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EDITORIAL

RESTRUCTURING HEALTH SECTOR IN PAKISTAN FOR EFFICIENT AND EFFECTIVE HEALTH CARE

Nadeem Khawar

Poor governance, mismanagement, inefficiencies and corruption are often used synonymously in a health systems context. A developing country with a population of 165 million, we see the top brains in the health sector uniting with a complex inefficient system, which itself poses a problem, rather than being a solution to the health problems of the nation.

Central to the integrity of any efficient and effective health sector is its workforce, a major chunk consisting of doctors. Developed countries with efficient health systems place a huge importance on this central workforce, and have well guarded, established, time tested policies and procedures for continual improvement of the health sector workforce, with the ultimate aim of improving the general health status of the population, and not merely focusing on diseases management.

Currently we produce 7000-10000 doctors annually in Pakistan. The lucky enough find their way out of the country to pursue well guarded careers in the west, polishing and refining their skills. Those who are left behind are left with a minimum variety of choice. Many of them enter the official health system in various cadres to serve the ailing community, but the complexities in the system prevent them from offering their best services.

At the moment, restructuring of the current health system is the corner stone of any serious future improvement of the health sector of Pakistan.

The first and foremost important step of restructuring is bringing about uniformity across the board in health sector. This translates into developing concepts of Clinical governance, for teaching hospitals, establishment of clinical guidelines based on concepts of evidence based practice and implementing these reforms in letter and spirit.

In Pakistan, at present, a doctor with a postgraduate qualification is considered as a specialist by the PMDC. The Council has got a postgraduate committee which is responsible to set the standards of postgraduate qualifications. In the last decade, it has become very clear that a postgraduate qualification on its own right does not make a doctor a specialist. Proper recognized training is essential to call a doctor a specialist in developed countries like USA, UK and Ireland. In UK, apart from achieving a complete training and a certificate of completion of training (CCT) or certificate of completion of specialist training (CCST), continuous validation is also sought for specialist cadres. In UK, reforms are underway where recertification and revalidation process would be necessary. All these issues are based on the generic standards of Good Medical Practice[1]. However, PMDC has got no means or policy to revalidate a doctor's fitness to work in Pakistan. Concept of re-licensing and revalidation is far from thoughts.

Not many physicians and hospitals keep track of the outcomes of procedures performed by them and not many health care professionals maintain a portfolio of their CME. There is no formal audit of mistake and adverse outcome of their treatment presented by any government or private institute available to public. Incident reporting in health care system should ideally communicate all information relevant to patient safety. There should be a system in place at each and every hospital locally and also at a large scale, such as that of UK National Patient Safety Agency (www.nspa.nhs.uk), which allows a wider dissemination of lessons learnt and emphasize the need for parallel analysis and development of a solution[2].

Pakistan needs a system which should be compatible with the modern delivery of a safe health care where patients and public can have confidence on the professionals and also on their regulators. The regulators like medical council should ensure that doctors are objectively validated throughout their career and fit to deliver a safe and quality medical care.

At the same time, the Government should ensure that a safe and high-quality medical care is a basic human right. The health care professionals should be accountable for its delivery within the available resources. There is a need for a National Quality Assessment and Maintenance of Heath Care Delivery, which should incorporate clinical governance and national health care audit to provide quality health care to the nation.

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REVIEW ARTICLE

AN INTRODUCTION TO TRIGEMINAL NEURALGIA: PATHOPHYSIOLOGY AND TREATMENT

(A BRIEF REVIEW OF LITERATURE)

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ABSTRACT

Trigeminal neuralgia (TN) is characterized by unilateral, severe, brief, stabbing, recurrent pain in the distribution of one or more branches of fifth cranial nerve. Symptomatic or secondary trigeminal neuralgia involves TN like pain that develop owing to central nervous system lesion (benign or malignant) or to the multiple sclerosis. Different published articles and books were reviewed regarding current thinking on the etiology, diagnosis and treatment of TN. Generally, there was concordance regarding the diagnosis of this condition; however, some questions and controversy exist regarding the pathogenesis and treatment modality of choice. The authors relied on the most representative and complete articles for this review article.

TN is the most common form of neuralgia, and patients often visit several clinicians with complaints of pain. Clinicians must recognize this condition and diagnose it correctly for patients to receive proper referral and therapy for this relatively treatable condition.

Key words: Trigeminal neuralgia, tic doulorence, Naturopathic facial pain, carbamazepine, microvascular decompression (MVD), Stereotactic radiosurgery.

INTRODUCTION

Trigeminal neuralgia is an uncommon facial pain arising from trigeminal nerve. Trigeminal neuralgia TN or tic doulorence (painful tic) has specific inclusion criteria. Trigeminal neuralgia typically presents with sharp electric shock like pain in the distribution of one or more division of trigeminal nerve. TN is characterized by paroxysms of severe, lancinating, and electric shock like bouts of pain restricted to the distribution of the trigeminal nerve[1]. The pain predominantly occurs unilaterally, most commonly on the right side, and involves the mandibular and/or maxillary branch or, rarely, the ophthalmic branch. Pain attacks occur spontaneously, and also are triggered by a nonpainful sensory stimulus to the skin, intraoral mucosa surrounding the teeth, or tongue. Anatomical trigger zones often can be identified. Each attack usually lasts only seconds to minutes, but they may be repeated at short intervals; consequently, individual attacks can overlap each other and may be described as a lingering, painful sensation. Attacks can occur at any time and are triggered not only by sensory stimuli to the face, but also by movement of the face (for example, chewing, yawning). Pain during the night that interrupts sleep is rare.[2]

TN usually has an exacerbating and remitting course, and patients experience shorter periods of remission as they age. In primary or idiopathic TN, physical examination does not reveal sensory or motor impairment of the trigeminal nerve. Idiopathic TN often is difficult to treat because the cause remains unknown, and despite the availability of multiple successful treatment options, no universally accepted medical and surgical treatment protocol exists[3].

It is important to differentiate TN from trigeminal neuropathy, in which sensory loss is prominent and pain usually is slight. This distinction can be detected with a careful physical examination. The pain of TN also differs from the pain following reactivation of the varicella zoster virus, which typically is seen in older people. When the varicella zoster virus involves the face, it has a predilection for the ophthalmic division of the trigeminal nerve.[3] TN also is seen in patients with multiple sclerosis, or MS, and is the result of demyelinating lesions of the trigeminal root entry zone. This correlation between MS and TN ranges from 1 percent in one study[4] to as high as 8 percent in another study.[5]

In addition, patients with neuralgia-inducing cavitational osteonecrosis, or NICO, which has been described as a low-grade, nonsuppurative, radiographically invisible osteomyelitis of the jaws, may experience pain so similar to that of TN as to be confused with the condition[6]. However, the diagnosis of

NICO is somewhat controversial, and several authors have challenged the existence of this entity[7,8].

The majority of cases of TN occur sporadically; however, the literature contains several reports of familial TN. A familial occurrence has been found in 4.1 percent of patients with unilateral TN and in 17 percent of patients with bilateral TN[9]. In 1999, Duff and colleagues[10] described a patient with familial TN and contralateral hemifacial spasm. The mother of the patient, five of his 10 siblings and one nephew also had TN confirmed by neurologists. An autosomal-dominant inheritance pattern would be consistent with this report and with previous reports in the literature; however, research has not established this inheritance pattern.

PATHOPHYSIOLOGY

Most idiopathic TN cases are thought to be induced by vascular compression of the trigeminal root-entry zone, which results in demyelination of trigeminal sensory fibers[11,13]. Histopathologic examination of trigeminal nerve roots from patients with compression of the nerve root by a blood vessel reveals focal loss of myelin, close apposition of the demyelinated axons and lack of intervening astrocytic processes[12,13]. Demyelination may result in ectopic generation of action potentials, presenting clinically as spontaneous pain[15]. Moreover, demyelination promotes ephaptic neural transmission—namely, development of abnormal contacts between adjacent nerve axons, which results in inappropriate spread of-action potentials and activation of one nerve on activity in another. Such inappropriate spread of action potentials may underlie the generation of pain by innocuous stimulation[15]. In the course of time, excessive afferent input of nerve impulses may produce central sensitization, resulting in atypical TN features, such as constant pain.[16]

TREATMENT

Pharmacological approaches:-

Pharmacological therapy is the first line of treatment for TN. The goal of the medical management is the reduction of neuronal hyperexcitability in the peripheral nervous system, the CNS or both[16,17]. Various antiepileptic drugs are used, including carbamazepine, oxcarbazepine, lamotrigine, phenytoin and gabapentin[16,20]. Other potentially effective medications include antispasmolytic agents, such as baclofen, a γ-aminobutyric acid receptor agonist, and tizanidine, an £\2-adrenergic agonist[18]. Carbamazepine has been found effective in several controlled trials and is the mainstay of pharmacotherapy for TN[19]. The most common adverse effects include sedation, fatigue, dizziness, blurred vision, nausea, vomiting and allergic skin reactions. Periodic complete blood cell count and liver function monitoring tests are essential, since agranulocytosis and aplastic anemia, as well as hepatocellular and cholestatic jaundice, can occur rarely[16]. Oxcarbazepine, a daughter drug of carbamazepine, is a safer alternative to carbamazepine and does not require routine monitoring of hematologic and hepatic profiles during treatment[20]. Often, drug combinations are used to maximize effectiveness and minimize adverse effects[21]. The clinician should attempt gradual withdrawal of the medications once complete pain control is achieved, because remission periods are common. Patients with TN and with MS may respond initially to pharmacological treatment; however, relapse is frequent. The patient in this report was responsive to carbamazepine, but use of the drug was discontinued owing to adverse effects.

Surgical procedures:-

For patients with TN who become refractory to pharmacological treatment or cannot tolerate its adverse effects, surgical intervention; is recommended. Surgical techniques used for TN treatment are peripheral surgery, percutaneous ablative procedures, stereotactic radiosurgery and microvascular decompression (MVD).

Peripheral surgery:-

Peripheral surgery entails lesioning of peripheral branches-of the trigeminal nerve, and using cryotherapy, neurectomy, alcohol block or radiofrequency. Peripheral techniques are the least invasive of all surgical procedures but are characterized by low effectiveness and a high recurrence rate[21,22].

Percutaneous ablative techniques:-

Percutaneous ablative procedures involve nerve lesioning at the level of the gasserian ganglion by percutaneous radiofrequency thermocoagulation, balloon compression, injection of glycerol or a combination of these[23,25]. These neurodestructive procedures have good initial results and carry less risk than MVD; however, they are associated with a higher incidence of pain recurrence. Potential complications include loss of touch sensation, dysesthesias, corneal damage, anesthesia dolorosa and temporary masseteric weakness. The patient described in this case report underwent percutaneous glycerol rhizotomy. During this procedure, a needle is advanced, with the aid of fluoroscopy, through the foramen ovale into the trigeminal cistern, where glycerol is injected in close proximity with the pregaglionic trigeminal rootlets[19,26]. The sensory fibers of the trigeminal nerve are affected, resulting in termination or reduction of the TN attacks[27]. Percutaneous glycerol rhizolysis causes sensory loss and masseteric weakness less frequently than do the two alternative percutaneous procedures, but it has higher recurrence rates.[19,24 and 25]

Stereotactic radiosurgery:-

Stereotactic radiosurgery, also known as gamma knife surgery, involves lesioning of the trigeminal nerve

at the root entry zone using Stereotactic techniques and radiation between 70 and 90 grays[27,28]. This procedure is less invasive and thus is suitable for medically compromised patients. Outcomes are similar to those of other ablative procedures[29,30]. However, there may be a latency period of three to six months, after which maximum pain relief is obtained[27,28]. This technique's highest success rates are observed when it is used as primary treatment in patients with typical symptoms[29]. Facial sensory loss, paresthesias and dysesthesias are the most common complications[24,27]. A positive correlation between development of trigeminal dysfunction and pain relief after gamma knife surgery has been reported[28].

Microvascular decompression:-

MVD of vessels compressing the nerve root is effective and has a low incidence of recurrence of TN[31,32]. However, it entails posterior fossa craniotomy and involves serious risks, including hearing impairment, ataxia, brainstem infarction, cerebellar injury and death[32]. Magnetic resonance tomographic angiography can depict vascular, compression of the nerve and is useful in identifying patients who are good candidates for MVD[33].

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ORIGINAL ARTICLE

AUDIT OF OBSTETRIC HYSTERECTOMY AT KHYBER TEACHING HOSPITAL, PESHAWAR

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ABSTRACT

Background: This study was conducted with the objective to determine the frequency of hysterectomy for obstetric complications. Obstetric hysterectomy is not an infrequent procedure in complicated cases like massive obstetric hemorrhage, uterine rupture and sepsis. When timely performed, it is a life saving procedure. The associated high morbidity and mortality are often due to the underlying pathology for which the procedure is performed.

Research Methodology: This was a hospital based descriptive study conducted at the department of obstetrics and gynecology, unit "A" Khyber Teaching Hospital, Peshawar from January 2004 to June, 2005. The data from a total 25 cases of obstetric hysterectomies was collected on a structured proforma. Their clinical and laboratory profile was documented. Labour room, operation theatre and patient history notes were also consulted. The results were analyzed using descriptive statistics and comparisons done with national and international statistics.

Results: During one and a half year study period, 4374 deliveries and 25 cases of obstetric hysterectomies were done, giving an over all ratio of 1:174.96 deliveries. The indications were uterine rupture, in 19 (76%) cases, followed by post partum hemorrhage in 6 (24%). The severity of complications depended upon underlying pathology. Shock, anemia, multiple transfusions, febrile morbidity and wound infections were common postoperative complications. Maternal deaths occurred in 4 (16%), out of 25 women, who under went obstetric hysterectomies.

Conclusion: Obstetric hysterectomy is a highly morbid but life saving procedure in the face of catastrophic uterine rupture or massive obstetric hemorrhage, as such it should be performed only as a last resort. The front line staff such as midwives and birth attendants should be targeted by trainers and media to stop using oxytocin for treating prolong labour and its use should be limited for the prevention of post partum hemorrhage only.

INTRODUCTION

The operation of caesarean hysterectomy was originally proposed in 1768 by Joseph Cavallini in Florence. Based on animal experiments he suggested that such an operation was not only possible but might well be advantageous to the mother. However, a further century was to pass before Horatio Storer performed and documented the first sub-total Caesarean hysterectomy in 1869. Unfortunately the woman died after 68 hours. If she had survived, the operation would most likely have been named after him rather than Eduardo Porro from Pavia whose first case in 1876 was successful. In the United Kingdom Professor Lawson Tait of Birmingham became a particular pioneer.[1]

Lawson Tait urged that this procedure be seriously considered by obstetricians of his time as the most logical and satisfactory method of dealing with the not infrequent problem of impacted labour. Because the maternal mortality; was high that was 90-95 per cent, mainly due to sepsis and haemorrhage.[2]

Towards the end of twentieth century emergency hysterectomy in obstetric practice became a relatively infrequent procedure. The indications still being mainly those where the life of the mother is threatened by uncontrollable haemorrhage.[3]

This study was carried out to determine the commonest cause for which obstetric hysterectomy (caesarean and postpartum) is being done in our setting. Furthermore to find out the nature and severity of the associated complications. So that relevant and feasible interventions could be introduced at appropriate levels to minimize maternal morbidity and mortality.

RESEARCH METHODOLOGY

This study was carried out in "A" unit of the department of obstetrics and gynaecology of the Khyber Medical College, Peshawar from January, 2004 to June 2005. During the period under review 25 women underwent obstetric hysterectomies and they comprised the study population. Inclusion criteria: Women undergoing hysterectomy at the time of caesarean section or within forty days of vaginal delivery, caesarean section or laparatomy for uterine rupture.

Exclusion criteria: Hysterectomies if carried out before 20 weeks of gestation or after puerperium were not included in the study.

Data collected were sociodemographic variables, details of index pregnancy, intrapartum events, perioperative findings and complications.

Indications were scrutinized and categorized. Results were analyzed using descriptive statistics.

Sources of data collection included records of labour room, operation theatre and patient history notes.

As this was a descriptive study, frequency, mean, range and percentages were calculated for numerical variables using statistical packages for social sciences.

RESULTS

During one and a half year study period, there were 4374 deliveries and 25 cases of obstetric hysterectomies were done, giving and over all ratio of 1:174.96 deliveries. Age, parity and booking status is given in Table 1.

Of the 19 cases of uterine rupture, the diagnosis was made postpartum in 12 (48%) and intra partum in 7 (28%) cases.

Mode of delivery of the baby, type of hysterectomy and complications are given in Table No. 3, 4 and 5 respectively.

Table No. 1: Age, Parity and Booking Status of Cases

Characteristics of the patients (n = 25)	No. of patients	Percentage
Age in years		
Below 30	6	24%
Above 30	19	76%
Parity		
Less than 5	9	36%
More than 5	16	64%
Duration of gestation (weeks)		
Less than 37	5	20%
More than 37	20	80%
Social class		
Lower middle	16	64%
Poor	9	36%
Residence		
Urban	5	20%
Rural	20	80%
Booking status		
Booked	Nil	
Unbooked	25	100%

Table No. 2: Indications and Etiological factors for Obstetric Hysterectomies

Indications For Obstetric Hysterectomy		
Causes	**Number**	**Percent**
Total cases of Obstetric Hysterectomy = 25		
Uterine rupture	19	76%
Postnatal	9	36%
Intrapartum	10	40%
Risk factors		
Obstructed Labour (n = 8)		
Grandmultiparity (n= 16)		
Macrosomia (n = 7)		
Scarred Uterus (n = 4)		
History of labour induction (n = 14)		
Postpartum Haemorrhage =	6	24%
Uterine Atony =	4	16%
Adherent Placenta =	1	4%
Retained products of conception causing sepsis =	1	4%

Table No. 3: Mode of Delivery of the Baby

Variables	Number	Percent
C section	3	12%
Spontaneous Vaginal delivery (by Traditional birth attendant)	10	40%
Laparatomy	11	44%
Vacuum Vaginal delivery	1	4%

Table No. 4: Type of Operation

Variable	Number	Percent
Total hysterectomy	4	16%
Sub-total hysterectomy	21	84%

Table No. 5: Complications

Type	No.	Percentage
Pre-Operative Shock	25	100%
INTRA-OPERATION		
Bladder injury	2	8%
Difficulty in securing homeostasis	10	40%
EARLY POST-OPERATIVE		
Shock	14	56%
Chest infection	10	40%
Fever	12	48%
Blood Transfusion reaction	5	20%
Wound infections	6	24%
Renal Failure	3	12%
LATE		
Anaemia	14	56%
Wound Problems	4	16%
Urinary Incontinence	1	4%
Blood stained vaginal discharge	1	4%
Maternal Deaths	4	16%

DISCUSSION

During the one and a half year study period, there were 4374 deliveries and 25 obstetric hysterectomies, giving an overall ratio of 1:174.9 deliveries. This ratio is double than reported from Lahore and contrasts markedly with low incidence of 1 per 3000 deliveries reported in literature[2,3]. Uterine rupture is still a major contributor to the total obstetric hysterectomies performed in our set up, as out of 25, 19 (76%) hysterectomies were carried out for uterine rupture. Other contributors were massive primary PPH due to uterine atony in 5 (20%) cases and secondary PPH in one case (4%).

The overall ratio of ruptured uterus was 1:230 deliveries. This ratio is lower than 1:110 reported from Ethiopia[4] but higher than 1:273 and 1:6331 deliveries reported from Nigeria[5] and Singapore[6].

A minority of patients had received antenatal care, similar to reports from other developing countries[1,4] but different from reports of Chen et al from Singapore in which majority of women with ruptured uterus were booked patients. 9(36%) patients with uterine rupture were diagnosed postnatally. They either had home deliveries, managed at private clinics or some primary health centers.

The remaining 10(40%) patients with rupture uterus presented with antepartum hemorrhage, shock or obstructed labour and the dead baby was delivered after laparatomy.

The majority (79%) of patients in this study had rupture of the unscarred uterus, in contrast to reports from Singapore by Chen et al in which over two third of cases occurred in women with scarred uterus. Case fatality rate of rupture uterus was 10.5%.

All had prolonged labour and yet this was either not recognized, or recognized and managed erroneously by the administration of enormous doses of oxytocin.

5(20%) hysterectomies were performed for massive primary PPH. In 2 cases the intra operative bleeding could not be controlled during repeat caesarean deliveries. In the remaining 3 cases, the indications were uterine atony and coagulopathy. One (4%) hysterectomy was performed for secondary PPH due to sepsis after repeat caesarean section.

The ranking of the indications obtained in our study was similar to the pattern of indications typical of any third world country[4,7] uterine rupture being the leading cause followed by PPH and placental disorders.

All patients received multiple blood transfusions, stayed in intensive care unit and suffered more than one complication.

Obstetric hysterectomy is a highly morbid but life saving procedure in the face of catastrophic uterine rupture or massive obstetric hemorrhage as such it should be performed only as a last resort.

By bringing down the occurrence of uterine rupture and learning new techniques for controlling massive post partum hemorrhage, we can decrease its incidence. For the prevention of uterine rupture in the community, the idea of prohibition of oxytocin as over the counter drug seems attractive to stop its misuse by the unskilled.

The front line staff such as midwives and birth attendants should be targeted by trainers and media to stop giving more harm than delivering good.

They should stop using oxytocin for treating prolong labour and its use should be limited for the prevention of post partum hemorrhage only.

Health and maternal health in particular is more than the product of medical intervention. Poverty, lack of good quality health services and inadequate contraceptive / reproductive choices are all inter-linked causes of poor maternal health, they need to be addressed.

Alternative techniques to hysterectomy for uterine atony, when pharmacological and basic surgical steps have not achieved homeostasis are the following:

1. Traditional technique using gauze[8].
2. Intrauterine balloon tamponade[9].
3. Uterine artery ligation[10].
4. B-Lynch suture, its variants[11].
5. Internal iliac artery ligation[12].
6. Selective arterial embolization[13].

CONCLUSION

Obstetric hysterectomy is a highly morbid but life saving procedure in the face of catastrophic uterine rupture or massive obstetric hemorrhage as such it should be performed only as a last resort. The front line staff such as midwives and birth attendants should be targeted by trainers and media to stop using oxytocin for treating prolong labour and its use should be limited for the prevention of post partum hemorrhage only.

The combination of medical and surgical treatment should avoid the need for hysterectomy in patients for whom the conservation of uterus is important.

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ORIGINAL ARTICLE

ANDERSON HYNES PYELOPLASTY IN THE MANAGEMENT OF CONGENITAL PELVIURTERIC JUNCTION OBSTRUCTION IN CHILDREN

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ABSTRACT

Background: Congenital pelviureteric junction obstruction is an obstructive paediatric urological problem and need surgical intervention in most of the cases. There are different surgical procedures to treat this condition. Here we present our experience to know the outcome of intubated Anderson Hynes (AH) pyeloplasty in the management of congenital pelviureteric junction obstruction in children by comparing the pre and post operative changes on ultrasound, intravenous pyelography and renal scintigraphy .

Research Methodology: The study was conducted in the department of pediatric surgery at Khyber Teaching Hospital, Peshawar, Pakistan from January 1998 to December 2005. The study population included 75 patients with confirmed pelviureteric junction (PUJ) obstruction who underwent 80 intubated Anderson Hynes pyeloplasties. Patient records were analysed retrospectively for age, clinical presentation, pre- and post-operative ultrasound, intravenous pyelography, and isotopic renography findings. The outcome of the pyeloplasty was evaluated by comparing the pre and post-operative changes in the ultrasound, intravenous pyelography and radio isotope renal scans.

Results: In the entire 80 involved renal unit intubated Anderson Hynes pyeloplasty was done. The pre and post operative ultrasound, intravenous pyelography (IVP), and renal scintigraphic changes were compared and recorded. The pelvic diameter decreased from grade III to grade II in 70 (87.5%) operated renal units on ultrasound. On IVP 18(22.5%) units had no dilatation, 58(72.5%) had mild pelvicalyceal dilatation but without obstruction and in 2(2.5%) units there was marked dilatation with poor function. On Tc-99m DTPA renal scan the renal function was improved by 30-50% in 75 (93.75%) renal units. On diuresis renography 65(81.5%) renal units were non obstructed, 13(16.25%) were equivocal and 2 (2.5%) had an obstructed pattern. In our study the age range was from 3 months to 10 years, with a mean age of 4.3 years. There were 52 (69.3%) male and 23 (30.7%) females. The left side was involved in 45 (60%), the right side in 25 (33.3%), while 5 (6.67%) patients had bilateral PUJ obstruction.

Conclusion: Anderson-Hynes pyeloplasty is an effective surgical treatment for congenital PUJ obstruction in children. The newer endoscopic procedures currently practiced must be carefully assessed against this 'gold standard' procedure.

Key words: Children, congenital, pelviureteric junction, Anderson-Hynes pyeloplasty.

INTRODUCTION

Pelviureteric junction obstruction is defined as obstruction to urine flow from the renal pelvis to the ureter. This anomaly usually occurs sporadically, but familial cases have been reported[1]. Pelviureteric junction (PUJ) obstruction occurs more often in males than females with a ratio of 2:1[2]. With the advent of prenatal sonography, most PUJ obstruction is now detected in utero. Clinically significant neonatal hydronephrosis occurs in 1 in 500 pregnancies, with 40-50% due to PUJ obstruction.[3]

The etiology of PUJ obstruction is primary or secondary. Primary pelviureteric junction obstruction refers to a congenital lesion at the PUJ and is the commonest cause of hydronephrosis in infants and children. Secondary pelviureterac junction obstruction results from injuries to or distortion of the pelviureteric junction due to open or endoscopic surgery, inflammation, urolithiasis, and even vesicoureteric reflux.

Intrinsic narrowing of the junction of the renal pelvis and ureter is the most common cause of primary congenital PUJ obstruction. This is typically due to a patent but aperistaltic segment at the PU junction. Other, less common, intrinsic causes for congenital PUJ obstruction include atypical mucosal valves, polyps, and true ureteral strictures.

The extrinsic causes of PUJ obstruction include the crossing of PUJ by lower pole vessels, high insertion of ureter, kinks, adhesions and angulations at the PUJ level.

PUJ obstruction is often associated with other congenital renal anomalies including contralateral PUJ obstruction, VUR, ectopic or horseshoe kidneys; duplication of the collecting system, contralateral renal dysplasia, multicystic dysplastic kidney, or renal agenesis.[5]

Normally, urine is transported from the pelvis into the ureter by peristalsis initiated by electrical impulses from primary pacemaker cells in the calyces. With functional obstruction, this contraction wave is interrupted, and active urine transport across the PUJ is impaired.[6,7]

In the obstructed kidney, the initial pathologic response is elevation in renal pelvic pressures. Following this, there is a characteristic compensatory reduction in renal blood flow and glomerular filtration rate. Studies have suggested that the mode of injury from obstruction is likely to be an ischemic injury due to the chronic compensatory reduction in renal blood flow and not due to the elevated renal pelvic pressure.[8]

The neonatal and pediatric presentation of PUJ obstruction can typically include abdominal mass, recurrent urinary tract infection, pain, haematuria, nausea and vomiting, and hypertension. Occasionally it may be an incidental finding on routine abdominal ultrasonography[9 10].

To diagnose PUJ obstruction, both anatomic and functional studies are necessary. The most commonly used investigations are ultrasonography, intravenous pyelography (IVP), and radionucleide renal scans. Computerized tomography (CT) scan, magnetic resonance imaging (MRI), retrograde or antigrade pyelography, and other interventional imaging techniques are rarely required for diagnosis.

Common indications for surgical correction of congenital PUJ obstruction include symptomatic PUJ anomaly, declining function of the dilated kidney, and PUJ obstruction with expected poor patient compliance[11].

The procedure of choice for correcting PUJ obstruction is pyeloplasty. In general, pyeloplasty is performed in 1 of 2 ways: with dismemberment, in which the obstructing segment is excised, or with a flap repair, in which the PUJ is enlarged by the interposition of tissue from the dilated renal pelvis.[12]

The most popular open procedure is the Anderson-Hyne's dismemberment pyeloplasty. This procedure can be used almost universally for the repair of any primary PUJ obstruction, including a high ureteral insertion, redundant or tortuous pelvis, proximal ureter, and crossing vessels. Most importantly, the procedure involves the complete excision of the functionally impaired PUJ, unlike flap and endourologic procedures. This procedure can also be performed laparoscopically with the advantage of decreased hospital stay.[13]

RESEARCH METHODOLOGY

This study was conducted in the paediatric surgery unit of Khyber Teaching Hospital Peshawar from January 1998 to December 2005. All patients with PUJ obstruction were admitted.

In the patient history, symptoms such as mass, pain, dysuria, urinary tract infection, hematuria and gastrointestinal symptoms were recorded. Failure to thrive, family history and antenatal history were also noted Pulse, blood pressure, and presence of pallor were noted in addition to thorough urological examination. Systemic examination was done for detection of other associated anomalies.

The anatomic and functional investigations advised to evaluate the PUJ obstruction included ultrasonography (USG), intravenous pyelography (IVP) and ^{99m}Tc-DTPA renal scan.

The criteria used for ultrasonography diagnosis was Grade 1 Anterior posterior (AP) renal pelvic dilatation less than 12 mm; Grade 2 AP diameter between 12 -20 mm; and Grade 3 AP diameter more than 20mm.

The criteria used for diuresis renography diagnosis was on the radionuclide clearance half time and was; T ½ more than 20 minutes (obstructed); T ½ less than 10 minutes (non obstructed); and T ½ less than 12 minutes (equivocal).

All patients who had history and investigations suggestive of PUJ obstruction were included in the study.

Our exclusion criteria included acute renal failure; relative renal function less than 10% on the affected side by ^{99m}Tc-DTPA scan; associated vesico-ureteric reflux, vesico-ureteric junction obstruction, and secondary PUJ obstruction due to previous surgery.

Surgery was advised in all symptomatic patients. The decision to operate was also guided by imaging results, the aim being to avoid loss of renal function. Significant pelvicalyceal dilatation and thinned out renal parenchyma on USG, supported by ^{99m}Tc-DTPA renal scan findings of an obstructive pattern and/or compromise of split renal function below 40% were important indicators.

In all patients, Anderson-Hyne's pyeloplasty through an anterior extraperitoneal approach was performed. The cause of the PUJ obstruction was noted intraoperatively. After excising the redundant pelvis and 1-1.5 cm of ureter, the pelvi-ureteric anastomosis was made using 5-0 catgut. We used size 6 or 8 feeding tubes as a nephroureteric stent and a peri-nephric drain in all of the cases. The stent was removed on the 5th post operative day, and the drain on the subsequent day in the majority of patients. The patients were discharged and followed up monthly for 6 months. On follow up the patients were thoroughly examined and

any complaint noted. Urine examination was performed to exclude infection.

Ultrasonography was advised after 3 months, and the result compared with the pre operative findings. IVP and ^{99m}Tc-DTPA renal scan were performed after six months in all cases. The pre and post surgery results were compared and recorded.

RESULTS

The outcome of AH pyeloplasty were evaluated by ultrasonography, IVP and Tc-99m DTPA renal scan. The results were compared with the pre surgery findings. A total seventy five (75) patients with eighty (80) affected renal units were studied. On pre operative ultrasound 70 (87.5%) renal units had grade III while 10 (12.5%) had grade II pelvic dilatation.

All the involved renal units had a dilated renal pelvicalyceal system on IVP. On diuresis renography 68 (85%) renal units had obstructed and 12 (15%) had an equivocal pattern. The ultrasounds found grade II pelvic diameter in all the renal units examined showing improvement in 70(87.5%) operated renal units.

On IVP, mild pelvicalyceal dilatation was present in 58 (72.5%) of renal units but without obstruction, as there was complete wash out of contrast within one hour after injection of the contrast. In 18 (22.5%) units no dilatation was noted while in 2 (2.5%) units there was marked dilatation with poor function and an obstructed pattern of the pevicalyceal system.

On Tc-99m DTPA renal scan, renal function was improved by 30-50% in 75 (93.75%) renal units. On diuresis renography 65 (81.5%) renal units were non obstructed, 13 (16.25%) had equivocal, while 2 (2.5%) had an obstructed pattern with less than 10% relative function. In our study the age ranged from 3 months to 10 years with a mean age of 4.3 years. There were 52 (69.3%) male and 23 (30.7%) female patients. The left side was involved in 45 (60%), right side in 25 (33.3%), and 5 (6.67%) patients had bilateral PUJ obstruction.

Wound infection was noted in 3 (4%) patients and urinary tract infections in 5 (6.67%) patients. The average hospital stay was 6.5 days in our study. In the two post operative patients an obstructed pattern was noticed on the investigations mentioned. The renal cortex was found to be extremely thin on exploration in these two cases and subsequent nephrectomy was performed.

DISCUSSION

It is believed that hydronephrotic kidneys show loss of function with time. Nevertheless, two questions continue to intrigue pediatric urologists; is there a real obstruction in the hydronephrotic kidney due to PUJ obstruction? And is the impaired renal function recoverable? The challenge remains to predict which hydronephrotic kidneys are at risk of renal damage, and to identify the time point at which this deterioration starts to appear. It seems therefore preferable to operate on patients with PUJ obstruction as it is responsible for renal deterioration until new diagnostic techniques prove otherwise[4,14]. The choice of surgical procedure for the treatment of congenital PUJ obstruction is also a great challenge for the paediatric urologist. Here we present our experience of AH Pyeloplasty for the treatment of congenital PUJ obstruction in children with a short term follow-up and had compared our, results with the others practiced the same procedure

Open procedures for the treatment of PUJ obstruction include the Anderson-Hynes dismembered pyeloplasty, the Culp de Weerd spiral flap procedure and the Foley Y-V technique, of which the first is the most widely used. Newer methods to treat the condition include antegrade endopyelotomy, retrograde endopyelotomy, balloon dilatation and laparoscopic pyeloplasty.[15]

J.C Anderson and W. Hynes introduced the dismembered non intubated pyeloplasty in 1946. This is extremely useful procedure and is practiced world wide in pediatric urology.

We performed AH pyeloplasty in all 80 renal units of PUJ obstruction. We used a size 6 or 8 feeding tube as a nephroureteric stent, and although the use of the stent and drainage tube is debatable, we stented our anastomosis to keep it patent and protect it from kinks and adhesions. The average hospital stay was 6.2 days and urinary tract infection was noted in 10 patients, all of which were treated without complication.

On postoperative follow-up the ultrasonography, IVU, and ^{99m}Tc-DTPA renal scan were done to assess the anatomy and quantify the functional changes of the AH pyeloplasty. The diameter of the renal pelvis in all the operated units was reduced in size except the two cases on ultrasonography. There was marked improvement in the dilatation of pelvicalyceal system, with complete wash out of the contrast in 78 (97%) renal units on IVU. On ^{99m}Tc-DTPA renal scan there was 30-50% improvement in the renal function of 75 (93.75%) operated renal units, which shows an excellent response. The diuresis renography results favoured a non obstructive pattern in 78 (97.5%) operated renal units. Our results are in agreement with King *et al,* Parker *et al* and Samuelson et al.

King et al reported 93% improvement in renal function when measured 3 months to 4 years after pyeloplasty in 11 neonates with hydronephrosis using ^{99m}Tc-DTPA. Parker et al reported on 14 children aged 3 months to 16 years undergoing pyeloplasty, using ^{99m}Tc-DMSA renography, and showed an increase of 20-50% in split renal function at 3-44 months of follow-

up in six of 10 (60%) children. Samuelson *et al* studied 64 children with unilateral PUJ obstruction, measuring total and split renal function and noticed 93% improvement in renal function after AH pyeloplasty.

The newer endourological techniques such as endopyelotomy and balloon dilatation are time demanding, requiring experience and expensive instruments. The results are not better than the open AH pyeloplasty, as observed by Tan HL et al, who claim 77% success of endopyelotomy in 13 patients.[17]

We consider AH pyeloplasty to be durable, producing an improvement in renal function on the operated unit, and a lasting improvement in drainage of the renal pelvicalyceal system. Newer procedures must be carefully assessed against this 'gold standard' procedure.

CONCLUSION

Anderson Hyne's pyeloplasty is the time tested plastic repair of congenital PUJ obstruction in paediatric age group. This type of pyeloplasty offers an accepted technique for the congenital PUJ obstruction due to any cause. It can be done to a patient of any age as it not only relieves the urinary flow obstruction from the renal pelvis but leads to improvement of the renal functions and health of the patient. The post operative complication rate is very much lowered if the repair is done by gentle handling of the renal tissues and minimal mobilization of the upper ureter.

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ORIGINAL ARTICLE

COMPARISON OF EARLY COMPLICATIONS IN PATIENTS UNDERGOING TVP & TURP FOR BPH

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ABSTRACT

Background: BPH is the most common benign tumour in old men. In most instances the symptoms are so severe that Patients are subjected to seek medical attention. Patients are given medical treatment but those who show no improvement are subjected to surgery. TVP & TURP are the procedures usually performed in our set up. Our study was aimed to compare the early complications and patients stay at hospital in both the procedures.

Research Methodology: This comparative study was conducted in surgical unit of KTH from May, 2005 to May, 2006. In this one year study 100 patients were studied. All patients were assessed by DRE, U/S and IPSS. Those with clinical suspicion of malignancy and post voidal residual urine volume of less than 100ml were excluded from the study. 50 patients underwent TVP and 50 TURP. Sampling method was convenient randomization. In both the procedure complications were noted and results were calculated using SPSS version 10.0.

Results: One hundred patients having BPH underwent prostatectomy, 50 patients were randomly subjected to transvesical and 50 cases to transurethral prostatectomy. In TVP group 22 (44%) developed post operative complications while in TURP group complications were 15(30%). Urinary tract infection was developed in 5 patients (10%) of TVP & 4 patients (8%) of TURP group. 7 patients (14%) suffered hematuria in TVP and 3 patients (6%) in TURP. 3 patients (6%) developed clot retention in T.V.P and 2 patients (4%) in TURP. 1 patient (2%) had post operative incontinence in TVP & TURP each. In TURP group one patient of 75 years age died due to acute myocardial infarction while in TVP one patient died on the same day due to hypovolumic shock.

Conclusion: TURP is superior to TVP in terms of less operative time, less post operative complications, less blood transfusions, short duration of catheterization, short hospital stay. Results can be improved in better urological set up with more expertise availability.

Key words: Benign Prostatic hyperplasia, Transurethral Prostatectomy, Transvesical Prostatectomy.

INTRODUCTION

All men having functional testis will develop BPH if they live long enough. The prostate grows in a linear fashion to 20 years of age, stabilizes then resumes growth at the age of 50 years and onwards making BPH the most common benign tumour of men.[1]

The clinical presentation are usually nocturia associated with hesitancy, urgency or intermittent stream, terminal dribbling or acute urinary retention. Sometime the patients present with complications like hematuria, recurrent UTI, calculi and obstructive uropathy.[2] The diagnosis is made by detailed history, DRE and ultrasound with pre and post voidal residual urinary volume. Rarely is the diagnosis not straight forward and more investigations are required.[3] With mild to moderate symptoms patients are given trail of medical treatment which includes watchfull waiting, 001 blockers, 5001 reductase inhibitors and Phytotherapy.[4] Patients not responding to medical treatment or with severe symptoms have to undergo surgical interventions which include TURP, TVP, retropubic prostatectomy, TUVP (Transurethral vaporization of prostate) or minimal invasive procedures like transurethral incision of prostate (TUIP), transurethral microwave therapy (TUMT), Transurethral needle ablation (TUNA), high intensity focused U/S (HIFO), laser ablation, balloon dilatation and urethral stents.

In UK approximately 40,000 prostatectomies are performed annually. In US 2 billion $ is spent on surgical treatment of prostate while in UK, the management of BPH consumes 0.4% of national health services expenditure.[5]

TURP is the gold standard and is performed in our set up only in specialized units, but TVP is commonly performed due to lack of facilities and to deal with large glands, associated complications like vesical calculus and diverticulum. The objective of our study was to compare the complications that occur during surgery or in post operative period in both the procedures.

RESEARCH METHODOLOGY

This comparative study was conducted in surgical unit of KTH from May 2005 to May 2006. A total of 100 patients were included in the study, out of which

50 patients underwent TVP & 50 TURP. Sampling method was convenient randomization. All patients were having symptoms of bladder outflow obstruction and majority of them had history of acute or chronic urinary retention. Patients symptoms were evaluated on IPSS chart. In all patients thorough history, physical and systemic examination were done. DRE was done in all patients and those with hard nodule or suspicion of malignancy were excluded from the study. U/S with pre and post voiding residual urinary volume was done in every case and those who had post voiding residual urine less then 100ml were again excluded from the study.

Investigations done in all cases were FBC, urine analysis, blood urea and sugar, X-ray chest, ECG and plain x-ray KUB. Urine culture and sensitivity were done wherever necessary and antibiotics given accordingly. Urodynamic studies were not done because of lack of facilities.

In all cases of TVP incision used was transverse supra pubic. 24 size Bardia hematuria 3 way catheters were passed and primary closure of the bladder were done. Extra vesical drain was kept in all patients and irrigation maintained. In TURP group cystoscopy was performed before procedure followed by resection of the prostate. Hemostasis secured and bladder wash started through 3 way Bardia hematuria catheter.

In both TVP and TURP operative time was noted. Patients were examined in morning and evening rounds regularly to see the progress and any complication. The data collected through the pre designed questionnaire from patients were categorical where the appropriate statistical tools were chi square test and percentages. These were applied using SPSS version 10.0 and then results were obtained.

RESULTS

One hundred cases of patients having BPH underwent prostatectomy. 50 patients were randomly subjected to T.V.P and 50 cases to TURP. In patients undergoing TVP a total of 22(44%) patients developed post operative complications while in TURP group 15 patients (30%) developed post operative complications as given in the Table 1.

In TVP group, 1 unit blood transfused to 60%, 2 units to 8%, more than 2 unit to 4% and in 28% of patients there was no need of blood transfusion. In TURP group, 1 unit blood transfusion to 44%, 2 or more units of blood transfusion given to 4% while 52% of patients there was no need of blood transfusion as shown in Table 2.

In 78% patients in TURP group catheter was removed after 48 hours while in TVP most of the catheters removed after 5th post operative day.

From the table it is clear that there is significant difference among the two groups.

Most of the patients who had undergone TURP were discharged within 72 hours. While most of the

Table No 1: Comparison Of Post Operative Complications

OPERATED THROUGH TVP AND TURP

S. No.	Post operative complication	No. of Pts. group-1 (TVP)	No. of Pts group-2 (TURP)	Chi-square x2	P-value
1.	Urinary tract infection	5	4	0.000	0.78
2.	Hematuria	7	3	1.002	0.42
3.	Clot retention	3	2	0.000	0.97
4.	Transient incontinence	1	1	0.000	0.78
5.	Infection (cystitis epididimoorchitis)	3	2	0.000	0.97
6.	Urethral structure	1	1	0.000	0.95
7.	Mortality	1	1	0.000	0.95
8.	Incontinence	1	1	0.000	0.95
	Total	**22**	**15**	**1.563**	**0.2112**

Table No. 2: Comparison of Blood Transfusion in TVP and TURP

S. No.	Blood transfused	No. of Pts. TVP group	No. of Pts TURP group	X2	P-value
1.	No transfusion	14	26	5.042	0.0247
2.	01 unit	30	22	1.963	0.1612
3.	02 units	4	1	0.842	0.3588
4.	> 02 units	2	1	0.000	1.000
	Total	**50**	**50**		

Table No. 3: Comparison of Duration for Removal of Catheter in TVP and TURP

S. No.	Hours / days	No. of Pts. group-1 TVP	No. of Pts group-2 TURP	X2	P-value
1.	24 hrs	0	7	5.530	0.0187
2.	48 hrs	0	32	44.164	0.0001
3.	72 hrs	0	8	6.658	0.0099
4.	4^{th}	0	2	0.510	0.4751
5.	5^{th}	9	1	5.444	0.0196
6.	6^{th}	15	0	15.373	0.0001
7.	7^{th}	25	0	30.720	0.0001
8.	One week & onward	1	0	0.000	1.000
	Total	**50**	**50**		

Table No. 4: Comparison of Duration of Hospital Stay Post TVP and TURP

S. No.	Days	No. of Pts. group-1 TVP	No. of Pts group-2 TURP	X2	P-value
1.	24 hrs	0	7	5.538	0.0186
2.	48 hrs	0	32	44.592	0.0001
3.	72 hrs	0	6	4.438	0.0351
4.	4^{th} day	0	4	2.346	0.1256
5.	5-7	35	0	51.378	0.0001
6.	8-12	10	0	9.020	0.0027
7.	13 & onward	4	0	2.346	0.1256
	Total	**49**	**49**		

patients post TVP were discharged after 5th post operative day.

In TURP one patient died on 1st post operative day due to MI. In TVP one patient died on same day due to hypovolumic shock.

Patients were followed up for next three months. The symptoms gradually improved from 1st day after removal of catheter. Although 3 patients developed acute retention at 1st day of removal of catheter, no patient had retention after 2nd week of removal of catheter. Overall comparison of TVP and TURP were made and the complications were less in TURP than TVP.

DISCUSSION

There is little debate that as men grow older their prostate gland increase in size. The patients with LUTS generally seek help for relief of their symptoms and treatment is best decided by considering the impact of the disease on quality of life. Prostatectomy has represented the only acceptable therapeutic alternative for BPH.[6]

In a survey of 3885 patients, the most common indication of surgery was the symptoms of prostatism.[7] In Pakistan also in a study of 200 patients, the selection criteria was the symptoms of prostatism in 37.5% and urinary retention in 63.5% of the patients.[8]

TURP is the gold standard at the moment and the durability and success from surgery is clear with 80-90% symptomatic improvement.[9] TVP is still commonly performed in developing countries due to lack of facilities and to deal with large glands and associated complications like vesical calculus and diverticulum. Moreover TVP can be safely performed by general surgeons.[10] In our hospital we have urologists in our units and TURP is performed for most of the patients with comparatively good results.

Majority of the patients (58%) with BPH in our study presented with acute or chronic retention needing catheterization. All patients presented with retention or not, had the previous history of LUTS (both irritative and obstructive) Yan J et al[11] also noticed same results. The post operative symptoms gradually improved from 1st day, after removal of catheter to 3 months. The obstructive symptoms relief was excellent while some of the irritative symptoms persisted in few patients. Detrusor instability has been described as a possible explanation for irritative symptoms like frequency, urgency and urge incontinence. It has been stated that detrusor instability disappeared only in one half to two third of the patients post operatively.[12]

In TVP 22 out of 50 patients developed postoperative complications. Some patients have more than one complication. The frequency of UTI was high (10%) in our study. All these patients were catheterized preoperatively. Mian Naushad Ali[13] has reported 11.5%. Andrea et al[14] 12.5% and Oonwala and Sheikh[15] 73%. These gross variations may be due to the difference in sterilization technique of surgical instruments, catheter care and use of antibiotics. Clot retention occurred in 6% patients. It is quite similar to that (6.7%) described by Yan J et al.[11] Maqbool Ahmed[16] and Sattar Memon[8] has reported 4.8% and 1.5% respectively. Transient urinary incontinence occurred in 3 patients (6%) while total incontinence was nil. One study have shown an incidence of 5% of temporary incontinence, while in other studies not a single case of permanent incontinence was reported.[6,11,16]

Epididymoorchitis was 6% in our study which is near to international and local study. Maqbool Ahmed[16] has mentioned 4.2%. Masha Khan[7] et al stated 2% of incidence of epididomoorctitis which is lower than our study. We noticed urethral stricture in 1 patient (2%) while Abdul Razaque et al and Andrea et al have reported 3% and 6.25% respectively. Yan J et al have reported the mortality rate of 2.5%, Satar Memon 1.5% and Abdul Razaque et al 3% while it was 2% in our study.

In contrast in TURP group patients with UTI were 8% which correspond to international study. AC Throp et al[12] has also stated equivalent results in TURP. Hematuria was observed is 3 patients (6%). AC Throp et al has mentioned 2% and Mian Noushad has mentioned hematuria in 1% of patients. The difference may be due to patient factors, better facilities and well organized urology units.

Clot retention was observed in 2 patients (4%). Maqbool et al[16] stated clot retention in 4.8% of patients after TURP. Transient incontinence after TURP developed in 1 patients (2%) Maqbool Ahmed[16] has observed 11.4% in his study.

Epidydimoorchtis in TURP was observed in 2 patients (4%) which is quite near to the international study. Diallo MB et al[18] stated frequency of 11.5% which is quite high from our study but the difference is due to the fact that the study was conducted in small number and duration was 4 years. Urethral stricture was found in 1 patient (2%) while in study conducted by Mian Noushad Ali the percentage is 1. One patient died after TURP due to MI. AC Throp et al[17] has mentioned the mortality rate of 0.9% and Maqbool Ahmed 0.4%.

CONCLUSION

It is concluded that TVP & TURP for BPH both has excellent clinical outcome. Rapid improvement of most of subjective and objective parameters were seen in majority of cases but finally we concluded that TURP has less complications, less blood transfusions, short duration of catheterization and short hospital stay. These can be further controlled by proper catheter care, better sterilization of instruments and perioperative use of suitable antibiotics.

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ORIGINAL ARTICLE

ASTIGMATIC CHANGES IN PHACOEMULSIFICATION VS CONVENTIONAL EXTRA CAPSULAR CATARACT EXTRACTION IN AGE-RELATED CATARACT

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ABSTRACT

Background: Phacoemulsification and Extracapsular Cataract Extraction are the two standard surgical procedures in cataract management. In Extracapsular Cataract Extraction the incision is large which is closed with stitches. This results in more astigmatism and late rehabilitation. As there is large incision this results in more complications. Phacoemulsification is recent advanced procedure in cataract management. The incision is small and self-sealing. Complications are less and rehabilitation is early and also there is less astigmatism. However the learning curve is difficult. Once mastered then this is the best method of cataract management. Objective of the study was to compare astigmatic changes in Phacoemulsification Vs extra capsular cataract extraction (ECCE) with posterior chamber intraocular lens (PC-IOL) implantation in age-related cataract.

Research Methodology: This comparative study was conducted in the department of Ophthalmology Khyber Teaching Hospital Peshawar in collaboration with pathology department KMC/KTH Peshawar for investigations/ screening from January 2001 to June 2002. We selected 100 patients with age-related cataract including both the sexes and divided them into two groups (A&B) comprising of 50 patients each. Group A underwent Phacoemulsification with PC-IOL (PMMA lens). Group B underwent conventional ECCE with PC-IOL and 3-4 stitches with 10/0 nylon suture were applied to close the wound which were removed after two months. Astigmatic changes in dioptre cylinder (D-CYL) were recorded on the first postoperative day, end of first week, first month, second month and third month

Results: At the end of third month in group A 84% patients had 0 - 0.9 D-CYL, 10% had 1-1.9 D-CYL and 6% had 2 - 2.9 D-CYL. In group B, 82% had 0 - 0.9 D-CYL, 14% had 1 - 1.9 D-CYL and 4% had 2 -2.9 D-CYL. The results were statistically insignificant.

Conclusion: In both groups, the Astigmatic changes are comparable at the end of third month in our study. However time factor is important because in group A the rehabilitation is early as compared to group B.

Key words: Phacoemulsification, Extra Capsular Cataract Extraction and Astigmatism

Abbreviations: Phacoemulsification (Phaco), Extra Capsular Cataract Extraction (ECCE), Dioptre Cylinder (D-CYL). Visual Acuity (V.A), Posterior Chamber Intraocular Lens (PC-IOL).

INTRODUCTION

Cataract is a major cause of preventable blindness in aged people[1]. The management of cataract has a long history spanning over about twenty centuries under going various methods and procedures. Important procedures in its evolutionary stages are couching, intracapsular cataract extraction (ICCE) and ECCE. In 1967 Charlas Kelman revolutionized cataract management by describing ultrasonic fragmentation of the lens known as Phacoemulsification[2]. Phacoemulsification results in much reduced astigmatic changes and early rehabilitation as compared to ECCE[3]. Learning curve of Phacoemulsification is very difficult[4]. It may result in endothelial damage, capsular rupture, vitreous loss and dropped nucleus in vitreous. In Phacoemulsification 3.2 mm incision is given which is then extended to 5.5mm according to the IOL size. While in case of ECCE 8-10 mm incision is given. 3-4 stitches with 10/0 Nylon suture are applied to close the wound which are removed after two months of surgery.

RESEARCH METHODOLOGY

Non-randomized 100 patients were selected. Age range was 50-70 years. They were divided into two groups A&B each comprising of 50 patients. In Group A 29(58%) were male and 21(42%) were female while in Group B 34(68%) were male and 16(32%) were female. Investigations like blood sugar level, HBSAg and HCV screening were done in pathology department KMC/ KTH Peshawar.

Inclusion Criteria:

1. AGE 50-70 years

2. Blood Pressure less than 140/90mmHg
3. Fasting blood sugar level less than 126mg %
4. IOP less than 20 mmHg

Exclusion Criteria:

1. Diabetic patients
2. Hypertensive patients
3. Glaucomatous patients
4. Previously operated eyes
5. HBSAg and HCV Positive Patients

Preoperative astigmatism was comparable between the two groups. (Table 1). To avoid bias all the group A patients were operated by one skilled surgeon for phacoemulsification with PC-IOL and group B by other skilled surgeon for ECCE with PC IOL. All the surgeries were conducted with peribulbar local anesthesia.

In group A 3.2mm incision was given which was extended to 5.5mm for IOL implantation. In group B 8-10mm incision was given with applying 3-4 stitches of 10/0 Nylon suture to close the wound which were removed after two months. All the astigmatic changes were recorded by a single observer to avoid bias. Astigmatic were made on first post operative day, end of first week, first month, second month and third month.

RESULTS

The preoperative astigmatism in both the groups is shown in Table 1. The astigmatic changes on 1st post-operative day, end of 1st week, 1st month, 2nd month and 3rd month are shown in Table 2, 3, 4, 5 and 6 respectively.

DISCUSSION

Phacoemulsification is now the standard surgical procedure in cataract management. In developed countries it has replaced the conventional ECCE. Although Phacoemulsification has early fruitful rehabilitation post operatively with less astigmatism, but still ECCE cannot be ignored because after three months the astigmatic changes are comparable between the two procedures as has been observed in our study.

In our study 100% patients group A had astigmatism less than 3 D-CYL while 86% patients in group B had less than 3 D-CYL after one week.

Our results are comparatively better than the study of SA Haider[5] in which 56% patients had astigmatism less than 3 D-CYL after one week in Phacoemulsification while 68% had astigmatism less than 3 D-CYL in ECCE.

According to a study by Asad Aslam Khan, Shakeel Ahmad, Sohail Sarwar et al[6] in Phacoemulsification post operative astimatism had a range of 0-2 D-CYL after one week which are comparable with our study.

Our study results are better than the study by Asad Aslam Khan, AN Azhar, AM Chohan regarding Phacoemulsification in which post operative astigmatism was 0-1 D-CYL in 71% of patients and more than 1 D-CYL in 29% of patients.[7] ECCE with PC-IOL with small 6mm incision for small manual nucleus fragmentation and removal has also good results. According to Yaok, Tiang JK, Du Xh,[8] the mean astigmatic changes at one week was 1.96 +/- 1.08 D-CYL and at three months follow up it was 0.92 +/- 0.68 D-CYL. This astigmatism was less than control group with large incision ECCE.

According to the study by Naseer Raja, Mohammad Khizer Niazi[9] the mean post operative astigmatism in ECCE with PCIOL was +2.25(±1.7)D_CYL as compare to Phacoemulsification with PC_IOL in which mean astigmatism was +0.5(±0.49)D_CYL. After removal of stitches in ECCE with PC_IOL, the difference in mean astigmatism in both the groups was less than +0.25(±0.5) DCYL.

Table 1: Pre Operative Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	33	66	31	62	0.85
1-1.9 D-CYL	10	20	12	24	0.73
2-2.9 D-CYL	6	12	5	10	0.834
3-3.9 D-CYL	—	—	2	4	N.A
4-4.9 D-CYL	—	—	—	—	N.A
5 D-CYL and above	1	2	—	—	N.A

Table 2: 1st Post Operative Day Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	26	52	21	42	0.63
1-1.9 D-CYL	13	26	10	20	0.54
2-2.9 D-CYL	10	20	10	20	0.98
3-3.9 D-CYL	1	2	8	16	0.03
4-4.9 D-CYL	—	—	1	2	—

Table 3: 1st Week Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	40	80	22	44	0.005
1-1.9 D-CYL	8	16	12	24	0.02
2-2.9 D-CYL	2	4	9	18	0.028
3-3.9 D-CYL	—	—	6	12	—
4-4.9 D-CYL	—	—	1	2	—

Table 4: 1st Month Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	42	84	23	46	0.004
1-1.9 D-CYL	6	12	15	30	0.005
2-2.9 D-CYL	2	4	11	22	0.005
3-3.9 D-CYL	—	—	1	2	—

Table 5: Second Month Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	41	82	40	80	0.79
1-1.9 D-CYL	7	14	8	16	0.81
2-2.9 D-CYL	2	4	2	4	0.97

Table 6: 3rd Month Astigmatism

Astigmatism	Group A		Group B		Significance
	No. of Patients	%age	No. of Patients	%age	P. Value
0-09 D-CYL	42	84	41	82	0.793
1-1.9 D-CYL	5	10	7	14	0.61
2-2.9 D-CYL	3	6	2	4	0.59

More patients were satisfied with Phacoemulsification due to early rehabilitation. However the results were the same after six months of surgery.

In a study by Mustansir Siddique, Khalid Masood Ashraf, Mohammad Sohail Shehzad et al. There was less change in astigmatism in phacoemulsification with PC_IOL as compared to ECCE with PCIOL[10]. The results are comparable with our study.

CONCLUSION

In our study we conclude that rehabilitation is early in Phacoemulsification as compared to ECCE. Phacoemulsification is very safe procedure provided the surgeon is skilled. Phacoemulsification is very expensive and in our setup every patient cannot afford it as compared with **ECCE.** As obvious from our study there is no significant difference in astigmatism after three months except time factor. Further to add our study is comparable both national and international studies.

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ORIGINAL ARTICLE

COMMUNITY ACQUIRED SPORADIC SPREAD OF HEPATITIS C VIRUS (HCV)

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ABSTRACT

Background: HCV is a RNA vims and is one of the most common viral infections affecting a large majority of patients. Once exposed to this deadly virus 80-90% of the patients develop chronic liver disease. 20-40% of HCV-infected do not have recognized risk factor, leading to speculations that other as yet undiscovered modes of transmission may exist. This study aims to investigate the possible route of transmission in patients with no recognized risk factor.

Research Methodology: This case control study was carried out in the department of Medicine, KTH from Jan 2004 to Jan 2006. All the HCV positive patients (500 cases) of either gender, aged 15 years and above underwent a comprehensive history and physical examination with attention to the risk factors associated with acquisition of HCV.

Results: Most common route of HCV acquisition is parenteral. Transfusions used to be a major risk until the blood supply was cleaned by developing testing for blood and now this risk is considered very low. Currently the use of non-disposable syringes by local quacks out numbered the list amounting 65%. The maximum number of patients were in the age group 46-55 years. We identified about 13 independent risk factors for HCV infection with no standard risk factor. Altogether these risk factors could explain 27-40% of unidentified routes of transmission. The odds ratio for increased risk by these exposures are hospitalization surgical 1.7 fold increased risk, medical 2.1, dermatological procedures, diathermy 3.0 and cutaneous ulcers/wounds 10.0, and life style depilation at beauty saloons 2.0.

Conclusion: It is very difficult to ascertain the exact mode of transmission in HCV positive patients. Apart from the recognized routes of transmission on which many papers have been published but still 20-40% of HCV infected persons do not have recognized risk factors.

Key words: Identifying unknown routes for HCV transmission. Community Acquired spread of HCV.

INTRODUCTION

HCV is a RNA virus. The terms non A, non B virus was previously used for decades. In 1989 the virus was finally discovered. Now Hepatitis C is the most common cause of chronic hepatitis, cirrhosis liver and hepatocellular carcinoma world wide.[1]

The prevalence of HCV is 3.1% worldwide. The situation in Pakistan is still not clear. The present estimated prevalence is 4-5%.[2] There is a dire need for more epidemiological studies to clarify this situation.

The major route of transmission is parenteral. Blood transfusions, blood products, use of non-disposable syringes, unhygienic dental clinics, barbers, ear piercing, tattooing are important risk factors.

This study mainly focuses on sporadic spread of HCV which accounts for 20-40% of patients with HCV infected persons who have no other identified route of transmission. Several potential routes or sources of HCV transmission have been suggested that is previous hospitalization, minor surgical procedures, short term dialysis for acute renal problems, plasmapheresis, organ transplantation, GI endoscopy, cystoscopy, obstetrical voluntary abortion. Tetanus immunoglobulin injections, dermatological procedures, varicose vein sclerosis, diathermy, cutaneous ulcers and wounds, acupuncture and life style chiropodist, manicurist, depilation at beauty parlors and sharing of jewelry. The literature also considers its spread among the intranasal cocaine use and violent sport activities like boxing, rugby, but still studies are going on.

RESEARCH METHODOLOGY

This case control study was conducted in Medical 'A' ward, KTH, Peshawar from January 2004 to January 2006. All the cases 500 of either gender, aged 15 years or above underwent a comprehensive history and physical examination with attention to the risk factors associated with acquisition of HCV. A detailed performa which included information regarding age, sex, occupation with special emphasis on identification of risk factors like used syringes, needle pricks, blood transfusions, surgical procedures, commercial barber risk, dental procedures, visits abroad and sexual contact, tattooing, ear piercing and dermatological procedures. All the patients having a clear cut history of

the possible route of transmission like blood transfusion, surgery, i.v drug abusers, dental extraction, and use of non-disposable syringes were excluded from the study.

Inclusion criterion

1. Patients with HCV positive age 15 years and above.
2. Patients with deranged ALT and positive HCV antibodies by 3rd generation ELISA.

Exclusion criterion was HCV positive patients if they had history of transfusion or i.v drug use, sexual and occupational exposure, HIV infection, haemodialysis and transplantation.

750 control cases were recruited from general medical OPD with negative status for HCV. Possible hypothesized risk factors (normally not considered to be part of known/established risk factors) were looked in both cases and controls by verbal inquiry. Risk estimation was calculated as odds ratio.

RESULTS

60% of the cases were in the age group 46-55 years. We identified about 13 independent risk factors for HCV infection in patients with no standard risk factors. These suspected risk factors such as hospital stays, GI endoscopy, abortion, iv/im injections, acupuncture, violent sport, manicure/chirrupy and depilation. Altogether there risk factors could explain 27-40% of unidentified routes of infection. For hospitalization, GI endoscopy ad iv/im injections have positive correlation with the number of exposures and risk for acquiring HCV. The odds ratio for 41 endoscopies in this study was 2.1, if a person had less than 2 exposures and 4 fold risk if a person had greater than 2 exposures. The odds ratio for hypothesized risk factors are shown in Table 1.

Table 1

Risk factors	Odds Ratio (Relative Risk)
Hospitalization	
Surgery (Non-obstetrical)	1.7
Medical	
Endoscopy	2.1
Obstetrical	1.8
Dermatological Procedures	
Varicose Vein Sclerosis	1.7
Diathermy	3.0
Cutaneous Ulcers/Wounds	10.0
Acupuncture	1.6
Tetanus Ig Injections	1.7
IM Injections	1.4
IV Injections	1.7
Life Style	
Chiropodist/Manicurist	1.8
Depilation at beauty saloons	2.0

DISCUSSION

Many studies have been published over the last decade for understanding the natural history, acquisition, diagnosis and management of hepatitis C infection. Clearly large majority of patients, about 80-90% once exposed to HCV go on to develop chronic liver disease[2]. Worldwide prevalence of HCV is 3.1%. The situation in Pakistan is still not clear. The present estimated prevalence is 4-5%. There is a dire need for more epidemiological studies to clear this situation[1]. The major route of transmission is parenteral. Tattooing, I.V. drug abusers, body piercing and commercial barbering are important risk factors[1,5,7]. Cutaneous ulcers/wound debribement and dressing have the highest odds ratio 10.0. These cuts and wounds are part of day to day occurrence and people rush to the nearest possible medical care provider as an emergency to stop bleeding and get it cleaned and dressed. This care is usually provided by dispensers, quacks and in some rural areas by school teachers. Their instruments are un-sterilized and are used just after putting them in hot water which does not contain any anti-viral solution for its sterilization. Similarly diathermy procedures carried out for moles, warts and other minor skin problems carries the same risk done locally by quacks. Proper health education about the spread of HBV and HCV acquisition should be carried out to stop its spread in different parlors/beauty saloons. All of their instruments need to be sterilized in anti-viral solution before they are used. 20-40% infected persons do not have recognized risk factors leading to speculations that other as yet undiscovered modes of transmission may exist given the name sporadic spread or acquisition of HCV through unknown routes[19].

This study mainly focuses on sporadic spread of HCV which accounts for 20-40% of patients with HCV infected persons who have no other identified route of transmission. Several other potential routes or sources of HCV transmission have been suggested which include previous hospitalization locally in periphery, minor surgical procedures by dispensers/quacks, short term dialysis for acute renal problem, plamsapheresis, organ transplantations, GI endoscopy, cystoscopy, obstetrical voluntary abortions, immunoglobulin injections, dermatological procedures, varicose vein sclerosing, diathermy, cutaneous ulcers and wounds, acupuncture and life style chiropodist, manicurist, depilation at beauty parlors and sharing of jewelry among

females. For hospitalization, GI endoscopy, IM/IV injections have positive correlation with the number of exposures and risk of acquiring HCV. The odd ratio for GI endoscopy is 2.1, if the person has less than 2 exposures and 4 fold risk if person has greater than 2 exposures[19]. Saliva can contain a range of infectious agents and transmission of these can occur in which hepatitis C is of increasing importance. HCV RNA can be detected by PCR which also shows that HCV maybe present in the saliva of infected patients. This might provide an argument for possible transmission of HCV via contaminated saliva.[13]

As no vaccine protecting against HCV infection is currently available and no recent anti viral therapies are characterized by limited efficacy, high cost and substantial side effects its prevention rather than cure should be the slogan against HCV acquisition.

CONCLUSION

The majority of the primary healthcare is provided by people without standard medical training with lack of knowledge about sterilization and use of injections for minor problems with the belief that injections work faster than oral medication. People going for ear piercing, tattooing, circumcision and shaving at barbers are at higher risk of acquiring HCV infection because of reuse of unsterilized instruments.

As vaccine is not available for this deadly disease and anti-viral therapy is very expensive, therefore prevention by health education and awareness among the general public is likely to be a critical intervention that might help in limiting the spread of HCV infection.

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ORIGINAL ARTICLE

CERVICAL LYMPHADENOPATHY STUDY OF 100 CASES

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ABSTRACT

Background: A patient presenting with cervical lymphadenopathy is a common occurrence. There are various causes of cervical lymphadenopathy and it is dealt with by many discipline of medicine, but it is of particular importance in ENT practice, because in many instances the primary focus of disease lies in the ENT region. The objectives of the study were to determine causes cervical lymphadenopathy in 100 patients, establish proportion of various causes and to compare the results of this study with the results of other studies.

Research Methodology: This was a prospective study where sampling was done on convenience, conducted at the department of ENT Khyber Teaching Hospital Peshawar from Nov 2003 to Dec 2005. A total number of one hundred patients were included in this study. All those patients who presented with cervical lymphadenopathy of more than two weeks duration were included in the study.

Results: Out of total 100 cases recorded, tuberculosis of cervical lymph node was the single most major pathology detected, it accounted for 58% of cases. Reactive hyperplasia was noted in 26% of cases. 8% of patients showed metastatic deposits in the lymph nodes while Kikuchis disease was observed in one case.

Conclusion: Tuberculosis is the commonest cause for cervical lymphadenopathy in this region of the world.

Key words: Lymph node, tuberculosis, excisional biopsy, head and neck.

INTRODUCTION

There are about 800 lymph nodes in the body out of these about 300 are cervical group of lymph nodes, which drain head and neck region[1]. There are many causes of cervical lymphadenopathy, which includes inflammatory diseases (of bacterial, viral, fungal, protozoal and rickettsial origin), malignant disorders (primary and secondary), immunological disorders, lipid storage diseases and some miscellaneous conditions[2,3,4].

Cervical lymphadenopathy is a common occurrence and is of concern for the patient as well as his clinician. Cervical lymphadenopathy is dealt with by many medical and surgical disciplines, but it is of particular importance in ENT practice, as in majority of cases the cause lies in the ENT region. The scenario of causation of cervical lymphadnopathy is different in different regions of the world[5]. In Pakistan tuberculosis is the main cause because of poor socioeconomic condition, malnutrition, over crowding, lack of health education and poor sanitation[6]. Lymphadenitis is the most common mode of presentation of extra pulmonary tuberculosis and cervical lymph nodes are the most frequently involved.

Cervical metastasis is one of the most critical prognostic factor in malignancies arising in the head and neck region. Accurate detection and measurement of clinical and sub-clinical metastasis is important for precise staging of patient's head and neck cancer[6]. Staging usually determines treatment strategy[7].

RESEARCH METHODOLOGY

This was a prospective study where sampling was done on convenience, conducted at the department of ENT Khyber Teaching Hospital Peshawar from Nov 2003 to Dec 2005. The objectives of the study were,

- To determine the causes of cervical lymphadenopathy in one hundred patients and to establish proportion of various diseases.
- To compare results of this study with the results of others (national as well as international).

Patients presenting with cervical lymphadenopathy for more than two weeks duration were included in the study. Patients with inflammatory lymphadenopathy of less than two weeks duration were given broad spectrum of antibiotics for two weeks period. Patients, in whom the swelling clinically regressed, were excluded from the study. A Performa was used to obtain full information regarding history, physical examination, ENT examination laboratory investigation like TLC, DLC, ESR, Tuberculin test, ultrasound to confirm

whether the lesion is single or multiple, cystic or solid and its relationship to other anatomical structures radiological, FNAC, Excision biopsy of lymph node and histopathological examination of the specimen is the only authentic, specific and sensitive criterion for the diagnosis of lymphadenopathy.

RESULTS

Male to Female ratio recorded in this study was 1:1.28 in favor of females. The youngest patient in this study was a five years old female child, who was diagnosed as Hodgkin's lymphoma and the oldest patient was a 72 years old male, who was diagnosed as squamous cell carcinoma tongue with neck metastasis. The age range was from 5 to 72 years. The mean age was 38.5 years.

The major pathology detected in this study was *tuberculous cervical lymph node,* which accounted for 58% in total one hundred cases. None of these patients were suffering from concomitant pulmonary tuberculosis at the time of diagnosis as was shown by examination and relevant investigations. Various groups of lymph nodes were involved by physical examination of neck. In 41 cases (70.6%) out of the total 58 tuberculous lymphadenitis cases, the nodes of the posterior triangle of the neck were involved. In 13 cases (22.4%) out of total tuberculous cases, nodes of the anterior triangle of the neck were involved. In 3 cases (5.1%) submandibular group of lymph nodes were involved. In 20 cases (34.48%) out of total 58 tuberculous cases, caseation was found during surgery. In 19 cases (32.75%) the lymph nodes were matted during surgery.

Reactive hyperplasia accounted for 26% of cases of the total 100 cases.

Metastatic deposits were seen in 8 patients, (8%) of the total 100 cases studied. Metastatic deposits were found in old age group patients except in two patients of papillary carcinoma thyroid. In one case the primary source of metastasis could not be ascertained inspite of thorough physical examination and investigations including examination under general anaesthesia and blind biopsies from nasopharynx and tongue base. The case was thus labeled as occult primary. Details are shown in Table 1.

In this study 7 cases of *lymphoma* were recorded, 2 were Hodgkin's and 5 were non-Hodgkin's lymphoma. In this group the age range was 5-62 years.

Finally one rare case of *Kikuchi's disease* was encountered in this study. She was 14 years old, who presented with fever and cervical lymphadenopathy. All other tests were inconclusive finally lymph node biopsy was performed. The result came out to be histiocytic necrotizing lymphadenitis (Kikuchi's disease).

Table No. 1: Aetiology of metastatic deposits n=8

S. No.	Disease	No. of patients	Percentage
1.	Ca tongue	01	12.5%
2.	Ca Pyriform Fossa	01	12.5%
3.	Thyroid Malignancies	03	37.5%
4.	Ca Nasopharynx	02	25%
5.	Occult Primary	01	12.5%
	Total	**08**	**100%**

DISCUSSION

Tuberculosis is a global health problem. It causes three million deaths world wide each year[8]. Lymphadenitis is the common mode of presentation of extrpulmonary tuberculosis and cervical lymph nodes are the commonest nodes to be involved in extrpulmonary tuberculosis. The cervical nodes are involved in various ways, tuberculous bacilli reach the lungs through inhalation and primary complex is therefore located in the lung. The cervical lymph nodes are involved secondarily through lymphatics of hilar/mediastinal glands. The nodes of the posterior triangle are first to be involved. The second mode of involvement of cervical lymph nodes is through the tonsils. Occasionally haematagenous dissemination during early post-primary disease (miliary tuberculosis) results in involvement of several groups of glands and organs.

Tuberculosis of cervical lymph node passes through various distant stages[10] Stage of adenitis, in which the lymph node is enlarged but discrete. Stage of periadenitis, in which the disease process spreads outside the capsule of lymph node. The nodes thus become adherent to each other. This is followed by stage of cold abscess formation. Which if left untreated, progress to stage of collar stud abscess, stage of discharging sinus, stage of ulceration followed by healing.

Tuberculosis: In this study tuberculous cervical adenitis comprised 58% of the total 100 cases. This was in accordance with the other studies conducted within this country. Abdullah P reported 50.9% of tuberculous cervical lymphadenitis cases[6]. Abaidullah U reported 65.3% cases[5], Khan AJ[8] 56% while Saddiqui GF[1] recorded 46% cases.

When compared with studies conducted in other countries, the percentages of cervical lymph node tuberculosis reported were quite different. Bhattacharyya N (Boston, USA) reported only one case of tuberculous cervical lymphadenitis in his series of 95 cases of neck biopsies[13]. Vowles Richard H (UK) reported 2

cases of tuberculous lymphadenitis cases in a study comprising 100 patients[14]. MN Mthuphei (South Africa) reported 24% cases[12]. Thomas JO[15] (Ibaden) reported 25.7% while Ellison E[16] reported no case of tuberculosis in a series consisting of 309 patients.

Reactive hyperplasia was the second most frequent pathology observed in this study. It was observed in 26% of the total 100 cases. Reactive hyperplasia is because of the reason that microbiological agents or foreign bodies are introduced into the drainage area. Failure to resolve within two months necessitates rebiopsy. When compared with the other studies conducted within the country, results were almost similar. Abdullah A reported 33.2% cases of reactive hyperplasia[6], Abaidullah U reported 18.5% cases[5], Khan AJ reported 22.5% cases[8], AN Murad reported 30.2% cases[17] While SaddiquiGF[1] reported 19% cases of reactive hyperplasia.

Contrary to the above-mentioned studies some of the studies from the developed countries reported reactive hyperplasia as the most common pathology for the causation of cervical lymphadenitis. Bhattacharyya N reported 68.4% of cases[13], Steinkamp HJ recorded 36.6% cases, and Thomas JO reported 3 3.4% cases of reactive hyperplasia.

The percentage of metastatic lymphadenopathy in this study was 8%. The primary source of cervical metastasis in most instances lies in the head and neck region but occasionally it could be from distant sites such as stomach, bronchus and testes. The diameter of primary tumour (>2cm) and T stage (T3 and T4) is associated with high risk of metastases[3]. By comparing with other studies conducted within the country, Abdullah P[6] reported 4.9%, Abaidullah U[5] reported 1.1%, while Khan AJ[8] showed 4.6% cases of metastatic deposits in cervical lymph nodes. There was a significant difference between the percentages of metastatic tumour reported from developed countries of the world. The metastatic lymphadenopathy constituted much higher percentage. MN Muthuphei recorded 21.3% cases[12], AN Murad noted 14.6% cases[17], Thomas JO 22.4% cases[15], Steinkamp HJ[18] recorded39.3% while Ellison reported 47% cases of metastatic lymph nodes[16].

Seven cases of *lymphoma* were recorded in this study. Two cases (28.5%) were Hodgkin's and five (71.5%) were non-Hodgkin's lymphoma. Abdullah P reported 5.8% cases of lymphomas[6], Abaidullah U observed 10.3% cases[5] and Khan AJ recorded 4.6% cases[8]. Saleh A[19] reported Hodgkin's VS non-Hodgkin's ratio to be 49% and 51%. V Richard H[14] recorded Hodgkin's VS non-Hodgkin's to be 33.3% and 66.6%, while Bhattacharyya N[13] noted lymphoma cases ratio to be 10.5% in his study.

One case of *Kikuchi's disease* was observed in this study. This self-limiting clinicopathalogic entity is recognized increasingly worldwide. It is more prevalent among Asians and is relatively a common disorder among Koreans[20]. The disease has a strong predilection for young women under 30 years of age. The cervical lymph nodes are affected commonly[21]. Haroon A reported 1.9% cases[3], while Abdullah P reported 0.36% cases of Kikuchi's disease[6].

CONCLUSIONS

Tuberculosis is the commonest cause for cervical lymphadenopathy in this part of the world. It is more common in female population of the society and usually involves patients of middle age group (below 30 years). It is better to diagnose this treatable disease at the earliest, to avoid complications and mortality.

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ORIGINAL ARTICLE

DIURNAL VARIATIONS IN STROKE OCCURRENCE IN A HOSPITAL (UNIT)-BASED STUDY, CONDUCTED AT KHYBER TEACHING HOSPITAL (KTH) NWFP, PAKISTAN

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INTRODUCTION

Stroke is a very common medical disease but work on different aspects of stroke has not been done as it has been done on other diseases, notably ischemic heart disease.

It is a common knowledge that occurrence of myocardial infarction is highest during the early hours of the day[1]. Such studies for stroke have been very few in general and almost negligible in countries with temperate climate[2].

Temporal variations in the occurrence of stroke may provide insight into the factors that triggers the onset of a stroke. Most studies have identified a circadian variation in the time of onset of stroke with a peak occurrence between 0600 and 1200 hours[3].

The aim of our study was to analyze the diurnal variations in the occurrence of stroke in a local setting.

RESEARCH METHODOLOGY

All new stroke events presented in the six month beginning 1st July 2005, were traced through multiple case finding sources. These also included patients who were treated at home or other institutions.

A stroke was defined as rapidly developing symptoms and/or signs of a focal or at times, global loss of cerebral function lasting more than 24 hours or leading to death, with no apparent cause other than a vascular origin[2], including intra cerebral hemorrhage and infarcts, Subarachnoid hemorrhage was not included.

The date and time of stroke was obtained through an interview conducted by the attending doctor (receiving doctor). For fatal events or severely disabled patients, the interview was held with dose relative or other observers, who were familiar with the patients health but otherwise the interview was conducted with the patient.

Interview was conducted soon after the patient was brought to the unit or OPD (out patient department). The time of onset was defined as the time the patient or an observer first noticed neurological symptoms or signs. The time of onset was distributed into six hourly intervals; 0000-0559, 0600-1159,1200-1759,1800-2359.

RESULTS

Of the total 62 stroke events, 59.67% occurred in the interval 0000-0559 hours. 22.58% occurred in the interval of 0600-1159 hours. In the interval of

Table 1:

Month	0000-0559 hours	0600-1159 hours	1200-1759 hours	1800-2359 hours
July	6	2	1	0
August	4	1	0	1
September	3	2	0	1
October	4	3	2	0
November	7	1	5	0
December	13	5	0	1
Total	37	14	8	3
Percentage	59.67	22.58	12.90	4.83

Table 2:

Month	Time zone 0000-0559 hours. Observed and expected values	Time zone (rest of the day) Observed and expected values	Total	P values calculated by chi-square test
July	6(5.37)	3(3.62)	9	0.6712
August	4(3.58)	2(2.41)	6	0.7300
September	3(3.58)	3(2.41)	6	0.6253
October	4(5.37)	5(3.62)	9	0.3494
November	7(7.75)	6(5.24)	13	0.6689
December	13(11.33)	6(7.66)	19	0.4363
Total	37	25	62	—

1200-1759 hours the rate was 12.90%, and it was 4.83% in the interval of 1800-2359 hours.

So it proves that the maximum number of stroke (59.67%) occurred in the interval 0000-0559 hours, followed by events (22.58%) occurring in the interval of 0600-1159 hours.

The results also showed the rate of occurrence of ischemic stroke was 69.35%. For intracerebral hemorrhage the rate was 30.64%. Table

The study design was cross sectional. The inclusion criteria consisted of one group i.e stroke patients, who through recall method told the time of appearance of signs of neurological deficit.

The P-value for our study is statistically not significant but it is clinically significant, the reason being that our study sample was small, and a large sample study is needed in this regard.

DISCUSSION

Stroke is a common medical problem but there have been scant studies on diurnal variations on the occurrence of stroke in the world and particularly in the countries with the temperate climate.[2]

In our study there was a significant increase in the occurrence of stroke between 0000-1159 hours, and our findings are consistent with international trends. In these studies there was a 49% increase in the occurrence of all types of strokes between 0600 and 1200 hours, compared with the number expected if no circadian variation was present[3].

In our study the peak occurrence of stroke in the early morning favors the concept that a nocturnal reduction in blood pressure and cerebral blood flow is an important trigger for atherothrombotic ischemic strokes.[2] Diurnal variations in blood pressure parallels the circadian rhythm of stroke, tending to be highest between 0600 and 1200 hours.[4]

An increase in blood pressure may favor an ischemic stroke by triggering the hemorrhage into an atherosclerotic plaque, or initiating the coagulation cascade.[2]

Thus the practical applications of our study includes that therapeutic reduction of blood pressure in the morning may help to prevent stroke.

Circadian variations in haemostatic function also may account for a predominance of stroke at the same time.[2]

Identification of peak time of onset of stroke has implications for the provision of acute stroke services.[2] Hospital stroke specialists are often committed to ward rounds and out patient clinics in the morning, and may not be immediately available to assess patients who present at this time with an acute stroke. Recognition of these delaying factors may facilitate changes in the management that will lead to earlier treatment of acute ischemic stroke.

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ORIGINAL ARTICLE

PUERPERAL BREAST ABSCESS: A LOOK INTO AN OLD PROBLEM

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ABSTRACT

Background: Breast abscess is a common affliction of lactating mothers with a prevalence of 20% in the first six months. A less frequently researched area, this study looks into the predisposing factors, causative organisms and complications of puerperal breast abscess.

Research Methodology: Thirty eight patients with puerperal breast abscess admitted to our unit between January 2005 and January 2006, were included in the study. History and examination were directed towards predisposing factors, duration of symptoms, and the site, number and size of the abscess. After ultrasound examination, breast milk was sent for culture. Surgical drainage was done in all patients and the pus sent for culture and sensitivity. Followup was done in the outpatient department till wound healing.

Results: Among the 38 patients with puerperal breast abscess, 22(57.9%) patients were primiparous and 35(92.1%) had a baby aged 6 weeks or younger. Staph aureus was found to be the causative organism in 18(47.4) while the pus culture was negative in the remaining patients. The milk culture grew bacteria in 4(10.6%) patients. Six (15.6%) patients developed complications and 2(5.3%) had to stop nursing.

Conclusions: Puerperal breast abscess is commoner in primiparous mothers especially in the first six weeks. The commonest pathogen is Staph Aureus. Mothers who develop breast abscess should be encouraged to nurse their infants.

Key words: Breast abscess lactation.

INTRODUCTION

Breast abscess is a common affliction of lactating mothers. The estimated prevalence in the first six months is 20%. The condition can occur anytime during lactation but is most common in the first six weeks and in primiparous mothers.

Delays in seeking medical advice for problems like mastitis and cracked nipples, lead to breast abscess in nursing mothers. Myths about stopping lactation, lest milk be infected, further aggravates the problem affecting both mother and child.

This study looks into the predisposing factors, causative bacteria and results of treatment of puerperal breast abscess.

RESEARCH METHODOLOGY

This is a prospective study on all patients with puerperal breast abscess admitted to our unit between January 2005 and January 2006. Patients with a spontaneously evacuated breast abscess and patients having a failed surgical drainage prior to hospitalization, were excluded from the study. Patients with mastitis treated conservatively and patients with antibiomas were also excluded.

Patients were interviewed about age, parity, cracked nipples, duration of lactation, duration of symptoms, breast infections during previous lactation period and treatment taken prior to admission. The site, size and number of abscesses were recorded. Ultrasonographic examination was performed in all cases. Surgical incision and drainage was performed on all patients, leaving the wound open. Pus was sent for culture and sensitivity. All patients received empirical intravenous antibiotics for 24 hours in addition to painkillers. The drugs were thereafter changed to the oral form keeping in view the culture results.

Breast milk culture was obtained by collection of hand expressed midstream clean-catch sample into a sterile container after cleaning the nipple. Patients were discharged after the symptoms settled and ensuring that the wound was healthy. Patients were followed weekly as outpatients till the wound healed.

RESULTS

Between January 2005 and January 2006, 60 patients with breast abscess were admitted to our surgical unit for surgical drainage. In 38(63.3%) of these patients, lactation was the predisposing factor. 12 patients gave a history of cracked nipples. None of the patients was diabetic.

Thirty five of these 38 patients (92.1%) had a baby aged six weeks or younger. For 22(57.9%) of these

patients this was their first issue, for 14(36.8%), the second, and for 2(5.3%), the fourth. The duration of symptoms was a week or less in 14(36.8%) patients, 2 weeks in 14(36.8%) and more than 2 weeks in 10(26.3%) patients. Twenty (52.6%) patients had received antibiotics before coming to the hospital and one (2.6%) had taken analgesics. One (2.6%) patient had undergone aspiration. The remaining patients did not receive any treatment.

In all patients the abscess was single and measured more than 5cm on ultrasound examination. In 16(42.1%) the abscess was sited in the medial half of the breast, in 8(21.1%) the site was the lateral half and in the remaining 14(36.8%), central. Postoperatively the duration of stay in the hospital was one day for 2(5.3%) patients, 2 days for 18(47.4%), 3 days for 12(31.6%), and more than 3 days for 6(15.9%) patients. Culture of the breast milk grew Staph Aureus in 3(7.8%) patients and E.Coli in one (2.6%) patients. Culture of the pus drained grew Staph Aureus in 18(47.4%) patients while there was no growth of bacteria in the remaining 20(52.6%) specimens. Six (15.6%) patients developed complications: 2(5.3%) a mammary fistula, 2(5.3%) localized gangrene of the skin requiring debridement and 2(5.3%), incomplete drainage requiring further drainage.

In 2(5.3%) patients breast feeding had to be discontinued due to mammary fistula which was bothersome to the patient.

DISCUSSION

The reported incidence of abscess in lactation-related mastitis is 4.8%-11%[2]. Mastitis occurs more commonly in primiparous women. The reported incidence varies widely, from 1% to 24%[2]. Treating mastitis with a combination of breast-emptying procedures and a course of antibiotics usually prevents abscess formation[3] Breast abscesses can result as a complication of mastitis, especially if treatment is delayed or inadequate[3,4] Breast abscess can occur anytime during lactation but is most common in the first six weeks and in primiparous mothers.[1]

In our study, twenty two (57.9%) of patients were primiparous and 35 patients (92.1%) had a baby aged six weeks or younger.

The most common pathogen in infective mastitis is Penicillin resistant Staph Aureus. Less commonly the organism is a streptococcus or Eschererichia coli.[3,5] The organism probably gains entry into the breast tissue through a duct or a fissure on the nipple.[4,6] In our study, culture of the pus drained grew Staph Aureus in 18(47.4%) patients while there was no growth of bacteria in the remaining 20(52.6%) specimens. Imperiale et al. reported 23% of sterile cultures, which the authors attributed to previous antibiotic therapy.[7] The preferred antibiotic are usually penicillinase resistant penicillins.[4] such as dicloxacillin or flucloxacillin 500mg qid. In those who are sensitive to penicillin, cephalexin is recommended.[8] Many authorities recommend a 10- to 14-day course.[9,10] All of our patients responded well to Co-Amoxiclav 1 g bid. The 2 patients with incomplete drainage had a good response after the drainage was repeated.

A WHO publication on mastitis suggests that breast milk culture and sensitivity testing should be undertaken if there is no response to antibiotics within two days, if the mastitis recurs, if it is hospital acquired mastitis, or in severe or unusual cases.[11] In our study, 4(10.6%) of the milk samples grew bacteria: Staph Aureus in 3(7.8%) patients and E.Coli in one (2.6%) patient. Stasis is often the initiating factor in puerperal breast abscess formation, and breast feeding is an effective way of it's relief.[3] The fact that the milk of nursing mothers is often sterile, supports the argument that breast feeding can be safely continued during this period. This has also been proved in other studies.[11,12] Women who are unable to continue breastfeeding should express the milk, as sudden cessation of breast feeding can aggravate the problem.[6] In our study all the patients in our study continued nursing and the infants remained healthy. Later, 2(5.3%) patients had to discontinue owing to mammary fistula which was bothersome.

CONCLUSIONS

Puerperal breast abscess is commoner in primiparous mothers especially in the first six weeks. Proper education and encouragement can go a long way in preventing this complication in new mothers.

Because milk stasis is often the initiating factor in abscess formation in lactating mothers, the most important step in the management is effective milk removal. There is no evidence of risk to the infant of continuing breast feeding.

Appropriate steps for prevention are to effectively manage breast fullness and engorgement. Feeds should not be restricted. Any sign of mastitis should be treated early to avoid abscess formation. Factors causing difficulties in breast feeding like cracked nipples, beliefs that breast milk is insufficient, unsettled infants, should be attended to. As fatigue is a precursor to mastitis, nursing mothers should be encouraged to take adequate rest.

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ORIGINAL ARTICLE

EXPERIENCE OF VISCERAL LEISHMANIASIS IN CHILDREN AT SAIDU TEACHING HOSPITAL, SWAT

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ABSTRACT

Background: Like all other developing countries we also have high burden of patients with infectious illnesses. Our main infectious diseases are malaria, typhoid fever, acute gastroenteritis and tuberculosis. Visceral leishmaniasis (VL) is also an increasing problem in our province. We conducted this study to evaluate its clinical presentations, diagnostic approach and management.

Research Methodology: This study was conducted in the Department of Pediatrics and Child Health, Saidu Teaching Hospital, Saidu Sharif, Swat from January 2006 to September 2006 during which 25 cases of VL were diagnosed and managed.

Results: Patients came from five districts of NWFP including Shangla (48%), Swat (24%), Dir (12%). Bunir (8%) Kalam (4%) and Bajawar district (4%). All the patients were between one and 15 years. Common clinical symptom was Fever (100%) and signs were Anemia (100%), Splenomegaly (88%) Hepatomegaly (72%) bleeding diathesis (60%) and distension of abdomen (48%). Hemoglobin was below 7.0 gm in 90%, white cell counts below 3000/mm3 in 60.5%, Platelet count was below 100000/mm3 in 75.5% and ESR was >50 mm at the end of first hour in 86% of the patients. Lymphadenopathy could not be seen in our patients. Bone marrow examination was performed in all these cases and 100% of them demonstrated amistigot form of the Leishmania donovani bodies. All these 25 patients were given intramuscular meglumine antimoniate (glucantime) along with supportive therapy. They were observed in the ward for seven days and all of them showed very good response to treatment.

Conclusions: This disease should be considered as a very important differential diagnosis in febrile children coming from these districts. Children below 5 years are mainly affected. Bone marrow examination is the most reliable and simple method of diagnosis.

Key words: Leishmaniasis, Acutely febrile child.

INTRODUCTION

Visceral Leishmaniasis (VL), also called Kala-azar in India, is a systemic disease caused by a protozoa Leishmania Donovani." It is transmitted by the bite of a female sandfly[1] In Pakistan the vectors are Phlebotomus argentipes & burneyi. In Pakistan, human visceral leishmaniasis was first reported from Baltistan in 1960.[2] Its main clinical presentations are fever, anemia, leucopenia, bleeding diathesis and hepatosplenomegaly. The serious complications of Kala-azar are cancrumoris dysentery, pneumonia, anemia, agranulocytosis, jaundice, severe hemorrhage and anasarca. Mortality is very high in untreated cases (90%) and high in treated patients (5-30%)[2,3] Diagnosis is confirmed by splenic puncture, bone marrow aspiration & liver biopsy. The drug of choice was pentavalent antimonial compounds i.e. sodium stibogluconate (pentostam) and meglumine antimoniate (glucantime). But resistance to these drugs has been reported by WHO[4] Supportive measures include correction of anemia, treatment of infection and good nutrition. To assess the response to treatment clinical and parasitological parameters are used. These parameters include apyrexia, decrease in size of spleen, increase in leukocyte count, hemoglobin level and disappearance of parasite in biopsy or aspiration material.[5]

RESEARCH METHODOLOGY

This study was conducted at the department of Pediatric and Child Health Saidu Teaching Hospital Swat from January 2006 to September 2006. A total of 25 cases diagnosed with visceral leishmaniasis examinations were included in the study and their records were sorted to determine the most common presenting features, profiles of the physical examination and biochemical parameters, types of treatment received and response. A total of 25 cases were included in this study. A detailed history was taken from the patients and thorough clinical examination was performed in each case.

In all the patients, in addition to routine investigations, peripheral blood smear and bone marrow examination was performed. Diagnosis was based upon finding leishmania donovani bodies in bone marrow smear.

Each patient was put on antimony compound (Meglumine antimoniate) in a dose of 20mg /kg/day

intramuscularly for 4 weeks duration. Each patient was kept in hospital for one week after starting treatment to observe clinical improvement and any side effect of the drug. Supportive therapy like high caloric diet, multivitamin and mineral supplements, blood transfusion and antibiotics for bacterial infections were provided. After one week patient was sent home with same dose for another three weeks period and with advice to come back after completing treatment.

RESULTS

Seventeen patients (68%) were males while eight were females (32%). Thus male to female ratio was 2:1. All these cases were below fifteen years of age, half of them below five years (Table 1). Majority of the cases, 48%, came from Shangla District, 24% from Swat district, 12% from Dir, 8% from Bunir, and 4% from Kalam and Bajawar districts. The presentations and symptoms in most cases were fever, abdominal distension, and pallor (Table 2). The commonest signs were anemia, enlargement of Spleen and liver as shown in Table 3. Special blood Smear showed Pancytopenia in 80% and Bicytopenia in 20% of the cases while the bone marrow demonstrated amistigot in 100% of the cases.

Only nine cases came for follow-up examination, showed significant regression of liver and spleen. In all these cases repeat bone marrow examination was negative for leishmania donovani bodies.

Table 1: Age wise distributions

Age	No. of cases	Percentage
5 years	12	48%
5-10 years	8	32%
11-15 years	5	20%

Table 2: Symptoms in 25 cases of visceral leishmaniasis

Symptoms	No. of cases	Percentage
Fever	25	100%
Pallor	19	76%
Epistaxis	15	60%
Distended Abdomen	12	48%
Weight loss	12	48%
Cough	5	20%
Vomiting	4	16%
Loose motions	4	16%

Table 3: Signs in 25 cases of visceral leishmaniasis

Signs	No. of cases	Percentage
Anemia	25	100%
Splenomegaly	22	88%
Hepatomegaly	18	72%
Petechiae/Purpura	9	36%
Pneumonia	7	28%
Lymphadenopathy	0	0%

DISCUSSION

In our study it was noted that Visceral Leishmaniasis is twice as common in males as in females. The reason could be greater exposure of male to the vector of the disease during dusk and dawn and due to the male dominant society, males are brought earlier to the treatment facilities. This fact was highlighted by other national studies as well.[7] Majority (80%) of our patients were below 10 years of age and 48% were below 5 years of age, similar age incidence has been reported by other workers.[5,6,7]

The clinical presentation resembles the Mediterranean (Chinese) type as against the Indian Kala-azar in which there is black pigmentation on extremities and trunk. Similar presentation was reported by other workers in Pakistan.[6,7] All the children presented with an insidious onset, initially loosing interest in play and becoming listless, a presentation reported by others.[9] The average duration of symptoms was six months, ranging from few weeks to two years. Fever was the commonest symptoms and was present in 100% of the cases. Similar observations were noted by other workers.[6,7] Fever being the common complaint in our setup, after excluding the commonest febrile illnesses like malaria and typhoid, visceral leishmaniasis should be kept in mind by the clinicians.[6,7] Pneumonia was noted in 28% cases in our study, this finding was reported by another worker from Pakistan.[7] Pancytopenia was noted in 80% of the cases and similar incidence of pancytopenia was reported in other studies.[8]

All the patients (100%) were anemic, 88% showed Splenomegaly and 72% showed hepatomegaly in our study. All these findings were consistent with various studies done on V.L.[9] Epistaxis, Petechial spots; ecchymosis and bleeding problems were present 36-60% patients, mainly due to thrombocytopenia. Bone marrow examination showed amistigot form in 100% of the cases as reported by other workers.[10] Meglumine antimoniate (glucantime) was given to all the patients with good response in all the cases. Similar results were reported by other workers[11,12,13]

CONCLUSIONS

1. A high index of suspicion must be kept in mind for all febrile cases coming from Shangla and Kohistan districts.
2. The disease is very common in children below 5 years of age.
3. In our setup bone marrow examination is the most reliable and simple mean of diagnosing visceral leishmaniasis.
4. Sodium stibogluconate or meglumine antimoniate along with the supportive treatment is the most useful method of management.

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ORIGINAL ARTICLE

RISK FACTORS STRATIFICATION OF ISCHEMIC STROKE IN NORTH WEST PAKISTAN — *A STUDY OF 152 CASES*

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ABSTRACT

Background: Stroke is defined as an acute focal neurological deficit resulting from cerebrovascular disease and lasting more than 24 hours or causing earlier death. It is a clinical syndrome with numerous causes like cerebral infarction, intracerebral haemorrhage, subarachnoid haemorrhage and cerebral venous thrombosis and it needs urgent investigations and treatment[1]. We carried out this study to find out potentially modifiable risk factors for ischemic stroke in our population as their prevention or at least control can decrease the most common cause of adult physical disability.

Research Methodology: This study was completed in the department of Medicine Khyber Teaching Hospital Peshawar over a period from November 2005 to November 2006. Overall 152 patients were admitted with ischemic stroke during this period & all of them were studied for evidence of most common associated risk factors for ischemic stroke. A detail clinical history was taken from each patient or attendant. Then a number of investigations (Table 3) were done to determine frequency rates of common risk factors.

Results: Poorly or un- controlled Hypertension was the most common risk factor for ischemic stroke (38.5%) particularly in presence of diabetes mellitus (20.40%) & heart problem. Atrial fibrillation, whether of cardiac or of extracardiac origin was another most associated factor of ischemic stroke (7.2% cases). Other important modifiable risk factors found in our patients were ischemic heart disease (4.6%) and hyper coagulable states like heart failure (4.6%), pregnancy or postnatal state (5.26%), increased haematocrit due to primary or secondary polycythemia (3.20%), systemic lupus erythematosus (1.97%), multiplemyeloma (1.97%) hypercholesterolemia (2.6%). Smoking and obesity were not common findings. Non-modifiable risk factor i-e old age was the possible cause of ischemic stroke in 5% patients in our study.

Conclusion: In most of the ischemic strokes, the risk factors are modifiable and can be avoided or at least controlled and thus mortality and morbidity due to ischemic stroke can be reduced a lot.

Key words: Ischemic stroke. Diabetes mellitus. Hypertension, Atrial- fibrillation, Haematocrit, pregnancy, postnatal, valvular lesion.

INTRODUCTION

The main risk factors having strong association with ischemic stroke are as in Table-1 and 2 respectively. Uncontrolled raised blood pressure is one of the most important modifiable risk factor for ischemic stroke. There is a continuous association between both systolic and diastolic blood pressure and the risk of ischemic stroke[3,4] Meta-analysis of randomized controlled trials confirm an approximately 30-40% stroke risk reduction with BP lowering[4,5]. Diabetes mellitus is a clear risk factor for stroke[6,7]. Diabetes mellitus is an independent risk factor for recurrent stroke and is a strong determinant for the presence of multiple lacunar infarcts[9,10]. Primary stroke prevention guidelines have emphasized the more vigorous control of blood pressure in diabetes with a lower target of 130/80[11,12], which reduces the incidence of stroke significantly[13,14]. More rigorous control of lipids is now also recommended among diabetics, with LDL – Cholesterol target as low as 70mg% / dL[15]. There is strong and convincing evidence that cigarette smoking is a major independent risk for ischemic stroke and in one Meta analysis the risk of ischemic stroke was doubled in smokers than in non-smokers. The main pathological pathway for this risk is changes in blood dynamics and vascular stenosis[16]. The relation between obesity and hyperlipidemia with stroke is complex because of a strong relation of these with several major risk factors like hypertension, Diabetes & atherosclerosis[17]. Both persistent & paroxysmal atrial fibrillation are potent predictors of 1st & recurrent stroke[18]. Stroke or embolism occurrs in up to 12% of patients with acute myocardial infarction complicated by left ventricular thrombus[19]. Cardiomyopathy of whatever etiology, is an important risk factor for thrombo-embolic events and a five-years recurrent stroke rate in patients with cardiac failure has been reported to be as high as 45%[20]. Vascular lesion particularly rheumatic mitral valve disease is very much associated with thrombo-embolic states and recurrent embolism occurs in 30-60 % of these patients[21, 22].

Hypercoagulable states like inherited Thrombophilias, protein-s deficiency, and protein -C deficiency or anti-thrombin - III deficiency rarely contribute to adult stroke but may play a large role in paediatric strokes[23,24] Anti-Phospholipid antibodies [APL] has a strong association with ischemic stroke in young adults of less than 50 years age. Pregnancy increases the risk of several types of stroke[25]. Other uncommon hypercoagulable states associated with ischemic stroke are sickle cell disease, multiple myeloma and raised haematocrit as in polycythemia & in COPD. Common well documented and less documented risk factors are shown in tables 1 and 2 respectively.

RESEARCH METHODOLOGY

This observational study was conducted in the department of Medicine Khyber Teaching Hospital Peshawar from November 2005 to November 2006. The criteria for diagnosis of ischemic stroke was CT Scan and or MRI brain. A total of 152 patients with ischemic cerebral stroke diagnosed on basis of CT Scan findings were studied. A detailed clinical & laboratory workup of all these patients was performed including proper clinical history, physical examination, baseline and some special investigations were done to determine the most associated risk factors. At the completion of investigations (Table-3), possible associated risk factors in every patient were sorted out.

RESULTS

Age & sex distribution of these patients is shown in Table 4 and geographical distribution in Table 5. The most associated risk factors for ischemic stroke in our study are shown in Table 6.

Table 1: Risk Factors for First Ischemic Stroke Well-documented risk factors Modifiable

Hypertension
Cardiac Disease
Atrial fibrillation
Infective Endocarditis
Mitral Stenosis
Recent large Myo infarction
Cigarette smoking
Sickle cell disease
Transient Ischemic attack
Asymptomatic Carotid stenosis
Diabetes mellitus which is modifiable
Homocystenemia
Left ventricular Hypertrophy

Table 2: Less well documented risk factors for ischemic stroke

Elevated Blood Cholesterol & Lipids
Cardiomyopathy
Cardiac disease
Segmental wall motion abnormalities
Non - Bacterial Endocarditis
Mitral valve prolapse
Aortic stenosis
Physical inactivity
Obesity
Elevated Haematocrit
Dietary factors
Acute triggers (Stress)
Migraine
Anti - cardiolipin antibodies

Table 3: Important investigations to determine risk factors. A Haematological Investigations

Investigations	Possible Pathology
1. Blood complete Hb Platelet count	 Polycythemia Thrombocytosis
2. Auto-antibodies screening	Collagen vascular Disease Antiphospholipid syndrome
3. Fasting Blood sugar & lipid	DM Hypercholesterolemia
4. Protein C & Protein S levels, Antithrombin III level	Hypercoagulable states
5. Bone marrow smear	Multiple myeloma CCL
6. VDRL	Syphilis
B **Cardiac investigations**	
7. ECG	Arrhythmias
8. Echo	Vascular lesion
C **Doppler study**	
Legs Carotids	Cardiomyopathy Clot A kinetic Segment Vegetations

Table 4: Age & Sex distribution of 152 patients' ischemic stroke

Age group (Years)	Male	Female	Total
	108 (71.05%)	44 (28.94%)	152 (100%)
30-40	03 (1.97%)	03 (1.97%)	06 (3.94%)
40-50	29 (19.08%)	14 (9.21%)	43 (28.29%)
>50	71 (46.71%)	32 (21.05%)	103 (67.76%)

Table 5: Geographical distribution of 152 patients

Area	Number	Frequency %age
Peshawar	35	23.02%
Swabi	28	18.42%
Charsadda	23	15.13%
Mardan	20	13.15%
Swat	18	11.84%
Bannu	18	11.84%
Bunir	06	3.94%
Kohat	04	2.63%

Table 6: The most associated factors of ischemic stroke found in our patients

Factors	No. of patients	Frequency %age
Hypertension	58	38.15%
DM	31	20.40 %
Atrial fibrillation	11	7.20 %
Postnatal	08	5.26 %
Heart failure	07	4.60 %
Ischemic heart disease	07	4.60 %
COPD with raised Haematocrit	05	3.20 %
High Cholesterol	04	2.60 %
Multiple myeloma	03	1.97%
Peripheral Polycythemia	03	1.97%
SLE	03	1.97%
Smoking	02	1.31 %
Obesity	02	1.31 %
Non-modifiable risk factor	08	5.26%

DISCUSSION

Besides high mortality, morbidity in the surviving stroke victims is also substantial, making stroke the leading cause of serious disability in the United States[1], particularly among the elderly[27,28,29]. Stroke has two main types of risks factors. These are non- modifiable and modifiable.

The non-modifiable factors like age, gender, race, ethnicity, and heredity have been identified as markers of risk for stroke.

We studied potentially modifiable risk factors for ischemic stroke in 152 patients. Uncontrolled or poorly controlled hypertension was the single most important risk factor in our population i.e. 38.15% as mentioned in international literature[30,31] which says that the risk of ischemic stroke is 10 folds in hypertensive subjects than in normotensive[32]. Diabetes mellitus with or without concomitant hypertension, was the 2nd common risk factor in our patients with ischemic stroke. This (20%) high prevalence could be due to poor glycemic control in our patients, contributed by poverty and very low literacy. More over diabetics have increased susceptibility to atherosclerosis and increased prevalence of atherogenic risk factors like hypertension, obesity and abnormal lipids[6]. Atrial fibrillation was found in 7.2% of cases in our study. Nearly the same was also mentioned by others as the most powerful and treatable risk factor of ischemic stroke which increases with age. One study reports that almost half of the cardio-embolic strokes occur in the setting of atrial fibrillation. Postnatal state was another important risk factor contributing 5.2% to total .This could be due to pregnancy itself as hyper- coagulable state or due to un-necessary traditional bedridden postnatal period in our society. Heart failure and ischemic heart diseases contributed jointly about 13% of risk for ischemic stroke. Other hyper coagulable conditions found in our patients with ischemic stroke were COPD (3.2%), polycythemia and multiple myeloma 2% each, hypercholesterolemia 2.6% and SLE 2%. All these risk factors found were comparable with other studies[14,24]. Smoking and obesity were among the uncommon risk factors for ischemic stroke in our study (1.3% each) as compared to others[34] where the risk of ischemic stroke was nearly twice in smokers than in non-smokers. Migraine has been identified as an independent risk factor for ischemic stroke in men older than 40 years of age in the physician health study[36] but was not documented in our patients. Life-style factors like diet, physical inactivity and acute triggers are also having some role[37,38] but we could not define these clearly in our patients .In some 5% of our patients no risk factor except old age (non-modifiable risk factor) could be defined.

CONCLUSION

If potentially modifiable risk factors for ischemic strokes are properly addressed and timely corrected, the incidence of ischemic strike can be reduced a lot.

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ORIGINAL ARTICLE

BACTERIOLOGY OF SURGICAL WOUND INFECTIONS

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ABSTRACT

Background: Surgical wound infection increases patient morbidity with physical disability and prolongs hospital stay and poses economic burden. This study was conducted with the aim to isolate the bacteria involved in surgical wound infection and determine their sensitivity to various antibiotics.

Research Methodology: This was a cross-sectional descriptive study performed in the Surgical "C" Unit of PGMI/LRH, Peshawar from July 2005 to June 2006. All patients who were operated in emergency or electively and had wound infection were included in the study. A total number of 120 patients who developed postoperative wound infection from July 2005 to June 2006 were included in the study. Those patients who were shifted to our unit from the periphery district hospital were excluded from the study culture/sensitivity of wound infection was carried out.

Results: The common pathogens were E-coli 56 (46.66%), staph aureus coagulative negative 20 (16.60%), staph aureus MRSA 22 (18.33%), Pseudomonas 12 (10%), and Acinetobacter 8 (6.67%). One hundred (83.33%) were male patients and 20 (16.66%) were female patients. Ninety-four patients were operated in emergency OT and twenty-six patients in the elective list.

Conclusion: Methicillin resistant staph aureus (MRSA) is emerging as a major pathogen in the wound infection. This is an alarming situation, and needs due consideration.

Keywords: Surgical wound infection; Surgical site infection; Bacteriology-wound.

INTRODUCTION

Surgical wound infection is a common postoperative complication and causes significant postoperative morbidity and mortality. It prolongs hospital stay and puts economic burden on the patient and hospital. Although the total elimination of wound infection is not possible, a reduction in the infection rate to a minimum level could have significant benefit in terms of both patient comfort and medical resources used.[1] Purulent discharge from a surgical wound with signs of inflammation of the surrounding tissue should be considered as wound infection irrespective of whether micro organism can be cultured from the pus or not. Infection can occur at any incision site, but wounds that are closed primarily and healed are not considered infection. In 1992 the Surgical Wound Infection Task Force replaced the term "surgical wound infection" with "surgical site infection" to include in the skin and soft tissues such as peritoneum and bone[2].

There are many factors that are considered to affect the susceptibility of any wound to infection, some of which have strong relationship. These factors include pre-existing illness, length of operation, wound class, and wound contamination. Other factors such as extremes of age, malignancy, metabolic diseases, malnutrition, immunosuppression, cigarette smoking, remote site infection, emergency procedures and long duration of pre-operative hospital stay are not considered as independent risk factors for wound infection[3].

The purpose of this study was to isolate the spectrum of pathogens (aerobic) from the purulent discharge from the surgical wounds and determine their sensitivity to antibiotics.

RESEARCH METHODOLOGY

This study was conducted in the Surgical "C" unit of PGMI/LRH Peshawar from July 2005 to June 2006 (for one year). A total of 120 patients were included in the study. Those patients who developed wound infection postoperatively were included in the study. Patients operated in emergency or on the elective list were included in the study. Those patients in the periphery district hospitals with septic complications and shifted to our unit were excluded from the study. Purulent discharge from the wound was sent to the laboratory for culture and sensitivity (C/S).

Antibiotics received by the patients before culture sensitivity were noted. In some cases antibiotics were stopped for 48-72 hours before sending pus for C/S. The bacteria isolated from the pus and their antibiotic sensitivity or resistance was noted. Patients were given suitable antibiotics according to C/S and the response was noted.

RESULTS

Bacteria isolated were aerobic gram positive 42 (35%) and 58 (65%) were aerobic gram negative.

Bacteria isolated were E-coli 56 (46.66%), Staph coagulase negative 20 (16.66%), Staph aureus MRSA 22 (18.33%), Pseudomonas 12 (10%), Acinetobacter 8 (6.67%), Streptobacillus and Klebsiella pneumoniae one each.

Only aerobic organisms were isolated, as facilities for anaerobic bacteria isolation and specimen collection are not available in our setup. Antibiotic sensitivity and resistance is shown in Table No 1.

Total number of patients operated in emergency operation theater were 470, out of which 94 patients developed wound infection, so infection rate was 20%. Total patients operated on elective list were 1040, and of which 26 had surgical site infection, hence infection rate was 2.5% in this group.

Male were 100 (83.33%) and female were 20 (16.66%). Age ranged from 16-75 years. Ninety-four (79.16%) patients were operated in emergency and only 26 (20.84%) were operated on the elective list, who developed wound infection.

DISCUSSION

Wound infections remain a major source of postoperative morbidity and accounts for almost a quarter of the total number of nosocomial infections. The pathogens involved in the development of surgical site infection (SSI) remain largely the human microorganism from the exogenous environment and endogenous organs. Many factors influence surgical wound healing and determine the potential for, and the incidence of infection[4].

The level of bacterial burden is the most significant risk factor, but modern surgical techniques and the use of prophylactic antibiotics have reduced this risk[5,6,7]. A system for classification of operative wounds based on the degree of microbial contamination was developed in the US National Research council Group in 1964[5]. Four wound classes with an increasing risk of SSI, were described as follows: clean, clean contaminated, contaminated and dirty.

Infection rates according to international standard in the four surgical classes are, clean wounds 1-2%, clean contaminated 6-9%, 13-20% for contaminated wound and up to 40% for dirty wounds[6,7]. However in determining the infection rate, other factors should also be taken into account, such as the type of surgery, the duration of operation, the experience of the surgeon, and the condition of the operation theater.

In our study the infection rate on average was 20% for those operated in the emergency and 2.5% in the elective procedures. The elective procedures were mostly clean and clean contaminated and the emergency procedures were contaminated and dirty wounds. Most of these later were laparotomies for FAI abdomen, and perforated bowel or appendectomies. These emergency procedures are done most of the time by trainees so the infection rate in the procedure is very high (30%) but still within the international standard levels.

Salman A et al[1] have documented even worse infection rate in their own study. Infection rate in their study were clean 5.50%, clean contaminated 8.39%, 45.5% contaminated and 66.6% dirty cases. In the study of Abu Hanif Y the rate in clean surgery was 2.9% and 5.4%, 12.2% for clean contaminated and contaminated respectively.

The bacteria cultured from the wounds are largely the patients own normal flora, or the bacteria from the environment. The type of bacteria depends upon the type of surgical procedures. In our study the commonest bacteria cultured were E-coli 46.66% followed by MRSA 18.33% and staph aureus 16.66% while Pseudomonas aeruginosa was 10%. In their study of Suruncuoglu the commonest organism was staph aureus (50% followed by Escherichia coli 8%). In other studies the organism cultured were coagulase negative staphylococci 20%, Staph aureus 19.7%, E-coli 19.7%, Staph aureus 55.5%, E-coli 16.6% and pseudomonas aeruginosa 5.6%[11].

In our study the predominance of E-coli 46.6% was due to the fact that the majority of infected wound belonged to emergency procedures in which the bowel was perforated either spontaneously or by injury and this organism resides in the bowel flora.

This organism changes its antibiotic sensitivity frequently and this fact is quite evident in our study. There are only three antibiotics, to which this organism, is sensitive.

E-coli remained sensitive throughout the study period, to Amikacin, combination of piperacillin and Tazobactam (Tazocin), and another combination of Sulbactam sodium and Cefoperazone sodium (Sulzone) (Table No. 1). A local study performed in KTH by Jawad also shows predominance of E-coli 40% in hospital acquired infection[12].

Another important factor in our study which needs due consideration is the high wound infection rate by MRSA (18.33%). MRSA is a very resistant organism and sensitive only to vancomycin, Fucidin and Ticoplamin. These are very expensive drugs and the poor patient feels very difficult to purchase these drugs, as in our setup most of the drugs are not provided by the hospital. We do not have proper protocol for the patients of MRSA positive patients, and patients are lying in the general surgical wards and there are great chances for cross infection.

Table No 1: Common pathogens and their sensitivity to common antibiotics (%)

	E.Coli	Staph. aureus	Pseudomonas aeruginosa	MRSA	Enterobacter spp	Streptococcus feacalis	Actinobacter spp	Klebsiella Pneumonia
Tazocin	92.85%	65%	58.33%	R	R	Not done	R	100%
Amikin	75%	25%	41.66%	R	100%	Not done	100%	R
Gentacin	5.35%	15%	R	R	R	Not done	R	R
Sulzone	92.85%	10%	33.33%	4.54%	100%	Not done	R	R
Maxipime	10.71%	R	R	R	R	Not done	R	R
Augmentin	14.2%	85%	R	R	50%	100%	R	R
Sparaxin	14.2%	R	R	R	100%	100%	100%	R
Enoxabid	10.71%	35%	16.66%	R	50%	R	R	100%
Avelox	3.75%	25%	16.66%	R	50%	R	R	R
Rocephin	5.35%	55%	16.66%	R	Not done	R	R	R
Tienam	17.85%	R	8.33%	R	R	R	R	R
Fortum	10.71%	R	33.33%	R	R	R	R	R
Claforan	R	5%	8.33%	R	R	R	R	R
Amoxicillin	R	10%	R	R	R	100%	R	R
Cephradine	R	35%	R	R	R	R	R	R
Vancomycin	R	45%	R	100%	R	100%	R	R
Ciproxin	5.35%	40%	16.66%	R	100%	R	R	100%
Tiecoplanin	R	R	R	45.45%	R	R	R	R
Fucidin	R	30%	R	40.90%	R	R	R	R

CONCLUSION

Methicillin resistance staphylococcus aureus organism is emerging as major pathogen in wound infection. This will increase if we do not adhere to the proper protocol for dealing with patients infected with MRSA. The costly drugs which the patients can not afford, should be provided by the hospital, this will help at least in the eradication of the organism. More over as this study shows that the organism cultured are all aerobic, we do not have facilities for isolation of anaerobic organism. The time has come that tertiary level hospital must have a dedicated microbiologist with facilities for culture of anaerobic bacteria.

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ORIGINAL ARTICLE

DECREASING PERINEAL MORBIDITY IN PELVIC FLOOR REPAIR PROCEDURES

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ABSTRACT

Background: Sutures placed in the richly innervated perineum, as part of surgical procedure for correction of utero-vaginal prolapse, are cause of significant post operative pain. The study was designed to evaluate the effect on post operative morbidity, by using technique different than the conventional while suturing the perineal muscles and skin.

Research Methodology: 100 women from Jan. 2003 to Jan. 2006 who underwent Posterior Colpoperineorraphy as part of surgical procedure for uterine or vaginal prolapse, in private and government hospital setup, were randomly allocated to two groups. In one group, the perineal body was repaired with interrupted perineal sutures while in the other group it was repaired with the continuous knotless technique.

Results: Primary out come of the study was perineal pain at 48 hrs and 5 days post operatively. Analgesia use upto 48 hours postoperative was less in continuous group than, with the interrupted method 30/50 (60%) vs 43/50 (86%) P=0.003. Pain at 5 days postoperative was also less with continuous technique 16/50 (32%) vs 30/50 (60%) P=0.005. There was no Statistical difference in the Rate of Dysparenia between the groups at 3 months and 12 months. 4/25 (16%) vs 7/35 (20%) P=0.95. Need for residual suture removal was less frequent with continuous technique.

Conclusion: Simple change in the suturing technique at the end of posterior colpo-perineorraphy can decrease short terms morbidity in from of perineal pain.

Key words: Posterior Colpoperineorraphy-continuous knotless sutures.

INTRODUCTION

The anatomy of the female reproductive tract and its reproductive function predispose it to certain pathologies which are not seen in the male reproductive organs. Utero-vaginal prolapse is one of those conditions. Pelvic floor descent is integral to the women's role in the reproductive process, largely because of its unique anatomic features that are required to allow vaginal birth and because of the trauma that can occur during the event. Because of its high prevalence, deleterious affect's on quality of life and its impact on health care system, pelvic floor descent is an important public health issue and should be a focus of primary prevention'. Factors which initiate prolapse include prolonged or difficult labour, bearing down before full dilatation, multiparity, large baby, forceful delivery of placenta, other causes include increased intra-abdominal pressure, chronic straining at bowel movement, aging and oestrogen deficiency and vitamin C deprivation[2]. Prolapse of the female reproductive tract is further classified into that of anterior vaginal wall, posterior vaginal wall and uterine prolapse. Different management options both conservative and surgical exist for the management of different type of prolapses.

Posterior Colpoperineorraply is also called posterior repair. It is performed for deficient perineum, a relaxed vaginal outlet, rectocele and as a necessary step in most operations for prolapse. However it is associated with post operative dyspareunia and pain. Therefore it should be performed only when there is symptomatic rectocele or slackness at intercourse. According to the traditional method it consist of 9 steps

1. Demarcation of flap.
2. Reflection of posterior vaginal wall
3. Separation of lateral tissue
4. Removal of denuded flap
5. Restoring the vaginal wall
6. Approximation of levator Ani muscle
7. Completing the suture of vaginal edges
8. Suturing the facials layers
9. Suturing the skin[3].

The superficial perineal muscles and skin are usually sutured together with interrupted sutures. According to the latest research, in perineal repair the use of continuous non locking technique to reapproximate perineal muscle and skin is associated with less short term pain than technique employing interrupted sutures[4]. This technique is also used by some surgeons in the posterior repair, so that no sutures are visible at the perineum, thus decreasing the incidence of post operative pain dyspareunia and of residual suture infection and removal rate.

RESEARCH METHODOLOGY

A randomized study was conducted on 100 patients with prolapse of anterior and posterior vaginal wall, coming to private and government hospital setup from Jan 2003 to Jan 2006. Patients were randomly allocated to either interrupted technique of suturing of perineal muscle and skin or the continuous knotless with subcuticular continuous sutures.

The interrupted technique involved re-approximating the perineal muscles with interrupted sutures and using transcutaneous interrupted sutures for perineal skin. In the other group continuous non locking knotless sutures were used for perineal muscles and continuous subcuticular for perineal skin.

In the post operative period pain was assessed at 48 hours and 5th post operative day.

At followup, symptoms were assessed and repair was examined for healing. Statistical evaluation was done by Chi-square and T-test and P <0.05 was considered and significant.

The primary out come of the study was perineal pain at 48 hrs and 5 days, Dyspareunia at 3 and 12 months after surgery. Secondary out come included sutures removal, wound dehiscence, residual pelvic pain and satisfaction with repair at 3 and 12 months. 40 women dropped out of study at 3 months.

RESULT

The result were divided into primary and secondary out comes.

Table 1

Pain	Interrupted		Continuous		P-Value
	No (50)	%	No (50)	%	
4 8 hours	43	86	30	60	0.003
5 days	30	60	16	32	0.005

P-Value: 0.003
Chi-square: X^2 8.57
P-Value: 0.005
Chi-square: X^2= 7.89

Analgesia use up to 48 hour post operative was less in continuous group, than with the interrupted group. 30/50 (60%) vs 45/50 (86%) P 0.003 which was statistically significant. Pain at 5 days post operative was also less with continuous technique. 16/50 (32%) vs 30/50 (60%) P 0.005.

There was no statistical reference in rates of dyspareunia between the groups at 3 months and 12 months.

Table 2

Dyspareunia	interrupted		Continuous		P-Value
	No (35)	%	No (35)	%	
3 months post operative (Total 60 Patients)	7	20%	4	16%	0.95

P-Value: 0.95
Chi-square: X^2= 0.00

Even with the conventional method different rates of dispareunia have been reported by different authors. Rates of 9-11% have been reported by Zimmen, Haase[5,6] while a 28.6% rate is reported by Boceasante et al[7], at 3 months for the conventional method of posterior repair.

Table 3: Residual Suture Removal

Interrupted		Continuous		P-value
No 35	%	No. 25	%	
7	20%	2	8%	0.359

P-Value: 0.359
Chi-square: X^2= 0.84

Residual suture removal was done less frequently with the continuous technique however the result were not statistically significant.

Table 4: Satisfaction With Repair

Interrupted		Continuous		P-value
No 35	%	No. 25	%	
7	20%	8	32%	0.289

P-Value: 0.289
Chi-square: X^2= 1.12

More women reported satisfaction with repair in the continuous group, initially, however the results were not statistically significant in the long term.

DISCUSSION

Approximately 200,000 women undergo inpatient surgery for pelvic organ prolapse each year in the United States[8]. However because many women with pelvic floor descent are treated conservatively or never evaluated, surgically treated patients do not represent, the full spectrum of disease in the population. A cross sectional analysis of women 50 to 79 years old who were enrolled in the Women Health Initiative

indicated that 41% of women with a uterus had some form of pelvic organ prolapse at baseline[9]. In a cross sectional study of 487 Swedish women 20-59 years old, Samuelsson et al reported that 31% of women overall and 44% of parous women had some form of pelvic organ prolapse[10]. Compared with nulliparous women, women with 1 child are 4 times more likely and women with 2 children are 8.4 times more likely to experience pelvic organ prolapse that require hospital admission[11]. The incidence of utero-vaginal prolapse in our population is not known, however due to high parity, unmonitored labour with poorly managed second and third stages of labour, prolapse in one of the frequent complaints seen in the gynecological out patient.

Studies done for comparison between suturing techniques for perineal tear have demonstrated that the use of continuous knotless technique for perineal repair is associated with less short term pain and less need for suture removal[12,13,14]. A review of four Randomized Controlled trial involving 1681 primiparous and multiparous women found that continuous subcuticular technique of perineal skin closure in which skin sutures are placed loosely in the subcuticular tissue thus avoiding the perfusion of never endings in the superficial skin surface is associated with less short term pain[15]. Similar suturing technique was used in perineal muscle and skin closure in the posterior colpoperineorraphy to decrease post operative pain, dyspareunia and need for suture removal. Results show that there was highly significantly decrease incidence of post operative pain at 48 hour and 5 days which are comparable to results for perineal tear, Although it is a simple technique used at the end of the surgical procedure the decrease in short term post operative morbidity is significant. It is recommended that such technique should be used for all forms of perineal repair to decrease both short and long term perineal morbidity.

CONCLUSION

Simple changes in the surgical technique have been known to cause significant changes in post operative result, which is shown by constantly evolving surgical methods. The perineum is richly innervated, in surgical procedure on the female genital tract, it is the perineal sutures that are cause of significant pain and discomfort. By adopting the technique of continuous suturs, (which have been already proved lo cause less pain in trials), in the perineal repair procedures, we can decrease short term morbidity in the form of post operative pain.

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ORIGINAL ARTILE

A HISTOLOGICAL AND MORPHETRIC STUDY OF THE KIDNEY OF MICE AFTER ORAL ADMINISTRATION OF CYPERMETHRIN

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ABSTRACT

Background: Synthetic Pyrethroid insecticides are the new generation of insecticides. It is claimed by the manufacturers that these insecticides have a low toxicity to birds and mammals. The present study was designed to highlight the toxic effects of Cypermethrin a new synthetic pyrethroid insecticide, on the kidney of mammals.

Research Methodology: Adult albino mice (6-8 weeks old) were used for the study. The insecticide solution was administered to mice through the oral route in doses of 15 mg/kg body weight and 30 mg/kg bodyweight for a period of 6 weeks. At the end of the experimental period all the animals were sacrificed and their livers were dissected out and fixed in 10% neutral buffered formalin and processed for histological studies.

Results: There was congestion of vessels and marked lymphocytic infiltration in the kidneys of experimental groups. While no abnormality was detected in the kidneys of the control group.

Conclusions: Cypermethrin is toxic to mammals. It causes marked lymphocytic infiltration and congestion of vessels in the kidneys. The population at risk is the personnel involved in the manufacturing of the insecticide and the spray men. It is recommended that it should be made mandatory for the persons who handle the insecticide to take precautionary measures to avoid toxicity.

Key words: Insecticides, kidney, Cypermethrin.

INTRODUCTION

The commercial use of insecticides began after the world war II[1]. The injudicious use of the insecticides and their longer half life posed a serious threat to non-target organisms including man. Synthetic pyrethroids were than introduced. It is claimed that synthetic pyrethroids are non toxic to mammals. The present study is an attempt to assess and evaluate the toxicity of Cypermethrin, a synthetic pyrethroid, on mammals. It is widely used in the agricultural sector and as a household insecticide. It is also used as an animal ectoparasiticide[2,3,4].

Cypermethrin is a nerve toxin. It causes prolonged membrane depolarization and enhanced neurotransmitter release, eventually resulting in the depletion of the neurotransmitter and block of excitation in the nerve[5]. Poisoning is always due to accidental spillage during spray operations. The oral LD 50 for cypermethrin in mice varies from 82 to 779 mg/kg body weight. It is widely claimed that pyrethroids have low toxicity to mammals[6,7].

Several studies have been conducted to evaluate the residues of pyrethroids in the environment. The presence of pyrethroid insecticides flumethrin, deltamethrin, cypermethrin and cyhalothrin in milk and blood of cows was detected after a single dermal application of the recommended doses upto four weeks after the application[8]. Cyfluthrin, cypermethrin or permethrin were detected in the Blood and urine samples of thirty pest control operators, 24 hours after exposure[9]. In Germany, environmental surveys were conducted in 1985/86, 1990/91 and 1991/92. Dust samples were collected from 1600 randomly selected houses. An analysis of these samples was performed in respect of their content of 8 different pyrethroids. 90% of the samples contained permethrin while 8% of the samples contained other pyrethriods (Cyfluthrin, lambda Chyalothrin, Cypermethrin, alpha Cypermethrin, Deltamethrin, Epenthrin. d-Phenothrin)[10]. A study was conducted in 1999 to evaluate the residues of pyrethroids in grains, fruits and vegetables. Fourteen laboratories in six countries participated in this study. Residues of eight different pyrethroids were recovered in wheat, oranges, and tomatoes[11].

RESEARCH METHODOLOGY

In this study, 30 adult albino Swiss mice (6-8 weeks old) weighing 30.37 - 31.56 gm were procured from the Veterinary Research Institute, Lahore and were kept at the animal house of Postgraduate Medical Institute, Lahore. They were fed on commercial diet and

water ad libitum. The animals were provided optimal light and temperature.

After two weeks of acclimatisation, animals were randomly divided into three groups; A. B and C, each group comprising of 10 animals. Group A was the experimental group receiving 30 mg of Cypermethrin as a single daily oral dose, group B was the experimental group receiving 15 mg of Cypermethrin as a single daily oral dose while group C was the control group receiving 0.08 ml of 50 % ethanol as a single daily oral dose.

The body weight of all the animals was recorded at the start of the experiment and then weekly till the end of the experiment.

All the animals were sacrificed after six weeks, twenty four hours after administration of the last dose; their kidneys were dissected out, examined macroscopically with the aid of a magnifying glass and weighed. The kidneys of all the animals were washed in normal saline and fixed in 10% neutral buffered formalin. After histological processing the histological sections were stained with haematoxylin and eosin and PAS. The slides were then examined under the light microscope.

RESULTS

General Physical Condition

Mice in the control group "C" remained healthy and active throughout the experimental period. No morbidity or mortality was seen in this group.

The animals in the experimental group "A", in about 15-20 minutes after receiving the drug, became irritable. They started pawing and burrowing. After a while the animals of subgroup B calmed down and became lethargic. While the animals of the subgroup A exhibited abnormal movements of the head (side to side movements). The abnormal movements improved 2-3 hours after administration of the drug. In about a week's time all the animals were lethargic and less active as compared to the control group. No mortality was seen in this group.

Body Weight

All the animals showed weight gain. However the weight gain was insignificant in both the experimental groups A and B compared to the control group (Table 2)

Gross Appearance of the Kidney

Kidneys of all the animals, of the control as well as of the experimental groups, were paired structures located on the posterior abdominal wall, one on either side of the midline. The left kidney was cranial to the right kidney. All the kidneys were bean shaped with their hila facing medially. A single ureter emerged from the hilum of each kidney. The kidneys were reddish brown in colour and were covered by a thin glistening capsule, which was not adherent to the surrounding tissues.

All the kidneys were bisected longitudinally and examined with the help of a magnifying glass. Each kidney comprised of an outer cortex and an inner me-

Table 1: The experimental plan

Groups	Dosage of Drug
Experimental group A	30 mg/kg Cypermethrin in 50% ethanol as a single daily oral dose
Experimental group B	15 mg/kg Cypermethrin in 50% ethanol as a single daily oral dose
Control group C	0.08 ml of 50% ethanol orally as a single oral dose

Table 2: Mean values of the changes in the body weight of Albino mice of the control and the experimental groups

Group/Dose	Weight at the start (in gms)	Weight at the end (in gms)	% Weight Gain
A (30 mg/Kg) orally	30.35 ± 2.27	30.68 ± 1.95	^{x}1.09
B (15 mg/Kg) orally	30.49 ± 1.83	31.56 ± 2.31	^{x}3.51
C: 0.08 ml of ethanol orally	30.03 ± 1.79	33.1 ± 1.31	**10.2

Values are expressed as mean ± standard deviation.

X P>.05 difference insignificant.
* P<.05 difference significant.
** P<.01 difference considerably significant
*** P<.001 difference very significant.

Fig. 1: A photomicrograph of the histological section of the mouse kidney of the experimental group A. PAS stain. Magnification 700 X. Showing RC: renal corpuscle, PT: proximal tubule. BB: brush border, DT: distal tubule, L: lymphocytic infiltration, B: congested vessel, BL: basal lamina.

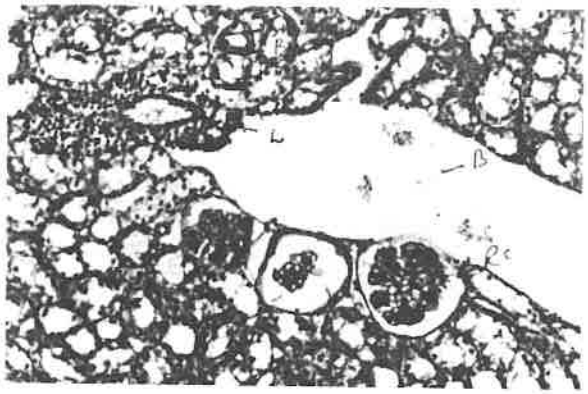

Fig. 2: A photomicrograph of the histological section of the mouse kidney of the experimental group B. PAS stain. Magnification 700 X. Showing RC: renal corpuscle, PT: proximal tubule. BB: brush border, DT: distal tubule, L: lymphocytic infiltration, B: congested blood vessel, BL: basal lamina.

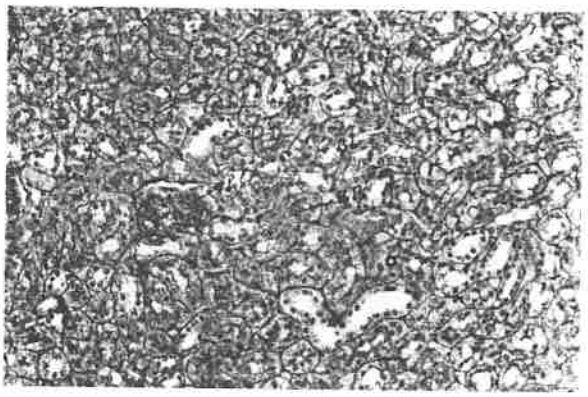

Fig. 3: A photomicrograph of the histological section of the mouse kidney of the control group C. PAS stain. Magnification 700 X. Showing RC: renal corpuscle, PT: proximal tubule. BB: brush border, DT: distal tubule, BL: basal lamina.

dulla. The cortex was lighter in colour and formed a narrow strip along the periphery. The medulla was darker in colour and was much thicker than the cortex, constituting much of the renal parenchyma. It was a single continuous structure forming a single pyramid. Along the medial side of each kidney was the renal pelvis, continuous with the ureter. The pelvis formed a single cavity with no subdivisions into major and minor calyces.

There was no change in the mean weight of kidneys of the control group C. while in the experimental groups there was an increase in the relative kidney weight (table 3).

DISCUSSION

General Physical Condition

The animals in the experimental groups, in about 15-20 minutes after receiving the drug, became irritable. They started pawing and burrowing. After a while,

Table 3: Comparison of changes in the kidney weight of albino mice of the control and the experimental groups

Group	Subgroup/Dose	Mean Body Weight (gm)	Mean Weight of Kidneys (gm)
A (30 mg/Kg) orally	30.68 ± 1.95	0.422 ± 0.028	***1.39 ± 0.18
B (15 mg/Kg) orally	31.56 ± 2.3	0.412 ± 0.03	***1.31 ± 0.15
C 0.08 ml of ethanol orally	33.1 ± 1.31	0.402 ± 0.079	X1.22 ± 0.2S

Values are expressed as mean + standard deviation.

X P >.05 difference insignificant.
* P <.05 difference significant.
** P<.01 difference considerably significant.
*** P<.001 difference very significant.

Table 4: Comparison of the mean values of histological observations of the kidney of mice of the experimental groups with the control group

Parameters		Experimental Group A	Experimental Group B	Control Group C
Renal Corpuscle	Diameter	x60.52 ± 8.39μ	x60.77 ± 6.231μ	x62.4 ± 5.16 μ
	Urinary Space	x10.45 ± 1.44	x10.3 ± 1.34	x10.9 ± 1.02
Proximal Convoluted Tubule	Normal /Atrophic	Normal	Normal	Normal
	Necrosis	Nil	Nil	Nil
	Basal lamina	Normal	Normal	Normal
	Casts	Nil	Nil	Nil
	Diameter	x31.28 ± 3.78μ	x34.35 ± 2.723μ	x30.37 ± 5.08 μ
Loop of Henle	Normal /Atrophic	Normal	Normal	Normal
	Necrosis	Nil	Nil	Nil
	Basal lamina	Normal	Normal	Normal
	Casts	Nil	Nil	Nil
	Diameter	x16.42 ± 1.72μ	x16.54 ± 2.269μ	x17.15 ± 74μ
Distal Convoluted Tubule	Normal /Atrophic	Normal	Normal	Normal
	Necrosis	Nil	Nil	Nil
	Basal lamina	Normal	Normal	Normal
	Casts	Nil	Nil	Nil
	Diameter	x32.34 ± 4.74μ	x31.85 ± 5.86μ	x31.85 ± 5.52μ
Collecting Duct	Normal /Atrophic	Normal	Normal	Normal
	Necrosis	Nil	Nil	Nil
	Basal lamina	Normal	Normal	Normal
	Casts	Nil	Nil	Nil
Stroma	Infiltration	+++	+++	+
	Haemorrhages	Nil	Nil	Nil
	Congestion	+++	++	—

Values are expressed as mean ± standard deviation.

X P> .05 difference insignificant.

* P < .05 difference significant.

** P < .0 l difference considerably significant.

*** P<.001 difference very significant.

For statistical significance experimental groups have been compared to their respective control group.

the animals of subgroup B calmed down and became lethargic. While the animals of the subgroup A exhibited abnormal movements of the head (side to side movements). The abnormal movements improved 2-3 hours after administration of the drug. In about a week's time, all the animals were lethargic and less active as compared to the control group. These changes in behavior resulted probably due to the neurotoxicity of Cypermethrin. Vijeverberg and Berkin[12] and McDaniel and Moser[13] have reported similar observations of Cypermethrin toxicity. The signs were less severe in animals receiving lower dose. This is because the toxicity of Cypermethrin is dose dependent[14].

Body Weight

Weight gain was observed in all the animals. However the weight gain was statistically insignificant in the experimental groups as compared to the control group (table 2). This is consistent with the findings of Shakoori et al,[15] Luty et al,[16] and Elbeticha et al[17].

Gross Appearance of the Kidney

In the present experimental study, there was a statistically significant increase in the kidney weight in the experimental groups. While there was no change in control group (Table 5). The increase in the kidney size after exposure to toxins has also been reported by Kumar et al[18]. The probable reason for the increase in the weight of kidneys may be congestion of vessels and lymphocytic infiltration.

Histological Observations of the Kidney

The histological changes observed in the kidneys after damage by toxins include changes in the tubules and in the interstitium. There is necrosis predominantly in the proximal tubules. In the interstitium, there is generalised odema along with inflammatory exudate comprising of polymorphonuclear leukocytes, lymphocytes and plasma cells. In about a weeks time the regeneration process begins and variable degree of tubular necrosis and regeneration can he seen[18].

The changes observed in the present study were congestion of vessels, diffuse and focal lymphocytic infiltration in the kidneys of the animals of the experimental group (Table 4). Luty et al[16], after oral administration of Cypermethrin reported mononuclear infiltration between the proximal tubules and increase in the number of autophaguos vacuoles in the cells of the proximal tubules. These changes were observed only in the group receiving a higher dose of the drug. In the present study changes were observed in both the experimental groups. The probable reason for the presence of changes in both the experimental groups is the difference in the doses used in this experimental study and those used by Luty et al[16].

CONCLUSION

Cypermethrin is toxic to mammals. It causes loss of body weight and is nephrotoxic causing mononuclear infiltration and congestion of vessels in the kidneys. Therefore, it is recommended that persons handling the insecticide (farmers, industrial workers) should be educated regarding the hazards of Cyperinethrin and it should be made mandatory for them to take precautionary measures to avoid toxicity.

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ORIGINAL ARTICLE

SHORT DURATION THERAPY FOR PEPTIC ULCER

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ABSTRACT

Background: There is a multitude of studies regarding the optimal duration of treatment for peptic ulcer disease and for eradication of helicobacter pylori. Data has been published from most parts of the world with some statistical differences therein. Worldwide consensus on this issue has still not been reached. Our study aimed to determine whether two-week duration of therapy would be sufficient to allow peptic ulcer healing and also whether one-week triple therapy is effective for eradication of pylori, so that a cost-effective protocol could be developed. Also to see if there was any difference to response in patients from this part of the world, as no such study has been previously reported from Pakistan,

Research Methodology: Patients with peptic ulcer documented at endoscopy and positive for H pylori infection were given PPI based triple therapy for one week and then PPI was continued for another week. After two weeks, endoscopy was repeated to assess ulcer healing.

Results: There were 32 patients (20 male, 12 female, mean age 38.9 years) included in the study. All had endoscopically proven peptic ulcer at initial diagnosis and all were positive for H pylori infection. On repeat endoscopy two weeks later, 27 patients (84.3%) showed complete ulcer healing and PPI was stopped, whereas 5 patients showed signs of partial healing. In the latter, PPI was continued for another week, and on repeat endoscopy at end of therapy, all ulcers showed complete healing. Urease test was repeated in all patients at second endoscopy and was negative in 28 patients (87.5%). Our results were in concordance with other similar studies from different parts of the world.

Conclusions: We conclude that one week of triple therapy is sufficient for eradication of H pylori and a two week treatment with PPI is sufficient for peptic ulcer healing.

Key words: Endoscopy, peptic ulcer, short duration therapy.

INTRODUCTION

Since the first culture of Helicobacter pylori more than 20 years ago, the diagnosis and treatment of upper gastroduodenal disease have changed dramatically. Peptic ulcer disease is now approached as an infectious disease, in which elimination of the causative agent cures the condition. Clinically relevant H pylori eradication regimens must have cure rates of at least 80% without major side effects. Once completely eliminated, reinfection rates are low, thus the benefit of treatment is durable. H pylori treatment is not achieved with antibiotics alone; proton-pump inhibitors are used in combination and so-called triple therapies have been widely evaluated[1]. However, published data on therapeutic options are sometimes confusing since few studies have similar design and patient and drug characteristics[2]. Various studies have been conducted worldwide to define the optimal duration of therapy, but still there are different opinions.

RESEARCH METHODOLOGY

During a one year period from November, 2000 to October, 2001, 32 patients with peptic ulcer demonstrated at endoscopy and positive for H pylori infection as tested by the urease (CLO test) test, were enrolled in the study. Patients who had ulcers, but were not infected with H pylori were excluded. Patients who fulfilled the basic criteria, but who did not return for repeat endoscopy were also later excluded from the study. All 32 patients received PPI based triple therapy for one week consisting of omeprazole or lansoprazole with clarithromycin and amoxicillin, while PPI was then continued for another week. At the end of two weeks, patients underwent repeat endoscopy and urease testing to assess ulcer healing and H pylori eradication. In patients who did not show complete ulcer healing, PPI was continued for another week and endoscopy repeated after three weeks of total therapy.

RESULTS

32 patients, 20 male and 12 female, fulfilled the inclusion criteria. The mean patient age was 38.9 years, the youngest patient being 16 years old and the oldest being 78 years of age. 21 patients had duodenal ulcers, 10 patients had gastric/pre-pyloric ulcers and 1 patient had both duodenal and pre-pyloric ulcers. On repeat endoscopy two weeks later, 27 patients

(84.3%) showed complete ulcer healing and PPI was stopped, whereas 5 patients showed signs of partial healing. In the latter, PPI was continued for another week, and on repeat endoscopy at end of therapy, all ulcers showed complete healing. Urease test was repeated in all patients at second endoscopy and was negative in 28 patients (87.5%). 3 of the 4 patients who remained infected with H pylori also showed incomplete healing at second endoscopy.

CONCLUSIONS

We conclude that one week of triple therapy is sufficient for eradication of H pylori and a two week treatment with PPI is sufficient for ulcer healing to take place sufficiently.

DISCUSSION

In the space of a century, a disease for which there was previously no sound treatment has been very much brought to "heel". The large scale use of surgery for acid peptic disease has been almost entirely abrogated. The unique clinical efficacy and lack of side-effects associated with proton-pump inhibitors as compared to H2 receptor antagonists is remarkable as they could achieve peptic ulcer healing rates of approximately 80%[3]. However, the ideal treatment regimen has not been defined yet and it is not possible currently to make definite recommendations for the optimal treatment schedule[4]. Treatment for peptic ulcer is given variably for 2-6 weeks depending largely on individual preferences. However, recently, a multitude of studies worldwide have confirmed the success of short-term therapy in eradication of H pylori and subsequent ulcer healing[5-17]. Modem ulcer treatment consists of H pylori eradication in infected patients. Reinfection is less than 2% per year in developed countries[18]. Cure of the infection essentially eliminates the ulcer diathesis, but may not equal full resolution of dyspeptic symptoms[19]. Successful and safe therapy requires extensive patient education to maximize patient compliance and minimize adverse events[20].

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ORIGINAL ARTICLE

FREQUENCY OF PREDISPOSING FACTORS, CAUSES AND OUTCOME OF ACUTE RENAL FAILURE IN MIDDLE AGED AND ELDERLY PATIENTS

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ABSTRACT

Background: Acute renal failure has been increasingly seen in middle aged and elderly population globally. It is multifactorial due to age related decline in renal function, Indiscriminate use of medicines, lack of appreciation of predisposing factors, underlying systemic diseases and delayed referral to nephrologist. This study was performed to find out the causes, predisposing factors and outcome of acute renal failure in the middle aged and elderly patients in northern Pakistan.

Research Methodology: This prospective study was carried out at Nephrology Department, Lady Reading Hospital, Peshawar, from July 2003 to August 2006. The study included 200 patients. Patients were divided into 2 groups, group A and B. Group A consisted of 80 patients with ages between 45 and 65 years (middle aged patients). Group B comprised of 120 patients with ages above 65 years (elderly patients). A proforma was designed for the study based on history, clinical examination, investigations, predisposing factors, causes, dialysis needs and outcome of acute renal failure. Renal replacement therapy comprised of acute haemodialysis and peritoneal dialysis. Percutaneous kidney biopsy was done in the selected cases of rapidly progressive glomerulonephritis in both groups.

Results: Ninety percent (90%) patients had oliguric and 10% had non-oliguric renal failure. Medical causes of acute renal failure were found in 57% and surgical causes in 43% cases. Almost two-third patients required acute haemodialysis and 14% were given peritoneal dialysis. Most common predisposing factors were volume depletion, followed by sepsis and drugs. Medical causes of ARF predominated in group A while surgical causes were found most common in group B. Clinical outcome was slightly better in group A (67% patients resumed normal renal function) than group B (60%). Overall mortality was 9%.

Conclusion: In our study acute gastroenteritis and prostate related obstruction were the most common causes of ARF in the middle aged and elderly patients. The most common predisposing factor to ARF was volume depletion. Mortality was found higher in the elderly as compared to middle aged patients.

Key words: Acute renal failure (ARF), elderly, Haemodialysis, Peritoneal dialysis.

INTRODUCTION

Acute Renal failure (ARF) is becoming a frequent disorder in the middle aged and elderly due to a variety of reasons.[1] The life expectancy has risen in the past 100 years with the predominance of elderly persons. The increased incidence of this renal syndrome in older patients is favored by histological and functional changes in aged kidney.[2] Moreover, delay in diagnosis, delayed referrals, lack of appreciation of predisposing factors like exposure to poly pharmacy and co morbid conditions like congestive cardiac failure contribute towards increased load of geriatric ARF admission in tertiary referral centers.[3] Controversy remains as to whether prognosis is poorer for elderly patients but there should be no technical reasons to deny treatment for ARF on the basis of age. In several studies outcome has been poor in the elderly patients in all types of acute renal failure.[4]

Few studies have assessed the prevalence and outcome of Acute Renal Failure in the elderly group. We carried out this study to find out the causes, predisposing factors and outcome of acute renal failure in middle aged and elderly patients referred to Department of Nephrology, Lady Reading Hospital, Peshawar from September 2003 to September 2006.

RESEARCH METHODOLOGY

The study included 200 patients. Patients were divided into 2 groups, group A and B. Group A consisted of 80 patients with ages between 45 and 65 years (middle aged patients). Group B comprised of 120 patients with ages above 65 years (elderly patients). A proforma was designed for the study based on history, clinical examination, investigations, predisposing factors, causes, dialysis needs and outcome of acute renal failure. Inclusion criterion comprised of acute rise

in serum creatinine>2.5mg/dl and blood urea> 100mg/dl on referral with baseline normal renal function at least 2 weeks prior to admission. Only the patients with normal sized kidneys were included in the study. Exclusion criterion consisted of bilateral small kidneys, chronic hypertension, diabetes mellitus, polycystic kidney disease, chronic obstructive uropathy, chronic renal parenchmal diseases, renal and extrarenal malignancies. Patients with multiple organ failure and cerebrovascular disease were also excluded from the study. Acute renal failure was defined as the acute rise in serum creatinine above 1.5 mg/dl. Oliguria was defined as urinary output less than 400ml/24 hours. ARF was classified as oliguric and non-oliguric acute renal failure. Predisposing factors leading to ARF were studied in all patients.

Baseline FBC, coagulation profile, blood urea, serum creatinine, serum electrolyes, urinalysis and renal ultrasound were done in all patients. Antinuclear factor, ANCA screen, anti dsDNA, ASO titre and 24 hour urinary proteins were done only in selected cases. Percutaneous kidney biopsy was done only in rapidly progressive glomerulonephritis (RPGN) in both groups.

Acute management included non-dialytic measures such as discontinuation of potentially nephrotoxic drugs, fluid and electrolyte balance, volume repletion and control of sepsis. Renal replacement therapy comprised of acute haemodialysis and peritoneal dialysis.

RESULTS

Out of our total 200 cases, one hundred and thirty patients (65%) were male and 70 were females (35%). Male to female ratio was 2:1 and mean age was 49.5 years. Ninety percent (90%) patients had oliguric and 10% had non-oliguric renal failure. Most common Predisposing factor to ARF observed in our study was volume depletion as seen in 70(35%) cases followed by drugs and sepsis seen 44 (22%) and 36 (18%) cases respectively. Details are shown in Table 1. Medical causes of acute renal failure were found in 57% (n=114) cases and surgical causes in 43 % (n=86) (Table 2).

The common causes of ARF documented in our cases are shown in Table 3. About a quarter of medical cases of ARF were due to rapidly progressive glomerulonephritis. The most frequent primary renal biopsy diagnosis in group A was diffuse proliferative glomerulonephritis seen in 8 cases. In group B cresentric necrotizing form of RPGN was found most common observed in 14 cases. Four biopsy specimen (1.8%) showed only benign nephrosclerosis without any apparent cause of acute renal insufficiency.

Acute haemodialysis was the mainstay of renal replacement therapy, given in 156 cases (78%) and peritoneal dialysis in 28 cases (14 %). Dialytic needs were almost similar in both groups (Table 4). Overall mortality was 9%, though higher in the group B as compared to group A (Table 5), however it was not statisti-

Table 1: Frequency of predisposing factors of ARF in our cases (N=200)

Predisposing factors	No. of Patients	Percentage
1. Volume Depletion	70	(35%)
2. Drugs	44	(22%)
3. Sepsis	36	(18%)
4. Drugs, Sepsis, vol. dep	24	(12%)
5. Drugs, Volume depletion	16	(8%)
6. CCF, Drugs, Vol.dep,	10	(5%)

Table 2: Frequency of Medical and Surgical Causes of ARF in both groups.

Age Group (in years)	No & %	Male	Female	Medical	Surgical
45-65	80(40%)	50(38%)	30(43%)	60(75%)	20(25%)
>65	120(60%)	80(62%)	40(57%)	54(45%)	66(55%)
Total	200	130(65%)	70(35%)	114(57%)	86(43%)

Table 3: Details of frequency of Medical and Surgical causes of ARF in our cases (N=200).

Medical	No & %	Surgical	No & %
1. Acute Gastroentritis	40 (35%)	1. Prostate related	38(44%)
2. RPGN	28 (26%)	2. Nephro-urolithiasis	15(18%)
3. Prerenal/Haemodynamic	17(16%)	3 Intestinal obstruction	12(14%)
4 Malaria	12 (10.5%)	4. Gallstone disease	9(10%)
5. ATN	8 (7%)	5. Acute Pyelonephritis	7(8%)
6. Rhabdomyolysis	6 (5%)	6. Bladder neck obstruction (in females)	5(6%)
7. Snake Bite	3 (2%)		
Total	114 (57%)	Total	86(43%)

Table 4: Type of Management offered in both groups.

Age Group (in years)	No & %	Conservative	Peritoneal Dialysis	Haemodialysis
45-65	80(40%)	6(7.5%)	10(12.5%)	64(80%)
>65	120(60%)	10(8.3%)	18(15%)	92(76.7%)
Total	200	16(8%)	28(14%)	156(78%)

Table 5: Clinical Outcome in both groups of ARF (N = 200)

Age Group (in years)	No & %	Recovered	Mild-Moderate Renal Insufficiency	CRF	Died
45-65	80 (40%)	54 (67.5%)	14(17.5%)	6(7.5%)	6(7.5%)
>65	120(60%)	72 (60%)	22(18%)	14(12%	12(10%)
Total	200	126(63%)	36(18%)	20(10%	18(9%)

cally different (10% verses 7.5%). Hospital stay was longer in the group B as compared to group A, 22 verses 9.5 days respectively ($p< 0.05$). Recovery rate was better in group A than in group B. Clinical outcome was poor in group B as 14(12%) patients progressed to chronic renal insufficiency .In contrast 6 (7.5%) patients developed chronic kidney disease in group A (Table 5).

DISCUSSION

Studies on age and gender consideration of ARF reveal increased incidence of this condition in elderly patients.[5] Referral of elderly patients with renal failure to nephrologists is delayed not only in south east Asia but also in Europe.[6]

Aging kidney is at risk for both toxic and hemodynamic induced acute damage resulting in high incidence of acute renal failure (ARF) in the elderly patients. Among the main senile changes that make the older people prone to acute renal failure are disturbance in the auto regulatory vascular defense, reduction in the number of glomeruli and glomerular capillaries and salt and water wasting due to reduced tubular reabsorbtion capability.[7,8] Physical examination in aged patients is not always reliable. For instance; dry mouth, orthostatic hypotension and skin fold turgor, all these signs are normally present in healthy elderly.[9] Likewise, the finding of edema in immobilized patients does not mean volume overload as well as lack of thirst does not signify an absence of dehydration.

Hence atypical presentation of ARF is seen in elderly as compared to young patients. In our study, the most common predisposing factors were volume depletion in 35% cases followed by sepsis 22% and drugs (NSAIDS. ACEI/ARBs, diuretics, etc) in 18%

cases. In other studies drugs and sepsis were the most common predisposing factors for ARF in elderly patients.[11,12]

In a North Indian study of factors determining the outcome of ARF in the 454 elderly patients multiple renal insults like volume depletion, presence of cardiac failure and sepsis were associated with poor outcome.[13] In our study 68% patients recovered fully and resumed normal renal function mortality was seen higher in geriatric group (10%) as compared to middle aged group (7.5%). In a Georgian 3 year study of ARF in hospitalized elderly African-Americans although mortality was reported higher in females patients, gender and advanced age did not independently contribute to high mortality.[14]

Persistent oliguria, hypotension and sepsis were found as poor prognostic factors in our study. Need for dialysis, mechanical respiration, decreased level of consciousness and oliguria were associated with poor prognosis in other studies of ARF in elderly patients.[15,16] Medical causes were found most common in middle aged group in our study. The most common medical causes were acute Gastroenteritis (35%), followed by RPGN (26%) and Prerenal/hemodynamic ARF (16%). In a study of ARF in a tertiary care center in Nepal also showed Acute Gastroenteritis (22%) as a leading cause of ARF followed by sepsis.[17] This indicates factors in the life style of the majority of the population in tropical countries that give rise to ARF including poor sanitation and contaminated water that can cause gastroenteritis.[18] Etiological distribution of ATN was observed similar in both groups.[19]

There were no statistical differences in dialytic needs in both groups. Most elderly patients responded well to dialysis either peritoneal or haemodialysis, however mortality in the elderly group was seen higher.[20]

Surgical causes were found most common in geriatric group with the predominance of prostate related (BPH/Post TURP) obstructive ARF (44%) in our study .As urinary obstruction is emerging as one of the most frequent causes of ARF in elderly patients being generally reversible, it is important to exclude this in all cases.[21] Renal biopsy does not carry a greater risk in the older patients than in younger with a complication rate of 2.2%–9%.[22] However, because of changes in aged kidney or intercurrent diseases such as arteriolosclerosis or global sclerosis, the interpretation of histological findings may be more difficult.[23] Kidney biopsies were done in selected cases, the most frequent tissue diagnosis was crescentic necrotizing glomerulonephritis (32%). This form of glomerulonephritis was observed in 24% cases in a study of 259 kidney biopsies of elderly ARF patients.[24] Drug-induced acute interstial nephritis (AIN) was seen in 18% of biopsies in our study. In a Boston study 44.7% elderly ARF patients were classified as having drug induced AIN.[25]

Recently an Australian study has reported proton pump induced interstial nephritis as likely to be more frequent cause of AIN in elderly patients.[26] The best strategy to avoid ARF in middle aged and elderly patients is to identify predisposing factors, avoid potentially nephrotoxic medicines, polypharmacy and early referral to nephrologists. Preventions should be taken to minimize the development of ARF in the group of patients. Further studies are needed to know the pathophysiology, co-morbid factors and referral pattern to limit the morbidity and mortality of ARF in older patients.

CONCLUSION

In our study, most common predisposing factors to ARF in both groups were volume depletion, followed by sepsis and drugs. Acute gastroenteritis and prostate related obstruction were the most common causes of ARF in the middle aged and elderly patients. Total recovery from ARF in geriatric group was less frequent and slower than middle aged group. Over all mortality was seen higher in the elderly as compared to middle aged patients. It may be concluded that patients over 65 years of age are at higher risk for developing ARF, nevertheless age should not be used as a discriminating factor in the therapeutic decisions concerning ARF.

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ORIGINAL ARTICLE

OFF PUMP CORONARY ARTERY BYPASS SURGERY (OPCAB): NATIONAL INSTITUTE OF CARDIOVASCULAR DISEASES EXPERIENCE: SHALL WE ALL SWITCH TO THE TECHNIQUE?

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ABSTRACT

Background: The objective of this study was to find out about the safety of the off pump coronary artery bypass surgery and evaluate the short and medium term results in a selected group of patients; and is this method of coronary revascularization recommended in majority of our patients, in light of the current literature review.

Research Methodology: 180 patients requiring coronary artery bypass surgery, with disease pattern suitable for OPCAB surgery, underwent the procedure at the National Institute of Cardiovascular Diseases, Karachi between June 2003 and May 2005. Patients with diffuse disease of coronary arteries, those with small vessels and patients requiring grafts to coronary arteries considered not easily accessible by off pump surgery techniques' were not considered suitable for the procedure. Left Anterior Descending Artery was grafted first. Either snaring of the coronary arteries or intra coronary shunts were used to keep the surgical field clear of blood. A low profile was kept for conversion to conventional on pump surgery in the event of hemodynamic instability during the OPCAB procedure. 12 lead ECG and cardiac enzymes were routinely done to rule out peri-operative myocardial insult. Routine / random coronary angiography has not been performed post operatively to check graft patency.

Results: There were 07 post-operative deaths. Surviving patients are being followed up regularly, with good clinical results.

Conclusion: OPCAB surgery can be performed safely, in selected patients, with good early and medium term clinical results. In the absence of follow up of the patients with coronary angiograms in our set up and lack of definite evidence of advantage in the outcome of the patients compared to on-pump surgery, longer follow up of the OPCAB patients is required before the technique is used more frequently.

Key words: Off pump coronary artery bypass surgery.

INTRODUCTION

Murray and Longmire reported coronary endarterectomy on beating heart for the first time in 1950s. Kolesov performed the first left internal mammary artery to coronary artery bypass on beating heart in 1964[1]. After the advent of the heart-lung machine, OPCAB operations were virtually abandoned with a few exceptions[2,3,4].

Conventional coronary artery bypass operation using heart lung machine is a safe procedure with low morbidity[5]. Nevertheless, cardiopulmonary bypass (CPB), hypothermia and global cardiac arrest are not free of complications[6,7]. OPCAB was reintroduced in the late 1980s[8,9]. Since myocardial revascularization is performed on beating heart in OPCAB surgery, it is a more physiological method to maintain the functional integrity of major organ systems, with the possibility of reducing morbidity and mortality[10].

OPCAB surgery is being used more frequently worldwide[11], but despite the refinement of techniques and equipment it has not been taken with the same enthusiasm by all the surgeons[12]. About 20% of all the coronary revascularization surgery cases are being done with the OPCAB techniques in the North America and Western Europe[13]. With its lower cost, OPCAB surgery may have a role in the management of patients with coronary artery disease in Pakistan.

RESEARCH METHODOLOGY

1146 patients underwent surgical revascularization for coronary artery disease at the National Institute of Cardiovascular diseases Karachi, over a period of 2 years, between June 2003 and May 2005. 180 (15.7%) of these had OPCAB surgery. These patients are being evaluated retrospectively.

The OPCAB cases in this study were a selected group of patients. Coronary angiograms of all the patients referred for surgical revascularization were carefully reviewed. Those who had non-calcified, easily accessible, good size target vessels (1.5 mm or more in

diameter on coronary angiogram) were considered for OPCAB surgery. Patients with diffuse coronary artery disease, dilated left ventricle (LVEDD > 60mm), those requiring cardiac procedures in addition to coronary revascularization, patients with failed percutaneous interventions (PCI), patients requiring emergency CABG and patients with obtuse marginal branches of circumflex artery which appeared to be not easily accessible by off pump techniques, were considered for conventional coronary artery bypass operation on heart-lung machine.

RESULTS

146 male and 34 female patients fulfilled the criteria for inclusion into the OPCAB group. Age range was from 34 years to 75 years (mean age 49.1 years). Majority of the patients were either with single or double disease vessel disease (169 /180). Figure 1 shows the angiographic data of the patients.

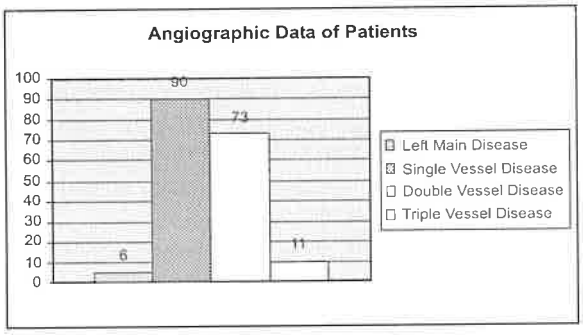

Fig. 1: Angiographic Data of Patients

The risk factors in these patients included hypertension, diabetes, previous myocardial infarction, left ventricular impairment, previous CVA, preexisting renal impairment and pre operative low cardiac output state (Table 1).

Table I: Preoperative Risk Factors

Risk Factors	Number	%age
Hypertension	69/180	38.3%
Diabetes Mellitus	58/180	32.2%
Previous Myocardial Infarction	42/180	23.3%
Left Ventricular Dysfunction	32/180	17.8%
Renal Impairment	03/180	1.7%
Previous Neurological Events	02/180	1. 1%
Low Cardiac Output State	01/180	0.56%

All the procedures were performed under general anesthesia with continuous invasive arterial and central venous pressures monitoring. Heart-lung machine and perfusion team remained on standby for establishing cardiopulmonary bypass in the event of hemodynamic instability. 1 mg / kg body weight heparin was given after harvesting the conduits (Left internal mammary artery ± saphenous vein) for grafting.

Pericardial stay sutures were used on the left side for exposure of obtuse marginal arteries and Ramus. To avoid compression of the right ventricle during grafting of these vessels, right pleura was opened and a vertical incision given in the pericardium towards inferior vena cava; and apex of the heart was displaced into the right side of the chest.

Octopus (Medtronic Inc, Minneapolis, MN), initially octopus 2 and lately octopus 3 with starfish were used to stabilize the heart. A clear field for coronary anastomosis was achieved either with the use of intra coronary shunts or by snaring the coronary arteries proximal and distal to the site of anastomosis with elastic vessel loops on a blunt needle, depending upon the availability.

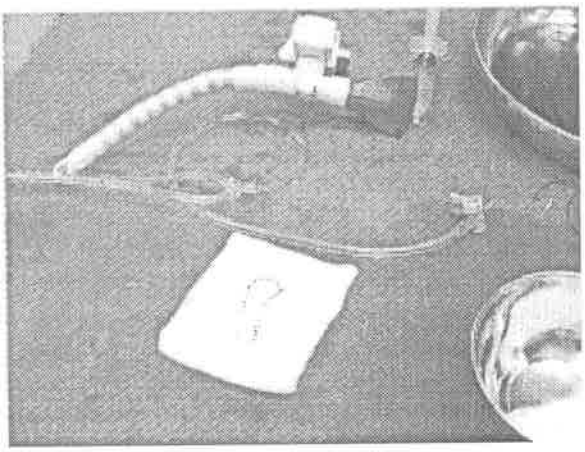

Fig. 2: Octopus and intra-coronary shunts shown in the picture

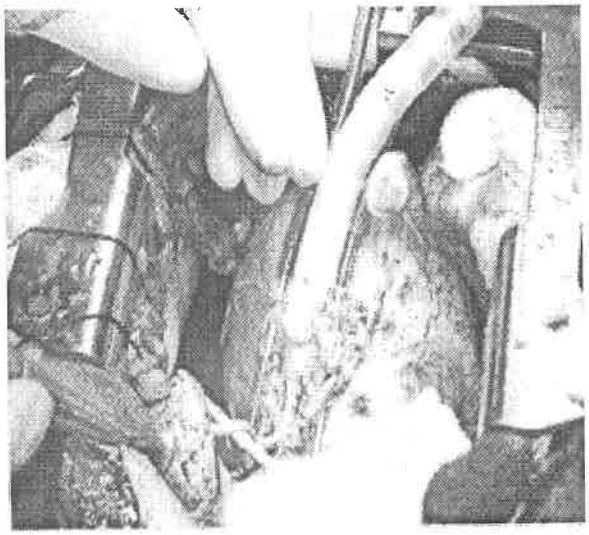

Fig. 3: Saphenous vein graft is being anastomosed to diagonal artery Left Internal Mammary graft to LAD is in picture. Pericardial stay sutures are also visible.

Left anterior descending artery was grafted first followed by grafting of the next accessible vessel. A total of 291 distal anastomoses were performed. Average number of grafts per patient was 1.61. 79 patients had a single graft each. 87 had 2 grafts each while 10 patients received 3 grafts per patient. Two patients had 4 grafts each (Fig. 4).

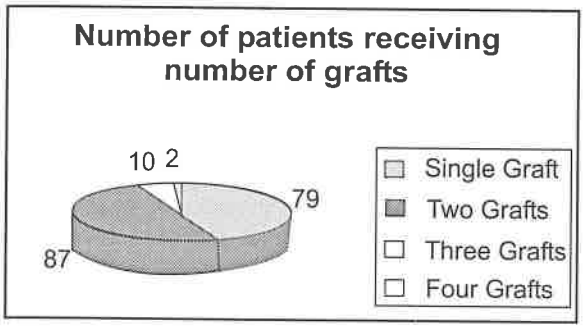

Fig. 4

Left Internal mammary artery was used in 167 patients while 13 patients received only vein grafts. 16 (8.89 %) patients had to be converted to cardiopulmonary bypass either for hemodynamic instability during the second or third graft anastomosis (10 patients) or coronary vessel being intramyocardial requiring deeper dissection (6 patients).

12 lead ECG and cardiac enzymes (CM-MB) were done on the intensive care unit to rule out perioperative myocardial infarction.

Patients were followed up with 12 lead ECG on first visit after their operation and 2D echocardiography after 3 months. Patients with symptoms suggestive of recurrent angina had stress thallium scan, followed by coronary angiogram if the scan was positive for inducible myocardial ischemia.

There were 7 (3.88%) in hospital deaths. The causes leading to death were, perioperative myocardial infarction in 5 cases, neurological event in one patient; while one patient could not be weaned off the ventilator. The complications encountered in these patients are shown in Table 2.

Table 2: Complications

Complications	Number	%age
Peri operative myocardial infarction	7/180	3.88 %
Re Exploration	4/180	2.22 %
New Neurological Events	2/180	1.11%
Deterioration of Renal function	1/180	0.56 %
Sternal wound infection	1/180	0.56 %

The intensive care unit stay in these patients was from 18-54 hours (mean stay 26 hours). More than 80% of the patients (146/180) were taken off the ventilator within 6 hours. 25 patients required mechanical ventilation for 6 to 12 hours while 9 patients were ventilated for more than 12 hours. The hospital stay was from 5-9 days (mean 5.8 days).

The follow up ranges from 18 months to 42 months. 43 patients have not attended the out patients department after their first visit. The remaining 130 surviving patients have attended the OPD regularly.

7 patients had symptoms suggestive of angina. Stress thallium was positive for reversible myocardial ischemia in 5 of these patients. These patients were subjected to coronary angiogram. Vein graft to right coronary artery was blocked in one patient with functioning left internal mammary artery to LAD. She is being managed conservatively on anti anginal medication. Three patients have stenosis at the anastomotic site, while one patient has new lesion in one of the obtuse marginal arteries, not present on the first angiogram. These four patients have been referred to cardiologists for percutaneous coronary intervention (PCI).

DISCUSSION

The study is a retrospective one and thus has its limitations. The total number of cases undergoing surgical coronary revascularization was 1146 over a period of two years (June 2003 till May 2005). 180 off pump cases represent 15.7% of all the cases done during this time period. Since the OPCAB study group of patients differed from the on pump group in many respects mentioned earlier, the results of the two groups couldn't be compared with each other. Many aspects of our OPCAB study can be, however, compared with the published literature.

20% patients had OPCAB surgery of all the patients having surgical coronary revascularization in North America and Western Europe as reported by Mack MJ[13]. Cleveland and co-workers reported 9.9% OPCAB procedures in a multi-center retrospective analysis[14]. Another study from Dallas-Texas[15], reviewing the coronary work of 22 surgeons from 1995 till 2000, showed a progressive increase in the number of OPCAB cases from 1.2% in 1999 to 34% in 2000. 350 OPCAB cases vs. 3171 on pump cases (11% OPCAB) have been reported by Arom KV and colleagues[16]. There are, nevertheless, reports in literature where 97% of the coronary artery bypass cases have been done off-pump[17]. Our 15.7% Off-Pump cases can be compared with many studies in literature.

Our number of grafts per patient is 1.61. The number of grafts per patient in our first 150 cases was 1.56 (234 / 150) and is 1.9 (57 / 30) in our last 30 cases. Baumgartner FJ and colleagues have reported an average of 3.3 grafts (range, 1 to 6 grafts) per patient[18].

Boening A and colleagues had 2.39 grafts per patient[19] while Mack and Associates have published 2.73 grafts per patient[15]. Thus our number of grafts per patient is less than those published in literature. However, the study shows our early experience. The number of grafts per patient is increasing in our patients as mentioned earlier (from 1.56 to 1.9).

The significant proportion of single vessel disease patients in our study is mainly because of the high cost of PCI as compared to CABG in the public sector hospitals.

There were 38.3% patients with hypertension, 32.2% with Diabetes mellitus, 23.3% with previous myocardial infarction, 17.8% with impaired left ventricular function, 1.7% with pre-existing renal impairment, 1.1% with previous neurological events and 0.56% with preoperative low cardiac output state in our study. Gobran SR and associates have reported hypertension in 66.8% and Diabetes in 32.5% of their OPCAB patients[20]. Omeroglu SN and colleagues have reported hypertension in 42.9%, Diabetes mellitus in 12.9%, previous myocardial infarction in 62.8% and renal failure in 2.9% patients in their study[21].

3.88% of our patients had peri-operative myocardial infarction. 2.22% of the patients needed re-exploration for excessive chest tube drainage. New neurological deficit was seen in 2 patients (1.1%). Deterioration of renal function was seen in 0.56% while superficial sternal wound infection was seen in 1 patient (0.56%). None of our patient needed dialysis. Our mortality was 3.88%. Our conversion to pump rate was 8.89%. Straka Z and colleagues have reported a mortality of 2%, peri-operative myocardial infarction of 2% and hemo-dialysis in 1% of cases[22]. A mortality of 2.8%, peri-operative myocardial infarction of 4.3% and conversion to pump in 2.8% of the patients have been reported by Boening A and colleagues[19]. Our peri-operative morbidity and mortality match favorably with the published data. Our conversion to pump rate is higher than many published studies. We hope that it will come down with more experience.

Though our short and medium term results of this study are encouraging, should we try to do most of our coronary patients off-pump? This study included selected group of patients only, who appeared suitable for off-pump from the review of their angiogram. We need to do a randomized trial comparing our on-pump and off-pump cases results before such a conclusion can be drawn. Search of literature for studies comparing the results of off-pump and on-pump cases have shown variable results. Calafiore AM and colleagues[23] have shown lower early mortality and lower peri-operative myocardial infarction in the off-pump group. Gerola LR et al have not found any statistical difference in hospital mortality and morbidity using on-pump or off-pump techniques for low-risk patients[24]. Boening A and colleagues have suggested that elective-surgery patients with coronary artery disease can be operated on either on-pump or off-pump with the same early and late mortality and morbidity[19]. Arom KV et al[16] have shown a trend of increased recurring angina and re-interventional procedures in the OPCAB patients. They have suggested that long-term follow-up is required to assess the future effectiveness of OPCAB. Srinivasan A and colleagues have suggested that off-pump coronary operation in diabetic patients significantly reduced postoperative morbidity and length of stay compared with on-pump coronary operation, although no in-hospital survival difference was noted between the two groups[25]. Cartier R and Blain R have concluded that OPCAB surgery has low morbidity and mortality and excellent early angiographic results. They have suggested that long-term follow-ups are needed to substantiate the potential long-term benefits of this technique[26]. Ascione R and colleagues have also stressed on quality follow-up data to assess the impact of off-pump coronary artery bypass operations on long-term clinical outcome[10].

CONCLUSION

Off-pump coronary surgery can be performed safely with acceptable early and mid-term clinical results. In the absence of routine / random angiographic follow-up data in our set up, and lack of solid evidence in literature showing superiority of off-pump over on-pump surgery in the outcome of the patients; we should wait for the long term results of off-pump procedure, before the procedure is used more frequently for coronary artery bypass patients. Prospective randomized trial comparing on-pump and off-pump cases results are also required in this regard.

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ORIGINAL ARTICLE

PREVALENCE OF HBV AND HCV AMONGST HEALTHY BLOOD DONORS OF NWFP

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ABSTRACT

Background: The objective of this study was to find out the sero-prevalence of hepatitis B and C amongst the healthy blood donors of NWFP.

Research Methodology: This study was conducted at blood transfusion units of Khyber Teaching Hospital and Rehman Medical Institute, Peshawar from April 2003 to December 2003. All healthy volunteer blood donors belonging to various districts of NWFP were screened for HBsAg and anti HCV antibody on ELISA method. Frequency rates were calculated for HBsAg and HCV anti bodies.

Results: A total of 1300 healthy blood donors were screened during a period of one year. Out of the total 1300 subjects 31 (2.38%) individuals were found positive for Hepatitis B surface antigen (HBs Ag) and 45 (3.40%) donors were positive for anti HCV antibody, 03 persons (0.23%) were positive both for HBs Ag and anti HCV antibody.

Conclusions: Viral Hepatitis is a major health problem and incidence of new infection is increasing every year for two obvious reasons, the transfusion of unscreened blood and its products and lack of hygienic measures. Screening of all blood donors prior to donation will reduce the transfusion of Hepatitis B and C.

Key words: HBV, HCV, ELISA, Blood Donors.

INTRODUCTION

Hepatitis B and C can be transmitted from an infected person or a chronic carrier to a healthy person via blood and blood products, semen, cerebrospinal, vaginal, synovial, pleural, peritoneal, pericardial and amniotic fluids. Blood contaminated saliva in dental procedures and other body fluids contaminated with blood is also a route of transmission.[1]

WHO has reported that there are about 300 million carriers of Hepatitis B throughout the world. The infection is directly related to higher proportion of death rate ranging, upto 1-2 million/year across the world. Moreover WHO estimates an increase in the carrier rate up to four hundred million by the turn of this century.[2]

The HBs Ag carriers rate is 0.1% in UK, 8.8% in Eastern Saudi Arabia and 20% in South East Asia. In Pakistan 3-4% of healthy subjects are HBs Ag positive. In blood donors at Islamabad the prevalence rate is 8%.[3]

The World Health Organization has estimated that as many as 170 million people worldwide are infected with hepatitis C, making a prevalence of about 3% of the world's population.[4] With an overall prevalence rate of 0.5% to 8% in blood donors worldwide shows a higher prevalence than HIV or HBV in Europe and Japan.[5] Prevalence of hepatitis C in apparently in healthy blood donors of Pakistan ranges from 4% to 9% in various published series. Hepatitis C is a major cause of post transfusion hepatitis.[6]

We carried out this study to find out the seroprevalence of Hepatitis B and C in healthy blood donors in various parts of NWFP and to compare it with others such studies reported from other Provinces of Pakistan.

RESEARCH METHODOLOGY

A total of 1300 blood donors, otherwise healthy were screened for Hepatitis B and C. The subjects were examined according to the questionnaire. The study was carried out from April 2003 to Dec. 2003. Out of 1300 total cases screened, 1000 were analyzed in Blood Transfusion Unit of (RMI) Rehman Medical Institute, Peshawar and 300 in (KTH) Khyber Teaching Hospital, Peshawar. These two institutions one in private and the other in the public sector provide health services to patients coming from almost all parts of NWFP. Inclusion criteria for selection of the subjects was based on history and physical examination. Persons were excluded if they were giving history of recent surgery, jaundice drug addiction or dental treatment (extraction/RCT/scaling). Study population for HBs Ag was tested on BioELISA which is a direct immuno enzymatic method of the "sandwich" type. Whereas 3rd

Generation ELISA kit was used for the detection of HCV antibodies.

RESULTS

Table 1: Comparison of Hep. B and C positive cases between KTH and RMI

Institution	Donors	Positive cases of HBsAg (%)	Positive cases of HCV (%)
RMI	1000	18(1.8%)	25 (2.5%)
KTH	300	13(4.3%)	20 (6.6%)
Total	1300	31 (2.3%)	45 (3.4%)

As shown in table (1) out of 1000 patients from RMI 18 blood donors were HBsAg positive which is 1.8% of the total blood donors (1000) and 25 were HCV positive which is 2.5% of the total (1000). Out of 300 patients from KTH 13 blood donors were HBsAg positive which is 4.3% of 300 and 25 were HCV positive which is 6.6% of the 300 blood donors. The total prevalence of HBV positive cases is 2.38% and that of HCV is 3.48%.

Tables 2 and 3 highlight the blood group status of donors who were positive for either hepatitis B or C or both.

Table 2: 32 Hep. B positive cases with their respective blood groups

Blood Group	A +ive	B +ive	0 +ive	AB +ive	AB –ive
Frequency	5	16	7	3	1
Percentage	15.6	50	21.8	9.3	3.1

Table 3: 45 HCV positive cases with their respective blood groups

Blood Group	A +ive	B +ive	0 +ive	AB +ive	AB –ive
Frequency	13	21	10	1	–
Percentage	28.8	46.6	22.2	2.2	–

DISCUSSION

Recipients of blood and its products are at high risk of acquiring hepatitis infection through unscreened blood transfusion. As blood donors are a part of our normal population and they come from community, therefore incidence of hepatitis B and C in blood donors will reflect the overall prevalence of hepatitis B and C in that particular section of the society.

The transmission of hepatitis C virus through the use of unsterilized syringes or other medical equipments are well documented.[7]

Many people infected with hepatitis have no symptoms, about 1/3 of HBV infected people have completely silent features and they may transmit this infection to other persons.

Co-infection of both HBV and HCV was also found in three donors in our study, out of which two had a previous history of blood transfusion where as the third one had no history of either transfusion and dental treatment or drug abuse.

Our results of HBV are comparable to various studies conducted in Pakistan in which it is mentioned that Hepatitis B Virus (HBV) is endemic in Pakistan and about 5% of the population is carrying this virus,[8] while some of the internationally published series also show the same prevalence pattern. In Madurai (South India), the prevalence of Hepatitis B in healthy blood donors is 4%.[9] While our results are comparable to that of Hashimi et al.,[10] where the prevalence of HBV was 2.06% in healthy blood donors of Faisalabad. Similarly 9.3% prevalence has been reported in Florianopils (Brazil).[11]

Prevalence of HCV varies from 0.5% to 8% in blood donors in various parts of the world. In Pakistan prevalence of HCV was found to be around 6% which is comparable to our results. Prevalence of anti HCV was nil (0%) in Hazara (N.W.F.P),[6] which differs from our results. Prevalence of HBsAg carriers of amongst donors screened at blood bank RMI, in our study, is 1.8% which is comparable with various studies carried out by different researchers in Pakistan, e.g. the prevalence of HBV carriers is 2.9%.[3] A study conducted at Children Hospital and the Institute of Child Health Lahore, the prevalence of HBV carrier was estimated to be 2.04%.

Prevalence of HCV in RMI patients in our study is 2.5% which is comparable to that of Alam and Khan,[12] where prevalence was 3.26% in blood donors of army belonging to different areas of Pakistan. Where as in Pakistan the prevalence of anti-HCV antibodies in blood donors has been reported from 0.5% to 14% in different studies. There was a preponderance of males. Similar findings are reported by Hollinger,[13] who found that the HBV and HCV positive donors were recorded to fall in the younger age group and also reported positivity of HBs Ag in an even younger age group. His reported age group persons were 15-29 years and Sultana et al.,[14] in Islamabad have the same results. The prevalence of antibodies to HCV in blood donors of Sialkot was found to be 3.26% in army men, with mean age of 27 years.[12] Our study also shows the same.

Regarding the possible sources of infection, amongst the 13 HBV positive donors, 4 donors and amongst the 20 HCV positive donors 9 donors gave a positive history of receiving blood transfusion. Chandrasoma and Taylor[15] as well as Sherlock[16] have similar claims that blood transfusion is one of the major source of transmission. Regarding the possible transmission through dental treatment, 3 HBs Ag and 3 HCV positive donors had received dental treatment in the near past. Presence of hepatitis virus in saliva has been documented by Weatheral et al.,[17] and Sherlock[16] as a possible source of infection.

One donor gave history of surgical intervention in the past, requiring hospitalization, but no blood or blood product was transfused. Hollinger et al.,[13] stated that non-transfused, hospitalized surgical patients rarely contract HBV infection, nevertheless, the possibility exists that the surgical intervention or the hospitalization if necessitated might have been responsible for the transmission of HBV to these persons. Although positive claims are reported, they are difficult to confirm. 2 HBs Ag and 3 HCV Ab positive donors gave history of injectable therapy. Hepatitis C can be transmitted through sexual contact.[18] In our study a single donor has a history of possible sexual transmission of hepatitis C.

Another possible source could be the hospital environment. 11-21% swab samples from gloved hands, door handles, needle clippers, furniture and external surfaces of dialyzers with or without visible traces of blood, were positive for HBs Ag.[19]

Krugman et al.,[20] has mentioned that the problem of over crowding and poor hygiene is a possible source of transmission of these viral infection. This could very well apply to our over crowded and over worked hospitals. Low socio-economic status and HCV infection has been noticed.[21] So socio-economic status is also a possible cause of transmission in the developing countries like Pakistan.

In the present study, the possible correlation of either HBs Ag or HCV Ab positivity with the blood groups and Rh factor was also studied. The higher percentage for both HBV and HCV was observed in Rh positive subjects. Where as very low percentage or no occurrence was found in case of Rh negative subjects. It was also found that in both HCV and HBV carriers, the higher percentage of positive cases are persons with blood group B positive. One possible reason for this could be the higher prevalence of the B positive blood group amongst the general population of this area.[22] Is it a normal finding or there exists some association between blood-group and vulnerability hepatitis. More work is required to know the exact correlation and causes of the high prevalence in Rh positive persons in general and in B positive persons in particular. This would also be very helpful in knowing the vulnerability of various blood group owners to the risk of acquiring either HBV or HCV infection.

CONCLUSION

Viral hepatitis is a major health problem. The incidence of new infection is increasing every year for two obvious reasons i.e. the transfusion of unscreened blood and its products and lack of hygienic measures in medical, dental and surgical practice. The need of adopting the most effective strategy for minimizing the transmission of these killer diseases is highly felt and the role of the print and electronic media for the public awareness is direly needed. If general screening is not possible due to budget constraints, it must be applied to the high-risk groups like Haemophilics, Thellasaemics, Haemodialyzed patients and babies born to hepatitis positive mothers, donors of blood and organs for transplant.

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ORIGINAL ARTICLE

AN AUDIT OF ELECTROCONVULSIVE THERAPY IN PSYCHIATRY DEPARTMENT OF KHYBER TEACHING HOSPITAL, PESHAWAR

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ABSTRACT

Background: ECT is an important and effective treatment for is widely used all over the world. There are national and international guideline for its use for various indications, effectiveness and safety of the procedure. So we conducted this study to audit the use of ECT in Psychiatry Department Khyber Teaching Hospital, Peshawar between June 2005-August 2006.

Research Methodology: This is a retrospective study carried out in Psychiatry Department Khyber Teaching Hospital. It included all the consecutive patient records that received electroconvulsive therapy between June 2005 - August 2006. A structured Performa was designed to collect all the relevant information and covered demographic details, indications, risk factors, facilities available for ECT and other technical aspects of ECT.

Results: A total of 100 patients were studied, (54%) patients were under the age of 50 years. Only 3% were above 50 years. Depression was the most common indication for ECT followed by mania (25%). None of the patients suffered any ECT or medication related complication. Vast majority (69%) received 4-6 ECT.

Conclusion: Our study demonstrated that ECT was appropriately and adequately used for various indications especially for depressive disorder, bipolar disorder and schizophrenia. The duration and strength of convulsions were adequate, 90% of seizure lasted between 20 and 50 second. The present finding also demonstrate that ECT practice in Psychiatry Unit Khyber Teaching Hospital, Peshawar is not performed according to the currently available international guideline because of equipment and personal resource shortage.

Key words: Electroconvulsive therapy, major depression, seizures.

INTRODUCTION

Electro convulsive therapy is the most effective treatment for those with severe emotional disorders. It is safe for patients of all ages, for people with debilitating illnesses, and for pregnant women. It relieves more symptoms in a briefer span of time than do most of the psychotropic drugs. Treatments are usually given three times a week for 2 to 3 weeks. The usual course of ECT recommended for depressive disorder is 4-8 treatments. For a sustained recovery once or twice week continuation treatments are administered. Patients are thoroughly investigated for any organic diseases and properly prepared for electroconvulsive therapy prior to the administration of treatments. Psychiatry unit Khyber Teaching Hospital, Peshawar is a major academic department and psychiatric service provider in North West Frontier Province and the aim of this study is to review and audit ECT practice in this unit so that the service can be further improved according to the recommended guidelines.

RESEARCH METHODOLOGY

This is a retrospective study carried out in psychiatry unit KTH. All the consecutive patient records who received ECT between June 2005 and August 2006 that numbered 100 were included in the study. Incomplete case records which numbered only three were excluded from the study. A structured Proforma was designed for this particular study. It covered demographic details, indications, risk factors, patient's preparation, and facilities available for performing ECT. Other technical details such as frequency and duration of electroconvulsive seizures were also recorded.

RESULTS

We studied 100 cases. 55 were females and 45 were males. 35% of the patients were under 20 years of age, 33% were between 20 and 35 years of age, 27% were between 35 and 50 years of age, only 3% of them were above 50 years of age. The major indications for ECT were depression (54%) mania (25%), schizophrenia (10%), others (11%).

In all cases bitemporal electrode placement with fixed high dose strategy was used. Doctor administering ECT monitored seizure duration and strength. 90% of seizures lasted between 20 and 50 seconds, 6% of the seizures lasted less than 20 seconds and 4% were longer than 50 seconds. None of the patients devel-

oped prolonged seizures or suffered from any ECT or medication related complications.

The number of treatments per course varied and depended upon clinical response. 29% of the patients received between 1-3 ECTs, 69% received between 4-6 ECTs and 2% received more than 6 ECTs.

ECTs were added to the ongoing pharmacological treatment regimens such as lithium (40%), benzodiazapines (63%), antipsychotics (30%), anticonvulsants (55%). The use of anticonvulsants was temporarily discontinued the night before reception of ECT. Sine wave device (konvulsator , Siemens AG, Munich Germany) was used to administer ECT. In all cases informed consent was taken. ECT was performed in a separate ECT room. After receiving ECT patients were shifted to the ward for recovery and kept under close observation. A junior psychiatrist heads ECT team and it comprises of an ECT nurse and ECT technician and attendant.

DISCUSSION

In this study females (55%) slightly out numbered the males (45%). Majority of the patients (68%) were under 35 years of age and only 3% were above 50 years of age. Current guidelines stress upon taking informed consent[1,2]. In our study informed consent was obtained in all cases. Depression was the commonest indication for this therapy and was given to 54% of the cases. More than 35% of the cases receiving ECT were suffering from psychotic illnesses. This is in contrast to a study done on the practice of electro convulsive therapy by Sienaert P et al[3] where the major indication for ECT was depression and less than 12% received ECT for psychotic illnesses. In certain countries ECT is the treatment of choice for schizophrenia[4,5] but in our unit it is given only in catatonic schizophrenia and schizophrenia unresponsive to pharmacological treatment.

In our study most of the cases received unmodified ECT due to non-availability of anesthetic services. Modified ECT was given to those who were suffering from medical problems along with their mental illness such as myocardial infarction, osteoporosis and in pregnancy. Although sine wave device used is associated with increased risk of cognitive side effects[6], none of the patients in this study developed any cognitive side effects.

In our study bilateral temporal electrode placement was used along with fixed high dose strategy to administer ECT in all cases. Despite many trials, the relative efficacy of right unilateral and bilateral ECT is controversial[7,8,9]. Some studies have found superior efficacy with bilateral ECT[10,11,12] where as others have reported equivalent efficacy[13,14,15]. Given this uncertainty the American Psychiatric Association Task Force on ECT recently recommended that electrode placement be determined on a case by case basis[7]. In Japan[16] and certain other Asian countries[17] unilateral electrode placement is used for administering ECT.

Generalized seizure of adequate duration is necessary for producing antidepressant effect[18,19,20]. In this study the duration and strength of seizures was monitored by the doctors. 94% of the seizures lasted longer than 20 seconds, which are adequate and effective seizures. Prolonged fits are associated with cognitive side effects and can occur in 2% to 19% of the cases[21,22]. There was no instance of any patient developing prolonged fits in our study.

According to American Psychiatric Association guidelines on ECT, treatment should continue until remission is obtained or recovery plateaus are achieved. Average number of treatments needed to achieve remission is 8 to 10[23]. Only 2% of the patients received more than 6 ECTs in this study, which shows there was good response with less number of treatments in our study.

CONCLUSION

Our study demonstrated that ECT was appropriately and adequately used for various indications especially for depressive disorder, bipolar disorder and schizophrenia. The duration and strength of convulsions were adequate, 90% of seizure lasted between 20 and 50 second. The present finding also demonstrate that ECT practice in Psychiatry Unit Khyber Teaching Hospital, Peshawar is not performed according to the currently available international guideline because of equipment and personal resource shortage.

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ORIGINAL ARTICLE

PREDISPOSING FACTORS AND MANAGEMENT OF GENITOURINARY FISTULA

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ABSTRACT

Background: This study was carried out to determine the key predisposing factors and management outcomes of urogenital fistulae so that preventive and curative measures could be devised.

Research Methodology: This observational prospective study was carried out in the Department of Gynecology and Obstetrics of Lady Reading Hospital, Peshawar over a period of one year from October 1996 to October 1997. Data was collected from patients with urinary incontinence. It included age, parity, address, socio-economic and education status, detailed obstetrical history including place and mode of delivery and post delivery complications, past surgical history, history of pelvic malignancy and radiotherapy and details of previous fistula surgery. Specific investigations were dye test, intravenous pyelography (IVP) and cystoscopy. Fistula repairs were done in 50 patients.

Results: Incidence of urinary fistula in this study is 0.9%. Out of total of 50 cases (39) 78% were of obstetrical origin, 10 (20%) of gynecological origin and one patient was found to have congenital fistula. In terms of age out of the total of 50 cases 17 (34%) were found to be below 30 years of age, whereas 33 (66%) of the patients were more than 30 years of age. The parity parameter of the study suggests that the overall distribution pattern comprises of primis 8%, mulliparas 24%. Grand multis 46% and great grand multis 22% respectively. 12% of patients were found to be literate. Obstructed labor and delivery and difficult labor leading to caesarean section or instrumental delivery made 56% of total. 18% of causes were attributed to rupture uterus cases whereas 20 % were found to have been caused by gynecological surgeries. Urogenital fistulae repairs were carried out vaginally in 45 cases where as the remaining 5 cases of ureterogenital fistula were repaired abdominally. The overall success rate was 84% in this study.

Conclusion: A familiarity with etiological factors associated with fistula formation and knowledge of various methods to adequately manage these risky factors are necessary for prevention of this vexing complication. More surgeons should be trained in fistula surgery by establishing the fistula centers.

Key words: Vesicovaginal, urogenital, obstructed labour, ureteric fistula.

INTRODUCTION

Genitourinary fistula may be defined as an abnormal communication between urinary and genital organs. It has existed in women since time immemorial (1935). The first mention of fistula in literature is found in Al Kanoon (Ibna Seena) in 1852. Sims of Alabama described a reproducible method of repair by vaginal approach. In 1890 Trendelenberg described the suprapubic transvesical route.

In Pakistan like other developing countries, obstetrical causes are still responsible for 80-90% cases of urogenital fistula while in advanced countries these are found either following pelvic surgery or pelvic radiotherapy. The reasons for high incidence of obstetrical fistulae in our set up are malnutrition, poor hygiene and un-treated infections in childhood resulting in to stunted growth and contracted pelvis. There is almost no concept of antenatal care and hospital confinement. 90% of deliveries are conducted at home. The lack of skilled obstetrical care, inadequate transport system, late referrals and arrivals in hospitals are implicating causative factors. Gynecological fistula can result from simple or complicated hysterectomy or laporatomy. It may also occur following radiation of neoplasia cervix and uterus. In difficult laporatomies in which dense adhesions are encountered or in cases of large adherent fibroids, ovarian cysts distorting the pelvic cavity, severe endometriosis or pelvic malignancy, there is increased chance of post surgery fistula formation.

RESEARCH METHODOLOGY

This observational study was carried out in postgraduate Medical Institute of Lady Reading Hospital Peshawar over a period of one year starting from October 1996 to October 1997. Fistula repair surgeries were carried out in 50 patients. Proforma was designed and data collected from patients with the urinary incontinence. Patients with urinary incontinence due to genitourinary fistulae were included and those with urinary incontinence due to stress and urge incontinence were excluded from the study. Data included age, parity, educational and socio-economic status,

detailed obstetrical history including mode and place of delivery, post delivery complication, past surgical history, history of pelvic malignancy or radiotherapy and details of previous fistula repairs. Besides, routine investigations, a number of other investigations were also performed. Preliminary examinations under anesthesia (EUA) and dye test were done in almost all cases to carefully assess the condition of tissues and to confirm the urinary extrauretheral leakage. Intravenous pyelography (IVP) was carried out to assess status of upper renal tracts, any compromise in form of hydroureter or hydronephrosis and to identify site of leakage or fistula. In five (05) cases, cystoscopy was done to identify the exact fistula site.

All repairs were attempted after an interval of three months. During the waiting period, antibiotics were given to prevent infection. Associated conditions such as anemia and urinary tract infection were managed. For ammonical dermatitis silicone barrier cream was advised. Local estrogens and steroids were also prescribed. For obstetrical fistula associated with lower limb weakness, foot drop and limb contractures physiotherapist were consulted.

Repair methods varied with the type and locations of fistulae. For 5 cases of uretero-vaginal fistulae, ureteroneocystostomies were performed while the remaining cases were managed using Lawson Tait method via the vaginal route. Besides routine post operative care, continuous bladder drainage was accomplished by a transurethral catheter for 2-3 weeks. Antibiotics such as cephalosporin and quinolones were used in all cases according to urine culture and sensitivity report.

RESULTS

Incidence of urinary fistula in this study is 0.9%. Details are shown in Table 1.

Table 1: Types of Urinary Fistulae

Types	No. of Patients	Percentage
Obstetrical	39	78%
Gynecological	10	20%
Congenital	1	2%

Age, parity and educational status of our cases is shown in Table 2

Obstructed labor and delivery and difficult labor leading to caesarean section or instrumental delivery made 56% of total. 18% of causes were attributed to rupture uterus cases whereas 20% were found to have been caused by gynecological surgeries. In one case multiple vesicovaginal fistulae were observed after evacuation and curettage by an in-experienced practitioner. The perinatal outcome was found to be poor as out of the total 39 cases 19 (48.7 %) patients had given birth to stillborn and in some cases early neonatal death were also reported. Details are shown in Table 3.

Table 3: Causative factors for urogenital fistula formation

Etiology	No. of Patients	Percentage
Obstructed labour and delivery	17	34%
Caesarean section for obstructed labour	8	16%
Forceps delivery	3	6%
Rupture uterus	6	12%
Rupture uterus and bladder	3	6%
Caesarean hysterectomy	2	4%
Total abdominal hysterectomy	8	16%
Vaginal hysterectomy	1	2%
Evacuation and curettage	1	2%
Congenital fistula	1	2%

The interval between inflicting injury and appearance of urinary incontinence registered varied pattern. This fact is substantiated by the data presented in Table 4.

Table 2: Relation of Urinary Fistula with age, parity and educational status of patients

Age		Parity	Educational status
Below 20 Years	2 (4%)	Primiparas 4 (8%)	Literate 6 (12 %)
Between 20-30	15(30%)	Multiparas 12(24%)	
Between 31-40	21 (42%)	Grand multis 23 (46%)	Illiterate 44 (88%)
Above 40 Years	12(24%)	Great grand multis 11 (22%)	

Table 4: Interval between inflicting injury and appearance of urinary incontinence.

Time Interval	No. of Patients	Percentage
Within one day	10	20%
2 –10 days	25	50%
11 days or more	14	28%

The time interval between the inflicting injury and appearance of urinary incontinence, mostly in the obstetrical fistula also reported quite discouraging statistics. Out of the 50 cases 9 (18%) of patients did not seek medical assistance for 10 years. The longest interval in one case was observed to be 16 years. However in gynecological fistulae 16 (32%) cases had registered this interval ranging from 3-6 months.

Further characteristics of fistulae including size, location and number also reported asymmetrical pattern. The position of 30 (60%) of fistulae were found to be lateral vaginal, retropubic and giant fistulae. 8 (16%) were juxtacervical, 7 (14%) vault and 5 (10%) were observed to be uretero vaginal fistulae. The higher incidence of juxtacervical, midvaginal, massive or giant fistulae can be attributed mainly to etiological factor i.e obstructed labor. Vault fistulae followed total abdominal hysterectomies whereas one case of vaginal hysterectomy and repair resulted in retro pubic fistula.

In terms of the size 17 (34%) cases were having more that 2 cm size. Although in most of the cases 44 (88 %) single fistula was observed however 6 (12%) patients had multiple fistulae mainly due to obstructed labour.

Table 5: Types of Repair Surgery for Urogenital Fistula.

Etiology	No. of Patients	Percentage
VVF repair	35	70%
Juxtacervical Fistula repair	7	14%
VVF repair and removal of bladder stones	1	2%
Martius grafting	1	2%
VVF & Perineotomy	1	2%
Ureteroneocystostomy	5	10%

The overall success rate was quite encouraging as in 42 (84%) of cases results were successful. Out of total 8 (16%) failed cases, 4 cases were of giant fistulae and 4 patients had previous failed repairs.

Immediate complications following repair surgery were not seen. Long term complications including stress incontinence, detrusor instability, urinary dysfunction and impaired bladder compliance were reported by 11 patients. 8 patients complained of non operative complications such as amenorrhea and foot drop was reported by a 04 patients. For detrusor instability and voiding dysfunction medical treatment was prescribed. For amenorrhea hormonal treatment was advised whereas one patient with severe leg weakness and paresthesia improved with physiotherapy.

DISCUSSION

Incidence of urogenital fistulae is different in various communicates because the causative factors differ. In Pakistan, incidence of VVF varies from 0.36% to 0.8% (Ahmad 1988). In United Kingdom, post hysterectomy fistula rate is approximately 1 per 1300 operations.

High incidence in this society can be attributed to a number of key factors including poor social and economic conditions of the people, mal-nutrition, poor hygiene, untreated infections in childhood resulting in stunted growth and contracted pelvis. The concept of antenatal care is extremely poor in most of the segment of the society. The lack of skilled obstetric care, inadequate transport system, late referrals and arrivals in the hospitals all eventually lead to obstructed labour lasting 2-3 days resulting in dead fetus and severe pressure necrosis to bladder base ultimately ending up in fistula formation. Gynecological fistulae were observed after difficult hysterectomies due to distorted pelvic anatomy mainly due to large fibroids and adhesions.

Current estimates indicate that VVF occurs in 1-3 of every 1000 deliveries in West Africa where as many as 15000 to 20000 women await repair in Nigeria alone. The estimated[2] third world prevalence is 1-2/1000 deliveries with perhaps 50,000 to 1,00,000 new cases each year.

Urogenital fistulae were mostly seen in great grand multis and illiterate poor ladies. It is in sharp contrast to western studies where majority of patients are educated. Grand multis and great grand multis made a negligible portion of patients while ages were in same proportion.

In this study, obstructed labor leading to delivery and caesarean section or rupture uterus and subsequent hysterectomy made 76 % while gynecological causes were 20% of the total number of cases. Studies carried out in the developed countries[4,7] suggest that key etiological factor are mainly related to gynecological and not obstetrical. Various studies[4,12] have identified that 70 to 75% causes relates to gynecological factors, 10 to 15% obstetrical whereas radiotherapy, malignancy and others such as trauma make 13%.

Conversely, local studies[1,6,8] has identified that 70% of cases were due to obstetrical labor and 20% cases pertains to post surgical complication. In developed countries, malignancy of genital tract and radiotherapy are main causes of VVF. One of Egyptian[5] study argued that 71.8% of VVF resulted from surgical procedure, 25% from vaginal interventions and prolonged labour.

Hysterectomy either abdominal or vaginal, was a common cause (53.1%) fallowed by cesarean sections 25% and forceps delivery in 4% cases. Regarding time interval between appearance of fistula and repair 18% patients waited for 5 to 10 years, with 16 year as the longest interval. These were mostly of obstetrical etiology. Due to poverty, illiteracy, social factors and inadequate transport system, these patients seek surgical intervention after very miserable periods of several years.

In western studies[3,4,12] vault and mid-vaginal fistulae are common as compared to urethra, giant and juxtacervical fistulae. Reasons being that majority of fistulae are seen after gynecological surgeries. Giant fistulae are seen in cases of pelvic malignancy and as complication of radiotherapy. In this study, giant fistulae > 2 cm were seen in 17 patients (43%). Such high number is because of obstructed labor where bladder is compressed between fetal head and symplysis pubis leading to severe ischemic necrosis. Others studies showed that the size ranges between 1 to 2 centimeters. In the instant study, multiple fistulae were seen in 6 (12%) cases, which were mostly suburetheral or midvaginal.

Healing rate[6,11] documented in literature ranges form 73 to 100% for abdominal intervention to close the fistulae. Success rate, in this study, was 84% and failure 16%. This suggests that the results of this study are inline with the results of the other studies. Elkins[4] reported 50% success on second and only 33% success on 3rd attempt showing that as number of attempts increase success rate falls. Repeated attempts at repair gradually impair the prognosis as each operation produce more fibrosis and further impair the blood supply. "The law of diminishing returns operates" (Lawson 1980).

Waldijk[12] noted that primary closure rates changed from 90% in those with simple VVF to 77% in those fistulae involving the urethra. In this study 13 patients had previous VVF repairs and among them 4 patients had incontinence at the time of discharge from the hospital.

CONCLUSION

The health needs of most of the women in developing countries are not being adequately met. In rural areas, trained health workers, drugs, blood and operative delivery may by urgently required but these are not available or they may not be consulted or reached in time. Unfortunately, there is a great shortage and mal-distribution of health worker in many developing countries. The most practical way is to train *'Dais'* (Lady Health Workers) to recognize risk cases and refer them early to nearby hospitals with specialist cover. These hospitals must be provided with ambulances for transport of high risk cases and emergency operation facilities. If during gynecological surgery there is any element of injury to bladder like blood stained urine catheter should be retained for 7 to 10 days and on exclusion of slough on per speculum examination it should be removed. Ojanuga has stressed on prevention not only by increasing awareness in masses but also in other family members who are often decision makers. This is not all; such patients also need social and psychological rehabilitation as they are isolated from the society.

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ORIGINAL ARTICLE

FREQUENCY OF URINARY RETENTION AND DURATION OF HOSPITAL STAY AFTER EARLY REMOVAL OF CATHETER FOLLOWING TURP

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ABSTRACT

Background: Transurethral prostatectomy is still the gold standard surgical treatment of bladder outflow obstruction due to prostatic enlargement. Post-operative care of TURP includes prolonged bladder irrigation that places a heavy burden on the nursing staff and a substantial strain on the budget. There is a trend towards early catheter removal that leads to early hospital discharge without causing additional morbidity and thus saving cost. Early removal of the indwelling Foley catheter after transurethral resection of prostate, significantly shortens the hospital stay, without causing additional morbidity, the savings resulting from the reduction in hospital stay are considerable. This study was conducted to assess the frequency of urinary retention and duration of hospital stay after early removal of catheter following TURP.

Research Methodology: The study was conducted from 1st January, 2002 to 31st December 2002 at Urology Department, Pakistan Institute of Medical Sciences, Islamabad. It was a descriptive study and a total of 100 patients were included who underwent TURP. The numerical data was analyzed, using a commercially available SPSS version 10. As our study was a simple descriptive study; so no test of significance was applied.

Results: Post operatively irrigation was discontinued after 24 hours in all the patients if it was clear. 11% of the patients developed retention and required re-catheterization. 95% of the patients had 48 hours post-operative hospital stay while only 5% of the patients had to stay for more than 48 hours. Two third of the patients presented with urinary retention and one third presented with mixed obstructive and irritative symptoms. Weight of the prostate was measured by pre operative ultrasonography. More than half of the patients had weight between 40 to 60 grams, followed by one fourth of patients between 20 to 40 grams. Only 5% of the patients had weight between 80-100 grams. Most of the patients who developed clot retention had prostatic weight more than 60 grams with only 2 patients having prostatic weight less than 60 grams. Incidence of malignancy was only 3% in prostatic chips sent for histopathology. There was no mortality observed during the study.

Conclusion: Early (48hrs) Catheter removal is a better option in a selected group of patients; significantly shortens the hospital stay, without causing additional morbidity, the savings resulting from the reduction in hospital stay are considerable.

Key words: Transurethral prostatectomy (TURP), Early catheter removal.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a particularly common feature of aging male and is considered to be responsible for urinary symptoms in a large group of men over the age of 50 years.[1] The cause of BPH is not known, it is thought that advancing age, functioning testicles, and androgen production contribute to the development of this disorder.[2] A considerable percentage of individuals are bothered by their symptoms but are unwilling to encounter the risk of surgery. Nothing can prevent the development of BPH. Treatment is based on quality of life issues, such as incontinence, urgency, frequency of urination, and nocturia.

Patient education should begin in the fourth decade of life to increase awareness of symptoms of BPH. It is important for men to know not to wait to seek treatment. Delay could result in severe obstruction of urinary system and subsequent kidney damage.[3] When the prostate enlarges to the point of symptomatic urinary outflow obstruction, a transurethral resection of the prostate (TURP) is the treatment of choice.[4]

With the introduction of new optical systems and advances in technology, transurethral resection is now most widely used method of management of prostatic adenoma[5]. It is usually performed under a general or spinal anesthesia. However, every surgical technique basically employs the principle that the resection should be performed in a routine step-by-step manner .The amount of intraoperative bleeding depends on the size of the prostate, the length of time required

to resect the adenoma, and to a degree, the surgeon's skill.[6]

TURP is associated with number of complications. The most serious TURP-associated complication is known as TURP syndrome. It occurs in about 2% of TURP patients, usually within the first 24 hours.[3,7] Abnormal vascular absorption of irrigating fluid during surgery causes severe dilutional hyponatraemia and hypervolaemia. The amount of fluid reabsorbed depends on the duration of resection, the number and size of opened venous sinuses, and the hydrostatic pressure exerted by irrigating fluid.

The most common complication after TURP is hemorrhage. The bleeding may be arterial, but venous bleeding is more common. Bladder spasms or movement may initiate bleeding. Meticulous surgical hemostasis followed by appropriate catheter balloon position and sufficient inflation can prevent or control hemorrhage.[8]

Bacteremia is another important complication of TURP. In catheterized patients, the incidence of infection is 50% or greater.[9] Urinary-tract bacteria enter the systemic circulation through prostatic vessels that are cut during surgery. The longer the length of time the catheter remains in place the greater the risk of infection. Virtually all patients have bacteria in the urine after 10 days of catheter use; however, other patient conditions may not permit the bacteria to become problematic.[10]

One of the important postoperative complications after removal of Foley catheter following TURP is urinary retention. Bladder volume at initial presentation, in patients with urinary retention provides important information about the likelihood of re-establishing spontaneous voiding after catheter removal following TURP.[11]

The urinary catheter can become obstructed by clots or tissue debris. By assessing the color and consistency of bladder returns, patency of inflow and outflow tubing, and rate of irrigation, urinary retention can be prevented post-operatively.

Early removal of the indwelling Foley catheter after transurethral resection of prostate, significantly shortens the hospital stay, without causing additional morbidity, the savings resulting from the reduction in hospital stay are considerable" There is a trend toward early catheter removal after TURP even to the extent of performing it as a day case.[12]

Patients should be warned that there is a significant chance of failure to void after TURP, the exact risk depending on their mode of presentation. Traditionally, urethral catheter was removed on the 3rd to 5th day postoperatively, however the best postoperative day of cathedral withdrawal is not well established.[13] It varies from center to center.

We are conducting a study to share our experience in the early removal of Foley catheter after TURP, and to study the frequency urinary retention and assess the duration of hospital stay in patients undergoing TURP after early removal of Foley catheter.

RESEARCH METHODOLOGY

Operational Definition: By early catheter removal we mean removal of catheter after 48 hours post-operatively, while conventionally we remove catheter on fourth post-op day i.e. after 96 hours.

This descriptive study was conducted from 1st January, 2002 to 31st December 2002 at Urology Department, Pakistan Institute of Medical Sciences Islamabad.

A total of 100 patients undergoing TURP were included, by non-probability convenient sampling.

The following patients were excluded

* Patients with chronic retention of urine
* Patients requiring bladder irrigation for more than 48 hours
* Diabetic patients
* Patients with other associated bladder outlet obstruction like urethral stricture etc.
* Neurogenic bladder

All the patients admitted in Urology department, Pakistan Institute of Medical Sciences Islamabad with enlarged prostate, fulfilling the above-mentioned criteria, were selected for the study. Complete history and physical examination along with relevant investigations were done preoperatively in all the patients. TURP was performed on all the patients by Blandy's technique, using continuation irrigation sheath and 27 Fr cutting loop. A 24 Fr three-way Foley catheter was passed for irrigation purpose. Continuous bladder irrigation was done with 0.9% Normal Saline, for the first twenty four hours, postoperatively.

Patients were assessed after twenty four hours. Bladder irrigation was discontinued, if it was clear; and if not. It was continued for the next twenty four hours. After forty eight hours, patients were reassessed. They were counseled and educated about problems after catheter removal. Catheter was removed if there was no heavy bleeding and the patients were asymptomatic. They were asked to take fluids and void. After successful voiding, patients were discharged. Those who developed urinary retention were catheterized again. Patients who developed massive hematuria or had associated clot retention, had to stay in the hospital. Patients were followed after two weeks in Out-patient Clinic and were enquired about their voiding pattern and any other complaints. Histopathology reports were also reviewed.

The numerical data was analyzed, using a commercially available SPSS version 10. As our study was a simple descriptive study; so no test of significance was applied.

RESULTS

A total of 100 patients at the department of Urology, Pakistan institute of Medical Sciences with bladder outlet obstruction secondary to benign prostatic hyperplasia were included in this study.

Post operatively irrigation was discontinued after 24 hours in all the patients if it was clear. 11% of the patients developed retention and required re-catheterization. 95% of the patients had 48 hours post-operative hospital stay while only 5% of the patients had to stay for more than 48 hours.

The age of the patients ranged from 48 to 96 years wit a mean age of 65.93 years. More than half of the patients were between 56 to 65 years of age and almost one fourth of the patients were between 66 to 75 years. Only few patients were below 55 years and above the age of 86 years. Almost two third of the patients presented through the casualty department. One-fourth in the out patient clinic and 8 patients with urinary retention were attended in other wards of the same hospital.

Two third of the patients presented with urinary retention and one third presented with mixed obstructive and irritative symptoms. Weight of the prostate was measured by pre operative ultrasonography. More then half of the patients had weight between 40 to 60 grams, followed by one fourth of patients between 20 to 40 grams. Only 5% of the patients had weight between 80-100 grams.

Pre-operative urinalysis revealed significant pyuria (> 4 pus cells) in 68% of the patients, out of them only three developed growth on urine culture. Most of the patients who developed clot retention had prostatic weight more than 60 grams with only 2 patients having prostatic weight less than 60 grams. Incidence of malignancy was only 3% in prostatic chips sent for histopathology. There was no mortality observed during the study.

DISCUSSION

With the introduction of new optical systems and advances in technology, transurethral resection of prostate is now the most widely used method in the management of prostatic adenoma[5]. It is still the gold standard surgical treatment of bladder outflow obstruction due to prostatic enlargement[14].

Post-operative care of TURP includes prolonged bladder irrigation that places a heavy burden on the nursing staff and a substantial strain on the budget. There is a trend towards early catheter removal that leads to early hospital discharge with out causing additional morbidity and thus saving cost.[15,16]

The most significant finding regarding postoperative urinary retention in my study is that, most of the patients who developed clot retention had larger prostates, because of the significantly higher tendency for postoperative hemorrhages in large prostates[12].

The other common post operative complication were persistent hematuria that was 12%, urinary tract infection in 19% which is higher than other international studies by Muller CJ[17], and Gordon NS[18]. Patients with hematuria were managed with Frusemide injection and increased oral intake of fluids was encouraged.

Urge incontinence and nocturia were the most distressing symptoms postoperatively, similar to the findings of Langwaade et al at Blackpoll, United Kingdom. Failures have to be considered against the comfort enjoyed by the majority of successful cases and the reduced workload of the staff by early catheter removal. The final success rate of early catheter removal (86%) is almost similar to other studies[12].

The prostatic chips which were sent for histopathology, revealed malignancy in 03% of the cases and this is in contradiction to the finding of Rehan A[19] who observed 27% incidence of malignancy and Rasool M[20], who noticed 19% incidence of prostatic cancer in patients presented with bladder outlet obstruction secondary to enlarged prostate. This low frequency of malignancy in my studies can be related to preoperative evaluation of the enlarged prostates that are suspected malignant on digital rectal examination and assisted by ultrasonography and prostate specific antigen (PSA) levels. These cases of malignancy diagnosed preoperatively were excluded from my study.

There was no mortality observed during my study.

Only 11% of the patients developed retention after early catheter removal, which is comparable [that is 12%) of Reynard JN study at Newzeland[11]. Gordon NS at Queensland, Australia observed 17.24% incidence of postoperative clot retention[18]. Even lesser percentage of patients developed clot retention in the international studies, that 1.7% observed by Muller CJ et al[17], 1.8% by Agerwal SK[15] and 4% by Iderpol L.[13]

5% of the patients required readmission to the hospital, 3 because of massive hematuria and 2 had associated clot retention. They were recatheterized and bladder irrigation started. 3 of them required blood transfusion that is comparable to the study conducted by Muller et al, in which 2.5% of the patients required blood transfusion.

Patients' age ranged from 48-86 years, with a mean age of 65.93 years. This mean age of presentation is comparable to the studies of Perera ND[12] and Iderpol L[13] where mean age was 67.5 years and 68.8 years respectively. A noteworthy finding was that majority of the patients presented in the 6th decade of life, a finding similar to that observed by Maqbool A[21]. sss 55% of the patients had average prostatic weight of 50 grams which is comparable to the findings of Iderpol L et al[13]. In his studies average prostatic weight was 54 grams. 25% of patients had prostatic weight of 30 grams, which is slightly more than the study of Perera ND[12]. 5% of the patients also under went TURP having prostatic weight of 80 grams, which is not observed in the international literature.

In studies regarding early catheter removal, more than two third of the patients had significant pyuria (> 4 pus cells) on their preoperative urinalysis. This high rate of the urinary tract infection is not an unexpected happening as in catheterized patients, the incidence of infection is 50% or greater[9] and a majority of the patients in my study presented with urinary retention and were catheterized.

This study of 100 consecutive patients was carried out at the department of urology Pakistan Institute of Medical Sciences to share our experience in the early removal of Foly catheter after transurethral resection of prostate.

CONCLUSION

Early (48hrs) catheter removal is a better option in a selected group of patients; significantly shortens the hospital stay, without causing additional morbidity, the savings resulting from the reduction in hospital stay are considerable.

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