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EDITORIAL

INDUCTION OF TRAINEE MEDICAL OFFICERS (TMOs)

Training of the next generation of doctors is a priority for every Government. Generally, policy makers in the Government would chalk out future plans based on expected or intended expansion and upgradation of health facilities coupled with population growth and disease burden. Pakistan and Khyber Pakhtunkhwa is no exception.

Looking at the past and present, the process of induction for training of postgraduate students in medical profession is at best a knee jerk reaction. This faulty process has been one important cause for deterioration in training with consequent downslide in service provision. One of the major problems for planners is that they would not have a clue as to how many postgraduate students would need to be accommodated in training institutions recognized by the College of Physicians and Surgeons. The result is that when FCPS part-I result is announced, unexpected number of postgraduate students passing part-I would have to be accommodated. Government, under tremendous pressure from society, professional bodies and politicians, would try to provide training slots to almost every student passing part-I examination.

All these students were to be given stipend for which finances had to be arranged on emergency basis. This has led to very confusing and irrational organization in post graduate training and has been a major cause of frustration and at time irritation among the postgraduate trainees. Terminology such as Government TMOs, Private TMOs, Floating TMOs and Original TMOs speaks very clearly and loudly about the confusion in the system, lack of planning and spontaneous thoughtless reaction on the part of the Government.

The issue got further complicated as no body or Government took the trouble to get the other institutions in the province recognized for postgraduate training by the CPSP. The result is that all four institutions are now choked with postgraduate trainees. The situation got worse when CPSP allowed sixteen postgraduate trainees per supervisor. In a 40 bedded unit if you have 48 postgraduate trainees, you can well imagine the kind of training that these students will receive. This becomes much more important in surgical disciplines.

Needless to say that we need a system that would give us a rough estimate of how many students would pass FCPS part-I examination each year? We need to limit number of trainees per unit to ensure quality training. We also need to get recognized many more institutions for postgraduate training by College of Physicians and Surgeons in order to accommodate the rising number of postgraduate students.

I will be failing in my duty if I do not mention the need of the society. The system that we need to develop, shall also address the issue of prioritizing the disciplines of medicine that got neglected in the past but are urgently required such as Anaesthesiology, Haematology, Oncology and Forensic medicine. Career guidance, job prospects in the future and incentives during training might help attract postgraduate students to these direly needed and extremely deficient disciplines of medicine.

Recently, six institutions have been recognized in Khyber Pakhtunkhwa by CPSP for postgraduate training. This will help the placement of TMOs as well as help these health facilities to grow and provide quality services to masses. Current Government is in the process of developing a system for TMOs induction in the hope that it will address almost all the issues related to their induction to training program. In the beginning, a few might feel at a disadvantage. My advice to them is to be patient because I believe that any system would bear desirable fruit if given a chance compared to no system.

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ORIGINAL ARTICLE J. Med. Sci. (Peshawar, Print) January 2011, Vol. 19, No. 1: 2-4

FREQUENCY OF PULMONARY MYCOSIS

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ABSTRACT

Objectives: To find out the frequency of fungal infections (pulmonary mycosis) in Microbiology Laboratory of Khyber Medical College, Peshawar.

Material and Methods: In order to find out the frequency of fungal infections of the chest, a retrospective descriptive study was performed in the Pathology Department of Khyber Medical College Peshawar. All sixty seven (67) patients, who submitted their sputum for microscopy during the year 2009, were included in the study.

Results: Among the 67 patients, 34 were males and 33 were females. A total 29 (43.3%) patients showed fungal hyphae on direct microscopy of their sputum (positive cases). Out of 34 males, 14 were positive while in 33 females 15 were positive showing a greater frequency in females. Fifty patients were above 60 years of age, 40 patients had a past history of tuberculosis, 20 patients had a history of Chronic Obstructive Pulmonary disease (COPD), 17 patients were diabetic and 2 patients had cancer.

Conclusion: The frequency of fungal infection is increasing both as an isolated infection and as a concomitant infection. Every sputum sample should be examined for fungal hyphae to exclude pulmonary mycosis. It is also recommended that a sputum examination should be a must for immunocompromised as well as chronically ill patients. Efforts should be made to create awareness in public as well as health care providers about the recent frequency of pulmonary mycosis.

INTRODUCTION

Besides tuberculosis, awareness about chest diseases is increasing and more non-tuberculous lung infections are being recognized. Pulmonary mycosis is not uncommon.[1] In the last few decades, fungi have emerged as important human pathogens.[2] Invasive fungal infections are an important cause of morbidity and mortality especially among immunocompromised patients.[3] The frequency is also increasing in patients with pulmonary tuberculosis.[4] These patients suffer prolonged periods of neutropenia and fungal pathogens encountered in these situations have often disseminated by the time they are recognized clinically. Allergic bronchopulmonary aspergillosis is an immunologically mediated lung disease that is caused by hypersensitivity to antigens of the genus Aspergillus.[5] Mucormycosis is a highly invasive, devastating and usually fatal fungal infection of the sinuses, brain, or lungs that occurs primarily in people with immune disorders. Despite advances in diagnosis and treatment, a high mortality still exists. Diabetics are also very prone to serious fungal infections.[6] Allergic Fungal Sinusitis (AFS) resembles allergic bronchopulmonary aspergillosis, resulting from a hypersensitivity reaction to fungi mediated by IgE & IgG.[7] Fungal pathogens are implicated as an important cause of morbidity and mortality in cancer patients.[8,9] Outbreaks of aspergillosis in patients admitted to intensive care units (ICUs) have been reported.[10] Fungi like *Aspergillus* spp. can cause pneumonia in ICU patients without the classical predisposing factors, as well as community-acquired pneumonia in otherwise immunocompetent healthy individuals.[11,12] Fungaemic patients have a two-fold increased risk of dying compared to bacteraemic patients.[1]

Systemic fungal infections are going to assume increasing importance as a major cause of morbidity and mortality among these patients. However, very few studies have attempted to explore the subject and the incidence of systemic fungal infections. Prompt and effective treatment is required to counter these potentially life-threatening infections. In order to create awareness in health care providers about the increasing trend of pulmonary mycosis we planned this study to determine the frequency of systemic fungal infections in patients who submitted their sputum samples during the year 2009.

MATERIAL AND METHODS

The study was conducted from 1st January to 31st December 2009 at the Department of Pathology,

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Khyber Medical College, Peshawar. This was a retrospective descriptive study. All the patients who submitted their sputum samples for microscopic examination during the above mentioned time period were included in the study. Three slides were prepared from each sputum sample. Hundred fields were examined in each slide. All the slides were examined by the technical staff at the microbiology Lab and were cross checked and confirmed by a microbiologist. The diagnosis of mycosis was based on the presence of fungal hyphae on direct microscopy.

RESULTS

A total of 67 patients submitted their sputum samples for microscopic examination in Pathology Department, Khyber Medical College, Peshawar, during the year 2009. Thirty-four (50.7%) were male patients and 33 (49.3%) were females. Out of these 67 patients 29 (43.3%) were positive for fungal hyphae. Among 34 males 14 (20.9%) were positive and in total of 33 females, 15 (22.4%) patients showed the presence of hyphae in sputum samples. Fifty (74.6%) patients were above 60 years of age. Fourty (59.7%) patients had a past history of tuberculosis, while 28 (41.8%) patients were on anti-tuberculous drugs, 20 (13.4%) patients had past history of COPD, 7 (10.4%) patients were new cases of COPD not yet diagnosed and two were neither having past history of COPD nor they are active cases. Out of 67 total patients, 17 (25.3%) were having diabetes mellitus.

DISCUSSION

Fungi are eukaryotes that possess thick chitin-containing cell walls and ergosterol-containing cell membranes. Fungi can grow either as budding yeast cells or slender filamentous hyphae. Hyphae may be septate (with cell walls separating individual cells) or aseptate, which is an important distinguishing characteristic in clinical material. Some of the most important pathogenic fungi exhibit thermal dimorphism; that is, they grow as hyphal form at room temperature but as yeast at body temperature. Fungi may produce sexual spores or, more commonly, asexual spores referred to as Conidia. The latter are produced on specialized structures or fruiting bodies arising along the hyphal filament. Fungi may cause superficial or deep infections. Superficial infections involve the skin, hair, and nails. Fungal species that are confined to superficial layers of human skin are known as dermatophytes. These infections are commonly referred to by the term "Tinea" followed by the area of the body affected (e.g., Tinea Pedis: "athlete's foot", Tinea Capitus "Ring worm of the scalp"). Certain fungal species invade the subcutaneous tissue, causing abscess or granulomas, (e.g., sporotrichosis and tropical mycosis).

Deep fungal infections can spread systemically and invade tissues, destroying vital organs in immunocompromized hosts, but usually heal or remain latent in otherwise normal hosts. Some deep fungal species are limited to a particular geographic region. Opportunistic fungi (e.g., Candida, Aspergillus, Mucor, and Cryptococcus), by contrast, are ubiquitous organisms that colonize normal human skin or gut without causing illness. Only in immunocompromized individuals do opportunistic fungi give rise to life-threatening infections characterized by tissue necrosis, hemorrhage and vascular occlusion, with minimal to no inflammatory response.[13]

In the invasive lesions the respiratory system is most commonly affected, where the pathogenic mechanism is attachment of the organisms to the upper respiratory tract epithelium followed by necrosis of the cells and an inflammatory response. When the process extends to alveoli, there is usually interstitial inflammation, but there may also be some outpouring of fluid into alveolar spaces, so that on chest films the changes may mimic bacterial pneumonia. Damage to and denudation of the respiratory epithelium inhibit mucociliary clearance and predispose to secondary bacterial infections.[13]

In our study the frequency of fungal infection was 43.3% which was much higher than the 8.2%, reported by Shafique et al[1], the 16% reported by Anjum et al.[4] and lower than the 64% reported by Petri MG et al.[14] Our results show a higher frequency than that of Shafique et al[1] because they selected patients from Multan region and our catchment area was much higher i.e., from the whole Frontier Province. The reason of the higher frequency in our study than that of Anjum et al[4] was that they selected patients with pulmonary tuberculosis for their study, and we included all the patients that came for sputum examination to our unit. The frequency is lower than 64% reported by Petri MG et al[14] because they reported this figure in seriously or terminally ill patients who were admitted to intensive care units.

CONCLUSION

The frequency of fungal infection is increasing both as isolated infection and as a concomitant infection. Every sputum sample should be examined for fungal hyphae to exclude pulmonary mycosis. It is also recommended that a sputum examination should be a must for immunocompromised as well as chronically ill patients.

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FINE NEEDLE ASPIRATION CYTOLOGY VERSUS HISTOPATHOLOGY OF BREAST MASSES

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ABSTRACT

Objective: To evaluate the accuracy of fine needle aspiration (FNAC) of breast masses using histopathology as gold standard.

Material and Methods: This study was conducted from January 2007-June 2008 in patients who attended the out patients department of Khyber Teaching Hospital, Peshawar and Mumtaz Surgical Hospital Peshawar. A total of 90 patients with age range 13-80 yrs were included in this study. All patients who had FNAC underwent incisional or excisional biopsy to confirm the diagnosis. All the FNAC smears were categorized according to National Health Services Breast Screening Programme (NHSBSP) 2001-3 criteria into five categories.

Results: In our study, the absolute sensitivity was 71.15%, complete sensitivity was 96.15%, specificity was 92.11%, positive predictive value (PPV) for C5 was 100%, PPV for C4 was 90% and for C3 was 66.67%. The false negative (FN) rate was 1.92% and false positive (FP) rate was 0%. The inadequate rate was 4.4%.

Conclusion: This diagnostic modality may be suitable for developing countries, because of the simplicity and low cost of the procedure.

Key Words: Breast lump, Fine needle aspiration cytology, Histopathology, Biopsy.

INTRODUCTION

The incidence of breast cancer is universally increasing in both developed and developing countries. In many areas of the world it is the most common malignant tumor in females.[1,2] The incidence of breast carcinoma has been increasing rapidly mostly in women above 50 years of age. The rise could be due to awareness and investigations like mammography screening.[3] Breast cancer is also the most frequent cancer in Pakistani women.[4] Approximately one in every nine Pakistani women are likely to suffer from breast cancer which is one of the highest incidence rates in Asia.[5]

The gold standard mode of diagnosis of a breast lump has been excisional biopsy for decades. It gives a precise diagnosis. In younger patients mostly a benign pathological lesion is seen.[6] FNAC is a minimally invasive diagnostic procedure in which there is removal of cells from suspicious masses for diagnostic purposes.[7,8] It has been used as a diagnostic tool together with clinical examination and mammography in patients with breast lesions. It gives a precise diagnosis and reduces the risk of missed diagnosis to less than 1%.[3] FNAC reported by an experienced cytopathologist is now considered by most as sufficient evidence to proceed to definitive surgery and with the help of a radiologist the effectiveness can be maximized.[9] Evaluation of biological parameters by FNAC may be useful to decide the treatment of breast cancer.[10] The purpose of the study was to evaluate the diagnostic accuracy of FNAC results in patients presenting with breast lump considering histopathology as the gold standard.

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MATERIAL AND METHODS

This prospective study was conducted from January 2007 to June 2008. The cases included were those attending the surgical out patient department (OPD) of Khyber Teaching Hospital Peshawar and Mumtaz Surgical Hospital Peshawar. The patients both in reproductive and postmenopausal age groups with age range 13-80 yrs who had a clinical history of breast lump were included in the study. Exclusion criteria were all male patients, those who presented with mastitis and those who were diagnosed on mammography of having a non palpable breast lesion.

All these patients underwent FNAC and had a surgical biopsy. Informed consent was taken. Most of the FNAC were performed by using a 23 gauge needle, mounted on a 10 ml disposable syringe. The mass was immobilized and the needle passed into the lesion. The

needle was moved to and fro and directed at different angles while aspirating. Two passes were made in each lesion. Smears from aspirate were made, fixed in 95% ethyl alcohol, stained with Hematoxylin and Eosin stain and examined under the microscope. The cytological diagnosis was then classified as inadequate (C_1), benign (C_2), atypical (C_3), suspicious for malignancy (C_4) and malignant (C_5) according to NHSBSP criteria 2001-3[11]All these patients underwent incisional biopsy, excisional biopsy or mastectomy. The data of FNAC and histopathology results were then analysed using SPSS to calculate the absolute sensitivity, complete sensitivity, specificity (full), positive predictive values, negative predictive values, false positive and false negative rates according to NHS Breast Screening Programme (NHSBSP) guidelines.[12]

RESULTS

A total of 90 patients were included in this study. Out of these patients, 30(33.3%) were in the age group of less than 30 yrs, while 33(36.7%) were in age group of 30-50 yrs and 27(30%) were above 50 yrs of age. Total patients with the benign lumps were 38, out of them 27(71.1%) were under 30 yrs and 8(21%) were between 30-50 yrs and only 3(7.9%) were above 50 yrs that is in the postmenopausal age group. The rate of malignancy was high in age group 30-50 yrs, 25(48.1%) were malignant and above 50 yrs, 24(46.2%) were malignant with the significant P value 0.005. While under 30 yrs, only 3(5.8%) were found to be malignant and up to the age of 35 yrs 7(7.8%) were malignant. FNAC results in this study showed that in total of 90 patients, 4(4.4%) were in category C1, 36(40%) were in category C2, 3 (3.3%) were in category C3, 10(11.1%) were in category C4 and 37(41.1%) were in category C5.

Out of 36 patients in category C2, 35 were diagnosed correctly as benign and one was malignant (false negative). While in C5 all the 37 patients were malignant (true positive). Among the inconclusive breast lumps, 4 were in category C1, out of which 3(75%) were malignant and 1(25%) was benign. Three (3) breast lumps were in category C3, out of which 2(66.6%) were malignant and 1(33.3) was benign. Ten (10) breast lumps were in category C4, out of which 9(90%) were malignant and 1(10%) was benign. The size of the lumps in the various NHSBSP catories are shown in Table 1. Clinically malignant patients were 43, taking into consideration age, menstrual status, skin appearance, nipple retraction, size, consistency, mobility and margins of the tumor. Out of a total of 90 patients, 37 were malignant and 10 were suspicious for malignancy on FNAC, while 52 were malignant on biopsy.

Complete sensitivity is the number of carcinomas that were not definitely negative or inadequate on FNAC expressed as a percentage of total number of carcinomas that is C3+ C4+C5/52 x 100. Specificity (full) is the number of correctly identified benign lesions (the number of benign results minus the number of false negative) expressed as a percentage of total number of benign lesions aspirated.

Positive Predictive Value (PPV) for C5 is the number of correctly identified cancers (number of C5 results minus the number of false positives results) expressed as a percentage of the total number of positive results. PPV for C4 is the number of cancers identified as suspicious (C4 minus the number of false suspicious results) expressed as a percentage of total number of suspicious results. It was 90%. Similarly PPV for C3 is number of cancers identified as atypical (atypical minus the number of benign atypical results) expressed as a percentage of total number of atypical results. Statistical analysis of FNAC results are shown in Table 2.

Table 1: Tumor Size (Cm) Vs Cytology
n= number of patients

Cyto-logy	Tumor Size (Cm)			
	<1 n (%)	*1.1-2 n (%)*	*2.1-3 n (%)*	*> 3 n (%)*
C1	0	0	1 (4.3)	3 (10.3
C2	8 (66.7)	13 (50.0)	7 (30.4)	8 (27.6)
C3	1 (8.3)	2 (7.7)	0	0
C4	1 (8.3)	3 (11.5)	1 (4.3)	5 (17.2)
C5	2 (16.7)	8 (30.8)	14 (60.9)	13 (44.8)
Total	12 (100)	26 (100)	23 (100)	29 (100)

Table 2: Statistical Analyses of FNAC Results

Parameters	Values
Absolute sensitivity	71.15%
Complete sensitivity	96.15%
Specificity	92.11%
Positive Predictive Value C5	100%
Positive Predictive Value C4	90%
Positive Predictive Value C3	66.67%
False negative rate	1.92%
False positive rate	0%
Inadequate rate	4.4%

DISCUSSION

The range of sensitivity in different series of studies is from 90-99%[13,14] In our study it was 96.2%. The results are concordant. In all these studies the sensitivity was high because it was complete sensitivity; the results of C3, and C4 were included in it. The absolute sensitivity in our study was 71.15% which is similar to the one described by Alatise[15] and Lieska[16] with the range of 65-70%. The results matched with our studies. The low values were encountered

because it was only for the definitely diagnosed (C5) cases. The specificity of FNAC is in the range of 93-100% in various studies.[11,13,17] Study showed the specificity to be 92.11%, which is similar to other studies.[14]

The positive predictive value (PPV) in all the studies mentioned is in the range of 92%-100%.[18,19,20] In our study the (PPV) for C5 category was 100%, PPV for C4 was 90%, for C3 was 66.6%. The PPV for C5 in our study matched with Yeoh[17] results but it was high for C3 and with C4. In our study there were 12 (13.3%) cases with tumor size of 1cm. or less. Smears were adequate in all cases. Four patients with tumor size above 3 cm had inadequate smears. The inadequate results were in invasive lobular carcinomas, low grade lesions and fibrocystic disease. In Suen & Chans[18] study the results were opposite to our study. The inadequate results in their study were in lesions < 1 cm. It may be because of technical reasons. According to DeMay[7] small lesions, mostly less than 1 cm, show few cells in the aspirates which can be missed and give inadequate results. While large lesions more than 4 cm are also associated with inadequate results and depends upon the type of lesion like Scirrhous ductal carcinoma, invasive lobular carcinoma and degenerative cyst. The statement matches with our results.[19,20] The False Negative rate ranges from 8%-14.9% in different studies [9,14,17]. In our study it was 1.4%. There was only one FN case which was confirmed on biopsy as low grade invasive ductal carcinoma. In low grade lesions, uniformity of nuclei may lead to misdiagnosis.[19]

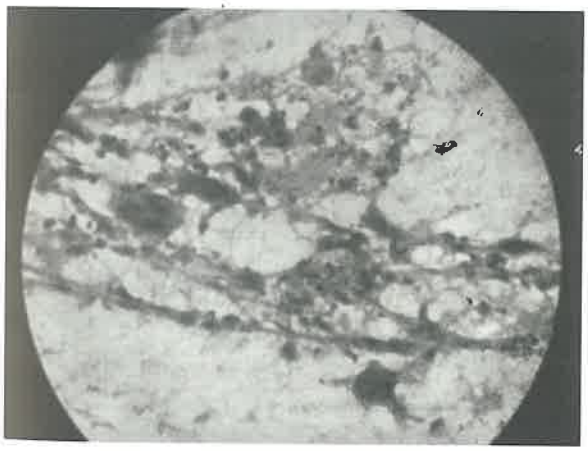

Fig. 1: FNA smear of anaplastic Carcinoma of the breast (H&E stain, X40)

In our study the inadequacy rate (C1) was 4(4.4%) in a sample of 90 patients. Out of these 4 inadequate smears, 3 (75%) patients were diagnosed as malignant on biopsy, while 1 (25%) was benign. In malignant lesions, 2 were low grade invasive ductal carcinoma and one was invasive lobular carcinoma. The benign lesion detected was fibrocystic disease. The same reasons for inadequacy were described by DeMay[7]. In patients who have clinically suspicious breast lesions with FNA reported as inadequate specimens the best approach is incisional biopsy to rule out malignancy.[21]

The inadequacy rate is lower in FNAC samples, when it is taken from two or three sites of the lesion, aspirated and interpreted by an experienced cytopathologist.[22] These findings are comparable to our results. In our study the inadequacy rate and FN rate were low compared to other studies probably because we performed two aspirations on each patient. In category C2, we diagnosed 36 (40.0%) patients, of which one patient had invasive ductal carcinoma of low grade. The study of Arisio et al., showed 3.9%, while that Ariga et al., mentioned 15% of cases. They described sampling defects, small sized lesions, well differentiated lesions and tumors like ductal carcinoma in situ and tubular carcinoma as reasons for false negativity. The case was of low grade invasive ductal carcinoma and that is why it was misinterpreted as benign. In this study 37 (41.1%) were diagnosed in category C5. There was no FP case in our study. Our results may have been more accurate due to our deliberate efforts to avoid any technical error. Ariga et al., mentioned atypical papilloma and atypical ductal hyperplasia as reasons for false positivity. In their study false positive cases were due to atypical epithelial proliferation with cytological features suggestive of malignancy and interpretation of these as malignant is not uncommon.

In our study cases were placed in category C3 and C4 because of technical factors like poorly spread and stained smears, air drying artefacts, bloody background and small number of malignant cells. The same factors were described by DeMay[7]. In the study of Chainwun et al[23], the number of benign lesions placed in C4 was higher than ours. The above technical problems can generally be avoided by evaluation of the specimen at the time of aspiration but because of lack of this facility we could not perform an immediate evaluation. The phyllodes tumor and anaplastic carcinoma were interpreted correctly while intraductal papilloma was interpreted as fibroadenoma. All malignant lesions were interpreted as invasive ductal carcinoma, this may be due to lack of experience in doing the subtyping.

CONCLUSION

Fine needle aspiration cytology is suitable for developing countries because of its simplicity, low cost, high accuracy, sensitivity and specificity than histopathology.

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PORT SITE HERNIA IN LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Objective: To find out the frequency of port site hernia in laparoscopic cholecystectomy.

Material and Methods: This study was conducted in the department of General surgery Hayatabad Medical Complex, Peshawar from January 2007 to December 2008. Patients who had previous upper abdominal surgery and morbid obesity were excluded from the study.

Results: A total of 113 patients, 100 female and 13 male, with an age range of 16-59 years (mean 37 years ±10 SD) were included. Epigastric port site was used for gall bladder extraction. Port site hernia occurred in 1 (0.88%) of the patients and port site infection in 15 (13.27%). In the majority of patients, 92(81.42%), the duration of surgery was 60-90 minutes.

Conclusion: Port site hernia is a rare but serious complication of laparoscopic cholecystectomy. It can be minimized by taking care while removing the trocars, and completely evacuating the pneumoperitonium.

Key Words: Gall bladder, Peritoneum, Hernia, Port site, Epigastrium.

INTRODUCTION

Laparoscopic surgery has a long and interesting history. Since its origin in 1901 by Kelling to the development of the computer chip television camera in the late 1980s, the history of laparoscopy entails a chronicle of discovery, innovation and rediscovery.[1] Laparoscopic gastrointestinal surgery has only recently become accepted among general surgeons. Laparoscopic appendicectomy was the first such procedure performed in 1983, followed by cholecystectomy performed by Mouret in 1987.[2,3] The development of laparoscopic cholecystectomy revolutionized the history of biliary surgery. It is now established as the gold standard therapy for symptomatic gall bladder disease.[4,5] The adaptation of this new technique resulted in the emergence of new specific operative complications. Bile duct injury is the most frequent complication.[6]

Incisional hernia at port sites is an uncommon but serious complication[7], because most of these require further surgery due to the risk of intestinal obstruction and strangulation.[7,8] Hernias like Richter's hernia have been reported.[9,10] In addition to small bowel and omentum, large bowel herniation has also been reported.[11]

Maio and Ruchman reported an obstructed, postcholecystectomy port site hernia containing small bowel.[12,13] This was the first report on port site hernia in gastrointestinal surgery. Since then many reports have been published.[14,15,16] The clinical diagnosis of port site hernia is sometimes difficult, especially in obese patients. In the presence of clinical suspicion, ultrasonography and even CT scan can be used.[17] Occasionally gastrointestinal contrast study is needed.[18]

Tonouchi et al, suggested a classification in which the hernias were classified into three types. In the early onset type dehiscence of the fascial plane, and peritoneum within 2 weeks. This usually results in small bowel obstruction. The late onset type occurs after 2 weeks and has dehiscence of the fascial plane, with a sac consisting of peritoneum. Only 12.50% of such hernias present with intestinal obstruction. Special type of hernia is a third category which occurs due to the dehiscence of all of the layers of abdominal wall.[19]

MATERIAL AND METHODS

Patients with cholelithiasis were admitted through outpatient or emergency departments. Laparoscopic cholecystectomy was performed on 113 patients, from January 2007 to December 2008. Follow up was done by recalling the patients to OPD for check up on the 10th post op day, then 2 months and 6 months later. All the patients had pneumoperitoneum created via an umbilical incision using veress needle to the pressure of 13 to 15 mm Hg. a 10mm trocar was introduced through the umbilical site. Under vision a 10mm epigastric trocar was passed. While removing the gall bladder, the epigastric site was dilated and stretched if required.

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At the completion of operation, the trocars were removed under vision and pneumoperitoneum evacuated before the camera was withdrawn. The fascial defect was not closed routinely except where it has been cut. Inclusion criteria was patients between age of 15-60 years, acute cholecystitis presenting within 10 days of the start of symptoms, ASA grade I and II, normal LFTs. Where as the exclusion criteria was where the peritoneum and rectus sheath was incised to remove the gall bladder, patients having past history of peritonitis, patients having past history of upper G I surgery, morbid obesity.

RESULTS

Out of 113 patients, 100(88.50%) were female and 13(11.50%) were male patients. Age range was 16-59 years (mean 37 years ± 10 SD). Fifteen (13.27%) patients had acute cholecystitis with edematous gall bladder, 68(60.17%) had gall bladder stones with normal wall thickness and 30(26.56%) had chronic cholecystitis with a shrunken adherent gall bladder. The duration of surgery is shown in Table 1. Portsite complications are shown in Table 2.

Table 1: Duration of Surgery

Duration of surgery	No. of Patients
60 – 90 minutes	92 (81.41%)
91-120 minutes	15 (13.27%)
> 120 minutes	6 (5.32%)

Table 2: Port site complications

Port site complications	No. of Patients
Port site infection	15 (13.27%)
Port site bleeding	5 (4.42%)
Port site hernia	1 (0.88%)

DISCUSSION

Incisional hernia is one of the common complications of conventional abdominal surgery, with an overall incidence ranging from 2-11%. 80-95% occur within 6 months to 3 years after surgery.[20] The usual predisposing causes are obesity, wound infection and faulty suture closing technique. The presence of wound infection increases the chances of incisional hernia by five fold.[21] Unlike open operation the frequency of trocar site hernia in laparoscopic surgery is much lower ranging from 0.02% -1.6%. It usually presents within 6 months, In our study the frequency of port site hernia is 0.88% which exactly corresponds to previous literature.[23] The causative factors are also different. The diameter of the port seems to be the major factor. 86.9% of such hernias occur in port sites of a diameter of 10mm or more.[24] Other factors include long duration of surgery, sites which are manipulated or dilated more, inadequate evacuation of pneumoperitoneum and unrelaxed abdominal wall at the end of the procedure and the insertion technique of the trocar it is common with open technique. The use of special trocars called 'fascial screws' can also increase the diameter of the aponeurotic fascial defect by 1-2mm.The controversy exists in whether to close or leave the aponeurotic defect open. For proper closure of fascial defect, the incision has to be wide enough for proper exposure. Doing so compromises the aesthetic advantage of laparoscopic surgery. Closing the port site also increases the chances of bowel injury.[25] Para umbilical port site is a usual site for occurrence of hernia, this being the site which is used commonly for gall bladder removal and therefore is manipulated and dilated more. In view of this it is recommend that the epigastric site should routinely be used for gall bladder removal. Even if this site is dilated and stretched the chance of hernia occurrence is less.[26] Adequate closure of fascial defects of 10mm or more, is recommended in most of the literature.[27] Also the closure of 5mm defect in the pediatric population is recommended.[28]

Review of the literature shows that it is not the closure technique of the fascial defect which is the prime cause of hernia occurrence, but the technique of evacuation of pneumoperitoneum and trocars. Total evacuation of gas should be done so that no pressure gradient is left between the peritoneal cavity and exterior. All trocars should be removed under vision and the epigastric trocar should be the last one to be removed. After its removal the site should be poked with a blunt instrument to unplug any viscera if caught accidentally.

CONCLUSION

Port site hernia is a rare but serious complication of laproscopic cholecystectomy. It can be minimized by taking care in removing the trocars and completely evacuating the pneumoperitonium at the end of the procedure.

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CORNEAL BLINDNESS, KERATOPLASTY AND VISUAL OUT COME

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ABSTRACT

Objectives: To treat corneal blindness with corneal transplants and to find out its visual outcomes and complications.

Material and Methods: This is a prospective study with one year follow up. The study was conducted in Eye B unit of Khyber Teaching Hospital, Peshawar from 2004 to 2008. Data extracted includes age, gender, type of corneal pathology, initial and final visual acuities and complications.

Results: Eighty eyes of 80 patients suffering from corneal blindness were operated with corneal transplant. Main indication were dense corneal opacity in 25 (31.20%) eyes, bullous keratopathy in 16 (20%) eyes, corneal thinning and perforation in 13 (16.25%) eyes, corneal degeneration in 10 (12.5%) eyes, keratoconus in 9 (11.25 %) previous graft failure in 05 (6.25%) eyes and corneal dystrophy in 02 (2.5%) eyes. Pre operative visual acuity was ranging from perception of light to counting fingers one meter. Final visual acuity was improved in 76% cases. Main complications were high refractive error in 11 (13.7%) eyes, glaucoma in 30 (37.5%) eyes, graft failure in 13 (16.25%) eyes and recurrence of primary disease in 2 (2.5%) eyes. Most of complications were resolved at the end of follow up.

Conclusion: Excellent success with corneal transplant is possible to treat corneal blindness, if donor corneas are available.

Key Words: Keratitis, Trachoma, Keratoconus, Keratoplasty, Graft failure.

INTRODUCTION

Corneal blindness is second to cataract as a cause of visual impairment.[1] Major causes of corneal blindness are corneal scarring due to trachoma, ocular trauma, corneal ulceration, xerophthalmia, ophthalmia neonatorium and traditional eye medicines. Trachoma caused corneal blindness in 4.9 million while ocular trauma and corneal ulceration add 1.5 to 2 million new cases every year.[2] The prevalence of corneal blindness varies from one population to other, depending on many factors like availability and general standard of eye care. In Africa onchocerciasis and trachoma like infections are the leading causes while in Pakistan, trauma and corneal ulceration are more common.[3] Whether the underlying cause is trachoma, corneal ulceration, onchocerciasis or any other disease, corneal scarring and vascularization remains. These individuals are blind throughout life. The only hope for them is corneal transplant or keratoplasty. This procedure is not cost effective to eliminate corneal blindness in Pakistan. As so much emphasis has been placed on cataract surgery in developing countries like Pakistan that program dealing with other causes of blindness has been neglected.[4]

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Corneal blindness is reversible if corneal transplant is successfully managed. Corn Von Hipple in 1888 did first successful corneal transplant in human beings while Zirm (1906) and Magitot (1911) described the fundamental principles of homograft and preservation of cornea.[5] Here is a study of eighty cases with various causes of corneal blindness, their treatment with corneal graft and their results.

MATERIAL AND METHODS

Data were obtained from patients records operated for corneal transplant in Khyber Teaching Hospital, Peshawar from 2004 to 2008. Detailed history, ocular and systemic examination were analyzed. Preoperative ocular examination with special emphasis on the cause of blindness, optic nerve assessment, macular function and intraocular pressure were noted. Corneal vascularization was treated with diathermy. Postoperative medications included systemic and topical steroids, topical antibiotics, cycloplegics and anti glaucoma drugs in selected cases. Daily ocular examination was done for one week and review examination done monthly. Optical clarity of cornea and refractive media, visual functions and intraocular pressure status were determined at each visit. Removal of sutures was done after a year or eighteen months. Corneal transplant was considered to fail if cornea was hazy due to any reason. Blindness was defined as visual acuity of counting fingers less than three meters. (3/60).

RESULTS

A total of eighty corneal transplants were performed. Amongst them 43 were male and 37 female. All patients were above 10 years of age, 23 patients were from 11-19 years, 39 patients from 20-39 years, 13 patients from 40-59 years and 5 patients from 60 years of age or above. Indications for keratoplasty are given in (Table 1). Preoperative visual acuity is shown in (Table 2). Post operative visual acuity was improved in 76% cases, and was 6/12 or better in 25 (31.25%), 6/18 in 13 (16.25%), 6/36-6/24 in 10 (12.5 %) and 6/60 in 7 (8.75%) eyes. Main complications were high refractive error in 11 (13.7%), glaucoma in 30 (37.5%), graft failure in 13 (16.25%) and recurrence of primary disease in 2 (2.5%) eyes.

Table 1: Indication for keratoplasty

S. No.	Disease	No. of patients & percentage
1.	Corneal scarring	25 (31.5%)
2.	Bullous keratopathy	16 (20.0%)
3.	Corneal ulcer and thinning	13 (16.25%)
4.	Corneal degeneration	10 (12.5%)
5.	Keratoconus	9 (11.25%)
6.	Previous graft failure	5 (6.25%)
7.	Corneal dystrophy	2 (2.5%)

Table 2: Pre-operative Visual Acuity (VA)

S. No.	VA	No. of patients & percentage
1	PL+	65 (81.25%)
2	CF1M	15 (18.75%)

PL= Perception of Light
CF = Counting Fingers

DISCUSSION

Corneal blindness or diseases is the second most important cause of blindness in the world.[1,2] Eighty percent of patients with blindness live in developing world. The corneal blindness is mainly due to corneal ulcer, trauma, nutritional and traditional use of medicine. These diseases are preventable, and prevention of causes would be the preferred method. However, in those suffering from corneal blindness, visual rehabilitation with corneal transplantation is the only hope. The frequency of indications for corneal transplant in our study were similar to those in India and Taiwan[6] but different from USA, UK and France.[7] The causes in India were corneal scar (28.1%), failed corneal graft (17.1%), keratitis (12.2%), bullous keratopathy (10.6%) and keratoconus (6%).[8] While in USA were bullous keratopathy (27.2%), failed graft (18.1%), keratoconus (15.4%), corneal scar (7.8%), and keratitis (2.9%).[9,10] In our study corneal scar (31.25%), bullous keratopathy (20%), keratitis (16.25%), corneal degenerations (12.5%) keratoconus (11.25%) and failed graft (6.25%) were the main indications for keratoplasty. Thus in developed countries the causes are mainly pseudophakic bullous keratopathy, keratoconus, failed corneal graft and corneal dystrophy while in less developed countries like Pakistan corneal scar and keratitis are common.[11]

Corneal transplant is successful if well trained surgeons and nurses are available as well as modern operating rooms, good equipments, reliable eye bank facilities, clinical services for long term follow up and treatment of graft rejection and other postoperative complication.[12] In our set up all these facilities were available. The outcome of keratoplasty is defined by two ways. From surgeon point of view the graft clarity indicates technically a successful surgery. From patient point of view the recovery of useful vision is important. As the recovery of vision depends on many factors like amblyopia, retinal and optic nerve pathology, the graft clarity is the suitable way of assessing the success of surgery. In our study eighty corneal transplant were done. By the end of study corneal grafts were successful and clear in 81.25% cases. The visual acuity improved in 76% cases.

In a study by Dandona[8] the success rate of corneal transplant was 96.4% in keratoconus, 87% in corneal dystrophies, 52.2% in corneal scars, 80% in bullous keratopathy and less than 40% in congenital glaucoma cases. In our study blindness (VA less than 3/60) dropped from 100% to 31.5% while in his study corneal blindness dropped from 80.2% to 41.6%. In our study the final VA was 6/18 or better in 48.50% eyes. Aphakic bullous keratopathy as indication for corneal transplant was the main difference which was comparatively more in Dandona study. In one study in Saudi Arabia penetrating keratoplasty was done in 910 eyes. The main indications were keratoconus, corneal edema, scarring and stromal dystrophy. The Visual acuity improved in 750 (82.4%) cases, remained same in 10% while worsened in 6.9%.[13]

The Study conducted in Singapore had 2100 Corneal Transplants from 1991 to 2006 . The main indication were pseudophakic/aphakic bullous keratopathy (23.4 %) post infectious scarring (12.9%), regrafts (12.4%), keratoconus (9.7%) and posttraumatic scarring (7.3%). The survival rate for optical grafts were 63.7 % to 86.6% in ten years time while survival rate for therapeutic grafts were 37.3% after 5 years.[14]

In another study in Saudi Arabia visual acuity improved in 84.3% cases after keratoplasty.[15] The

major complications were glaucoma in 27.60%, endothelial rejection in 17.3% and bacterial keratitis in 8.7% cases. The complications seen in our study were glaucoma in 37.5%, graft failure in 16.25%, high refractive errors in 13.7% and recurrence of primary disease in 2.5% cases. The complications seen in our study were same, but a bit less than other studies done in Saudi Arabia or India.

CONCLUSION

The rate of success and complication in our study is compatible with available literature.

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HAEMOGLOBIN LEVEL IN CHRONIC KIDNEY DISEASE

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ABSTRACT

Objective: To know the frequency of low Haeomoglobin level (Anaemia) in stage 3 and stage 4 chronic kidney disease (CKD).

Materials and Methods: This is an observational study and was conducted in the Haematology Department of Shaikh Zayed Hospital, Lahore from June, 2008 to December, 2008. This study included 150 patients, 50 for stage 3 and 50 for stage 4 chronic kidney disease and 50 for control group. Complete blood count was performed on these patients by Haematology analyzer for determination of Hb level.

Results: Haemoglobin level in stage 3, 33 (66%) out of 50 patients, had mean Haemoglobin level 9.83 g/dl, $\pm$ 0.978 SD, while rest of the 17 patients had haemoglobin level above 12.5 g/dl. Haemoglobin level in stage 4, 39 (78%) patients out of 50 had mean haemoglobin level 9.1 g/dl, + 1.22 SD while rest of 11 patients had mean Haemoglobin level 12.22 g/dl + 0.56 SD. The haemoglobin level of both the two groups of the anaemic patients were not significetly different from each other, but significantly lower from the control group stage 3, p value .0024 and for stage 4 p value .0022.

Conclusion: This study concluded that Anaemia is a significant finding in the patients of chronic kidney disease. These patients therefore require close monitoring for early detection.

Keywords: CKD, Heamoglobin, Anaemia.

INTRODUCTION

Anaemia is a common and early finding in chronic kidney disease and is associated with a wide range of complications including increased morbidity and mortality due to cardiovascular consequences. Several factors contribute, but the most important factor is Erythropoietin deficiency. Correction of anaemia with exogenous erythropoietin is associated with improvement in out comes. Iron deficiency is also common in CKD patients for multiple reasons and should be appropriately treated prior to erythropoietin treatment.[1] It has been reported that a higher target of haemoglobin in patients with chronic kidney disease is associated with an increased risk with no benefit in the quality of life.[2] Erythropoietin alfa is administered subcutaneously once or twice weekly. Initial dose is 50-100 units per kg per week. Haematocrit and haemoglobin levels should be monitored every 1 to 2 weeks. Iron stores should also be chcked and deficiency treated.

The higher rates of cardiovascular events among patients with chronic kidney disease who were in the high haemoglobin group parallels the out come reported in patients with end-stage-renal disease.[3] This increased risk of cardiovascular events in probably not due to the higher haemoglobin target, since mean haemoglobin never exceeds the target level of 13.5g per deciliter. But may be secondary to the role of erythropoietin in inducing chronic inflammation and inhibiting fibrinolysis.[4] In addition Erythropoietin triggers signaling pathway in endothelial cells increasing their thrombogenicity by implicated expression of tissue factor.[5]

Erythropoietin use, especially in patients with cancer who are undergoing chemotherapy, has been implicated in an increased risk of venous thromboembolism.[6] It is important to know whether normalization of haemoglobin levels with higher dose of erythropoietin increase the risk of venous thromboembolism in this population of patients. Erythropoietin stimulating proteins, such as erythropoietin alfa and darbepoietin alfa, have positively impacted anaemia management. These medication improve patient out comes and quality of life, their cost, however, remain a major barrier for health system.[7]

MATERIAL AND METHODS

This observational study was conducted in the Nephrology and Haematology departments of Shaikh Zayed Hospital, Lahore.

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Cases were divided into three groups, 50 for stage 3 and 50 for stage 4 chronic kidney disease each and 50 for control group. Glomerular filftrations rate (GFR) is a measure of the overall filtration rate of all nephrons. GFR is used to assess the degree of kidney function. Cockeroft and gault formula is a quick and reliable method for GFR estimation.

$$\frac{(140\text{-age}) \times \text{weight in kg}}{72 \times \text{creatinine level}}$$

Creatinine level was determined by fully automated chemical analyzer. Stage 1, stage 2 and stage 5 were excluded from the study. Haematological investigation were performed on total 150 cases. Blood sample (5ml) was collected, 1.8ml was collected in a tube containing 200µl of 3.2% sodium citrate, which was used for coagulation studies while rest of blood was added to a tube containing EDTA to estimate Haemoglobin level. Sample collection was done in by an aseptic technique. Complete blood count was performed by haematology analyzer for determination of haemoglobin level. Statistical analyses of data were performed by using t-test for comparison of both groups. P<0.005 was statistically significant.

Table 1: Creatanine level of stage 3 & stage 4 CKD

Groups	Stage 3 CKD	Stage 4 CKD
No. of patients	50	50
Minimum creatinine level	1.60	3.50
Maximum creatinine level	3	6
Mean Statistics	2.44	4.95
St error	.62	.12
SD	0.44	0.84

Table 2: Mean haemoglobin level of stage 3 and stage 4 Chronic Kidney Diseases (CKD)

Group	Stage 3 CKD		Stage 4 CKD	
No. of cases	50		50	
Hb g/dl				
low	33	66%	39	78%
Normal	17	34%	11	22%
Mean Hb				
low	9.83		9.17	
Normal	12.24		12.22	
SD				
Low	.97		1.22	
Normal	.89		.56	

Stage-3 P value <.0024

Stage-4 P value <.0022

RESULT

There were 25 (50%) males and 25 (50%) females in stage 3 and 30(60%) males and 20 (40%) females in stage 4. Mean creatinine level of stage 3 and stage 4 CKD was 2.49+0.44 mg/dl was 4.99+0.84 mg/dl respectively. Normal GFR is 125 ml per minute per 1.73m.^{2} Stage 3 CKD has moderate reduction in GFR (30-59ml/minute/ 1.73). Stage 4 CKD has severe reduction in GFR (15-29ml/minute/1.73).

Haemoglobin level (Hb) in stage 3, 33 (66%) had Hb level lower than 11.5 gm/dl mean Hb level is 9.83 g/dl ±.97 SD, while rest of the 17 (34%) patients had above 11.5 g/dl mean Hb level is 12.24 g/dl ± .45 SD. Hb level in stage-4, 39 (78%) patients had Hb level less than 11.5 g/dl. Mean Hb level was 9.17 g/dl ±1.22 SD, while rest of the 11 (22%) patients had normal Hb level mean 12.22 g/dl ±.56 SD. The Hb level of both the two groups of the anaemic patients were not significantly different from each other, but significantly lower from the normal value. For stage 3, P<.0024 for stage 4, P < .0022.

DISCUSSION

The anemia of CKD remains both under diagnosed and under treated despite the wide availability of safe and effective treatment. Correction of anemia with exogenous erythropoietin is associated with improvements in outcome and hence should be aggressively pursued. Iron deficiency is common in CKD patients for multiple reasons and should be appropriately treated prior to erythropoietin treatment.

In the present study, 66% of the patients with stage 3 and 78% of the patients with stage 4 were found to have Hb less than 11.5 g/dl. This shows that majority of the patients in both stages are moderately or severely anaemic. A similar study in Nigeria, showed 32 of the 39 patients to be enamic.[8]

In a study by Riegerserger et al 36 patients with chronic kidney disease were analysed for anaemia which showed that 14 patients had anaemia and they found that in patients with CKD 3 and CKD 4, anaemia was present above twice as much as compared to the third National Health Nutrition Examination Survery (NHAN ES-II)[9] The National Kidney foundation-kidney-disease outcomes quality initiative (NKE-K/DOQ1) practice guidelines recommend maintaining ferritin > 100 ng/ml and transferrin saturation > 20% to ensure adequate iron supply for erythropoiesis among patients with chronic kidney disease.[10] Availability of iron is key for optimal working of erythropoietin. Much has been written on the important contribution of iron deficiency toward anemia and erythropoietin resistance among end – stage renal disease (ESRD) patients. The very high cost of erythropoietin therapy renders optimizing iron status particularly important. Hemodialysis patients are at especially high risk for iron deficiency because of blood loss associated with the dialysis procedure.[10]

Another study to determine the prevalence of anaemia in children and adolescents with chronic kidney disease found 12 of 25 patiets to be anaemic.[11] The major cause of anemia in patients with chronic kidney disease and end-stage renal disease (ESRD) is erythropoietin (EPO) deficiency, resulting from its decreased production from the kidney. The remarkable development and subsequent introduction of recombinant human erythropoietin (rHuEPO) in 1989 made it possible to safely and effectively treat the anemia of renal insufficiency and practically eliminate the need for repeated transfusion. Despite the advances in dialysis care and the use of erythropoietin, anemia continues to be a clinical problem seen in patients with ESRD. It was believed that iron deficiency was the major predictor of EPO hypo responsiveness.[11]

Other factors that have been shown to influence the response to rHuEPO in adult and pediatric patients on dialysis include dosage, route of administration, acute or chronic infection and aluminium intoxication. Refractory anemia appears to be more common in those patients on dialysis who also suffer from protein-energy malnutrition (PEM) or inflammation. Secondary hyperparathyroidism contributes to resistance of EPO in adults.[11] Anaemia affects almost all patients with chronic kidney disease, reduces quality of life and is a risk factor for early death. Observational studies showing that higher level was associated with improved life and survival, but higher Hb targets may cause excess thrombosis and hypertension and are costly.[12]

CONCLUSION

The present study recommends to strictly watch and follow the patients of C.K.D for anaemia and to prevent its complications.

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ELECTROCARDIOGRAPHIC FINDINGS IN PATIENTS WITH HEART FAILURE

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ABSTRACT

Objective: To know the clinical and Electrocardiographic findings in patients with congestive cardiac failure (CCF) or simply heart failure (HF).

Material and Methods: This hospital based descriptive study was conducted in Department of Medicine, Khyber Teaching Hospital, Peshawar from December 2007 to June 2008. A total of 100 admitted patients with clinical and echocardiographic evidence of congestive cardiac failure were randomly selected. A detailed history was taken and clinical examination was done with special consideration of the cardiovascular system. The clinical diagnosis was established by the simultaneous presence of at least two major, or one major and two minor criteria according to Framingham Heart Study criteria for the diagnosis of heart failure. The patients were noninvasively investigated, including 12-leads ECG and echocardiogram.

Results: The study included 100 patients with clinical and echocardiographic evidence of heart failure. There were 52 male and 48 female patients. The mean age was 51±5 years. None of the included patients with CCF had normal ECG. ECG abnormalities consistent with ischemic pattern were observed in 46%, left ventricular hypertrophy (LVH) in 28% and cor pulmonale in 12%. In 14%, the ECG pattern was non-specifically abnormal, like low voltages and specific repolarization changes.

Conclusion: ECG has always some abnormality in patients with heart failure. The normal ECG virtually excludes the diagnosis of heart failure.

Key Words: Electrocardiogram, Heart failure, Echocardiogram.

INTRODUCTION

Congestive cardiac failure or simply heart failure (HF) is the clinical syndrome that manifests when cellular respiration becomes impaired because the heart cannot pump enough blood to support the metabolic demands of the body or when normal cellular respiration can only be maintained with an elevated left ventricular filling pressure.[1] There is no nation-wide data available about the epidemiology of heart failure in Pakistan. It is a major and growing health problem in the United States (US). Approximately 5 million patients in US have heart failure and more than 550,000 patients are diagnosed with heart failure for the first time each year.[2] The prevalence of CCF rises with increasing age and affects about 10% of the population older than 75 years of age.[3,4] The incidence of HF approaches 10 per 1000 population after age 65 and approximately 80% of patients hospitalized with HF are more than 65 years age.[2,5] American Heart Association has reported Ischemic heart disease, Hypertension, Valvular heart disease, Cardiomyopathies, Cor pulmonale, Anemia, Hyper and hypothyroidism, chronic arrhythmias and cardiac fibrosis as common causes of heart failure.[6]

Ischemic heart disease (IHD) is the most common cause of CCF.[7,8] Congenital heart diseases contribute significantly to the overall burden of cardiovascular diseases. In developing countries, Rheumatic heart disease (RHD) is one of the most common causes of heart failure in young adults.[9-11] No system of diagnostic criteria has hitherto been agreed upon as the gold standard for diagnosis of CCF. Commonly used systems are the Framingham criteria, the Boston criteria and the Duke criteria.[12-14]

Various investigations are performed to diagnose HF and to define the underlying cause among which transthoracic two-dimensional echocardiography with Doppler flow studies is highly recommended for all patients with heart failure.[15] Electrocardiogram (ECG) is simple to perform, risk free, inexpensive and easily available and should be obtained in all patients who present with heart failure. The sensitivity of ECG in diagnosing heart failure is 94% and specificity 62%.[16] The positive predictive value of electrocardiography plummets to 2.4% and the negative predictive value rises to 99.9%.[14] A normal electrocardiogram virtually excludes chronic heart failure due to left ventricular systolic dysfunction.[16,19] This hospital based descriptive study aims to know the frequency and

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pattern of various ECG abnormalities in heart failure and to know the importance and contribution of ECG in detecting the etiology of heart failure.

MATERIAL AND METHODS

This hospital based descriptive study, comprised of 100 randomly selected patients with congestive cardiac failure fulfilling the inclusion criteria admitted in Medical Units of Khyber Teaching Hospital, Peshawar during 7 months (December 2007 to June 2008). Adult patients, both male and female, with clinical and echocardiographic evidence of heart failure were included in the study. The clinical diagnosis of CCF was established by the simultaneous presence of at least two major or one major and two minor criteria according to the Framingham Heart Study for the diagnosis of HF. Initial clinical status of patients was classified according to New York Heart Association (NYHA) functional class.

All patients were investigated with blood complete, blood sugar, urea, serum electrolytes, lipid profile, urine examination, liver function tests (LFTs), 12- lead ECG, X-ray chest and echocardiogram. A few patients had thyroid function tests. ECG of all patients was discussed with senior physicians also. The ECG findings were recorded along with the clinical feature of the patients. The patient's history, physical finding, results of investigation and detail of ECG findings were recorded on proforma.

Table 1: Abnormal ECG Findings in patients with Heart Failure

S. No.	Observations	No. of pts & %age
1.	"T" Wave inversion	58(58%)
2.	Rhythm abnormalities (Tachycardia, irregular rate, atrial fibrillation, atrial and ventricular ectopics)	50(50%)
3.	Abnormal ST-Segment (ST-Segment depression, elevation)	44(44%)
4.	Left ventricular hypertrophy	28(28%)
5.	Abnormal "P" Waves (p-mitrale, p-pulmonale or inverted)	24 (24%)
6.	Abnormal Axis (Left axis deviation, right axis deviation)	38(38%)
7.	Abnormal "Q" Waves	20(20%)
8.	Blocks of all type (1st, 2nd, 3rd degree heart block)	10(10%)
9.	Loss of "R" wave progression in chest leads	22(22%)

RESULTS

Out of 100 patients, 52 (52%) were male and 48 (48%) were female. The age range was 16-80 years. The mean age was 51 ±5 years. None of the included patients with CCF had normal ECG. The most common abnormality was T wave inversion in various leads in 58 (58%) patients. The second most common finding was rhythm abnormality which was present in 50 (50%) patients. The rhythm abnormalities were in the form of tachycardia, irregular rate, atrial fibrillation and ectopics (both atrial and ventricular). Twelve (12%) patients had atrial fibrillation. Various abnormal ECG findings in patients with heart failure is shown in Table 1.

DISCUSSION

Heart failure results from various cardiac and non cardiac diseases and is a major cause of morbidity and mortality all over the world.[2] Many studies have reported gradual increase in the prevalence of heart failure with advancing age.[2-5] The Framingham Heart Study had also indicated this fact.[18] In our study 66% of the patients were above the age of 45 years. In younger age group in our community the main cause of HF is RHD as shown by Tareen et al.[17] This study showed that RHD is responsible for heart failure in 56% of patients in the age group 16-40 years, while our study shows that in 16-45 years of age RHD is the cause of HF in 53% of patients which are comparable.

The Framingham Heart Study evaluated the etiology of heart failure prospectively.[18] Hypertension was present in 77%, IHD in 45% and RHD was reported in only 2-3%. In our study hypertension was less common (40%) as compared to Framingham study. It may be because of less number of patients in our study. IHD is a common cause of HF in the developed countries.[18] The risk factors for IHD are also increasing in our country.[17] For this reason 46% of our patients had IHD. This fact was also revealed by other studies.[7,8] RHD was reported up to 18% in our study which is quite high as compared to Framingham study. RHD is still a major health problem in developing countries as compared to the western world.

The absolutely normal ECG virtually excludes diagnosis of HF.[16] In a study by Davi AP et al a total of 534 patients aged 17-94 years were assessed.[16] Ninety six patients had impaired left ventricular systolic function on echocardiogram. Of these 93.75% patients had major ECG abnormalities (e.g. atrial fibrilation, old myocardial infarction, left ventricular hypertrophy, bundle branch block and left axis deviation). 6.25% patients had minor ECG abnormalities (e.g. atrial enlargement, tachycardia, wide "QRS" complexes, right axis deviation, 1st degree AV block). None had a normal ECG. Our study reveals that none of the patients studied had normal ECG which supports findings of the above study. Another study conducted

by Nielson O, et al showed that the probability of systolic dysfunction was very low if the patient had a normal electrocardiogram.[19]

CONCLUSION

ECG abnormalities consistent with ischemic pattern are the most common findings in patients with heart failure. ECG not only indicates presence of heart failure but also hints towards etiology of heart failure.

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PATTERN OF TRAUMATIC DENTOALVEOLAR INJURIES

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ABSTRACT

Objective: Objectives of the study were to determine the pattern of presentation of traumatic dentoalveolar injuries (TDI).

Material and Methods: This study was conducted at Khyber College of Dentistry, Peshawar, Pakistan and included 100 patients with dentoalveolar injuries. A detailed history, clinical examination and radiological examination such as periapical radiographs and orthopantomogram were performed for each patient.

Results: The age range in this study was 3-60 years with mean age 18.17 years; + 13.08 SD. The male to female ratio was 2.7:1. Hundred patients presented a total of 400 traumatic dental injuries (TDI). Out of these 84% were present in the permanent dentition and 16% in the primary dentition. In both permanent and primary dentition, most common teeth traumatized were maxillary central incisors followed by maxillary lateral incisors. In permanent teeth, left maxillary central incisor was the most commonly involved tooth (15.77%). In primary teeth, the most common tooth involved was also left maxillary central incisor (18.75%) followed by right maxillary central and lateral incisors (15.62%). In permanent TDI, lateral luxation types were most common (35.71%) followed by subluxation (32.14%). In primary TDI, displacement injuries were most common (45.31%) followed by subluxation injuries (23.34%).

Conclusion: The permanent teeth in comparison to primary were commonly involved in these injuries. Preventive measures should be taken to prevent damage to permanent dentition.

Keywords: Traumatic, dental injuries, alveolar fractures, dental trauma.

INTRODUCTION

Traumatic dentoalveolar injuries (TDI) are classified as injuries to the dental hard tissue, injuries to the periodontium, injuries to the supporting bone and injuries to the gingiva and oral mucosa.[1] The face, most exposed part of the body, is particularly vulnerable to trauma.[2] According to Andreasen 50% of children are exposed to dental trauma before reaching school leaving age. He predicted that dental trauma would probably exceed dental caries and periodontal disease.[3]

The prevalence of TDI is 8.5% in the maxilla and 16.7% in the mandible.[4] According to Zarman prevalence of traumatic injuries to the incisor teeth ranges from 6 to 37%.[5] The most frequently injured teeth in the primary dentition are the maxillary incisors[6] while in permanent dentition maxillary central incisors followed by mandibular central incisors are commonly affected.[7] Patients with primary dentition mostly suffer from luxation injuries such as subluxation, avulsion and lateral luxation, while those with permanent dentition mostly involve uncomplicated crown fractures, subluxation and avulsion injuries.[8]

Traumatic injuries in children and adolescents are a common problem. Dentoalveolar injury may lead to restriction in biting, speaking clearly and embarrassment when smiling and showing the teeth.[9] Many dental injuries result in medicolegal claims because of the devastating aesthetic and psychological effects of loss of permanent teeth in young adults and the cost of eventual replacement.[10] The purpose of this study is to enlist common modes of presentation of TDI. The findings will add to the general dental practitioner's knowledge and will disclose the importance and emergency nature of this trauma.

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MATERIAL AND METHODS

This descriptive study was carried out at oral and maxillofacial surgical unit, Khyber College of Dentistry, Peshawar, Pakistan from 1st October, 2006 to 31st March 2007. Study duration was six months and was conducted on 100 patients with traumatic dentoalveolar injuries using non probability convenience sampling technique. Patients with Crown infraction, uncomplicated crown fracture, concussion, and isolated soft tissue injuries were excluded. With

verbal and informed written consent of the patients or attendants, all the necessary information about the variables of the study were collected by detailed history and clinical examination. Patients age, gender, etiology, facial bone involvement, soft tissue injuries, teeth involved and type of dentoalveolar injuries noted. Periapical radiographs, orthopantomogram were performed for each patient.

RESULTS

The age range in this study was 3-60 years with mean age 18.17 years; + 13.08 SD. The male to female ratio was 2.7:1. Road traffic accident was the most common cause of TDI. Out of 100 TDI cases 26 were associated with other facial bone fractures (26%). Out of these 26 cases, mandible was involved in 65.38%. Other bones fractured were maxilla (15.38%), zygomatic bone (8.3%) and nasal bone (3.84%). Soft tissue injury to lips, skin, cheek, nose, gingiva and tongue, were associated. A total of 400 traumatic dental injuries (TDI) were seen in all 100 patients. Of these 400 TDI, 336 (84%) were present in the permanent teeth and 64 (16%) in primary teeth. Details of the 336 permanent teeth that sustained injuries are shown in Table 1 as compared to 64 cases of TDI to the primary teeth Table 2. In permanent teeth, left maxillary central incisor was the most common tooth to be involved (15.77%) followed by right maxillary central incisor (14.88%) and mandibular central incisors (8.93%). In primary teeth the most common tooth involved was also left maxillary central incisor (18.75%) followed by right maxillary central and lateral incisor (15.62%).

Table 1: Percentage of Permanent Teeth in traumatic dental injuries

Name of teeth	Percentage in prem-teeth	Percentage in all teeth
Maxilla (58.93%)		
Central incisors	30.65%	25.75%
Lateral incisors	17.56%	14.75%
Canines	4.46%	3.75%
Premolars	5.36%	4.5%
Molars	0.89%	0.75%
Mandible (41.07%)		
Central incisors	16.67%	14%
Lateral incisors	13.39%	11.25%
Canines	5.36%	4.5%
Premolars	05%	4.25%
Molars	0.56%	0.5%

Table 2: Percentage of Primary Teeth in Patients who Sustained TDI

Name of teeth	Percentage in prem-teeth	Percentage in all teeth
Maxilla (58.92%)		
Central incisors	34.37%	5.5%
Lateral incisors	29.69%	4.75%
Canines	15.62%	2.5%
Premolars	4.68%	0.75%
Molars	1.56%	0.25%
Mandible (41.08%)		
Central incisors	9.37	1.5%
Lateral incisors	4.68%	0.75%
Total	100%	16%

In 336 permanent teeth injuries, lateral luxation (displacement) type of injuries were 120 (35.71%) followed by subluxation 108 (32.14%), avulsion injuries 41 (12.20%), crown fractures 36 (10.71) and root fracture 25 (7.44%). Intrusion injuries were (1.19%) and extrusion injuries only (0.59%). In 64 primary TDI, displacement injuries were 29 (45.31%) followed by subluxation injuries (23.34%). Intrusion injuries were 15.62%, avulsion injuries 14.06% and crown fractures were 1.56%. There was no root fracture in primary teeth.

DISCUSSION

The study setting is located in both low and middle class socioeconomic area and treats both major and minor facial trauma. Thus it is reasonable to assume that it covers the surgical spectrum of TDI. Some 26% fractures of the other facial bones were associated with TDI in this study. This figure is different from 13.5% reported by Da Silva et al.[11] This may be due to the differences in etiology of TDI in the two studies. In this study road traffic accidents were the major cause, as compared to fall in other study. In this study mandible was involved 65.38% which is comparable with the study of Saulo E et al.[12]

A total of 400 injuries were recorded in this study. Out of these 84% were in permanent teeth and 16% in primary teeth. This is comparable to the study of Altay and Gurger,[8] but varies from Schatz and Joho,[15] who reported a higher frequency of traumatized primary teeth. Out of 400 injured teeth, 58.93% were in the maxilla. This in agreement with the study by Da Silva et al,[11] and is varies from results of Zuhal et al,[14] where it was 88.5%. Maxillary central incisors followed by maxillary lateral incisors in both permanent and primary dentition were the most common teeth involved. This may be due to their vulnerable positions. This finding is in agreement with the findings of other studies.[3,5,8,13,14,16,17] Maxillary left

central incisor followed by maxillary right central incisor was the most common tooth to be affected in TDI in this study and this fact is supported by earlier studies.[7,16]

Displacement was the most common type of trauma in permanent dentition in this study. This is in agreement with Da Salva et al,[11] and varies from others,[8,16] where uncomplicated crown fracture was the common injury. This may be due to the exclusion of simple dental fractures (infraction, uncomplicated crown fracture and complicated crown fracture without alveolar fractures) from this study. Other injuries in this study were subluxation (32.14%), avulsion (12.21%) and complicated crown and root fracture (10.72% and 7.44% respectively). This is in agreement with the earlier studies[1,8] and varies from the observation of Gholamreza et al[18] where complicated crown fracture ratio is 59%. This may be due to difference in the etiology in this study Road traffic accident is the common cause, where with Gholamreza it is combat sports. Displacements followed by subluxation were common injuries in primary dentition. Intrusion and avulsion injuries were 15.62% and 14.09% respectively. There was a single case of complicated crown fracture and no case of root fracture in primary dentition. These results agree with earlier reports.[5,8] and this may be due to high resilience and elasticity of alveolar bone in childhood.

The limitations of this study were that these cases were recorded in maxillofacial surgical unit. Therefore simple soft tissue injuries, crown infraction and simple dental fracture cases, which are usually referred to peadodontics and operative department were excluded. It would be much better if some one record these cases in emergency department and dental outdoor department before referring these cases to concerned departments.

CONCLUSION

The Permanent teeth were noted as the common teeth to be injured. In primary dentition displacement injuries were most common followed by subluxation and intrusion injuries.

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RELATION OF DEMOGRAPHIC VARIABLES WITH CARDIOVASCULAR RISK FACTORS IN DIFFERENT BLOOD GROUPS

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ABSTRACT

Objectives: To know the relation of demographic variables with cardiovascular risk factors in different blood groups.

Material and Methods: A community based investigation was carried from urban and rural areas of Peshawar from January 2008 to December 2009. The data collected was subject to correlation regression analysis. A total of 1304 subjects were included in the study.

Results: The study revealed a strong positive correlation of age with body weight, systolic blood pressure (SBP) and diastolic blood pressure (DBP) in both genders of the A and O phenotypes and positive relationship with Triglyceride (TG) in all blood groups. Positive associations of age with SBP & DBP also characterize the male B and female AB phenotypes. Of the lipids/lipoproteins, it was, Triglycerides (TG) that showed a consistent pattern of increasing means as age of all phenotypes advanced from 16 to 75 years.

Conclusions: Awareness and necessary precautions are to be adopted by individuals of B and O groups who are more at risk of Cardiovascular disease.

Key Words: ABO, Blood group, Cardiovascular risk, Hyperlipidemia.

INTRODUCTION

Cardiovascular disorders (CVD), especially coronary heart disease (CHD) are known to constitute a serious affliction the world over.[1-2] Plasma lipids, lipoproteins, dietary habits, lack of exercise, obesity and emotional stress are some of the major risk factors for CVD.[3,4] Various community based research programs aimed at identifying gene markers of CVD have led to the view that ABO and Rh phenotypes are also reliable determinants of hyperlipidemic state and the impending threat of this disorder.[5-6] There is abundant evidence that total serum cholesterol and TG are a major risk and predictive factor of CVD. In the geographic context very little work has been done in Pakistan[7-8] on the possible association of the ABO phenotypes as co-variables of lipids and cardiovascular risk. The present study based on regression analysis is an effort to correlate demographic variables in different blood groups with CVD.

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MATERIAL AND METHODS

This prospective study was carried out in Khyber Medical College, Peshawar from January 2008 to December 2009. A total of 1304 subjects, 756 males and 548 females, were screened and selected. The subjects belonged to urban and rural areas of Peshawar. The age of the subjects ranged from 16 to 75 years with a mean age of 45 years. The subjects were required to answer a questionnaire covering occupation, personal data, dietary habits, etc. Body weight, Blood pressure, pulse were recorded. The subjects were required to fast overnight prior to collection of a blood sample. Facilities for sample analysis were provided by the Pakistan Medical Research Council (PMRC), Peshawar. The blood groups were analyzed by antigen – antibody agglutination test. The anti-sera used were obtained from Plasmatec (Kent, UK). For determination of Rh Factor, Plasmatec anti-D monoclonal reagents were used.

Total serum cholesterol (TC), and Triglycerides TG were determined by enzymatic colorimetric method using Elitech Kit (Brussels) The optical density of the sample was read against a blank on a spectrophotometer (IRMA colorimeter, Japan) at a

wavelength of 510 nm. The reference value of cholesterol according to Elitech kit is 150-260 mg/dl. For TG, the optical density of the standard was read against blank at a wavelength of 546nm. Differences among the blood groups (ABO, Rh) and sexes within blood groups were determined by Student's T test.

RESULTS

The distribution of ABO groups by number and percentage in the population sample and genderwise is shown in Table 1. The blood group B being dominant in males and O in females, AB was represented in approximately tenth of the study sample. The correlation of age with anthropometric, blood pressure, lipid parameters of different ABO phenotypes is shown in Table 2. There were no significant differences in height, however sex-specific differences ($P < 0.05$) were noted within all blood phenotypes. The males were, on average taller than females in addition to being significantly heavier than the females as well. There was no significant difference between the BP and pulse rate within the various blood groups overall, however statistically significant differences existed between the sexes within each of the B and O blood groups for SBP ($P<0.05$) and A and O groups for DBP. The males overall had higher SBP in addition to DBP.

The most out-standing relationship are a positive association of weight with SBP, DBP in both genders of A and O phenotypes and TG in all phenotypes. The advantage of age frequency analysis is that it also illustrates the limitations of age co-relations in respect to sample size of the older age groups resulting in introduction of some degree of bias in the data presented; in addition this analysis also displays a trend in the association of advancing age with the selected parameters for all blood phenotypes. Similar trends were evident for body weight in addition to BP. TG, though showed a highly significant trend of increase between the 16-20 and the older age groups, this trend is not marked for other lipid/ lipoprotein parameters which rise with advancing age and body weight.

Table 1: Distribution of various blood groups by sex in the total sample of subjects

Blood Group	Male with %age	Female with %age	Total
A	218(58.6%)	154(41.3%)	372
B	246(61.5%)	154(38.5%)	400
AB	78(54.17%)	66(45.8%)	144
O	174(44.8%)	214(55.15%)	388
Total	756	548	1304

Table 2: Correlation of different blood groups, gender, Height and Anthropometric Parameters

Group	Sex	Height (cm)	Weight (kg)	Pulse (per min)
A	Male	167	68.3	76
	Female	154.4	61.0	69
B	Male	168.7	67.2	76
	Female	155.4	63.1	76
AB	Male	170.8	72.9	78
	Female	150.3	63.2	76
O	Male	169.9	68.8	76
	Female	154.3	61.7	75
	Sex	**TG mg/dl**	**HDL mg/dl**	**LDL mg/dl**
A	Male	159	47.2	93.7
	Female	147.9	49.5	93.1
B	Male	146.6	47.4	93.7
	Female	138.6	50.5	95.4
AB	Male	145.6	50.0	95.7
	Female	146.1	48.7	99.3
O	Male	150.4	46.6	101.4
	Female	127.7	49.6	104.2

TG = Triglyceride, LDL = Low Density Lipoprotein, HDL = High Density Lipoprotein

DISCUSSION

Recently, a study showed that the population sample from Pakistan presently under consideration provides no evidence of hyperlipidemic state that would otherwise pose immediate risk of CVD despite demonstrating Rh-dependent and sex specific differences in lipids, blood pressure and anthropometric parameters among and within various blood phenotypes.[9] The study however did reveal a tendency, in the long term, of the B and O phenotypes in this sample for an adverse lipid profile and the impending threat of CVD. The present correlation analysis of the data provides further strength to these observations. This data not only reveal an association, positive or negative, of various anthropometric, BP and

lipid parameters with particular blood group phenotype. In a study conducted by Wong FL and Nicolosi RJ[10-11] the blood groups which were dominant in male were of O type than females, and the same observations were found in our study.

Age, however turned to be one of the out-standing factors having an influence on BP and lipid metabolism. Whereas age is independent of blood phenotype, the age at which particular physiological processes become active can vary in individual ABO blood groups (e.g. age at menarche). The present analysis provides ample evidence that age is positively correlated with weight, BP and TG particularly in the case of A and O subjects, regardless of gender. These findings are comparable with other studies.[12,13,14,15] It is also known that any one of the ABO phenotypes may have an influence on growth and development processes that are inherently important in determining body height and weight. A study conducted by Kannel WB et al.[16] showed that male were taller and heavier than females, it compares with our results. Akhund et al[18] and Soomro et al,[19] provide to the fact that Phenotype A are predominantly prone to CHD. Our study failed to favor this view despite demonstrating Rh-dependent and sex-specific differences in lipids, blood pressure and demographic parameters among the various blood groups, in our study blood groups B & O were more prone to coronary heart diseases.

While the present results and those described earlier,[17,18,19] collectively provide guidelines for timely preventive therapeutic intervention and constitute a database in an area of study that has received scant attention in Pakistan. Very importantly, follow-up investigations on this very population sample along the lines of the Bogalusa, the Framingham and the seven countries[20,21] would go a long way in evaluation of determinants of cardiovascular disease in general.

CONCLUSION

Blood groups B and O are more at risk of CVD than A and AB. These individuals must take necessary therapeutic and preventive measures to prevent cardiovascular complications.

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PRE-OPERATIVE CHEST X-RAYS: ARE WE DOING TOO MANY FOR TOO MUCH?

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ABSTRACT

Objective: To study whether preoperative chest x-rays are sometimes unnecessarily done in patients admitted to surgical wards.

Material and Methods: This observational study was conducted in a Surgical Ward of Khyber Teaching Hospital, Peshawar, Pakistan from 22 February 2010 to 22 March 2010. All those patients who were admitted to a single surgical ward and had their chest x-ray done preoperatively were included in the study.

Results: The total number of patients included in the study was 89. Of them, 28 (31.36%) had a positive history of cardiopulmonary problems. Only 5 patients were examined before the x-ray was done. Out of these 5 patients, 3(60%) had positive findings on chest examination. Seventy nine (88.76%) x-rays were advised by house surgeons. The anesthaetist had a look at the chest x-ray in only 9(10%) cases. The total expenditure of the hospital was Rs. 4445.55 for all the 89 cases that were included in our study.

Conclusion: Strict adherence to guidelines of pre-operative chest x-rays can decrease the burden on the hospital in terms of finances and work load.

Key words: Chest x-ray, preoperative, cardiopulmonary.

INTRODUCTION

X-ray chest has been an integral part of the pre-operative assessment, where indicated, for a long time.[1,2] Pre operative x-ray chest is done to detect those patients who may have some cardio pulmonary pathology which is asymptomatic, thus preventing any post operative complication there in.[3] To maintain cost effectiveness certain guidelines have been laid out in different set ups and institutions[1,3] Such guidelines often stress upon a certain age limit and clinical condition of the patient before penning down an investigation form.[4,5] These guidelines are meant to avoid the wastage of precious and limited financial resources, exposing the patients to unjustifiable radiation, over burdening the radiologist and exhausting auxilliary staff who are supposed to move the patients around from the parental ward to radiology.[6] Failure to adhere to a protocol can result in long lines of waiting patients, some of which may need important x-rays or other radiological investigations. It is quite possible that some of these patients should have been the first priority.

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In our setup, we have yet to develop protocols for various procedures including preoperative chest x-rays. The residents and house surgeons who are the ones on whom preoperative workup falls, usually fail to check the clinical status of the patient or take into account the age of the patient before advising a chest x-ray. Having observed this, we performed an audit of preoperative chest x-rays done in one month in a single surgical unit.

MATERIAL AND METHODS

This observational study was conducted in a single Surgical Unit of Khyber Teaching Hospital, Peshawar, Pakistan from 22 February to 22 March 2010. The number of patients in the study was 89. All those admitted patients were included in the study in whom chest x-ray was done preoperatively. A detailed performa was laid out noting the age, gender, type of admission, disease, management plan, cardio pulmonary examination findings prior to doing x-rays. The total time spent to transfer the patient to and from the Radiology Department, the time the patient had to wait for his/her turn and emergencies faced by the patients while waiting or being transferred, was noted. Any medication missed due to their absence from the ward was taken into account. A two question performa was given to the Anaesthetist, after surgery was done, asking the following questions:

1) Did he/she have a look at the x-ray before the patient was anaesthetized?

2) If yes, were there any positive finding(s) on the x-ray?

An observer was also asked to observe whether the anaesthetist asked for the x-ray film. It was also noted whether a chest examination was conducted on the patient by the anaesthetist and whether there were any positive findings. At the end of one month, the results were analyzed to see whether unnecessary x-rays were being done and also to see the consequences of an unnecessary x-ray, especially in terms of wastage of time and resources.

RESULTS

The ages of the patients ranged from 2 years to 120 years, with the median age being 45 years. Out of a total of 89 patients, 48(53.93%) were female and 41(46.07%) were male. Sixty two (69.66%) were admitted as elective cases and 27(30.34%) as emergencies. Only 28 (31.46%) had symptoms related to the cardiopulmonary system like dyspnoea, palpitations, chest pain, cough, history of myocardial infarction, tuberculosis and asthma. Only 5(5.61%) patients out of 89 were examined before sending them for a chest x-ray. The remaining 84 (94.39%) were sent for a chest x-ray without having undergone a cardio-respiratory evaluation.

Three (60%) patients out of 5 who were examined had some positive findings. One patient had wheezes. One had dyspnoea with absent sounds on the right side of the chest. She was discovered to have a diaphragmatic hernia on the x-ray. The remaining two (40%) who were examined had no positive findings. An x-ray was advised by residents/post graduate trainees in 7(7.87%) cases. In 3 (3.37%) cases, a consultant asked for a chest x-ray. Seventy one (79.78%) patients were stable enough to walk to the Radiology Department and back. Thirteen (14.61%) patients had to use a wheelchair and 5(5.61%) patients were transported on a trolley.

Seventy eight (87.64%) patients were accompanied by a ward attendant for their x-rays. Eleven (12.36%) patients had to find their way to the Radiology Department. No patient was accompanied by a nurse or doctor. Of the 89 patients, 6 were on medication for various indications. Four of them (66.67%) missed one or more doses of medication while being out of ward. Two (2.25%) patients developed serious problems while waiting in the Radiology Department. One was a case of intra-abdominal malignancy who developed severe respiratory distress. Another case was of a patient who had undergone a laparotomy in a district hospital and developed profuse discharge from the wound site while waiting for an x-ray. He was due for re-exploration for anastomotic failure. Sixty eight (76.40%) patients had a normal chest x-ray while 21(23.60%) patients had positive findings like cardiomegaly, consolidation, pleural effusion and more importantly from a surgical point of view, gas under the right hemi diaphragm.

The anaesthetist examined the chest of the patients quite regularly but very rarely asked for the x-ray. In 71(79.78%) patients, the x-ray was not looked at by the anaesthetist. In 9(10.11%) patients it was seen by the anesthetist. Five (5.61%) patients had their x-rays misplaced so positive findings could not be ascertained. Only 5(5.95%) out of the 89 patients operated, developed chest related complications in the first 24 hours. Two of these patients had serious complications. One developed ARDS. Preoperative chest examination and chest x-ray had been normal. He later recovered. The second patient had bronchiolar spasm. This patient had no history of respiratory problems and was not examined preoperatively. His pre-operative chest x-ray had been normal. The remaining 3 patients developed a dry cough. These patients had no history of cardiac or pulmonary problems. None of these 3 patients had been examined preoperatively nor had their x-rays been seen by the anaesthetist.

Our hospital pays Rs. 49.95 for each x-ray film. The total cost to the hospital for the 89 cases studied in one ward in one month amounts to Rs. 4445.55 which translates to Rs. 53346.61 per ward per year. If one considers all five surgical units, the total amount comes to Rs. 266733 per year. In 71 patients, the x-ray was not asked for by the anaesthetist. Twenty one patients had findings on their x-rays but in only 9 of these patients, the x-rays were examined by the anaesthetist. If we exclude the 3 patients who developed postoperative dry cough but had not had their x-rays seen by the anaesthetist, the number of "ill-advised" x-rays totals to 65 (73.03%) and the unnecessary expenditure on x-ray films alone, in a month in a single ward amounts to Rs. 3246.75. Taking into account the 5 surgical units, this translates to Rs. 194805 per year. If we consider the whole hospital the amount would be much higher. It may be noted that we have not taken into account the amount used on electricity and the wear and tear of wheel chairs and trolleys. The inconvenience to patients and attendants and over burdening the staff is of course to be considered but not measureable in real terms.

DISCUSSION

Most of the time a preoperative chest x-ray would not change the decision regarding the choice of anaesthesia or operative procedure.[1] The study of Lim et al[1] showed that only in 11 cases out of 324, such changes were made while in our study, a single change was made after the chest radiography of a patient suspected of having acute abdomen turned out to have a diaphragmatic hernia. Another study showed that only in 4.7% of the cases unexpected findings/changes were seen and only 1.2% changes were significant

enough to change the management plan.[6] In the study of Jeavon's et al only 33 of 500 patients had significant changes on x-ray chest and out of these 4 patients had to have their surgeries cancelled.[7] In our study, 65(73.03%) x-rays were done unnecessarily. A study by Mishra et al[2] puts this figure at 65%. In their study, 89% were ordered by the clinician and 11% by the anaesthetist. On the other hand, a study by Nze et al [8] reported that 75% (90/120)of cases had some medical indications for chest x-ray and that 84% (105/120) had positive findings on chest ray. We can presume that in this hospital setting they have a very good pre-CXR clinical assessment, so that there are clear indications for doing a preoperative chest x-ray.

According to the study of Ranasinghe et al[3] the house officer, medical officers and registrars were mostly responsible for the non-indicated chest x-rays. In our study of 89 patients, x-rays were advised by house officers in 76 patients, 9 by trainee medical officers and 4 by consultants. Our study showed that on most occasions, the doctor advising the x-ray did not perform a cardio-respiratory evaluation before sending the patient for an x-ray of the chest. The majority of the chest x-rays were advised by house officers, who possibly under pressure to get their job done take "short cuts".

In our study, it was also observed that the anesthetist had a look at the x-ray film of only 9 out of 85 patients who ultimately were put on the operating list. This means that the anaesthetist did not consider the x-ray important in most of the cases. One anesthetist had a look at the x-rays of all three consecutive patients that he had to anaesthetise. This was not the case with all the anaesthetists. This means that following a protocol is an individual choice. There is no literature on this subject with which we may compare our observations.

Joo et al[9] recommend that due to few changes in patients' management plan and low prevalence of detection of abnormality, chest x-ray should not be done routinely until and unless there is some co morbidity. The study of Wood et al[6] compared the occurrence of postoperative complications in two groups, one with preoperative chest x-ray and another group with no such x-ray and found no difference in both groups. Although we did not group patients, but the 5 patients who did develop postoperative cardiopulmonary complications had normal chest x-rays preoperatively.

In our study the number of those x-rays with positive findings was 21 and 16 of these were aged 50 years or above. This suggests a positive correlation between the age and positive findings on chest x-ray. Other studies[5,7,10] have also reported a positive correlation between positive findings on chest x-ray and patient age. Chest x-ray as a base line investigation is of value in 9% of cases only.[9] The possibility of getting some abnormal findings on routine pre-operative chest x-ray is 2.5% to 37%.[8] We found similar results in our study.

CONCLUSION

The importance of pre-operative x-rays cannot be denied but proper guidelines must be enforced to avoid unnecessary x-rays, thus cutting down the expenses of the hospital, and using the funds for other important things.

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MECHANICAL BOWEL PREPARATION IN ELECTIVE COLORECTAL SURGERY

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ABSTRACT

Objectives: To assess the effects of preoperative mechanical bowel preparation (MBP) on postoperative complications and recovery in elective colorectal surgery.

Material and Methods: Prospective study carried out in the Surgical Department of Hayatabad Medical Complex on patients with American Society of Anaesthesiologist (ASA) grade < III, undergoing elective bowel resection and primary anastomosis for colorectal pathology. Post operative anastomotic leak, re-operation rate and mortality within a 30 day period were determined as the primary end points while the secondary endpoints were wound infections, abscesses, cardiovascular complications and hospital stay.

Results: A total of 102 patients were randomized into two groups. Half of these (MBP-Gp1) received mechanical bowel preparation prior to surgery and the other half (No MBP-Gp2) did not have any bowel preparation. No significant difference was observed between the two groups in relation to the primary and secondary endpoints with the rate of anastomotic leak recorded as 11.76% and 7.84%, re-operation rate 9.8% and 5.88%, mortality 1.96% and 1.96%, cardiovascular complications 19.61% and 11.76%, wound infection 23.5% and 15.69% and deep abscess 7.84% and 3.92% respectively. Post-operative hospital stay was 10.27 d in Gp1 and 10.02 d in group 2, the difference being statistically insignificant.

Conclusions: Mechanical bowel preparation offers no benefit in terms of anastomotic leak rate, infective and other complications in patients undergoing elective colorectal procedures.

Key Words: Mechanical bowel prep (MBP), colorectal surgery, anastomotic leak, wound infection, cardiovascular complications, re-operation, hospital stay.

INTRODUCTION

Administration of mechanical bowel preparation to patients before elective colorectal operations has been in fashion for more than a century.[1] Surgeons around the world employ the procedure, along with special diets and prophylactic antibiotics[2,3,4,5] in an effort to obtain a clean bowel and cut down on the frequency and magnitude of post operative infective complications. However of late the role of MBP has been questioned, with an increasing number of trials,[6-7] multicentre randomised studies[8,9] and meta analysis[10-11] showing that it does not have any significant benefits to offer in terms of the rate of anastomotic leak and other infective complications. Inspite of all the recent evidence undermining the role of MBP for colorectal operations, the practice continues to find place amongst surgeons in modern day practice. A 2003 survey of practicing colorectal surgeons in The United States showed that almost 99% of the respondents used elective bowel prep routinely before colorectal operations.[12]

In our country, with limited resources and poor patient compliance in terms of any management procedure the use of MBP needs to be carefully reviewed in light of the evidence available. This study was conducted to assess the impact of pre-operative bowel preparation on patients undergoing colon surgery and the results compared with patients having procedures of a similar nature without any bowel preparation.

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MATERIAL AND METHODS

This randomized controlled trial was carried out in the Surgical Department of Hayatabad Medical Complex, Peshawar. It included patients with an ASA grade of I, II or III admitted for elective colorectal operations (Ca, adenoma) from April 2008 to March 2010. All these patients had primary hand sewn bowel anastomosis. Patients who scored ASA IV and those who had formation of a stoma or were found to have a locally advanced or metastatic disease were excluded. An informed consent was obtained from the participating patients. Relevant data was recorded on specially designed collection forms and promptly fed

into a computer database. The patients were randomized into 2 groups. Those in group 1 were kept on a low residue diet for 2 days prior to their operation and were given sodium picosulphate (Laxoberon – 20ml) in the morning and again in the evening of the day preceding surgery. Patients in group 2 received no such mechanical bowel preparation. All patients received antibiotics (Cefotaxime and Metronidazole) at induction and were given low molecular weight heparin (LMWH) post- operatively. Primary endpoints were anastomotic leak, re-operation rate and mortality within a 30 day period. Secondary endpoints were wound infections, abscesses, cardiovascular complications and hospital stay. The Chi-square test and t test or Mann-Whitney U test were used to assess any statistically significant difference in outcome with a p value <0.050.

RESULTS

A total of 109 patients were assessed for eligibility. 102 of these were randomized into the trial. 5 of the 7 excluded pts did not meet the inclusion criteria while 2 did not have surgery. They were allocated equally i.e 51 patients each to the two groups – Group 1 receiving MBP and Group 2 without any MBP. The demographic data (Table 1), indications for operation (Table 2) and site of anastomosis (Table 3) were well matched between the two groups.

Table 1: Demographics

	MBP	No MBP	p value
Age in years	23 – 75 (mean 56 y) SD+11.98	29-76 (mean 57 y) SD+9.89	0.52
Male Gender	32	30	0.68

MBP=Mechanical Bowel Preparation

Table 2: Diagnosis

	MBP	No MBP
Ca	43	39
adenoma	08	12

MBP=Mechanical Bowel Preparation
(Pearson Chi square test; p=0.32)

Table 3: Site of Anastomosis

	MBP	No MBP
Ileocolic	28	31
Colocolic/ colorectal	23	20

MBP=Mechanical Bowel Preparation
(Pearson Chi square test; p=0.55)

Anastomotic leak was diagnosed clinically and confirmed by contrast radiology. Six patients (11.76%) in the MBP group and four patients (7.84%) in the no MBP group had an anastomotic dehiscence. The difference was not statistically significant. Five patients in group 1 (MBP) and three in group 2 (no MBP) had a re-operation for anastomotic leak. One patient in each group, having minor degree of leaks was managed conservatively. The mortality rate (1.96%) was similar in both groups. The patient in group 2 died of advanced disease (carcinomatosis diagnosed at the time of operation) while the death in the MBP group was secondary to an anastomotic leak and sepsis leading to fatal MI. Although the overall incidence of CVS complications was higher in the MBP group, this did not show any statistical significance. A similar non significant trend was observed in case of complications such as wound infection and deep abscesses confirmed on ultrasound. The mean post operative hospital stay was 10.27 days for patients in the MBP group versus 10.02 days for the non MBP group which was not statistically significant (p = 0.50).

DISCUSSION

This study reflects the results of more recent trials[13-14-15] and meta analysis[16-17-18] suggesting no benefit to the use of mechanical bowel preparation in significantly lowering the incidence of post operative complications in colorectal surgery. In spite of growing evidence to the contrary, the protagonists of the more traditional approach use bowel preparation routinely arguing benefits for example less faecal soiling during operation, better handling of the bowel and tumour localisation, ease of use of stapling devices, avoiding on table washouts and a decreased risk of anastomotic leakage requiring re-operation.[19-20] Results of the study show that the two group of patients in our study, ie those receiving MBP and the ones without any form of preparation were of the same size and were well matched in terms of their demographic and diagnostic presentation and the site of colonic anastomosis with other studies.[21,22,23,24]

A recent meta-analysis of randomized controlled trials comprising five thousand patients showed a significantly higher rate of cardiac events in patients receiving mechanical bowel preparation before colorectal surgery.[25] Some studies have also shown a higher mortality rate in patients receiving bowel preparation.[26,27,28] These effects are related to dehydration and electrolyte imbalance caused by use of laxatives. Other studies[29,30] however, have shown no significant difference in this respect. A trend towards higher cardiovascular complications like AF, CCF and MI was observed in this study, though this was not statistically significant. One death in each group was recorded in our study. Our overall mortality rate may be biased by the fact that patients with major systemic illnesses i.e. ASA IV and above were excluded from

this study to negate the effects of the patient's general health on anastomotic healing.

A higher incidence of leaks was recorded in our study in the MBP group (11.76%) as compared to the no MBP group (7.84%) though the difference was not statistically significant (p=0.50). There is growing evidence to suggest that MBP has no role in reducing the incidence of anastomotic leaks and may in fact contribute to the latter by causing structural alteration and inflammatory changes in the large bowel wall.[31,32] A meta-analysis of nine clinical trials and a total of 1592 patients, published in Cochrane Database review in 2005[23] concluded that "there is no convincing evidence that MBP is associated with reduced rates of anastomotic leakage after elective colorectal surgery. On the contrary, there is evidence that this intervention may be associated with an increased rate of anastomotic leakage and wound complications." This was thought to be a result of "semi prepared" colon full of liquid faeces that was difficult to control, often leading to spillage and peritoneal contamination, thus explaining the higher rates of complications found in the MBP group.

Interestingly the incidence of infective complications was higher in group II which conforms with the long recognised fact that the intracolonic bacterial content is unaffected by MBP. This study thereby demonstrated the safety of primary anastomosis in unprepared bowel, a view that is also fortified by studies[32,33] in patients with traumatic colonic injuries having primary repair in evidently non prepared bowels. In our study the use of mechanical bowel preparation had no impact on the length of hospital stay which was mainly determined by the nature of post-operative complications. In a developing country like Pakistan the cost of using bowel preparation and accompanying intravenous fluids to avoid dehydration has financial implications. Furthermore bowel prep administration on the ward has additional constraints on the busy and overworked nursing staff and accounts for unnecessary preoperative bed occupation.

CONCLUSION

Mechanical Bowel preparation offers no advantage in terms of the rate of anastomotic leak and reducing the number of infective complications, we propose that the procedure is un-necessary and can easily be avoided.

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GASTROINTESTINAL STROMAL TUMORS

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ABSTRACT

Objective: To study the clinical presentation, results of investigations and treatment of the recently identified tumor entity Gastrointestinal Stromal Tumors (GISTs).

Material and Methods: This descriptive study was conducted in the Department of Surgery, Khyber Teaching Hospital, Peshawar from January 2002 to December 2010. Eight patients were admitted from OPD and two patients shifted from medical units. All these patients were investigated thoroughly before surgery, including computerised tomography, magnetic resonance imaging and endoscopy apart from the baseline investigations. Post operatively, all these cases are being followed initially at three month intervals, then at six months in the second year and later on at one year intervals.

Results: There were four female and six male patients between the ages of 40 and 65 years. The mean age of the patients was 58.5 years. The main clinical features at the time of presentation were a palpable mass in the abdomen, hematemesis and malena. The small intestine was involved in 7 cases and stomach in 3. Investigations performed were ultrasound of the abdomen and computerized trans-axial abdominal scan in all the cases. Endoscopy, angiography and biopsy were performed in some. The investigations did not confirm the diagnoses in any patient. Diagnosis was established after surgery in all the cases. All the patients were treated with surgery alone with good result.

Conclusions: The diagnosis of gastrointestinal stromal tumors is confirmed after surgery. The gold standard in treatment is complete surgical resection of the tumor.

Key Words: Stromal tumors, pleuripotential cells.

INTRODUCTION

Gastrointestinal stromal tumors are a subset of mesenchymal tumors. Although a rare tumor, accounting for less than 1% of gastrointestinal tumors, it is still the commonest mesenchymal tumor involving the gut.[1] These are primary non-epithelial neoplasms arising from pleuripotential mesenchymal cells.[2] It is a recently recognized tumor entity and the literature on these tumors has rapidly expanded in the past four or five years. These tumors are KIT (Tyrosine Kinase Receptor CD117) signal driven mesenchymal tumors.[3] These tumors commonly involve the stomach and small intestine and can rarely involve the colon,[4] esophagus or extra-intestinal structures.[5] The behavior of the tumor is variable, from being completely benign to frankly malignant. The mainstay of treatment is complete surgical resection.[6]

MATERIAL AND METHODS

This study was conducted in surgical 'B' unit of Khyber Teaching Hospital, Peshawar from January 2002 to December 2010. All cases were admitted through OPD except two cases shifted from medical units, with variable complaints. The investigations performed in these cases included baseline investigations like blood complete, blood urea and glucose, hepatitis viral screening, blood group and X-ray chest. Specific investigations like ultrasound, computerised tomography, magnetic resonance imaging and endoscopy in cases where indicated. The final diagnoses were established after surgical resection and histopathology of the specimens. These cases are being followed-up at regular intervals, every three months during first year after surgery, after six months in the second year and yearly afterwards.

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RESULTS

Six male and 4 female patients, were diagnosed with GIST. The age ranged between 40 and 65 years. Most of these patients presented with vague abdominal symptoms. An abdominal mass was palpable in seven patients. Two patients presented with hematemesis and on endoscopy were found to have a gastric mass, but the endoscopic biopsy was reported as normal. One patient who had endoscopy for dyspepsia was incidentally found to have a gastric mass. Again biopsy showed normal gastric mucosa. One patient presented with severe malena resulting in hypovolemic shock. This patient required multiple blood transfusions.

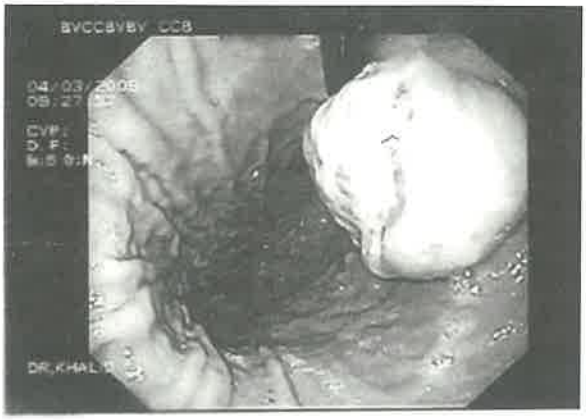

Fig. 1: Endoscopic view of a gastric stromal tumor

All those cases confirmed on Histopathology after surgery was included in this study. In biochemical investigations, five patients had hemoglobin of less than 9gm/dl with no other significant findings. All these patients with an abdominal mass were investigated by a preliminary ultrasound abdomen followed by CT abdomen. One patient presenting with severe malena also had an MRI and mesenteric angiography which showed a highly vascular small gut tumor. Chest radiograph was done in all cases and showed no abnormality. In none of these cases the diagnosis was confirmed before surgery. All the patients underwent laparotomy; complete resection of the mass, no macroscopic residual tumor tissue behind. The masses ranged from 3cm to 10cm with no lymph node involvement.

The histology report of all the tumors was that of gastrointestinal stromal cell tumor with a positive KIT (tyrosine kinase receptor) CD117 gene positive. The number of mitoses was less than 5 per 50 high power fields. All these cases had low to intermediate risk for malignancy. There were no obvious metastases in the liver and lungs. All the patients had a smooth recovery without any complication. The follow-up of the initial five patients for the last five years has shown no local recurrence or distal metastasis. Patients operated more recently are being followed regularly.

DISCUSSION

GISTs are a recently recognized tumor entity.[2] Eight years ago when I presented a case report, there were hardly a few articles available on this tumor. Literature on GISTs has expanded very much on this subject in the last five years or so. The origin of this tumor at first was attributed to Cajal's cells in mesodermal tissue,[3] but recently it has been recognized that GISTs arise from multipotential mesenchymal stem cells.[4] These tumors are KIT-expressing and KIT (tyrosine kinase receptor –CD117) signal driven mesenchymal tumors. All our cases were positive for this gene.

Previously these tumors were classified as leiomyoma, liomyosarcoma and leiomyoblastoma due to the presence of smooth muscle.[9] In 1998, Hiroto reported that GISTs contain activating C KIT mutations, which play a central role in their pathogenesis.[8] GISTs also express CD34 (Cluster Designation 34) and the KIT on their surfaces.[2,10] The discovery of mutated gene CD 34 and CD 17 has led to the introduction of the chemotherapeutic agent Imitanib Mesylate which is a tyrosine kinase inhibitor for C kit, very effective against GISTs.[7]

The incidence of GISTs is estimated to be 10 to 20 per million people per year. The risk of malignancy is between 20 to30percent.[11,12] Ninety percent of GISTs occur in adults above 40 years of age, as was the case in our study. The median age is 63 years. In our study it was 58.5 years. The incidence in both sexes is the same with some male predominance in some studies[10] as was in this study. The most common site involved is the stomach (60 to 80%) and small gut (30 to 40%). In our study 70% involvement was of small intestine. Five to ten percent arise from the colon and 5% from the esophagus. Other sites involved may be mesentery, omentum and retroperitoneum. There are reports of involvement of gall bladder, pancreas, liver and urinary bladder.[14,15]

Clinical presentation is variable. Only 70% patients are symptomatic while 20% are asymptomatic and 10% are detected on autopsy.[7,10] The symptoms are not disease specific. The majority of patients will present with abdominal mass or bleeding in the form of malena or hematemesis.[16,17] All our patients presented in the same way. Seventy percent of our patients presented with an abdominal mass, 20% with hematemesis and 10% incidentally. Other vague symptoms are nausea, vomiting, abdominal discomfort, weight loss and early satiety, these symptoms were found in some of our cases. Rupture of the tumor into the peritoneal cavity is rare and can cause life threatening hemoperitonium.[19] Other symptoms are location dependent. The diagnoses are often delayed due to the vague nature of the symptoms.[13] Intra-peritoneal spread and spread to the liver or metastasis in the surgical scar can occur,[20] none of these occured in our cases.

The investigations required for diagnosis include barium study, ultasonography, computed tomography and angiography, but none of them can confirm the diagnosis as was in all our cases. The recent development in endoscopic ultrasound guided fine needle aspiration cytology with a reported accuracy of 80-85% can confirm the diagnosis.[21] Endoscopic ultrasound has been found very effective in finding out tumor characteristics, size, irregular borders, local spread and heterogeneity to predict malignant potential of the tumor,[22] these facilities are not availabe to us. Complete surgical resection without rupture of the tumor is the gold standard therapy.[23] All our cases

responded well to complete surgical resection. Regional lymph node resection has no value in the treatment of GISTs, because it rarely metastasizes to lymph nodes.[6] Complete resection results in a 48-65% five year survival.[24] Laparoscopic resection is also successful.[6]

In the management of advanced GISTs (metastatic or recurrent disease), the mainstay will be complete surgical resection followed by the use of imitanib 400mg/day for 72 months. Without imitanib curative surgery had a 5 year survival of 40-75%.[25] The prognosis of low risk tumors after curative surgery is excellent. The prognosis for high risk patients was poor, but the introduction of imitanib has changed this dramatically. GISTs have a very unpredictable behavior and a long term followup is advised independent of the benign or malignant nature. Recurrence in the majority occurs within 3-5years, so a CT abdomen is advised every 3-6 months for 3-5 years and yearly thereafter.[3]

CONCLUSIONS

The gold standard in the treatment of GISTs is complete surgical resection of the primary tumor without rupture and because of unpredictable nature of the tumor a 3-5 years follow-up is suggested in all the cases whether benign or malignant.

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SEROMA FORMATION IN MODIFIED RADICAL MASTECTOMY: WHY, WHOM AND WHEN?

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ABSTRACT

Objectives: The objective was to determine the frequency of seroma formation after modified radical mastectomy and the possible causes.

Material and Methods: This descriptive, observational study was done in the Surgical "B" Unit, Khyber Teaching Hospital, Peshawar, Pakistan over a 1 year period (1st November 2005 to 31st Oct 2006). Patients undergoing mastectomy with axillary dissection were selected according to the inclusion/exclusion criteria by convenience method. All the patients were interviewed using a proforma. The data was analyzed using descriptive statistics.

Results: Forty two patients, 1 male and 41 female underwent mastectomy and axillary dissection of whom 13 (31%) developed a seroma. Advanced age was significantly associated with seroma formation. Out of 6 (14.3%) hypertensive patients 3(50%) developed a seroma, while amongst the 30 (71.4%) over weight patients, 10(33.3%) developed seroma. There were 9(21.4%) anemic patients of whom 4(44.4%) developed a seroma. Aspiration of seroma was done in 5(38.5%) patients. Recovery was uneventful in all patients.

Conclusions: Certain factors might be associated with an increased risk of seroma formation.

Keywords: Seroma, carcinoma breast, mastectomy.

INTRODUCTION

Modified radical mastectomy is a frequently performed procedure in breast cancer.[1,2] Seroma is the most common complication,[3,4,5] with a reported incidence of between 2.5% and 51%.[6,7] Though not life threatening, seromas can lead to significant morbidity (e.g. flap necrosis, wound dehiscence, predisposition to sepsis) and may delay adjuvant therapy.[8,9] Rarely a second surgery is needed. Fluid collection is ideally managed by repeated needle aspirations to seal the skin flaps against the chest wall. Sometimes it resolves itself.[10,11] The mechanism and aetiology of seroma formation in breast cancer surgery remain controversial. A prolonged, intense inflammatory phase of wound healing is thought to be the cause. Several factors found in seroma fluid support this: high levels of IgG, granulocytes, proteinases, proteinase inhibitors, different kinds of cytokines. (tPA, uPA, uPAR, PAI-1, PAI-2, IL-6, IL-1).[12]

There is evidence to support a risk for seroma formation in obese individuals, hypertension and in individuals who undergo radical mastectomy rather than a simple mastectomy. A "large dead space" appears to contribute. In terms of seroma prevention, the key factor appears to be obliteration of the dead space by securing flaps to underlying tissues. Additional factors include minimization of lymph spillage and serum ooze, and a rapid removal of accumulating fluid.[13]

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MATERIAL AND METHODS

This descriptive observational study was carried out in the Surgical "B" Unit of Khyber Teaching Hospital, Peshawar, Pakistan, from 1st November 2005 to 31st Oct 2006. All patients with carcinoma breast who underwent modified radical mastectomy were included in the study. The sampling technique was non probability convenience sampling and all consecutive patients fitting the criteria were included. Patients with fungating growths for which a toilet mastectomy would be done and patients undergoing conservative surgery were excluded.

Preoperatively, a history was taken and examination performed. A note was made of age, gender, BMI (body mass index), blood pressure, clinically palpable axillary lymph nodes, and other associated medical diseases. Investigations were done preoperatively and recorded on a proforma. Postoperatively, wounds were regularly examined for complications including seromas. Following discharge, hospital visits were scheduled at one week after discharge and then a month from the date of surgery. Interval visits were arranged as needed. A note was made of the time interval between surgery and

the appearance of the seroma. The line of management and the response to it were noted. Data was recorded on a proforma.The data was entered into the SPSS program version 10.0. Chi-square test was applied.

RESULTS

A total of 42 patients with breast cancer were studied. There were 41 (97.6%) female and 1 (2.4%) male patient. All the patients underwent modified radical mastectomy. Thirteen (31%) patients developed seromas. Thirty-six (85.7%) patients were above the age of 45 years, 9(25%) of whom developed a seroma. Six (14.3%) were aged 45 years or younger; 4 (66.7%) of whom developed a seroma. The mean age was 56.90 years (9.76 S.D) ORS=. 167(95% CI .026-1.068) P=. 041.

Twelve (28.6%) patients had clinically palpable ipsilateral lymph nodes, 5 (41.7%) of whom developed a seroma (p= 0.46). Six (14.3%) patients were hypertensive. Of the hypertensive patients, 3(50%) developed a seroma, (p=.35) while amongst the 30 (71.4%) over weight patients 10 (33.3%) developed a seroma. Of the 12 (28.6%) patients with normal weight 3(25%) developed a seroma (p=.72)and of the 9(21.4%) anemic patients 4(44.4%) developed a seroma (p=.06). Eight (61.5%) cases of seroma were treated conservatively. Aspiration of seroma was done in 5(38.5%) cases. 2 (40%) patients needed a second aspiration while 2(40%) needed a third aspiration. All the cases resolved within two weeks.

DISCUSSION

Seroma is a common complication following breast surgery and axillary dissection. It is an accumulation of serous fluid beneath the skin flaps of a mastectomy or in the axilla after axillary dissection.[14] The incidence of seroma formation after breast surgery varies between 2.5% and 51%.[15,16,17,18] A study done in Ankara Oncology Hospital on 257 consecutive cases of modified radical mastectomy, reported a 31.1% incidence.[19] Another study conducted at the Mayo Hospital, Lahore by Bhatty et al put this figure at 20%[5] while a study by Hashemi et al reports a 39% incidence.[20] In our study the incidence was 31%. Among the several risk factors recognized for seroma formation are: advanced age, duration of drain placement, electrocautery use, [21] obesity,[22] involved lymph nodes, early shoulder movement,[23] hypertension,[24] larger breast size, previous surgical biopsy, and the use of heparin.[25]

The risk for seroma formation in the obese may be related to the larger dead space formed after a mastectomy.[26,27] Some studies have however found no correlation between the two.[18] In our study seroma formation was commoner in the over weight but the relation was not statistically significant. Gonzalez et al showed that there was a direct correlation between age and the development of seroma.[21,28] A study by Kurari et al showed no relationship.[29] In our study the relation between patient's age and seroma was statistically significant. OR= 167(95% CI .026-1.068) p=. 041, seromas being commoner in the older age group.

Soomro et al conducted a study on the role of hypertension, diabetes mellitus, neoadjuvant chemotherapy and nodal dissection in the development of seroma after breast surgery. The only factor that appeared to contribute was hypertension.[30] We found no statistically significant relation between the two. A myriad of techniques have been reported for the prevention of seroma formation; closing dead space, flap tacking procedures, tissue glues, and restriction of shoulder movements.[31,32] There are two methods for closure of the dead space beneath skin flaps: compression by external pressure, and fixation of the flaps with sutures. Chintamani et al showed that the external compression dressings helped in the adherence of the flaps and reduction of dead space.[33] Another study shows that routine use of a pressure garment to reduce postoperative drainage is not warranted.[22,34] In our study compression dressing was used in all the 42 patients in whom 13 developed a seroma. Suture flap fixation does reduce seroma formation, allowing early removal of drains and discharge.[35] In this study flap fixation was not done in any case.

Seroma may persist for several months, require multiple aspirations, increase time of hospitalization and delay adjuvant therapy. Occasionally, a seroma may need surgical removal. In the present study aspiration of seroma was done in 5 patients. Thus, although a number of factors have been correlated with seroma formation,[36,37] strong evidence is needed, and it seems to be difficult to identify patients who will ultimately suffer from seroma.[38]

CONCLUSION

Seroma formation is a frequent complication of mastectomy. Certain factors might be responsible for seroma formation. Further studies are needed to elucidate these.

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ESOPHAGECTOMIES IN A GENERAL SURGICAL UNIT

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ABSTRACT

Objective: To report the results of esophagectomies for carcinoma esophagus, in a general surgical unit over a three year period.

Material and Methods: Over a three year period, from July 2005 to July 2008, a total of 20 patients with biopsy proven carcinoma of the esophagus considered fit for curative resection underwent esophagectomies in a single Surgical Unit of Khyber Teaching Hospital, Peshawar. The postoperative course was followed closely in hospital for 14 days and out patient follow up was done at 30 days and at six months following surgery. Surgical outcome was assessed in terms of immediate and early postoperative complications, length of ICU stay, and remaining symptom free at 6 month follow up.

Results: Of 20 patients, 8 (40%) were referred from other units, while 12 (60%) were admitted through the surgical out patient department. There was a male preponderance of 2.3:1. The age range was from 40 to 75 years. The two-stage Ivor Lewis procedure was performed in 16 (80%) patients and three-stage McKeown procedure in 4 (20%) patients. The average length of Intensive Care Unit (ICU) stay was 56 hours. There was one in-hospital death post operatively due to presumed pulmonary embolism. One patient required thoracotomy for drainage of intra thoracic leak. Thus, 30-day mortality and morbidity were both 5%. At six months, 80% of patients were traced at follow up, and remained symptom-free.

Conclusions: We conclude that with the relatively low 30 day mortality and morbidity related to surgery in the observed patients, immediate and early postoperative outcome remain tolerably well.

Keywords: Carcinoma, esophagus, esophagectomy.

INTRODUCTION

Cancer of the esophagus, a disease with a high mortality and morbidity,[1,2] is experiencing a rise in incidence globally.[3,4,5] With only 50%[6] of patients being candidates for cure at diagnosis, complete surgical extirpation of tumour and involved lymph nodes remains the mainstay of treatment.[7,8] Esophageal carcinoma has a poor prognosis[1,2] and where the incidence of squamous cell carcinoma is static, that of adenocarcinoma is on the rise. Controversy exists about the best surgical approach, to remove and reconstruct the esophagus and about the extent of resection.[9] The two most common approaches are the trans-hiatal approach and the trans-thoracic or Ivor Lewis esophagectomy.[9,10] Post operative morbidity and mortality remain high.[11,12] The most frequent major complications include respiratory failure and anastomotic leaks. Although the trans thoracic approach results in fewer leaks (5-10%), compared with cervical anastomosis, yet leak associated mortality is higher for the thoracic anastomosis. (50-70% versus less than 20%).[13] Long term survival has been shown to be mainly stage dependent and old age, in the absence of co morbid factors, does not adversely affect outcome.[14] Although the results of surgery have been directly related to case volume in a center, we have aimed in this study to observe outcome in a low volume (of carcinoma esophagus) general surgical unit and to look for avenues for improvement.

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MATERIALS AND METHODS

After approval by the Institutional Ethical Committee, a descriptive study of all esophagectomies for esophageal cancer performed in a single surgical unit of Khyber Teaching Hospital over a three year period from July 2005 to July 2008 was carried out. Patients with biopsy proven carcinoma esophagus referred from other units as well as those presenting to the surgical out patient department with a subsequent diagnosis of carcinoma esophagus were included. Patients who were declared unfit for surgery, patients who had advanced disease on investigations and were not considered fit for curative resection were excluded. Pre operative tumor staging was done using routine chest radiology, ultrasonography of the

abdomen, barium swallows, contrast enhanced CT thorax and abdomen, and endoscopic biopsy (where not already carried out). Cardiorespiratory assessment was done using routine ECG, pulmonary function tests and echocardiography where indicated. In patients with severe prolonged dysphagia and weight loss, preoperative nutritional support using a short period of oral elemental liquid diet was instituted. Preoperative haemoglobin measurement was done with blood transfusions intra/postoperatively as indicated. Postoperative outcome was measured in terms of development of complications in the immediate and early post operative periods, length of intensive care unit stay, and symptoms at 6 months postoperatively. All data was recorded through a proforma.

All operations were done with curative intent, to remove the primary tumor and the draining lymph nodes in entirety. The Ivor Lewis approach is a two-stage esophagectomy entailing a thoracic anastomosis. The three-stage McKeown approach uses an anastomosis in the neck. Choice of procedure was dependent on the site of the tumor. Stomach was used to replace the esophagus in all cases, using a sutured anastomosis. Feeding jejunostomy was done for post operative enteral nutrition and routine naso gastric tubes were passed before completing the anastomosis. Anastomotic patency was checked per operatively by flushing the nasogastric tube with saline, with additional sutures placed if required. Procedure related mortality was taken as in hospital death or death within 30 days of surgery. The patients were given Intensive Care monitoring initially (for a minimum of 48 hours) and were later shifted to the ward. They were discharged after 10 days.

Pathological Analysis:

The resected tissue was marked with a stitch for orientation of proximal end. The specimen was then preserved in formalin and sent to the histopathologist. The tissue was assessed for tumor type, grade and size. The margins were assessed for tumor involvement.

RESULTS

A total of 20 patients with esophageal carcinoma underwent surgical treatment during the study period. Of these, 8 (40%) patients were referred for surgery by other departments; the rest (60%) were all admitted through the surgical out patient department. Dysphagia was the presenting symptom in 18(90%) patients. This was associated with significant weight loss in 14 (70%) patients. Most of the patients were middle aged to elderly, with a mean age of 55.3 years (Range 45-70 yrs). The male to female ratio was 2.3:1. Sixteen patients (80%) had tumors in the lower third of esophagus, whereas 4 patients (20%) had tumors of the mid-esophagus. Of the cancer type, squamous cell carcinoma was present in 12(60%) patients whereas 8 patients (40%) had adenocarcinoma. The two-stage Ivor Lewis procedure was used in 16(80%) of the patients whereas 4(20%) patients underwent the three-stage McKeown procedure. During the ten day in-hospital stay, there was one death due to pulmonary thrombo embolism. Procedure related mortality was thus 5%. One patient (5%) developed intra thoracic leak of the anastomosis which was detected on contrast radiography on the fifth post operative day. This necessitated re-exploration and placement of an intra thoracic drain. At six months, 16(80%) patients reported for follow up and these were all symptom-free.

DISCUSSION

Carcinoma of the esophagus is a morbid disease. Long-term survival is depends on disease stage at presentation. Worldwide, it is a disease of the elderly and screening programmes now promise some improvement in survival. Treatment protocols are aggressive with high morbidity and mortality. In accordance with global trends, most of the study patients were middle-aged to elderly males, female preponderance being relatively low. Dysphagia was the most common presenting symptom, and, since dysphagia per se is a sign of advanced disease, this implies that the disease is in an advanced stage in most patients at the first presentation. This is in contrast to new trends in the West and in Japan, where implementation of regular screening programmes means the disease is increasingly being detected at an early stage.[15]

Investigations include contrast enhanced CT of the thorax and abdomen, as well as upper gastrointestinal endoscopy, which has diagnostic and possible therapeutic value.[16] Whereas incidence of proximal and mid-esophageal tumours has remained relatively static over the past few decades, gastro-esophageal junction tumours have steadily been on the rise.[1,4,5,9] Although proximal gastric tumours were not included in our study, the most frequent site of tumor involvement was the distal esophagus. Squamous cell carcinoma in contrast to international data, was the most frequently observed tumor type seen in the study.

Treatment aims at complete tumor removal. Surgical removal remains the mainstay of treatment, with different authors advocating a 5-10 cm gross proximal margin of clearance. Of the transthoracic, transhiatal, or left thoracoabdominal approaches, the transthoracic Ivor Lewis[10] approach was used for tumors of the lower esophageal third, with an intrathoracic anastomosis. With its lower anastomotic leak rate (3-12%), it carries lower morbidity (29%) and

mortality (2.1%).[17,18] The three-stage McKeown approach with its cervical anastomosis was used in 4 patients. Although reported to have a higher leak rate, none of the patients had any such problems. Long-term prognosis, remains uninfluenced by anastomotic leaks post-operatively.[8,13,17] Our single incident of procedure-related morbidity translated into an overall complication rate of 5%, which compares with data from specialist centres. The single death resulting from pulmonary embolism also meant an overall 30 day mortality of 5% which again is in accordance with results of specialized centres. Importantly, elderly patients were included in the study and underwent surgery where there was no contraindication to general anaesthesia, with no difference between age groups in procedure related outcome.[19]

CONCLUSIONS

Carcinoma esophagus can be safely operated with good results in a general surgical unit.

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CLINICAL PRESENTATION OF VERNAL KERATOCONJUNCTIVITIS

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ABSTRACT

Objective: To identify the various clinical manifestations of Vernal Keratoconjunctivitis (VKC).

Material and Methods: This is a descriptive hospital based study done on patients attending Eye outpatient department, Khyber Teaching Hospital, Peshawar from January 2007 to Decmber 2009 presenting with signs and symptoms of vernal keratoconjunctivitis. Patients who were difficult to be examined on slit lamp were excluded from the study. The diagnosis was made basically on history and clinical examination.

Results: A total of 200 patients were examined, 118 (59%) patients were in first decade of life, 180 (90%) patients were male. Twenty Four (12%) had family history of atopy. One hundred & sixteen (58%) had palpebral VKC followed by 80 (40%) suffering from mixed VKC, 4 (2%) had limbal VKC. The symptoms and signs were present all around the year in 156 (78%) of the patients with increase in severity in summers.

Conclusion: Palpebral type of VKC is the most common type. In majority of the patients symptoms are present throughout the year with exacerbation in summers.

Key words: Vernal Keratoconjunctivitis, Allergic Conjunctivitis.

INTRODUCTION

Vernal Keratoconjunctivitis is a bilateral recurrent, IgE mediated allergic condition of conjunctiva and cornea.[1] Affected patients may be allergic to variety of substances including air borne allergens as pollens, mites, molds and animal dander.[2] About three quarters of patients have associated atopy and two third have a close family history of atopy. Atopic patients develop asthma and eczema in infancy.[3] There are three types of VKC, palpebral, limbal and mixed. Itching, redness, photophobia and discharge are its common symptoms. The visual morbidity is mostly due to corneal complications of the disease. The vernal keratopathy is caused by eosinophil derived proteins.[4] The objectives of our study were to identify the various clinical manifestations of vernal keratoconjunctivitis.

MATERIAL AND METHODS

We conducted a descriptive study from January 2007 toDecember 2009 in Eye Department, Khyber Teaching Hospital, Peshawar. A total of 200 cases of VKC were included in the study. A comprehensive proforma was designed for the study having detailed record of age, gender, seasonal variation, personal and family history of allergy. Presenting symptoms were documented as itching, redness, watering photophobia, discharge and defective vision. Corneal signs were categorized as superficial punctate keratitis, shield ulcer, corneal plaque, opacification, keratoconus, acute hydrops and pseudogerontoxon. The diagnosis was based mainly on history and clinical examination (including fluoroscein staining of cornea). Our inclusion criteria were all patients having VKC who consented to be subjected to the study. Patients who were difficult to be examined on slit lamp were excluded from the study. Medical and Surgical treatment was provided where indicated. The data was analyzed manually and results were compiled.

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RESULTS

Two hundred patients were included in the study. 180 (90%) patients were male and 20 (10%) were female. 118 (59%) were upto 10 years, 70 (35%) patients were 11-20 years and 12 (6%) were above 20 years of age. Associated nonocular allergic disorders were found in 46 (23%) cases while 154 (77%) cases had no such history. Family history of nonocular allergies were present in 24 (12%) while 176 (88%) had no such family history. Medical treatment was given to 192 (96%) patients while combined medical and surgical treatment was given to 8 (4%) patients. The seasonal occurrence, symptoms and corneal complications of VKC are shown in Table 1, 2 and 3 respectively.

Table 1: Seasonal Occurrence of VKC

Clinical presentation	No. of patients and percentage
Perennial	156(78%)
Only in summers	32(16%)
Only in spring	12(6%)

Table 2: Symptoms of VKC

Type of symptoms	No. of patients and percentage
Itching	200(100%)
Redness	184(92%)
Watering	174(87%)
Photophobia	184(92%)
Foreign body sensation	102(51%)
Defective vision	82(41%)
Discharge	144(72%)

Table 3: Corneal Complications In VKC

Corneal signs	No. of patients and percentage
Superficial punctate keratitis	44(22%)
Shield ulcer	10(0.5%)
Plaque	6(0.3%)
Keratoconus	12(0.6%)
Corneal opacification	8(0.4%)
Acute hydrops	6(0.3%)
Pseudogerontoxon	2(0.1%)

DISCUSSION

The data showed that most of the patients (59%) presented with VKC in their first decade of life and the disease most commonly affected boys (90%). This is comparable to another study done at Civil hospital Karachi where 278 (69.5%) patients presented with VKC in their first decade of life and 368 (92%) were boys.[5] This is also similar to another study done in Pakistan in which 88% of patients presenting in early years of life were male.[6] In 156 (78%) of cases the disease was present throughout the year with exacerbation in spring and summers. These findings are in agreement with Bonini et al and in contradiction with Khan.[6]

The most common form of VKC seen in our study was palpebral type observed in 116 (58%) patients followed by mixed type 80 (40%) patients and limbal 8 (4%) patients. These results are similar to another study where palpebral form was most common.[7] Associated non ocular allergies were present in 46 (23%). This data is comparable with study done in Italy[3] and Pakistan.[1,5] Superficial punctate keratitis was present in 44 (22%). Shield ulcers were present in 10 (0.5%) cases. Corneal shield ulcers and plaques are rare but serious complications of vernal keratoconjunctivitis. Keratoconus was present in 12 (0.6%) cases.[8] In a study conducted in Japan, 40% of keratoconus cases have allergic background.[9] The keratopathy in VKC may range from a relatively innocuous punctate keratitis to shield ulcers which have potential for corneal scarring and thus visual impairment. Eosinophils are main culprits for the keratopathy.[10] Recently a family of chemoattractant peptides have been recognized to play an important role in normal leucocyte trafficking as well as in leucocyte recruitment during the inflammation.[9] Patients presented with typical signs and symptoms like itching, photophobia, redness, watering, foreign body sensation and discharge which rendered the diagnosis of VKC straight forward. These findings are similar to another study done in Pakistan.[11]

Generally the first line of management is medical therapy, including frequent instillation of topical steroids, mast cell stabilizers, and supra tarsal injection of steroids. Cases not responding to medical therapy and severe shield ulcers in which inflammatory material is deposited on the base are indications for surgical treatment. This could involve surgical debridement, superficial keratectomy, or excimer laser phototherapeutic keratectomy with or without bandage contact lens and amniotic membrane transplant.[12]

CONCLUSION

Superficial punctate keratitis is the most common corneal complication of VKC. It is advised that VKC should be diagnosed at early stages to prevent complications.

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ROLE OF DRAIN IN LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Objectives: The objective of the study was to investigate the appropriateness of an intraperitoneal drainage tube after Laparoscopic Cholecystectomy and to see its usefulness.

Material and Methods: This study was done on one hundred patients, in Khyber Teaching Hospital, Peshawar and private set up at Peshawar during April 2008 to April 2010. patients were divided into 2 groups Group A with drain placed and Group B without drain The data of all patients, who were operated, was entered in standardized proforma and analyzed on SPSS 10.

Results: There was no mortality and statistically significant difference in morbidity between the 2 groups. Mean age of the patients in years was 40.3±5.8 and 43.0±8.4 in Group A & B respectively (p=0.0403). Mean drained fluid was 35.0±20.3 milliliters. In most cases (76%) drained fluid volume was less than 30 cc. One patient in each group suffered subhepatic collection on 7th post operative day on follow up. Pain by Visual Analogue Score was 4.7±1.3 and 3.8±.7 in Group A and Group B respectively (p>0.0001). The duration of surgery was 58.6±9.2 minutes in Group A and 52.0±7.43 minutes in Group B (p=0.0001).

Conclusion: Due to more stay at hospital and more chances of infection it is advised not to place drain in Laparoscopic Cholecystectomy.

Key Words: Cholelithiasis, Laparoscopic cholecystectomy, Intraperitoneal drain.

INTRODUCTION

Gallstone disease is an important health problem in the adult population and laparoscopic cholecystectomy is the choice of treatment. It is the commonest laparoscopic operation performed worldwide.[1] During the 1980s, the conventional surgical technique for cholecystectomy changed to laparoscopic cholecystectomy.[2,3,4] Some recent randomized clinical trials have addressed the timing and surgical approach to the patients with acute cholecystitis. The results have showed that laparoscopic cholecystectomy was associated with a shorter hospital stay and rapid recovery. The overall cost of treatment was less and sufficiently safe in routine.[5,6] Laparoscopic cholecystectomy results in less postoperative pain, decreased incidence of atelectasis and chest infection, rapid mobilization and early discharge from hospital.[7,8] Laparoscopic cholecystectomy is also recommended for symptomatic gallstone disease in grossly obese patients[9] and is as effective as in the average weight population.[10] Thus Laparoscopic cholecystectomy has been established as the surgical treatment of choice for the management of acute cholecystitis.[11] Shoulder tip pain, back pain, and nausea/vomiting, absent in the conventional laparotomy are the common complaints in laparoscopic cholecystectomy.[12,13,14] It has been suggested that carbon dioxide for pneumoperitoneum itself stimulates pain.[15,16] Intraoperative high-pressure pneumoperitoneum, exceeding 12 mmHg[17] and right subphrenic accumulation of gas[18] have been reported as possible causes of these complications. To cope with these problems, a drainage tube is inserted postoperatively for a short time in many patients.[19] Other complications that are observed in Laparoscopic Cholecystectomy are cystic duct leakage,[14] discomfort, paralytic ileus, perforation of gall bladder, spilled stones, spilled bile, soiling of wound by bile/ stones, slipped cystic duct ligature/clips and cystic artery bleeding.[20,21]

Routine drainage was also adopted in laparo-scopic cholecystectomy due to fear of complications that might require an open operation.[22] As compared to Open Cholecystectomy, the usefulness of drains in laparoscopic cholecystectomy is not clear, and in many instances prophylactic drains are useless or may even add to the morbidity or cost of a procedure.[23,24]

MATERIAL AND METHODS

The patients were randomized into two groups. Group (A) with drain included 50 patients (4 males and 46 females), and group (B) without drain included 50

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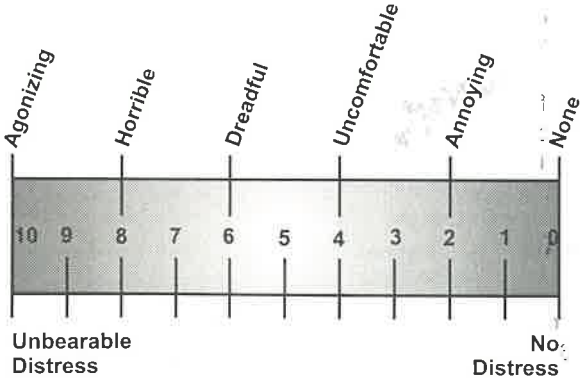
patients (2 males and 48 females), from April 2008 to April 2010, were included in the study. All patients were evaluated by one of the authors for cholecystectomy and standard laboratory tests and ultrasound abdomen were obtained. Data including indications for cholecystectomy, previous history of jaundice or pancreatitis, and previous surgery, were recorded. All patients underwent preoperative laboratory tests, including complete blood count (CBC), serum electrolytes, bilirubin, alkaline phosphatase, alanine aminotransferase (ALT), aspartate aminotransferase (AST), and abdominal sonogram.

Patients with symptomatic gall stones of either sex with age from 21 to 80 years were included into the study. Those who were healthy volunteers, of age above 80 years, with acute cholecystitis, Empyema Gall Bladder, known choledocholithiasis, upper laparotomy or with hemorrhagic tendency due to any reason and known cirrhosis of the liver, patients not willing to give informed consent for Laparoscopic Cholecystectomy and wishing to undergo open cholecystectomy and patients who were converted to open cholecystectomy were excluded from the study.

Written informed consent was obtained from each patient for laparoscopic cholecystectomy under general anesthesia. Three doses of prophylactic antibiotics; 2nd generation cephalosporin "cefuroxime" was given. First dose 15 minutes before the operation, second dose 8 hours after the operation and third dose on the day after the operation. Surgery was performed using conventional four ports; umbilical port, epigastric port and two ports below right middle and lateral costal margin. Pneumoperitoneum was at a pressure of 12 mmHg. In group A plastic drain size 20 was inserted at the end of operation. In certain cases, the right subhepatic space and right subphrenic area was irrigated with 0.9% Normal Saline and then suction done. Drain was inserted through the lateral port. Pain was assessed by visual analogue score (VAS) using a 10cm line labeled at "0" with "no pain" and "10" with "worst pain" as shown below. The patients started oral feeding 8 hours postoperatively.

Schematic presentation of visual analogue score (VAS)



Abdominal ultrasound was done for all the patients in both groups on the third day before discharge to show any collection or free fluid in the abdomen. The patients were discharged after removal of drain, and when the patients had no complications.

Statistical analysis

Data was analyzed by using statistical software SPSS version 10.0. Mean ± Standard deviation was calculated for continuous variable like age and pain. Frequency and percentages were calculated for sex. All the results were presented in the form of tables.

RESULTS

The distribution of age and sex of patients in both groups are shown in Table 1. None of the patients in group A or B showed infection or multiple organ complications postoperatively. One patient in Group B without drain presented to the OPD with fever, vomiting and pain right hypochondrium. Ultrasonography showed collection in the right subhepatic area. Leukocyte count was high. Patient was readmitted and 500cc purulent collection was aspirated ultrasound guided. Pus sent for culture and sensitivity study. Patient responded excellently and was discharged after 72 hrs. Also one patient from group A was found to have asymptomatic collection on abdominal ultrasound on 7th day, this patient was also readmitted and 300cc serosanguineous fluid was aspirated ultrasound guided and was negative on culture for any microbes.

The postoperative VAS scores using a 10 centimeter (cm) line after 24 hours of surgery is shown in Table 2. VAS score was greater in group A (4.7±1.3) than in group B (3.8±0.7) at 24 h after operation with p>0.0001. Postoperative pain was more in females in

Table 1: Age and sex of patients

Group	Age of patients in years + SD	Sex of patients (%)
Group A		
Male (n=4)	50.0±8.0	4(8%)
Female (n=46)	39.5±4.8	46(92%)
Total	40.3±5.8	100%
Group B		
Male (n=2)	55.5±4.9	2(4%)
Female (n=48)	42.8±8.1	48(96%)
Total	43.3±8.4	100%

P=0.0403

Table 2: Duration of surgery in minutes and Visual Analogue score using a 10 centimeter

Group	Duration of surgery ± SD	Visual Analogue Score ± SD
Group A		
Male (n=4)	52.5±9.5	4.0±0.8
Female (n=46)	59.1±9.1	4.7±1.3
Total	58.6±9.2	4.7±1.3
Group B		
Male (n=2)	43.00±4.2	3.5±0.7
Female (n=48)	52.3±7.3	3.8±0.7
Total	52.0±7.4	3.8±0.7

(P=0.0001 for duration of surgery P > 0.0001 for VAS)

Table 3: Volume of drainage in drain (milliliters)

Group	Volume of drainage ± SD
Group A	
Male (n=4)	32.7±21.6
Female (n=46)	35.2±20.4
Total	35.0±20.3

Table 4: Fluid detection by U/S (millimeters)

Group	Fluid detected by U/S on 3rd day. ± SD	Fluid detected by U/S on 7th day. ± SD
Group A		
Male (n=4)	8.7±17.0	0.0±0.0
Female (n=46)	1.0±7.3	6.7±45.7
Total	1.7±8.5	6.2±43.8
Group B		
Male (n=2)	15.0±21.2	250.0±353.5
Female (n=48)	0.8±5.7	0.0±0.0
Total	1.4±7.0	10.0±70.7
P value	0.8476	0.7473

group A. The volume of drainage is shown in Table 3 Fluid was serous or serosanguineous or bile stained in all cases, no fresh blood or bile in any case. The collection detected by Ultra Sound abdomen is shown in Table 4.

DISCUSSION

Laparoscopic cholecystectomy has rapidly emerged as an established method for the treatment of symptomatic gallstone disease.[15] The mean age of patients in our study was about similar to another national study (40.30 years)[1] but was more in other studies (48.4+14.1 years,[2] 50 years,[6] 35 years[9]). The duration of surgery in both groups was less in our study in comparison with another study i.e. 81.4+24.1 minutes in drained patients and 82.1+18.6 minutes in non drained patinets.[24]

Drainage of body cavities has been practiced in medicine for a long time. Historical reports of drainage of chest empyema and ascites go back to the Hippocratic era.[20] To minimize or prevent complications, intraperitoneal drains have been employed to signal or remove intraperitoneal ascites, blood, bile, chyle, and pancreatic or intestinal juice.[16,21] In our study, the amount of fluid drained (35.0+20.3 milliliters) in patients having drain was less when compared with the other study (40.4+28.4 milliliters).[33] But as reported by the other studies,[9,12,16,22] there was no difference in complications in the two group of our study.

The limited data on the value of prophylactic drains for laparoscopic cholecystectomy is possibly due to the fact that such approach was not justified.[16,17] In our study more pain was noted in patients having drain as compared to non drained patients. This was also observed by Uchiyama K et al in there study.[24] In 2 randomized clinical trials after laparoscopic cholecystectomy with a different focus on removing residual gas and decreasing postoperative pain.[16,18,19] Here also, drains failed to provide any advantage,[16] although it has been suggested that carbon dioxide gas itself causes postoperative pain.[28,29,30] Despite of degassing by placing drain, the patients in our study experienced more pain and this has also been documented in the other studies (5 in drained patients versus 3 in non drained patients, 2.2+1 in drained patients versus 1.5+1.2 in non drained patients). The fluid detection[31,32] on Ultrasonography was not much different in the two groups of our study and 2% of patients in each group suffered subhepatic collection on 7th post operative day. The subhepatic collection in patients with drain has been reported in a study up to 4.08%[33] while other studies has reported no collection in any group.[34,35] We have considered that the routine use of a drain in laparoscopic cholecystectomy has nothing to offer and is potentially harmful, except if there is a worry about an unsolved or potential bile leak.

CONCLUSION

In conclusion, the routine use of intraperitoneal drain placement seems purposeless and has no significant role after Laparoscopic Cholecystectomy.

It increases wound infection rates and delays discharge from hospital. We recommend that no drain should be inserted after laparoscopic cholecystectomy unless there are clear, strong intraoperative indications. This study is a small study and further extended studies are required to clarify the issue of intraperitoneal drain placement in laparoscopic cholecystectomy.

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TONSILLECTOMY WITHOUT THE USE OF POST OPERATIVE ANTIBIOTICS

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ABSTRACT

Objectives: To see the frequency of infection in cases of adult tonsillectomy and its effect on morbidity without the use of post-operative antibiotics.

Material and Methods: This prospective study of 106 cases of adult tonsillectomy for chronic tonsillitis, post quinsy tonsillitis and unilaterally enlarged tonsil was carried out in ENT Department of Gomal Medical College, D.I.Khan and Khyber Teaching Hospital, Peshawar, to see the result of the procedure without the use of post-operative antibiotics.

Result: Sixty adult males and forty six adult females were included in the study. Age range was between 16-30 years. Patients were divided into two groups, Group 1 comprised of 60 patients who were not given any antibiotics where as Group 2 containing 46 patients were given co-Amoxiclav. Postoperatively, one patient from each group presented with secondary haemorrhage which was treated by parenteral antibiotics alone. Another five cases from Group 1 and three cases from group 2 presented with moderately severe throat pain and odynophagia during the first visit but none had pyrexia or otitis media.

Conclusion: The use of routine post-operative antibiotics after adult tonsillectomy is not required in our set up, if proper aseptic techniques are observed.

Key Words: Audlt tonsillectomy, Post-operative antibiotics, Complications.

INTRODUCTION

Acute tonsillitis in an adult is a significant illness and can be diagnosed from the history of pyrexia, sore throat and constitutional upset. Moreover, mild sore throat or discomfort in the throat arising from tonsils do not constitute an indication for tonsillectomy.[1] If there is doubt about the diagnosis and the surgeon is not certain that these represent tonsillitis, then the patient must be examined during an acute attack. Recurrent tonsillitis is a common indication for tonsillectomy in adults as well as in children.[2] Other indications include sleep apnoea, recurrent quinsy and rarely, glossopharyngeal neuralgia and Eagle syndrome. Removal of tonsils may be required for diagnosis of lymphoma, carcinoma or tuberculosis in some cases.

If there is suspicion of a bleeding disorder, then the case must by investigated properly. In patients with known bleeding disorders the advisability of surgery must be discussed with the patient and haematologist. Recent upper respiratory tract infection is a contra-indication because it increases the risk of hemorrhage and pulmonary complications. Patients on oral contraceptives should stop the medication six weeks prior to the procedure. The decision to operate on hypertensive and diabetic patients should be individualized and the risk discussed with the patient. Antibiotics are not used post-operatively in some countries[3] while in our setup and some other countries they are routinely used due to the fear of infection and its complication leading to increased morbidity.[3-8]

Various methods for tonsillectomy have been adopted ranging from guillotine to cryosurgery in the past but the universal method is the dissection technique.[4] Recently coblation tonsillectomy, endoscopic microdebride tonsillectomy and laser tonsillectomy is gaining popularity in the developed countries with its advantages of minimum operative bleeding, decreased operating time and less post-operative pain.[5,6] We conducted this study to see the chances of infection with its consequent effect on morbidity without the use of post-operative antibiotics.

MATERIAL AND METHODS

One hundred and six adult patients with recurrent tonsillitis (at least 4-5 episodes per year for

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more than two consecutive years) recurrent quinsy and a unilaterally large tonsil were included in this comparative prospective study in ENT department of Gomal Medical College, D.I. Khan and Khyber Teaching Hospital, Peshawar between June 2001-July 2002. All the cases had easy approach to the hospital. Sixty patients were adult males and 46 were adult females. The age range between 16-30 years. Pre operatively all the patients were evaluated for recent upper or lower respiratory tract infection. Patients with cardiopulmonary disease or other illnesses not fit for General Anaesthesia were excluded from the study. Routine investigations included Hb%, bleeding and clotting time, platelet count and urine analysis. Chest X-Ray and ECG were done when required. Haemostasis was secured with bipolar diathermy and 3/0 black silk suture if required. Analgesics were given to all patients on regular basis. The patients were divided into two groups. Group 1 was not given any antibiotics and group 2 was given Co.Amoxiclav 625 mg TDS for one post-operative week. During the hospital stay and follow up visits they were asked about the severity of pain, odynophagia and otalgia on visual analogue scale. On discharge they were instructed to keep a record of their body temperature and report to the department in case there was any bleeding.

RESULT

The age distribution of patients is shown in Table 1 complications in each group are shown in Table 2, patient with secondary hameorrhage responded to parenteral antibiotics. Patient with Odynophagia were given antiseptic gargles and analgesics and were encouraged to eat and drink. None had pyrexia, chest complications or otitis media.

Table 1: Age distribution of cases n-106

S. No.	Age	No. of patients and percentage
1.	16-20 years	60 (56.60%)
2.	21-25 years	26 (24.53%)
3.	26-30 years	20 (18.87%)

Table 2: Frequency of post-operative morbidity

Complications	Group (1) n-60	Group (2) n-46
Reactionary Haemorrhage	1 (1.67%)	01 (2.17%)
Secondary Haemorrhage	1 (1.67%)	01 (2.17%)
Odynophagia	05 (8.33%)	03 (6.52%)

DISCUSSION

Tonsillectomy is a universal and commonly performed operation for recurrent tonsillitis in children as well as adults.[7] Complications like haemorrhage can occur and post-operative morbidity could be significant. Post tonsillectomy patients have sore throat and difficulty in swallowing. They may have otalgia, foul smell in the oral cavity and post-operative fever with body aches. Several studies have been done to see the post-operative morbidity by using either a single dose of peri operative antibiotic or post-operative antibiotic therapy for several days but still controversy has been found. Some have recommended no use of antibiotic therapy.[1,2] while others found the use of antibiotic useful.[3-8]

Dissection tonsillectomy is universal and can be carried out with blunt dissection, laser or diathermy.[9] Recent advances in tonsillectomy include harmonic scalpel, bipolar scissor dissection, microdebride endoscopic tonsillectomy.[10] The technique of tonsillectomy influences the risk for post-operative morbidity.[11-14] We used the blunt dissection method, haemostasis being secured with bipolar diathermy or 3/0 black silk suture if required. In a study by Mantague ML et al.[11] the incidence of reactionary haemorrhage was 1% and 1.5% each where as in our set up it was 1.67% to 2.17% comparising a good result. Where as the incidence of secondary haemorrhage was 2.17% which was controlled by systemic anti-biotics, this is in contrast to other studies where the incidence of secondary haemorrhage was negligible.[12,13] if proper sterilization and proper operation theater protocol is observed, the use of routine postoperative antibiotics is not needed reducing the financial burden to the patients.

CONCLUSION

We recommend not using of post-operative antibiotic in tonsillectomy in our setup if the procedure is carried out under aseptic conditions.

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