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EDITORIAL

POLIO ERADICATION PROGRAM NEEDS REVISION

Nadeem Khawar

This year Pakistan is seeking to eradicate Polio, as it remains one of the few countries on earth where Polio still is occuring, despite successive rounds of polio vaccination drive involving the full state machinery. In the January 2005 issue of the Bulletin of Polio Eradication Dr. Jacob John had stated: "it is still possible to see the last case of wild-virus polio in 2004 itself. If that does not happens then it should happen in the first quarter of 2005". The International Expert Advisory Group concluded at the 26-27 March, 2005 meeting that the transmission of wild polioviruses can be stopped in the country within months. The prophesy turned out to be incorrect as can be seen in *Table I.*

TABLE I

Number of polio cases in 2005.

As on	**17.07.2005**
Representative period	First 7 months
Virologically confirmed	12
Compatible	05
Discarded Cases	1704
Pending Cases	249

It would be relevant to state that many polio cases are being missed because of the following two reasons: (i) AFP cases where vaccine polioviruses are found in stools are discarded as non-polio. (*ii*) Wild polioviruses not detected in stool samples of AFP cases. Many such cases are discarded as non-polio even without 60 days follow up.

High incidence of vaccine failure: According to the official data polio incidence in children who had received four or more of doses of OPV was as follows: In year 2000: 58%, in 2001: 60%, in 2002: 44%, and in 2003: 51%. According to Kohler, *et al*. out of 181 VAPP cases during 1999, 78 children had received five or more doses of OPV before onset of paralysis.

High incidence of VAPP: The expected number of VAPP cases every year was 60-75. According to revised data made available by the NPSP the number of VAPP cases were as follows: 1998 : 124, 1999 : 206, 2000 : 151, 2001 : 120, 2002 : 203. According to statistical estimates about 300 cases occur every year.

It can be said that present eradication program ensures that polio is not eradicated. Polio cases will continue to occur because of vaccine failure and due to mutant vaccine polioviruses. Infected immunocompromised children will continue to spread for prolonged period in the community wild as well as mutant vaccine polioviruses.

It is suggested that following three measures be considered: (*i*) new guidelines for AFP classification be formulated so that no polio case is missed, (*ii*) IPV be made available for those children who are immuno- compromised or have immunocompromised close contacts, and (*iii*) the reasons for vaccine failure be determined and appropriate remedial measures, if feasible be taken, otherwise some alternate strategy for polio eradication be formulated.

REVIEW ARTICLE

CONTRACTING OF HEALTH CARE SERVICES

S. A Sabooh Bacha, Nayyar Raza Kazmi

ABSTRACT

The last decade has seen a number of important changes in the mix of public and private services in the health sector and in the organization of those services throughout the developing world. Governments are looking for ways to increase efficiency in the use of public sector resources, improve the quality of health care, and extend health services to underserved populations. Public -private partnerships can help government agencies deliver more cost-effective health services to target populations. This review offers a brief overview of the benefits—and limits—of using contracts for service delivery, and describes some of the steps that are key to good contract management

INTRODUCTION

The last decade has seen a number of important changes in the mix of public and private services in the health sector and in the organization of those services throughout the developing world. Governments are looking for ways to increase efficiency in the use of public sector resources, improve the quality of health care, and extend health services to underserved populations[1] Public -private partnerships can help government agencies deliver more cost-effective health services to target populations. This guide offers a brief overview of the benefits—and limits—of using contracts for service delivery, and describes some of the steps that are key to good contract management. Although there exist a wide range of types of contracts, this guide focuses on performance-based contracting.

What is a contract?

A contract is a written agreement between two parties, usually enforceable by law. A contract might, for example, authorize the transfer of funds from a government agency to a contractor, in return for the goods or services defined in the contract[2]. A contract can be negotiated with a sole provider or awarded through a competitive bidding process. It can allow the contractor a great deal of liberty as long as its objectives are met, or it can establish standards and conditions of work to be evaluated and enforced by the purchaser. There is no single rule to determine how specific a good contract should be; rather its form will depend on a number social, political, and legal issues, some of which are described below.

Why contract?

Public agencies may use contracts to:

1. Extend coverage to underserved sectors of the population and provide priority services to targeted groups.
2. Provide services that the government does not have the infrastructure (human or technical capacity) to provide.
3. Improve the quality of health care.
4. Encourage competition among health care providers.
5. Control costs and improve the efficiency of public health expenditures.
6. Improve government's ability to focus on public health planning, financing, and oversight.

Nongovernmental organizations (NGOs) and commercial health care providers have many different reasons for entering into contracts with public sector agencies. NGOs may wish to ensure their financial sustainability, extend their social mission, or achieve greater public recognition and a more prominent role in the marketplace.

Commercial health care providers may wish to increase their profits or market share.

What are the advantages and disadvantages of contracting?

How contracting works—how it helps agencies meet objectives like those mentioned above—is described throughout this paper. Contracting increases government's accountability to the public. As the use of contracting increases, government gains authority in its regulatory and oversight roles. Contracting encourages innovation among government agencies, and it requires government and the private sector to develop new ways of working together as they evolve from regarding each other as competitors.

Possible Advantages

- Meets the health care needs of the population.
- Improves the quality of health care and extends coverage (increase access).

- Increases oversight of the private sector.
- Enlists private sector support for public priorities.
- Increases efficiency in the use of public sector resources.
- Offers greater flexibility in personnel management to hire, fire, and relocate staff members and to offer them with performance-based incentives.
- Introduces market tools and market-like incentives, such as links between results and costs, demand-based service provision[3] and monitoring of customer satisfaction, service definition and calculations of unit costs, and accountability of personnel for performance.

Possible Disadvantages

- Demands a high level of supervision and monitoring.[4]
- Incurs higher administrative and transaction costs, for example, the costs of negotiating, seeking legal advice, and creating adequate information and reporting systems.
- Decreases direct control over the use of public funds while maintaining public sector accountability over the use of government funds

Contracting in

One option often explored by the public sector is contracting in: that is, when one level of government or a public institution—for example, the central Ministry of Health—contracts with a lower level of government facility—say, a district, a province, or another facility to deliver services[5]. Contracting in serves as a way to introduce private sector concepts and business strategies into public sector management in an unthreatening way, as only public providers are involved. This document introduces contracting in but will serve primarily as a guide to contracting out.

For example, contracting in can introduce market-inspired mechanisms such as competition and performance-based incentives into the public sector health care system. The goal might be to promote greater efficiency, improve the quality of care, extend coverage, or motivate the public sector workforce. Performance-based contracts between two levels of government will not be effective or efficient, however, if it is difficult to enforce contract compliance.

Contracting in was the approach used in the 1980s in **Great Britain** under the National Health Service Reform[6]. This strategy has also been adopted by developing countries. For example, in 1995 the Government of **Chile**[7] established contracts between the Ministry of Health and select Regional Health Service Administrations (Sojo 1996). In **Costa Rica**[8], the Social Security Institute has signed contracts with its own social security hospitals. Nicaragua has developed contracting in agreements whose objective is to motivate public service health care workers to improve their performance. In **Zambia**[9] and Cambodia, agreements have been signed between the central Ministry of Health and Health Districts.

Contracting out

Contracting out presents many options to the public sector in its role as purchaser, including the opportunity to work with a wide array of potential partners, from nonprofit NGOs to for-profit private commercial providers, in order to meet public sector health care needs[10]. A variation of the contracting-in model exists whereby a NGO is contracted to improve upon public sector management practices to run government clinics while working under the framework of civil service law. In **Cambodia**[11], for example, the contractor has authority over Ministry of Health staff to manage service delivery within the district and may establish internal staff regulations as long as they are not in conflict with civil service law.

Under a donor-financed project, Cambodia also employs a contracting out model, in which a private sector contractor has authority over the project staff and budget, as well as autonomy within the service delivery system. Since the early 1990s, when **Colombia**[12] enacted a series of laws explicitly allowing public agencies to contract out to the private sector for the delivery of health services, that country has signed a wide range of public -private contracts for service delivery. There, competition among providers—including public agencies, private for-profit providers, and, especially, NGOs—has been created in order to extend access to care, as well as improve the management, efficiency, and quality of care.

At the local level, municipal governments in **Brazil** have been contracting out with BEMFAM—Brazil's International Planned Parenthood Federation affiliate—to provide education and technical assistance in planning and implementing health services, supervise local activities, produce educational materials, and strengthen information systems on utilization and stock controls. Of a total of 3,339 municipalities, 996 (29.8%) have contracts with BEMFAM[13].

In choosing whether to contract for service delivery and whether contracting should be done within the public service delivery system or with private providers of health services, the purchaser must

consider the national legal framework and political environment, and the capacities of the public sector to manage the contracting process, as well as the goals and objectives of contracting. The decision to contract is not the inevitable result of a straightforward process, nor is there a "recipe" to follow. Rather, contracting responds to a country's particular needs at a particular time. Nevertheless, there are issues that policymakers, health authorities, and providers should consider before negotiating and implementing a contract (Abramson 1999).

WHAT FACTORS ARE IMPORTANT TO CONTRACTING?

Before entering into a contractual arrangement, it is important to ask whether the political environment and legal structure of the country are conducive to contracting.

National legal framework

Laws and other legal documents can help or hinder contracting and private sector participation in health service delivery. Many countries in the developing world face legal barriers to contracting, and in most developing countries the legal framework is not geared to public contracts.

In countries where the legal framework is not particularly conducive to contracting but not explicitly against it, public sector agencies have been able to contract either through projects or by careful attention to legal language and concepts. This was the case of Costa Rica where the National Social Security Institute was able to initiate contracting under the auspices of an international donor-supported project in spite of national legislation nonconducive to contracting. Where barriers to contracting are more difficult to surmount, health care agencies have had to find alternative approaches to meet their goals.

Political and social environment

The roles of the public and private sectors in a society—for example, the traditional role of civil servants—impact on government's success in contracting. In addition, the history and culture of the contracting institution must be taken into consideration.

Agencies must ask:

1. Is the public sector the primary provider of health care coverage? Are the majority of health expenditures incurred within the public sector?
2. Are there strong professional and medical associations or unions that generally benefit from the status quo? Can changes in the system offer union members new opportunities?
3. What political forces outside the health sector may oppose or support contracting?
4. Will there be resistance to the introduction of traditional private sector management concepts into the public realm? Will contracting be misunderstood as "privatization" of public health functions?

On the other hand, some social factors may support contracting. Examples include changes in government administration, and an organized community that supports increasing access to services through alternative providers. Calling public attention to the goal of strengthening public health financing and regulatory oversight, rather than presenting contracting as a way for government to get out of the business of providing direct services, may help deter opposition.

Choosing a provider

Ideally, when considering options for health service delivery including the option of contracting out to the private sector, the purchaser will compare the costs of each option, the quality of services offered, and the ability of each approach to reach target populations.

A private provider is one that has legal status as a private entity. A private provider has full responsibility for its sources of income and control over its budget—that is, it has control over its assets and is responsible for its debts and claims on its revenues.

In simple terms, there are two basic types of private providers: nonprofit providers, generally referred to in this document as nongovernmental organizations (NGOs), and for-profit commercial providers. In the health care industry it is often difficult to distinguish between the two. What the commercial sector calls earnings or profits, for example, NGOs may call reserves. However, these reserves, if any, are not distributed to owners or investors, as business profits are; instead, they are generally used to advance the organization's mission—to subsidize health promotion or education services, for example, or to offer services to target populations who are unable to pay market prices for them (World Bank 1997).[14]

Below is a more detailed description of these two types of providers.

Nongovernmental Organizations (NGOs)

NGOs can range from community-based grassroots service delivery organizations to large service delivery organizations dependent upon international donor funding. Some NGOs are formally constituted;

others are informal. They all, however, operate independently of government. Most are characterized by humanitarian or cooperative missions and values. NGOs promote the interests of the poor, for example, and do relief, development, and advocacy work.

When considering an NGO as a potential contractor, the purchaser of health services should become familiar with the types of services delivered, the organization's sources and types of funding, as well as its mission, role in the community, and ties to other local groups. An organization that receives funding from international sources, for example, whether in the form of grants or contracts, will have to maintain special accounting systems to track its use of these funds and will have experience meeting reporting requirements. An organization that does not receive international funds may be used to having greater autonomy to execute tasks and report on them.

Commercial sector

The for-profit sector is generally characterized by commercial objectives. It is important to note that accounting and reporting experience and practices can vary widely within the private sector—in different countries and among publicly traded and private or closely held companies.

WHAT CAPABILITIES DOES THE PUBLIC SECTOR NEED IN ORDER TO CONTRACT?

Contracting for health care services is a complex process, one that affects not only the public health care system, but also health care market structures. In order to contract successfully, the purchaser must be able to manage contracting processes properly: that is, to define contract objectives, negotiate contract terms, prepare and implement contracts, and monitor and evaluate performance. This section describes some of the key capabilities that the public sector needs to develop in order to manage the contracting process, including regulation; procurement, administration, and financial systems; information systems; cost determination; and bill paying.

By definition, the use of public funds to contract out to private providers requires the purchaser to ensure that those funds are being used properly. This focus on accountability of public funds, through contract management and oversight, is one of the principal benefits of contracting.

Regulation

As Ministries of Health evolve from providing direct service delivery to financing, purchasing, and oversight of the health care sector, regulation of the health sector should, as a consequence, become a major public sector responsibility. Three areas are key to this regulatory function: **accreditation, enforcement of national treatment standards for health care providers,** and **quality assurance** to provide adequate levels of care.

Although many developing countries enter into contractual relations without first establishing an accreditation process, the establishment of an accreditation process for health care facilities—either public sector facilities, in the case of contracting in, or private providers, when contracting out—can facilitate the contracting process.[15]

Accreditation makes clear the basic requirements a health care provider must meet in order to be considered for a contract. These requirements will vary depending on the type of contract in place. For example, a performance-based contract may require the provider to have a specific type of financial system, follow certain clinical protocols for service delivery, maintain a given ratio of physicians to nurses or nurse's aides, and have appropriate licenses and certain basic equipment or infrastructure. Another factor that may be considered in the process of accreditation is the existence of a quality of care program, including provisions for client satisfaction surveys, education and training of service delivery staff, etc.

Regulation also involves the oversight or supervisory functions the public sector undertakes to ensure that providers comply with national health care standards and treatment protocols. Directly related is the issue of quality assurance—performance standards expected of service providers and procedures to ensure that the standards are met, and that care is as safe and effective as possible.

After the government has decided what qualifications providers must meet in order to be considered as contractors, it should determine which aspects of the care to be provided it should regulate and how it will regulate them. Developing management skills in health, administration, and finance and strengthening the health information systems of both purchasers and providers are indispensable next steps (Bennett 1997, Mills 1998, Sojo 1999).

Information systems

Information systems essential to contracting include programmatic information, financial information, administrative information, information flows, and communications. As information is a two-way street, the purchaser must have its own administrative information structures, procedures, and mechanisms in order before entering into contracts.

Although Ministries of Health generally keep records of epidemiological and administrative infor-

mation, few countries have created the formats and records needed to monitor contractor compliance with financial and programmatic terms. In the case of health care contracting, relevant information includes specific services to be provided, the quality of those services, the personnel and materials used in providing services, and the costs of public and private health care. Once the government knows the cost and quality of public health services, this data can be entered into an information system. The government will then have sufficient data to decide which services they should contract out for and which services would be better provided in house.

After a contract is in place, information systems enable its flexible and appropriate supervision. For example, information systems provide patient records that help the purchaser review the quality of care delivered (programmatic information). They also make it possible to process and review contractor invoices (financial information).

Cost determination

In order to determine the benefits of contracting services out to the private sector, the purchaser must know what its unit costs are, either for individual services or for packages of services. Information about costs is also important to ensure that services are appropriately priced in the contract.

On the basis of an analysis of demand and of the needs of the population covered under the contract, the public sector purchaser should estimate the number of services to be offered. The purchaser should then estimate both its costs and the commercial sector's costs for those services. Once the public agency has determined the type and volume of services to be contracted for and its unit cost per service, it can establish a basis upon which to evaluate bids and negotiate with contractors. **For more on this aspect of contracting, see the table of definitions.**

As a purchasing agent, the government is responsible for ensuring that it has payment procedures in place for the timely disbursement of funds. It is a good idea for a payment schedule to be outlined in the contract. Whether the government contracts with public sector facilities, not-for-profit NGOs, or private commercial firms, its financial and administrative capacity to disburse funds on time is pivotal to building trust between purchaser and contractor.

Many small commercial providers and NGOs depend on timely payment for their financial survival. Some health service delivery NGOs charge user fees to patients, but others do not. In most cases, the fees alone are not sufficient to support these organizations for an extended period of time. A significant delay in payment from the government can have a devastating effect on the provider's cash flow, preventing it from carrying out the services to which it is committed by contract. In some cases, providers who do not have the financial means to cover upfront expenses or to cushion themselves against possible delays negotiate advance payments with the government as part of their contracts.[16]

One option available to public sector purchasers is to contract out accounting and payment functions to a third party. This eliminates the need for the purchaser to develop accounting and invoice tracking systems and helps ensure the timely disbursement of funds.[17]

Payment

Term	Purchaser	Provider	Consumer/End User
Cost	The value of an input; generally used to determine the level of investment required to produce a service or treat a case.	The value of an input; generally used to determine the level of investment required to produce a service or treat a case.	What is paid or disbursed in order to receive a service or treatment.
Price	What the provider asks to be paid in exchange for service or treatment.	What the purchaser is asked to pay in exchange for service or treatment.	What is paid for a service.
Payment	What is disbursed to the provider in exchange for service or treatment.	What the purchaser disburses for service or treatment.	What is disbursed in exchange for service or treatment.
Rate	Similar to price, what the purchaser pays the provider in exchange for service or treatment.	Similar to price, what the purchaser is asked to pay in exchange for service or treatment.	Consumers generally do not use this term.

Steps in Contracting

1) Carry out needs assessment.
2) Identify contracting objectives.
3) Develop statement of work.
4) Decide on contract type and payment mechanism.
5) Decide whether to competitively bid out contract.
6) Send out Request for Proposals (if competitively bid).
7) Review proposals.
8) Award, negotiate and design contract.
9) Monitor contract implementation.
10) Evaluate contract performance.

Contracting is an important tool that can be utilized by public -sector policymakers to meet the health care needs of target populations. Some of the opportunities that contracting can bring include extending coverage to underserved populations and increasing the provision of priority services to targeted groups, improving the quality of health care delivery, and increasing efficiency in the use of public –sector resources. There are, however, certain prerequisite conditions that need to exist before the public sector contracts. The public sector must have the capability to gather and utilize programmatic, administrative, and financial data in order to properly regulate service providers—particularly private providers under government contract. Information systems and data collection processes need to be functioning in order to ensure proper contract supervision and monitoring. An analysis of unit costs by the public sector is essential in order for the government to act as an informed purchaser of services. The national legal framework and political environment need to be considered prior to contracting. In addition, the availability of service delivery providers as potential contractors needs to be measured. Contracting with private providers serves to utilize existing health resources to service the public sector and decrease coverage gaps and improve the efficiency of public resources.

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ORIGINAL ARTICLE

THORACOTOMY EVACUATION OF RETAINED POSTTRAUMATIC HEMOTHORAX

Aamir Bilal, Muhammad Salim, Muhammad Muslim, Muhammad Muqeetullah

ABSTRACT

Background: Inadequately drained post-traumatic hemothroax with tube thoracostomy can lead to the complications of fibrothorax/entrapped lung or empyema. The study was designed in our set up to determine the role of surgical intervention for clotted hemothorax and evaluate the outcome of early thoracotomy.

Research Methodology: An observational descriptive study was conducted in the Department of Cardiothoracic Surgery, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar from January 2003 to June 2004. The records of all trauma patients undergoing surgical intervention for retained hemothoraces over the 18-month period January 2003 to June 2004 were reviewed.

Results: The study included 46 patients. All sustained penetrating injuries, 40 (85%) with stab and 6 (15%) with gunshot wounds. Twenty-two, 17 and 7 patients each had one, two and three attempts at drainage with tube thoracostomy, respectively. In 37 patients (80%), retained infected / uninfected pleural fluid was successfully evacuated though thoracotomy.

Dense adhesions were present in all of these patients. The mean time interval between injury and thoracotomy was 14.5 days (range 11-24 days). The mean volume of pleural fluid evacuated was 650mL. The median postoperative stay was 5 days.

Conclusion: Early surgery is an accurate, safe and reliable therapy for retained posttraumatic retained hemothorax to prevent later complication of empyema and fibrothorax.

Key words: Hemothorax, thoractomy.

INTRODUCTION

Inadequately drained posttraumatic hemothorax with tube thoracostomy can lead to the complications of fibrothorax / entrapped lung or empyema[1,2]. Conventionally, these conditions are managed surgically with open thoracotomy[3]. Residual posttraumatic hemothoraces occur in 1% to 20% of patients managed with tube thoracostomy[4].

We report our experience regarding the open surgical intervention in retained hemothorax.

RESEARCH METHODOLOGY

Over the 18-month period January 2003 to June 2004 the records of all patients with posttraumatic retained pleural collections that underwent surgical evacuation were reviewed. Patients with clotted hemothoraces, and those with a suspected or proven infected pleural collection were identified. A clotted hemothorax was defined as a residual, clot estimated to be larger than 500 mL or that occupied at least one third of the involved hemithorax. An infected thoracic collection was defined as a bacteriologically proven infection of any collection in the pleural space, documented before or after surgery. Patients with persistent opacities (>33% involvement of a hemithorax) on chest radiograph and those with persistent opacities with signs of intrathoracic sepsis (fever, raised white cell count, purulent drainage) were evaluated with a thoracic spiral computed axial tomography (CAT) scan. Patients with residual opacities with multiple air-fluid levels or localized run-off on lateral decubitus chest radiographs with failure to drain with tube thoracostomy underwent surgery without a thoracic computed tomographic (CT) scan. In the operating room, all patients underwent general anesthesia with double lumen endotracheal intubation. All patients were administered intravenous antibiotic combination of amoxicillin and clavulinic acid perioperatively. This was continued for a maximum of 24 hours. Thereafter, therapy was directed according to microscopy, culture and sensitivity results. Empyemas were managed with 4 weeks of oral antibiotic administration and sterile cultures (i.e. presence of white blood cell [WBC] and no organisms) with 1-week oral amoxicillin and clavulinic acid, and those with no WBC and no culture with 24-hour postoperative intravenous amoxicillin and clavulanate only. Patients were placed in the corresponding full posterolateral thoracotomy position. Pleural space was entered though bed of 5th, or 6th rib. A suction catheter was inserted into the pleural cavity, into the loculated

collection, and as much of the pleural fluid removed. Pleural fluid was sent for microbiologic assessment. Further evacuation of the pleural contents was performed under direct vision. Gentle dissection under direct vision with sponge sticks, released the trapped lung. Thus, the procedure was performed from within the loculated collection, gently releasing the adherent lung from the chest wall toward normal lung. Once all the pleural fluid and fibrin was evacuated, adequate lung expansion was observed by ventilating the ipsilateral lung. Two thoracostomy tubes were placed postoperatively. All patients were transferred to a high-care unit where both intercostal drains were placed onto low-pressure suction. A chest radiograph was obtained, blood for arterial blood gas taken and routine monitoring of vital signs performed. All patients received physiotherapy twice daily. Chest tubes were removed once pleural drainage was less than 50 mL or when the air leak had stopped for 12 hours.

RESULTS

Among 1220 patients admitted during the study period requiring or admitted with tube thoracostomy, there were 46 patients (4.4%) with a retained pleural collection. There were 40 men and 6 women with a mean age of 29.3 years old (range 18 to 49 years). All patients sustained a penetrating injury, with stab and gunshot wounds accounting for 85% and 5% of the retained collection, respectively. Before referral, patients had one, two and three attempts at pleural fluid drainage with tube thoracostomy. Thirty-one (67%) patients had a CAT scan of the chest illustrating a loculated, retained pleural collection. The remaining 14 (33%) patients had residual opacities on chest radiograph with multiple air-fluid levels failed attempts to drain with tube thoracotomy. Thoracotomy evacuation of the pleural fluid was successful in 37 patients (80%). Full lung expansion was visualized in all patients intraoperatively and confirmed with postoperative chest radiographs. One patient (2.5%) developed superficial sepsis of the thoracotomy wound. This was managed with suture removal and dressings as an outpatient. Tube thoracostomy was removed at a median of 3 days (range 1-7 days). One patient with an empyema had the tube thoracostomy cut short and a drainage bag applied for persistent purulent drainage. This was removed at 2-week follow-up. The residual draining sinus eventually closed approximately 7 weeks after surgery. There was no recurrence of clinical or radiologic evidence of empyema or pleural fluid at 2-and 6-week follow-up. The median postoperative stay was 5 days (range 3-28 days).

DISCUSSION

Retained hemothorax reportedly occurs in 1% to 20% of patients with chest trauma.[5] Using a protocol based on vigorous physiotherapy and early withdrawal of tube thoracostomy in 1845 patients, retained hemothorax and empyema rates of 2.7% and 0.5%, respectively, were reported by Knottenbelt and associates.[6] The complications of entrapped lung and empyema following inadequately drained pleural blood has traditionally been managed by thoracostomy. Coselli and coworkers[7] reported a study that strongly supports early drainage in such cases. They reviewed 4000 patients requiring chest tube for hemothorax. A thoracotomy was necessary for 3.8% of patients for fibrothorax and empyema. The mortality for early evacuation (<5 days) was 0% compared with mortality rates of 1.6% and 9.4% for patients who progressed to decortication or empyema, respectively.

This complications results from long periods of time elapsing prior to recognition and treatment of hemothorax, utilization of small chest tubes and repeated thoracenthesis as a primary treatment schema. Retained hemothorax is a major risk factor for the development of empyema[8]. If a hemothorax is small (<200 to 300 ml) and the patient is clinically uncompromised, it may be observed, especially if the pleural cavity has not been violated and potential contamination has not occurred. If drainage is necessary (symptomatic patient with large hemothorax) the first step is to ensure proper placement of an adequate chest tube. A 32 Fr should be used to drain a hemothorax. If the tube is malpositioned or malfunction, a second tube should be placed through a different skin incision. Radiologic guidance may be helpful if the hemothorax is loculated or in an unusual location. If a second tube fails to resolve the hemothorax quickly (within 524 hours); surgical intervention should be considered[9].

Thrombolytic agents such as purified streptokinase injection, as adjunct to chest tube drainage have been used by others in this situation. Thrombolytics may be reasonable alternative in poor risk patients with retained pleural collections. In each case initial drainage was accomplished by placement of large bore chest tube inserted dependently with radiographic confirmation of position. When drainage was tapered of, usually over 1 to 3 days, streptokinase 250,000 U in 100 ml saline was injected and the procedure was repeated daily until the yield dropped to under 100 ml and or clearing was noted radiographically[10,11].

Smith et al and others[12,9] have claimed thoracoscopic removal of clotted hemothorax as alternative to formal thoracotomy. They suggested that this procedure should not be performed unless one third of the volume of hemithorax was occupied by clot. This estimate was best made by CT scan. More over small amounts of clot resorb without intervention. Patients having necrotic lung tissue or pulmonary abscess that required resection would not respond to non-operative therapy[13].

The use of intrapleural fibrinolysis with streptokinase and urokinase as an adjunctive treatment in hemothorax and empyema is well documented with success rates ranging from 62.5% to 92%[14,15]. We have no experience with this procedure and are presently reviewing the available literature to assess the feasibility of performing a prospective study. Delay in surgery results in patients presenting with semiclotted blood, adhesions from pleural inflammatory reaction and empyema[16,17]. The position of the loculated collection was determined from CT scans of the chest or lateral chest radiographs. It is currently our policy to perform a CAT scan of the chest in all patients with significant residual opacities on chest radiographs to delineate the total geometry of loculated collections and to differentiate among consolidation or atelectasis, contusion, intrapulmonary collection, pleural collection and pleural reaction.

CONCLUSION

This study shows that timely surgical intervention in retained posttraumatic hemothorax has a significant role in the prevention of posttraumatic empyema and fibrothorax.

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ORIGINAL ARTICLE

ETIOLOGY, MANAGEMENT AND OUTCOME OF PATIENTS WITH PERICARDIAL AND PLEURO PERICARDIAL EFFUSIONS

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ABSTRACT

Background: Patients with pericardial or pleuro pericardial effusions can be very unwell at presentation. These patients are treated with pericardiocentesis and/or pleural aspiration which itself is associated with morbidity & mortality. The aim of this descriptive study was to determine the etiology, management and outcome of patients with pericardial or pleuro-pericardial effusions.

Research Methodology: Patients with pericardial / pleuro pericardial effusion presented to cardiology / pulmonology unit KTH, Peshawar between February 2001 to December 2003 were included in the study. Diagnostic and therapeutic pericardiocentesis/ pleural biopsy was performed, patients managed and followed up for subsequent outcome.

Results: In total of 53 patients (28 males, 25 females, mean age of 36 yrs; range 19 to 65 years), 35 had pericardial and 18 had pleuro-pericardial effusion. Twenty patients underwent pericardiocentesis for diagnostic or therapeutic purpose while pleural biopsy was performed in 16 patients. Twenty patients (38%) turned up with confirmed Tuberculosis (T.B), (bacteriologically or histopathologically proven) and twelve (22.6%) had clinical diagnosis of TB (Positive history of contact and or chest X-ray finding). Pyogenic effusion was present in 3 (6%) of patients. Uraemia, malignancy, rheumatic heart disease (RHD), connective tissue disease (CTD), dressler syndrome and idiopathic group were much less in number, pointing to the fact that the T.B was the commonest etiology, affecting younger age group, with positive history of T.B contact in 15%. TB patients received treatment for 8 months, with 83.3% cure rate. Total of 12 patients lost follow-up.

Conclusion: In our setup, TB is the commonest underlying diagnosis in patients with pericardial/ pleuro-pericardial effusion. Percutaneous pericardiocentesis and pleural biopsy remains an effective diagnostic tool. Regular follow up leads to successful outcome in these patients depending on the underlying condition.

Key word: Tuberculosis, pericardial effusion, pleural effusion, percutaneous pericardiocentesis.

INTRODUCTION

Patients with symptomatic pericardial / pleuro pericardial effusions can be severely unwell at presentation. The immediate aim must be the relief of symptoms, although secondary aims in these patients should include determination of underlying cause of the effusion and preventing recurrence[1].

Percutaneous needle pericardiocentesis/ pleural aspiration remain the most common therapeutic procedure for the early management of symptomatic effusions[2]. It continues to be used as a diagnostic procedure in some patients with asymptomatic pericardial effusions[1]. However, pericardiocentesis is itself associated with morbidity and mortality. There is limited information available, about the diagnostic role and outcomes of percutaneous pericardial drainage, especially in some groups of patients for e.g. those with large tuberculous effusion. Studies have been done in the West[3,4,5] regarding the etiology of pericardial effusions but no large scale study has been reported in Pakistan so far.

The aim of this study was to determine the aetiology of moderate to large and / or symptomatic pericardial or pleuro pericardial effusions and to review the management and subsequent outcome of these patients.

RESEARCH METHODOLOGY

This descriptive study was conducted in cardiology and pulmonology unit Khyber Teaching Hospital, Peshawar. The study period extended from 2nd February 2001 to 29th December 2003. During this period, patients presenting with large pericardial / pleuro-pericardial effusion to cardiology/ pulmonology unit, KTH, Peshawar, were included. Patients who were uncooperative, with small (echo free space in diastole <10mm) pericardial effusion, evolving effusive/ constrictive pericarditis, bleeding disorders, and or skin lesions were excluded form the study.

Table I: Clinical presentation.

Symptoms	Number	%age n = 53
Breathlessness	48	90.5%
Chest pain	39	73.5%
Cough	37	69.8%
Abdominal pain	15	28.3%
Fever	21	39.6%
Triad	22	41.5%
Physical signs		
Tachycardia (>100/min)	17	85%
Raised JVP (>3cm)	17	85%
Pulsus paradox (>10mm of Hg)	15	75%
Hypotension systolic B.P (<100 mm of Hg)	5	25%
Diminished heart sounds	4	20%

Table II: Etiological Diagnosis

Aetiology	Pericardial effusion (n=35)	Pleural effusion (n=18)	Total(n=53)	%age
Tuberculosis	18	14	32	60.3%
Uraemic	5	1	6	11.3%
Malignant	2	1	3	5.6%
Pyogenic	2	1	3	5.6%
Rheumatic Heart Disease (RHD)	—	2	2	3.7%
Dresslers Syndrome	1	—	1	1.8%
Congestive Cardiomyopathy	1	1	2	3.7%
Rheumatoid Arthritis (RA)	—	1	1	1.8%
Systemic Lupus Erythematosis (SLE)	—	1	1	1.8%
Idiopathic	1	1	2	3.7%

Each patient was subjected to a full clinical examination, chest radiograph, 12 leads electrocardiograph, sputum for AFB Ziehl Nielson (ZN) staining of pericardial/ pleural fluid and echo-cardiography along with thorough review of available previous records.

Pleural biopsy was preferred diagnostic test in cases of pleuro-pericardial effusion and diagnostic or therapeutic pericardiocentesis was done in cases of pericardial effusion.

A pericardial tap was performed via sub-xiphoid approach, either under echocardiograhic guidance/ or E.C.G monitoring with local infiltration of 2% lignocaine to anaesthetize skin, subcutaneous tissue, muscle and parietal pericardium.

Procedure site was sealed with sterilized dressing. Haemodynamic monitoring and check x-ray was done. The fluid was sent for cytology, microbiology (ZN Stain) and biochemistry. Viral studies were not done due to non availability of resources.

In cases of pleuro pericardial effusion, pleural biopsy was opted and performed by the study team, under aseptic technique using standard protocol[6,7]. Pleural biopsy specimens were sent for histopathological analysis.

Histological / microbiological diagnosis was sought to get confirmed Tuberculosis[8] (TB) but in absence of evidence a clinical diagnosis was made based on[9].

- Positive history of contact
- Chest x-ray finding
- Negative work up for other causes of pericardial effusion.

The patients were started on appropriate treatment and followed up for 8 months.

RESULTS

In our study, out of 53 patients 28(54%) were men and 25(46%) were women with mean age of 36 years (age range: 19-65 years). Clinical presentation is outlined in table I. Breathlessness (90%) was the most common presenting symptom. Pericardial and pleuro-pericardial effusions were diagnosed in 35(66%) and 18(34%) patients respectively on the basis of chest X-ray & echocardiography. Small complexes on ECG were only present in 9(17%) out of 53 patients. Clear evidence of electrical alternans was present in one patient (with tuberculous effusion and evidence of tamponade).

The result of the etiological work up is shown in table II. There were 20(38%) cases who fulfilled the criteria for confirm tuberculosis; 12(24%) were sputum acid fast bacilli (AFB) positive, 8(14%) had positive pleural biopsy, while a clinical diagnosis of TB was made in 12(24%).

Twenty patients (38%) had pericardiocentesis either therapeutic or diagnostic and 4(7%) ended up with minor complications such as vasovagal shock, secondary infection and right ventricular dysfunction. Sixteen (30%) patients had pleural biopsy and one patient had post biopsy leakage.

Thirty two TB patients were started on antituberculosis treatment (ATT) according to WHO guidelines[10] and steroids were given for 6–8 weeks in tapering dose. These patients were followed for 8 months and assessed for ATT outcome.

At the end of treatment (8 months) in sputum smear positive sub-group(N=12) 83.3%(10) got cured, 73% got treatment completed, 18% defaulted and 9% transferred out.

One patient with a malignancy related effusion developed recurrent tamponade with in four weeks of the original drainage procedure, he was referred for surgical intervention.

Twelve out of 20 patients with other diagnosis lost follow up. Six uraemic patients were followed for 6 months, 2 died, and rest were on haemodialysis. One patient each with Dresslers Syndrome and rheumatoid arthritis (RA) were followed for 3 months, no one had recurrent pericardial / pleuro pericardial effusion.

DISCUSSION

Pleuro pericardial disease is a common disorder, its treatment and outcome depends on the etiology of the case. Tuberculosis remains a common cause of pleuro-pericarditis in developing countries, although it accounts for less than 5% of cases in the Western world[11]. A study conducted by Javed A et al[6] on etiology of pleural effusion revealed tuberculosis in 45% and malignancy in 24% only, pointing to the high frequency of tuberculosis in our set up.

In Western world malignancy is the most common cause of large pericardial and or pleuro pericardial effusions, followed by uraemia[9,12,13]. However our study demonstrated a high frequency of large tuberculous pleuro pericardial effusions when compared with previously published western studies[5,9,11,12,14].

Diagnostic and therapeutic role of pericardiocentesis cannot be overlooked and cardiac tamponade was the most common indication for pericardiocentesis and therapeutic pericardiocentesis was mandatory in patients with cardiac tamponade. A large effusion with a circumferential echo space of >1cm anteriorly or posteriorly was reported to be a powerful predictor of the development of tamponade[15,16] and same was observed in this study. Indeed, the volume of fluid required to produce cardiac tamponade is also variable and is dependent on both the rate of accumulation and the dispensability of the pericardial sac[4,12].

Pericardial aspiration is not indicated as a routine investigation, because of the low diagnostic yield[17]. In more than 80% of cases the aspirated pericardial fluid in TB was haemorrhagic[18]. The diagnosis of TB pericarditis/ pleuro-pericarditis was confirmed by the presence of AFB in pericardial, pleural fluid or on biopsy of pleurae or pericardium. In our study, AFB was difficult to isolate from pericardial fluid, however they were rarely seen on direct examination, and the positive rate from conventional cul-

ture was only around 50%[17]. A "probable" diagnosis of TB pericarditis is thus made by the confirmation of TB else where in a patient[19,20].

Fowler & Colleagues[20,21] reported chest x-ray findings suggestive of tuberculosis in only 30% of patients with TB pericarditis, and a pleural effusion in 40-60% of cases[15,16]. Similar results were seen in our study. The tuberculin skin test is generally of limited value, in our set up, because of the high prevalence of primary tuberculosis and the widespread use of BCG immunization[21].

In our study, 12 patients with clinical diagnosis of TB were treated and an adequate response to empirical ATT were highly suggestive of TB pericarditis/ pleuro pericarditis. Empirical treatment has been recommended in patients from endemic areas, where investigations fail to yield a diagnosis, although there is no evidence supporting empirical treatment in patients from non-endemic areas[2].

In our study conventional ATT along with steroids has dramatically improved the prognosis in TB pericarditis. In one large scale prospective South African study, oral prednisolone appeared to reduce the risk of re-accumulation of pericardial fluid, and the requirement for repeat pericardiocentesis, with a trend towards reduced mortality[22]. Further more, the use of steroids in established pericardial constriction, was associated with low mortality and reduced requirement for pericardectomy[22]. Although the use of steroids remains controversial[1]. Our practice is still to use adjuvant prednisolone in all patients treated with ATT for TB pericarditis.

In pleuro pericardial effusion, diagnosis via pleural biopsy is less hazardous. Moreover, pleural biopsy has its greatest applicability in the diagnosis of exudative pleural effusion[2]. TB and malignancy are common causes of exudative pleural effusion, even in our set up[6,7]. In study conducted by Saadia[7] the positive yield of pleural biopsy was reported in 53.3% of cases whereas Fisherman et al[24] reported in 40% cases. The histopathology of pleural biopsies were diagnostic in 51% of the cases, this fact was established by a meta review of 14 studies[25].

In published case series, the complications rates of percutaneous pericardiocentesis range from 4% to 40%, with an overall estimated procedure related mortality rate of 2%[15], although echocardiographically guided aspiration has been reported to be associated with lower complication rates[15,16]. Myocardial puncture is the commonest reported complication in most case series, with a frequency of 2-7% and our study reported right ventricular puncture in 1.8%. Other recognized complications include atrial and ventricular arrhythmias[17,19] severe vasovagal episodes and pneumothoraces. Poe et al[26] documented pneumothorax as a complication of pleural biopsy is about 3% to 5% of cases. However, a single case of pneumothorax was reported in a local study[7].

This study is based on the experience of a single hospital and several operators were involved in performing the procedures, although all were performed or supervised by experienced operators. A further limitation is the short follow up, in view of the fact that long term complications particularly constrictive pericarditis may only become evident many years after the original infection.

CONCLUSION

In our setup, TB is the commonest underlying diagnosis in patients with pericardial/pleuro-pericardial effusion. Sputum microscopy, fluid biochemistry and tissue sampling are the useful diagnostic tool but importance of clinical diagnosis in certain patients cannot be overlooked. Regular follow up leads to successful outcome in these patients depending on the underlying condition.

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ORIGINAL ARTICLE

OUTCOME OF RETROLABYRINTHINE VESTIBULAR NERVE SECTION SURGERY

Javed I. Shah, Gerald B Brookes

ABSTRACT

Background: Vestibular nerve section is a procedure with proven efficacy in the treatment of intractable vertigo and Retrolabyrinthine Vestibular Nerve Section has minimal post operative complications. This observational study was designed to study the outcome of Retrolabyrinthine Vestibular Nerve Section Surgery.

Research Methodology: Data of 76 patients who underwent retrolabyrinthine Vestibular Nerve Section Surgery was reviewed for outcome and complications rate.

Results: Vertigo was successfully abolished in 93.4% of the patients. No significant change in the hearing was noted in 63% of patients. 27% of patients had more than 10 dB of hearing loss and in 4% of cases the hearing loss was conductive. Complications were infrequent.

Conclusion: The Retrolabyrinthine approach for Vestibular Nerve Section is effective with few complications for untreatable Meniere's disease and Non-Meniere's recurrent vestibulopathies.

Key words: Vertigo, Vestibular Nerve Section, Retrolabyrinthine approach.

INTRODUCTION

Most patients with peripheral labyrinthine disorders can be managed medically and achieve a very satisfactory outcome. Some, however, continue to suffer frequent and severe episodic symptoms resulting in marked disability which precludes a normal lifestyle, and may benefit from surgical rehabilitation.

Many different types of operation have been advocated for the treatment of intractable vertigo[1], but Retrolabyrinthine Vestibular Nerve Section Surgery remains the most effective.

RESEARCH METHODOLOGY

This study was carried out at National Hospital for Neurology and Neurosurgery, London Retrospective data of 76 patients who under went Retrolabyrinthine Vestibular Nerve Section, was reviewed for outcome and complications.

The diagnosis of Meniere's disease conformed to AAOO criteria. Patients with delayed endolymphatic hydrops or hydrops secondary to other otological conditions were classified separately. Retrocochlear pathology was excluded by internal auditory meatus (IAM) imaging and evoked response audiometry. Transtympanic electrocochleography was only employed in the investigation of 'atypical' cases. Peripheral vestibular disorders were diagnosed on the clinical features in conjunction with results of a comprehensive vestibular protocol.

Pre-operative disability and outcome was assessed using modification of the disability grading system recently described by Moffat et al.

This trans-temporal approach involves a comprehensive mastoidectomy extending 2 cm posterior to the sigmoid sinus.

Sinus retraction then affords to cut an anteriorly based small posterior fossa flap. The cochleovestibular nerves are directly medial to the horizontal semi-circular canal. These are separated and the cranial vestibular component sectioned. Closure requires mastoid obliteration with a free abdominal fat graft.

RESULTS

The etiology responsible for 76 cases undergoing retrolabyrinthine vestibulocochlear nerve section surgery is shown in Table 1.

Table 1: Etiology in cases of VNS Surgery

Etiology	VNS n=76	%
Meniere's Disease	57	75%
Recurrent Vestibulopathy	9	11.84%
Uncompensated peripheral vestibular disorders	7	9.21%
Delayed Secondary Hydrops	3	3.94%
Total	76	100

60% of the Meniere's group had undergone previous endolymphatic sac surgery, whereas this had only been carried out in two (11%) of the Non-Meniere's group prior to assessment. Reasons for primary VNS included the severity and frequency of attacks of vertigo, drop attacks (15% of Meniere's VNS cases), and persistent imbalance. Often patients requested the most effective vertigo controlling procedure.

The complications rate of retrolabrynthine vestibulocochlear nerve surgery is shown in Table 2.

Table 2: Retrolabrynthine VNS Complications

Complications	No. of cases	%age
Abdominal haematoma	5	6.6
CSF leak	4	5.2
Scalp seroma	4	5.2
Dead EAR	3	3.3
Hydrocephalus	1	1.3
Wound infection	1	1.3
Transient VII Nerve Palsy	0	0.0

Audiometry at 2–3 months after surgery showed >10 dB hearing improvement in 9% of cases, no significant change in 63% of cases and >10 dB increased loss in 27% of cases. In 3 (4%) cases the hearing loss was conductive in type due to bony ossicular fixation resulting from viable bone dust remains in the aditus and middle ear. Any associated tinnitus was usually unchanged.

5 (6.6%) patients suffered from recurrent vertigo in the operated ear, probably due to an incomplete nerve section. Vertigo was therefore successfully abolished in 93.4% of cases. Initially 56 (74%) of patients achieved good compensation. Significant impairment occurred in 8 (10.5%) of patients, who all had contralateral Meniere's disease or marked labyrinthine hypofunction.

DISCUSSION

Many different types of operations have been advocated for the treatment of intractable vertigo, but Retrolabyrinthine Vestibular Nerve Section remains the most effective.[1] In 1904 Parry first described eighth cranial nerve transection for intractable vertigo. Selective[2,3,4] section of the vestibular nerve via a sub-occipital approach was pioneered by McKenzie in 1931, and subsequently adopted by Dandy[5]. Although 90 per cent patients were cured of their vertigo, there was a relatively high associated morbidity with these neurosurgical procedures, which were undertaken before the introduction of the operating microscope. A 10 year review of Dandy's cases showed that facial paralysis occurred in 7.5% of patients undergoing selective vestibular nerve section, and 25% of patients after eighth nerve sections. As a result these techniques did not gain widespread acceptance.

In 1961, House[6,4] developed the middle fossa approach to section the vestibular nerve in the internal auditory canal, and routinely preserved normal cochlear and facial nerve function. This is a technically demanding approach through a relatively narrow field, and even in the best hands transient facial paralysis occurs in 3 to 7% of cases. As a result in 1982 Silverstein advocated the retrolabyrinthine approach because it was easier to perform and relatively safe.

Silverstein,[7] Norrell and Rosenberg, reported the results of 115 cases who underwent Retrolabyrinthine Vestibular Nerve Section in 10 years time, they had vertigo control in 94% of cases and had preserved hearing within 20 dB in 70% of cases.

Russo and Taibah, et al reported a series of 35 patients, who underwent Retrolabyrinthine Vestibular Nerve Section between 1987-1993, the overall success rate of vertigo relief was 96.7%.

In our study, seventy six patients with interactable vertigo underwent Retrolabyrinthine Vestibular Nerve Section and vertigo was successfully abolished in 93.4% of cases and we have preserved hearing with in 20 dB in 90% cases, which is consistent with the above mentioned studies.

CONCLUSION

Vestibular nerve section has a limited role in vertigo management. There are different surgical procedures for vestibular nerve section but until a medical cure for the Meniere's disease is found, the retrolabyrinthine approach is very effective and associated with very few complications.

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ORIGINAL ARTICLE

THE QUALITY OF EMERGENCY SERVICES IN NWFP GOVERNMENT HOSPITALS (1999–2000)

Rashid Iqbal, Akbar Khan Afridi, Ghulam Sarwar, Bushra Iftikhar

ABSTRACT

Background: The dominant position of emergency services is well established in view of its sensitivity to treat life threatening illnesses and injuries. In developing countries to which Pakistan is no exception, the inefficient system of emergency services is the leading cause of death and those surviving may emerge with serious disabilities. Therefore there is a need for effective and efficient emergency departments to deal with the accidental and intentional injuries at all stages of life. Therefore we decided to find out the status of Emergency Services in the five big hospitals of NWFP i.e., Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), Hayatabad Medical Complex (HMC), District Headquarter Hospital Kohat (DHQ Kohat) and District Headquarter Hospital Mardan (DHQ Mardan).

Research Methodology: A Questionnaire was designed to assess the quality of emergency health services and got filled through strict supervision. The Questionnaires were filled randomly at various intervals.

Results: Majority of patients (66%) were not satisfied with the arrangements in the Emergency Department. Most of the patients (85%) approached directly to ED. 64% of patients were able to see the doctor at first instance while in 36% cases, the doctor was absent. 65% of the patients came with Road traffic accidents, 20% reported fever and pains and 04% came with poisonings. In 70% patients, appropriate diagnosis was made. 62% left the ED in a stable condition. 62% of the staff considered themselves properly trained and 64% viewed that ED has all the emergency equipment.

Conclusion: The staff inspite of lacking latest emergency equipment and sufficient financial support is doing its best, but as a whole, the standard of emergency services is disappointing. This situation needs the primary attention of the government and other health promoting organizations like WHO, UNICEF etc.

Key words: Emergency department, Emergency equipments. Government hospitals.

INTRODUCTION

The dominant position of Emergency Department (ED) in a hospital is well established. An efficient emergency service in a hospital decreases the suffering of seriously ill and trauma patients. It increases the confidence of general population in the hospitals and doctors. The previous picture of a casualty department with a casualty medical officer and few paramedics with limited equipment is rapidly changing throughout the world. In the advanced countries, the emergency departments cater to the needs of not only emergency medical cases but also all sorts of trauma. These departments now have full time operation theaters, consultant surgeons, burn units and latest equipments like defibrillator, respirators and trauma aids. Unfortunately even big hospitals in our country lack these facilities. Although EDs exist primarily to treat the patients with life threatening illnesses, they also serve many patients with less serious conditions. One result of this broadening responsibility has been a 22% increase in annual ED visits over the past twenty years[1]. Seriously ill patients, the elderly and the poor use emergency department more than the general population. In developing countries like ours, the insufficient system of emergency services is the leading cause of death in the first four decades of life. Many young people survive but with serious disabilities and off course the consequences of accidental and intentional injury are evident at all ages.

RESEARCH METHODOLOGY

A structured questionnaire was prepared. A total of 300 copies were distributed among the patients who were attending the emergency department. They were designed on Yes/No pattern. The questionnaire for the patient displayed a complete picture of the patient from his entry to ED, until he would be discharged or shifted to some other unit. It also included his opinion about the quality of services and suggestions for improvement. The staff was asked about the difficulties they face while serving the patients and their views about the betterment of the quality of services. A separate checklist of vital drugs and equipment, which must be available in EDs was prepared. The checklist was filled confirming the presence of these drugs and equipment. The survey was carried out in five prominent

government hospitals of North West Frontier Province (Lady Reading Hospital, Hayat Shaheed Teaching Hospital, Hayatabad Medical Complex, DHQ Mardan and DHQ Kohat). The staff filled the questionnaires themselves while the patients were interviewed separately. Strict measures were taken to keep the confidentiality and privacy of the participants. All the patients in the three shifts (Morning, Evening and Night) were included in the survey and were analysed separately.

Table 1: Number of patients who visited EDs

(Total number = 300)

Cause of ED Visit	Nos.	(%)
RTAs	195	65
Pain & Fever	60	20
Poisoning	12	04
Others	33	11
TOTAL	300	100

RESULTS

Tables 1 & 2 show the data from the patients. Table 3 shows the views of staff.

Table 4 shows that most of the vital drugs and equipment for ED were absent in these five major hospitals. The mean positive response showed a figure of only 20%.

Table 2: Response from patients

QUESTION ASKED	Positive Response		Negative Response	
	Nos.	(%)	Nos.	(%)
The patient approached the ED directly	255	85	45	15
The doctor was readily available in ED	192	64	108	38
Proper diagnosis was made	210	70	90	30
Lab. Facilities were available in ED	12	04	288	96
Medicines were provided from the ED Free of cost	18	06	282	94
X-ray was available	180	60	120	40
Proper observation of the patient was done during the stay in ED	108	36	192	64
The condition of the patient was stable on leaving the ED	186	62	114	38
The patient was satisfied with the quality of the services	102	34	198	66

Table 3: Response from EDs staff

QUESTION ASKED	Positive Response		Negative Response	
	Nos.	(%)	Nos.	(%)
The staff is adequately trained for ED	93	62	57	38
ED has all the emergency equipment	96	64	54	36
Free medicines for the patients	52	35	98	65
No. of paramedics is adequate for ED	67	45	82	55
Consultants visits ED at the time needed	53	34	97	66
The staff feels overloaded at the present job	98	63	55	37
The staff is satisfied with the quality of services provided in ED	45	30	105	70

Table 4: Availability of Vital Drugs & Equipment in EDs

Name of Hospital	Positive response in Checklist (%)
Lady Reading Hospital	19
Hayat Shaheed Teaching Hospital	25
Hayatabad Medical Complex	30
DHQ Mardan	16
DHQ Kohat	11

DISCUSSION

In all the hospitals where the survey was conducted, patients suffering from road side accidents topped the list of people (65%) who attended the EDs. Fever, pain and burns constituted the rest of 24% of patients. Only 34% patients were satisfied with the quality of services. The departments were deficient in essential services like X-ray (60%) and emergency drugs (6%). The number of patients suffering from minor injuries and common illnesses were quite high. These patients can be treated well by their general practitioners or in the primary health care centers. The problem of such patients attending big hospitals exists even in advanced countries[2,3]. Moreover, majority of patients visited the emergency department directly without approaching the primary health care centre or their family physicians. The result of such practices is overcrowding and pressure on the already limited resources of the emergency departments. Such problems also existed in other countries but they tackled them appropriately[4]. The misuse of EDs is a common practice throughout the world[5]. Majority of the staff members and doctors in the hospitals were not trained for emergency services (10.4% only). This is also a problem around the globe[6]. In a study in Britain hospitals, only 31 % of the staff had any special training for working in emergency[6]. The lack of availability of emergency drugs in EDs is deplorable. There is a great need for giving training to staff of EDs in ethics, attitudes and skills. According to a snapshot survey of patients in accident and emergency departments in the UK, the delay in initiation of the treatment was mainly due to understaffing, indicating that staff is frequently occupied by emergencies and cannot provide the level of services and supervision required for those patients.[7,8] A study conducted by Jeremy Dale in South East London regarding the satisfaction from services provided by EDs show that out of 855 patients, 240 (42%) were seen by general practitioners, 268 (47%) by a senior house officer and 59 (10%) by a registrar or a senior registrar. The overall satisfaction from the patients were 71%-75%. It was because of larger sample size on part of the investigator as well as high tech resources enabling the EDs to become more efficient despite of the variability in levels of emergency aid providers, manifesting thereby greater enhancement in services to cope with the medical eventualities in a standby manner.[7]

CONCLUSION

The emergency departments of government hospitals in NWFP are serving wide range of patients from seriously ill to patients with non-urgent problems. The staff inspite of lacking latest emergency equipment and sufficient financial support is doing its best, but as a whole, the standard of emergency services is disappointing. This situation needs the primary attention of the government and other health promoting organization like WHO, UNICEF etc.

RECOMMENDATIONS

1. Life saving medicines should be made available at EDs in sufficient amount to cope with the number of emergencies and this medication and management should be free of cost.
2. State of the art equipment should be provided to all the EDs.
3. The EDs must be supported with modern laboratories for rapid investigations.
4. Special trainings and refresher courses should be arranged for all the staff of EDs to enable them to handle seriously ill patients properly. Secondly, the number of paramedics should be increased to avoid their overburdening of patients. Consultants should be readily available at the EDs all the time.
5. Quick ambulance service should be there for handling road traffic accidents & other emergencies.
6. Evening OPD should be started for the non-urgent patients.
7. Community awareness must be present regarding cardio pulmonary resuscitation to deal with the emergencies.
8. Hygienic conditions of ED should be improved as much as possible.

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ORIGINAL ARTICLE

ULTRASOUND GUIDED PERCUTANEOUS ASPIRATION OF PANCREATIC PSEUDOCYST

Muhammad Nawaz, Muhammad Jehanzib, Fida Muhammad, Muhammad Zarin

ABSTRACT

Background: Ultrasound guided percutaneous drainage of pancreatic pseudocyst is a relatively new and effective therapy. To evaluate the outcome of ultrasound guided percutaneous external drainage of pancreatic pseudocysts with the help of catheter, this study was carried out a Khyber Teaching Hospital where patients of pseudopancreatic cyst referred from different disciplines where treated by percutaneous ultrasound guided aspiration and the results were compiled. It was a prospective study, carried out at Radiology Department of the Khyber Teaching Hospital Peshawar Pakistan from January 2002 to December 2004.

Research Methodology: A total of 20 patients were included in this study. These patients were already investigated and diagnosed by different wards as pancreatic pseudocyst. The patients were subjected to ultrasound guided aspiration of cyst with the help of a catheter. The patients were sent back to their respective wards and were repeatedly called back for regular monitoring. The drains were removed after they remained dry for 24 hours. The patients were followed for a period for four months. Associated complications like failure of drain, injury to viscera, infection, bleeding and recurrence, were noted.

Results: The procedure was quite successful in 14 cases (70%) out of total 20 patients without any complications whatsoever. However drainage was not successful in 02 cases (10%), gut was injured in 5%, infection occurred in (5%), bleeding in (5%) and recurrence occurred in 10%. The average hospital stay was 04 days and return to normal life and activity occurred within 10 to 16 days.

Conclusion: The procedure is minimally invasive, quick, safe, result oriented, successful, bedside and inexpensive which may be performed as an out door technique.

Key words: Pancreatic pseudocyst, Ultrasound guided, pancreatitis.

INTRODUCTION

Morgagni gave the first description of pancreatic pseudocyst.[1,2] It is a localized collection of pancreatic secretions enclosed in a wall of fibrous granulation tissue without any epithelial lining, that is why it is called pseudocyst.

Mostly they are unilocular and can occur any where from chest to pelvic cavity but usually located in the lesser sac. Patients usually present with pain, vomiting, compression symptoms and epigastric swelling. Ultrasound and CT are investigations of choice.

There are numerous therapeutic options for the treatment of the pancreatic pseudocysts, such as percutaneous external drainage, endoscopic drainage, endoscopic transpapillary drainage, surgical external, and internal drainage or resection of cysts.[3,4,5]

The first percutaneous external drainage was performed in 1875, while in 1882 Bozeman surgically removed the cyst and in the following year Gusserman marsupilized the cyst to perform external drainage. Cystogastrosomy, cystodudenostomy and cystojejunostomy were introduced in 1921,1928 and 1931 respectively.

The first ultrasound guided percutaneous drainage was performed in 1976. Various routes can be chosen for percutaneous external drainage i.e. retro-peritoneal, trasnperitoneal, transhepatic or transduodenal.[3]

The purpose of our study was to determine the success rate of percutaneous drainage of pseudopancreatic cyst and its use as an alternative for open surgery.

RESEARCH METHODOLOGY

This study was carried out in Radiology Department of Khyber Teaching Hospital from January 2002 to December 2004. A total of twenty non-randomized patients were included in this study. They were diagnosed sonographically as cases of pancreatic pseudocysts as complication of acute pancreatitis and were referred from surgical (n=12) and medical (n=08) units.

Inclusion Criteria:

All patients with diagnosed uncomplicated and larger than 6 cm size pancreatic cyst were included in the study.

Exclusion Criteria:

Patients with complicated pseudopancreatic cysts (rupture) or with associated complications (ascities etc) were excluded from the study.

These patients were already admitted in different wards and after proper workup were sent to Radiology department for percutaneous drainage. After gastric decompression, patients were put in supine position on table. Using wide bored needle, the cysts were aspirated followed by putting a small catheter (08G) in the cavity for continuous drainage. The aspiration were sent for culture and sensitivity and patients were sent back to their parent wards. During their stay in hospital, they were called back once or twice for monitoring. The drains were removed after they remained empty for 24 hours and were discharged home the same day. The patients were followed fortnightly for a minimum period of four months to look for any complications like recurrence.

A proforma was designed to analyze the results and complications at the end of the study. The procedure was assessed in terms of duration of procedure, hospital stay, morbidity, failure to drain, injury to viscera, bleeding, infection and recurrence.

RESULTS

Out of 20 patients, 13 (65%) were male and 07 (35%) female patients and age ranged from 30 to 55 years with mean age of 42 years.

Ultrasonography revealed pancreatic cysts of variable sizes in these patients, ranging from 6x6.5 cm to 10.5x8.5 cm, involving the lesser sacs variably causing compression effects on the stomach. Variable quantities of fluid aspirated on the first day ranged from 500 to 1500cc.

The procedure was quite successful in 14 cases (70%) out of total 20 patients without any complications whatsoever.

Complications encountered during procedure

S. No.	Complications	No. of cases	%age
1.	Failure	2	10%
2.	Gut puncture	1	05%
3.	Haemorrhagic tap	1	05%
4.	Recurrence	2	10%

In 2 (10%) patients, the procedure failed due to thick fluid and debris, in 1 (5%) case, initially the aspirate was gut content which amounted to gut puncture but later on at proper placement of needle, the cyst could be aspirated successfully. In 1 (5%) patient, the aspirate was blood stained which could be due to injury to the cyst wall. Follow-up examinations were carried out fortnightly upto four months, which revealed recurrence in 2 (10%) case at interval of 24 and 40 days respectively.

DISCUSSION

There are a lot of controversies regarding appropriate treatment of pancreatic pseudocyst. Intervention is indicated when size of cyst is more than 06 cm in diameter, symptoms of toxemia, obstructive symptoms like jaundice and vomiting or cyst persist longer than 06 weeks.

Simple drainage of pseudocyst carries a recurrence of 20% but pigtail catheter allows the cyst wall to remain collapsed. The effectiveness and duration of percutaneous external drainage seems to be related to the presence of a communication between the pancreatic duct therefore prolonged drainage is needed in such cases. The hospital stay in case of percutaneous external drainage is remarkably reduced as compared to the patients treated surgically.[9]

Controlled pancreatic fistula is a recognized compilation, which closes 02 to 06 weeks after catheter is removed,[7] other complications are superficial colonization, pneumothorax, pleural effusion and minor hemorrhage.[7] In our study, the male gender dominated female and average age was 42 years and these results are comparable to other studies.[7,8]

Other international studies show failure rate of the procedure ranging from 10-40% and in our study the failure rate was 10%. These studies have also shown recurrence rate of 15-30% which is a bit higher than in our cases.[7,8] The rest of the complications like haemorrhagic tap, gut puncture etc are almost the same as in other studies.[8,9,10]

Further large scale studies need to be done to evaluate the outcome of the procedure.

CONCLUSION

Ultrasound guided percutaneous external drainage is a quick and safe procedure associated with low morbidity.

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ORIGINAL ARTICLE

HISTOLOGICAL PATTERN OF GLOMERULOPATHIES AT KHYBER TEACHING HOSPITAL, PESHAWAR

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ABSTRACT

Background: To find out the histopathological pattern of glomerulopathies in children and adult population who, under went renal biopsy in a tertiary care hospital.

Research Methodology: This was a prospective study carried out at the department of Nephrology at Khyber Teaching Hospital, Peshawar from June 1999 till June 2001. Ultrasound guided percutanous renal biopsies were carried out in patients with the findings of; 1) Nephrotic range proteinuria in adults. 2) Non-nephrotic range proteinuria with evidence of hypertension / haematuria / deranged renal function or active sediments on urine microscopy. 3) Steroid resistant nephrotic syndrome in children (patients not responding to steroid in eight weeks time) and 4) Children with nephrotic syndrome who were not tolerant of steroid therapy or were considered for immunosuppressive drugs.

Results: A total of 130 renal biopsies were done. Out of these 77 were male patients and 53 were females. The most common histopathological lesion among children population was Minimal Change Disease (42.10%) followed by Focal Segmental Glomerulosclerosis (26.31%) and Membranous GN (15.78%). In the adult, the most frequent entity was Membranoprolifirative GN (22.22%), Membranous GN (20.37%) and Focal Segmental Glomerulosclerosis (16.66%). We observed that nephrotic range proteinuria was most prevalent in Membranous GN followed by Focal Segmental Glomerulosclerosis, while non-nephrotic range proteinuria was mostly seen in patients with Membranoprolifirative GN. It was also noticed that Crescentic GN is invariably associated with impaired renal function followed in frequency by renal Amyloidosis (60%) and ATN (40%).

Conclusion: In adult population Membranoprolifirative GN is the leading histopathological entity in our region followed by Membranous GN. Similarly in children Minimal Change Disease is the most commonly encountered glomerulopathy followed by Focal Segmental Glomerulosclerosis. Percutanous renal biopsy helps the nephrologjst to find out the underlying histopathology for accurate diagnosis leading to improved management plan.

Key words: Nephrotic Syndrome, Renal biopsy, Proteinuria, Glomerulopathy.

INTRODUCTION

Injury to glomeruli results in a variety of signs and symptoms of disease, including proteinuria, haematuria, azotemia, oligouria, edema and hypertension. Specific glomerular diseases tends to produce particular syndromes of renal dysfunction, although multiple glomerular diseases can produce the same syndrome.

Evaluation of pathogenic features identified in a renal biopsy specimen may be required for definitive diagnosis. In patients with renal disease, renal biopsy provides tissue that can be used to determine the cause, predict the prognosis, and direct the treatment. Renal tissue obtained by biopsy has contributed enormously to the field of Nephrology. In 1934, Ball performed the first closed needle biopsy with an aspiration device,[1,2] In 1954 Kark and Muchrecke[3] performed percutaneous renal biopsy using intravenous pyelography. Because of exposure to radiation in pyelography, many modifications in technique for localization of kidney have been described, including ultrasound marking prior to biopsy, continuous ultrasound guidance with the help of transducer and the use of C.T scan in massive obese patients.

Similarly modification of percutaneous biopsy needle from Menghini needle, Vim Silvermann and its Franklin modification (Tru-curt), to automated spring loaded gun have increased the yield of successful biopsies from 60% to 90% with associated minimal complications. Recently there has been a major shift towards utilization of spring-loaded disposable gun devices. In addition to percutaneous and open renal biopsy, transjugular and even laproscopic renal biopsies are being carried, where indicated.

A close correlation has been established in diseases affecting kidney diffusely, such as

glomerulopathies, and percutaneous renal biopsy. Renal biopsy is indicated in a patient with renal disease when all the three following conditions are met;

1) The cause cannot be determined or adequately predicted by less invasive diagnostic procedures
2) The signs and symptoms suggest parenchymal disease that can be diagnosed by pathological evaluation and
3) The differential diagnosis includes diseases that have different treatments, and different prognosis.

Situations in which a renal biopsy serves an important diagnostic function include nephrotic syndrome in adults, steroid resistant nephritic syndrome in children, glomerulonephritis in adults other then clear-cut acute post streptococcal GN or lupus nephritis and acute renal failure of unknown cause.

Contraindication to renal biopsy include an uncooperative patient, hemorrhagic diathesis, severe hypertension, severe anemia, cystic disease, hydronephrosis, acute pyelonephritis / perinephric abscess, renal neoplasm and End Stage Renal Disease. It is a safe procedure in experienced hands[4] but still complications do occur; including gross haematuria in < 10% of patients, arteriovenous fistula < 1%, hemorrhage that require surgery in < 1% and mortality in 0.1%.

This prospective study was undertaken to determine the frequency distribution of various renal histopathological lesions and their clinical significance in a tertiary care hospital.

RESEARCH METHODOLOGY

This prospective study was carried out in the Department of Nephrology at Khyber Teaching Hospital Peshawar, over a period of two years (June 1999 till June 2001). A total of 130 renal biopsies were performed during this study. Strict inclusion and exclusion criteria were laid down for subjecting patients to percutaneous renal biopsy, as per following details;

INCLUSION CRITERIA

1) Nephrotic range proteinuria in adults.
2) Non-nephrotic range proteinuria with evidence of hypertension / haematuria / deranged renal function or active sediments on urine microscopy.
3) Steroid resistant nephrotic syndrome in children (patients not responding to steroid in eight weeks time).
4) Children with nephrotic syndrome who were not tolerant of steroid therapy or were considered for immunosuppressive drugs

EXCLUSION CRITERIA

1) Nephrotic syndrome in children between 2 years and 8 years.
2) Long standing diabetics with proteinuria (>7 years for IDDM and >5 years for NIDDM).
3) Bilateral small echogenic or scared kidneys.
4) Adult Pofycystic Kidney Disease and congenital nephritis.

All patients who met the above mentioned criteria were admitted to the hospital. The procedure and its complications were thoroughly explained to all the patients, and a written consent was obtained. Blood pressure was stabilized, PT / APTT, Platelets count, 24 hrs urinary protein estimation, HBs antigen, Anti HCV antibodies and abdominal ultrasound were performed in all cases.

The patient was placed in prone position with a sandbag under the upper abdomen. Real time ultrasound guided renal biopsy was done. Spring-loaded disposable percutaneous biopsy needle was used in all the patients (16G for adults and 18G for children). After biopsy pressure bandage was applied, vital signs were initially checked half hourly for 4 hrs then hourly for another 4 hrs.

Biopsy material was fixed in 10% buffered formaline and was sent for histopathology to Agha Khan University Hospital Laboratory with all the relevant information. Biopsy containing only tubules, interstitium and less then 5 glomeruli were considered inadequate for reporting purpose and hence excluded from the study.

RESULTS

A total of 130 renal biopsies, were performed during this study. Out of these, 77 (59.2%) cases were male patients while 53 (40.7%) cases were females. When gender related renal impairment causes were excluded, males significantly out numbered females in this series.

The mean age of the patients in our study was 26.75 ± 14.14 years (SD) with a range of 2 years to 75 years. The age distribution showed that patients below 12 years were 19 (14.6%) cases while 111 (85.3%) cases were above 12 years of age. The average duration of illness in this series was 7.7 months (ranging from 15 days to 10 years).

In this series a total of 127 out of 130 renal biopsies (97.69%) fulfilled the inclusion criteria of the study. Regarding the indications for renal biopsy

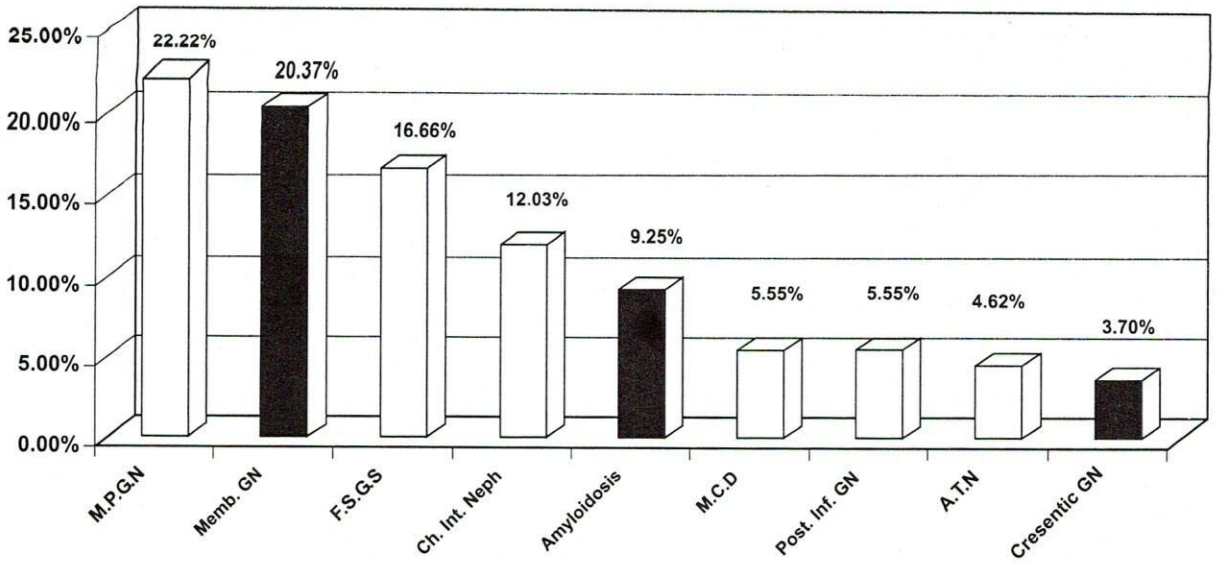

Fig. 1: Pattern of GN in adult population

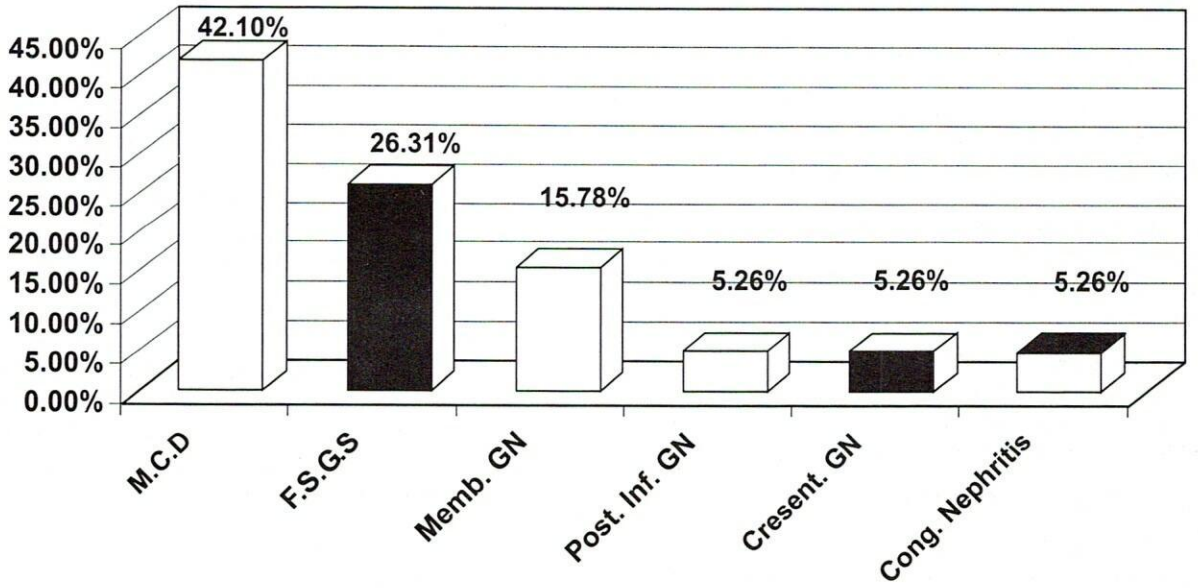

Fig. 2: Pattern of GN in paediatrics

TABLE 1

Type of G.N	HBs	HCV	SLE	T.B.	Copd	Psoriasis	URT I	VSD	Total
Memb. GN	4	1	1			1			7
MCD	1							1	2
Amyloidosis	1			3	4				8
MPGN			1						1
FSGS			1						1
Post. Inf. GN			1				1		2
Total	6	1	4	3	4	1	1	1	21

Table 2: Proteinuria as predictor of Glomerulopahy

Glomerulopathy	No of Patients with Proteinuria / day	
	> 3gms	< 3gms
Membranoprolifirative GN	8	16
Membranous GN	15	10
Focal Segmental Glomerulosclerosis	13	10
Chronic Interstitial Nephritis	3	10
Renal Amyloidosis	5	5
Minimal Change Disease	9	5
Post Infectious GN	5	2
Acute Tubular Nephritis	5	0
Crescentic GN	2	3
Congenital Nephritis	0	1

Table 3: Deranged Renal Function in different Glomerulopathies

Glomerulopathy	No. of pts.	Percentage
Crescentic GN	5 out of 5	100%
Congenital Nephritis	1 out of 1	100%
Amyloidosis	6 out of 10	60%
Acute Tubular Nephritis	2 out of 5	40%
Chronic Interstitial Nephritis	5 out of 13	38.46%
Membranoprolifirative GN	7 out of 24	29.16%
Focal Segmental Glomerulosclerosis	5 out of 23	21.73%
Post Infectious GN	1 out of 7	14.28%
Membranous GN	2 out of 25	8%
Minimal Change Disease	1 out of 14	7.14%

in this series, the commonest cause was proteinuria alone accounting for 94 (72.3%) cases. The next commonest cause was proteinuria with haematuria 15 (11.5%) cases, followed by proteinuria with deranged renal function 9 (6.9%) cases, unexplained acute renal failure 8 (6.1%) cases, and finally haematuria alone / with deranged renal function accounting for 4 (3%) cases.

The most common histopathological lesions among the biopsied patients were further divided into two age groups. The pattern in the age group of less then 12 yrs showed that Minimal Change Disease was the most frequently occurring entity accounting for 8 (42.10%) cases, followed by Focal Segmental Glomerulosclerosis and Membranous GN accounting for 5 (26.31%) cases and 3 (15.78%) cases respectively. (Figure 1).

Similarly in adult population the pattern of glomerulopathies indicated that Membranoprolifirative GN was the most frequently occurring entity accounting for 24 (22.22%) cases, closely followed by Membranous GN 22 (20.37%) cases and Focal Segmental Glomerulosclerosis, which accounted for 18 (16.66%) cases. (Figure 2). The asso-

ciated conditions, which we encountered with different glomerulopathies in this series, are summarized in Table 1.

The types of glomerulopathies according to types of proteinuria is shown in Table 2 while types of deranged renal function in different glomerulopathies is shown in Table 3.

DISCUSSION

Renal biopsy helps nephrologists in establishing accurate diagnosis, identifying any reversible pathology, helps in devising appropriate management plan for the patient and is very useful in understanding the histological nature of the disease.

The most common histopathological lesion in pediatric population (age < 12 yrs) in our series is Minimal Change Disease, Focal Segmental Glomerulosclerosis and Membranous GN. This is comparable to that reported by Farida and Azhar[5]. According to Hafeez and Rasool, Mesangioprolifirative GN is the leading entity followed by Membranoprolifirative GN and Minimal Change Disease.[6]

In the adult population this series showed that the most frequently occurring glomerulopathy in our region is Membranoprolifirative GN, which accounts for 24 (22.22%) cases closely followed by Membranous GN 22 (20.37%) cases and Focal Segmental Glomerulosclerosis 18 (16.66%) cases. This is very similar to the pattern of glomerulopathy reported from PIMS Islamabad.[7] Similarly audit of renal biopsies at JPMC, Karachi has shown that Focal Segmental Glomerulosclerosis is the most frequently occurring entity followed by Membranous GN and Minimal Change Disease.[8] Muzaffar et al[9] has reported that Membranoprolifirative GN is the leading cause of glomerulopathy followed by Minimal Change Disease and Focal Segmental Glomerulosclerosis, which is quite in agreement with the finding of this series. While Focal Segmental Glomerulosclerosis is reported to be the leading cause followed by Minimal Change Disease and IgA nephropathy, in Kuwait, as reported by Al Amiri renal center.[10]

Regarding the presence of nephrotic range proteinuria versus non-nephrotic range proteinuria, the earlier finding at Rawalpindi by Yaqoob et al[11] that Membranoprolifirative GN is the leading cause of non-nephrotic range proteinuria and Membranous GN the leading cause of nephrotic range proteinuria, was also validated by similar findings in our study. It is seen that Membranous GN is the commonest entity with proteinuria of more then 3 gm/day, followed by Focal Segmental Glomerulosclerosis and Membranoprolifirative GN. (Table 2).

More importantly the finding of deranged renal function with different glomerulopathies, we observed that almost all patients of Crescentic GN and Congenital Nephritis are associated with impaired renal functions. (Table 3). The next commonest entity is Renal Amyloidosis with more then half of the cases presenting with impaired renal function. In this series, as shown in the Table 3, both Membranous GN and Minimal Change Disease are rarely associated with significant renal impairment.

We did not find any significant number of Mesangioprolifirative GN in this series because all those cases suspected of having post infective GN were excluded from our study. Similarly we could not show any IgA nephropathy due to the lack of Immunofluorescence studies of the biopsy samples.

The associated conditions which we encountered in our study did show the already established fact that HBs antigen positive patients were more likely to have Membranous GN but the new finding was a case of HCV positive patient with Membranous GN. This might be a chance finding and only a large population study can establish any firm association. The presence of COPD and pulmonary TB with renal Amyloidosis implies that this is the most important cause of secondary Amyloidosis in our country.

As different studies have shown, the risk of complications significantly reduces when biopsy is carried out by an expert person[4]. This was also confirmed in this series, as our team encountered no major complications during the study period.

CONCLUSION

We conclude that Membranoprolifirative GN is the leading histopathological entity in adult population, followed by Membranous GN and FSGS. Similarly in children Minimal Change Disease is the most frequently encountered glomerulopathy followed by FSGS.

We also conclude that percutaneous renal biopsy is a safe procedure in expert hands with minimal complication. It helps the nephrologist to find out the underlying histopathology for proper diagnosis and management.

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ORIGINAL ARTICLE

PRESENTING SYMPTOMS OF TUBERCULOSIS

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ABSTRACT

Background: Tuberculosis is a leading cause of morbidity in developing countries where 95% of TB cases occur, eighty percent (80%) of these cases involve persons who are in their productive years (15-59). TB causes more than 25% of avoidable adult deaths in the developing world. The loss of these patients from work force and the frequency with which they infect their contacts are factors of great socioeconomic concern.

Research Methodology: To find out the presenting symptoms of tuberculosis in our setup, this descriptive study was carried out in the Department of Medicine, Khyber Teaching Hospital Peshawar, from December 1997 to December 2000. One hundred newly diagnosed admitted cases of TB were studied for the presenting symptoms. These were divided into 50 pulmonary and 50 extrapulmonary forms. The diagnosis of TB was based on smear and/or culture positivity for mycobacterium TB and response to antituberculous therapy. The approach towards diagnosis was different in each form of TB. Known tuberculous patients, those with malignancy, chronic illnesses and HIV positive were excluded. Follow up upto 5 months was done in each case.

Results: The most common generalised symptoms in both pulmonary and extrapulmonary forms of TB were fever, loss of appetite, weight loss and night sweats. The commonest presentation of pulmonary TB was cough. Swelling in the neck was the commonest symptom of lymphatic TB. Low grade fever and headache were commonest presentations of pleural and CNS TB respectively.

Conclusion: Fever was a common general symptom in most forms of TB followed by weight and appetite loss, bodyaches and night sweats. Tuberculosis should always be considered in the differential diagnosis of a young patient presenting with unexplained low grade fever and weight loss.

Key words: Tuberculosis (TB), pulmonary, extrapulmonary.

INTRODUCTION

TB is a major health problem throughout the globe and especially in the third world countries. It is defined as a disease caused by bacteria belonging to the mycobacterium tuberculosis complex. The disease usually affects the lungs, although other organs are involved in upto 1/3rd of cases. With proper treatment disease is curable in virtually all cases caused by drug susceptible strains. Without treatment it may kill the patient within five years in more than half of cases[1].

The cause of TB in most cases is the mycobacterium tuberculosis which is a human strain but in the past a bovine strain called mycobacterium bovis was an important cause of tonsillar and intestinal TB particularly in children which has now disappeared in the developed countries due to the eradication of tuberculosis herds and the pasteurization of milk[2].

The electronic and print media has increased the level of awareness of a common man. This has lead to an earlier presentation of a patient to a health care provider. This paper highlights the presenting symptoms of tuberculosis in our setup and compares the results with local and international literature.

RESEARCH METHODOLOGY

This study was conducted on newly diagnosed 100 tuberculous patients who were admitted to medical units of KTH Peshawar. Patients included in this study were above 13 years of age, residents of NWFP and Afghan refugees. A simplified clinical approach was adapted during the study. On admission a detailed history was taken and clinical examination carried out in each case. Then were advised baseline and special investigations. A printed proforma containing a comprehensive record of all aspects of the disease was completed from each patient.

Total of 100 cases were studied for presentations. These were divided into 50 pulmonary and 50 extrapulmonary forms. The extrapulmonary forms were 20 cases of pleural TB, 20 cases of lymphatic TB and 10 cases of CNS TB. The approach towards diagnosis was not similar in all forms. Some investigations like x-ray chest, TLC, DLC,

loss and malaise were 9(45%) and 5(25%) cases respectively. In case of pleural TB my figures are coinciding with the results of Ahmed N[10] who reported wt loss in 28(56%) cases and malaise in 13(26%) cases.

In this study night sweats was a presentation in 24(48%) cases of pulmonary TB, 7(35%) of lymphatic TB, 4(20%) cases of pleural TB and 3(30%) cases of CNS TB. Kumar P and Clark M[14] has described drenching night sweats as a less common feature and attributed it to the anxiety associated with the disease. Ahmed N[10] found night sweats in 8(16%) cases of tuberculous pleural effusion. The reason for night sweats in my patients was high grade fever in some cases and anxiety in others. Cough was the commonest symptom in pulmonary TB in this study. It was found in 47(94%) patients on presentation. In 24(48%) patients it was productive with haemoptysis in 7(14%) patients. Stauffer J L[15] and Hopewell PC et al[16] has described cough as the most common symptom of pulmonary TB. Cough on presentation was noticed in 7(35%), 13(65%) and 3(30%) cases respectively of lymphatic, pleural and CNS TB. The reason in most cases was lung involvement. Ahmed N[10] reported cough in 42(84%) patients suffering from pleural TB. The reason for the difference with this study could not be known.

Breathlessness was the presentation in 5(10%) cases of pulmonary TB. In one case pleural effusion and in two, pneumothorax was thought to be the cause of breathlessness. Javed A et al[17] conducted study on 60 patients with pneumothorax and found TB as a cause in 32 cases. This shows that breathlessness due to pneumothorax can be a presentation of pulmonary TB. Breathlessness was found in 12(60%) cases of pleural TB. Ahmed N[10] reported breathlessness in 38(76%) patients with pleural TB. Chest pain was observed in 31(62%) cases of pulmonary TB, 3(15%) cases of lymphatic TB, 10(50%) cases of pleural TB and 2(20%) cases of CNS TB. Ahmed N[10] reported chest pain in 26(52%) cases of tuberculous pleural effusion which coincides with this study. Pleurisy, muscle fatigue and pneumothorax were responsible for chest pain in most of the patients. Headache, vomiting and altered mental state were presentation in 8(80%), 6(60%) and 15(50%) cases respectively of CNS TB. Alsoub H[18] reported headache as the most common presenting feature of tuberculous meningitis. Hosoglu S et al[13] reported headache in 96% cases, vomiting in 81.2% of cases and altered mental state in 72.3% cases. Swarts & Briggs[12] reported abnormal mental status as the commonest presentation of tuberculous meningitis. A little difference with this study is due to less number of cases of CNS TB in my study.

Swelling in the neck was presentation in all 20(100%) cases of lymphatic TB. One case of lymphatic TB presented with dysphagia. Mediastinal lymphadenitis pressing the esophagus was the cause of dysphagia in this case. Dysphagia as presentation of lymphatic TB has been reported by Popli M B[19].

CONCLUSION

Fever was a common general symptom in most forms of TB, followed by weight loss, loss of appetite, bodyaches and night sweats. Other specific symptoms were common to the particular organ involved. Overall the presenting symptoms of TB in this study were not much different from the available national and international literature. In our setup the patients present when the disease is fairly advanced. Tuberculosis should always be considered in the differential diagnosis of unexplained low grade fever of a few weeks duration in a young patient in our setup.

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ORIGINAL ARTICLE

"ANGIOFIBROMA" — A SURGICAL CHALLENGE — EXPERIENCE WITH 20 PATIENTS

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ABSTRACT

Background: Angiofibroma is a highly vascular tumor of adolescent males located mainly in the nose and nasopharynx. Though benign histologically, it has the potential to spread to adjacent areas of the head and neck and can lead to a variety of Presentations. We studied the management plan of Angiofibroma mainly based on the diagnostic methodology especially CT and MRI scans and treatment modality.

Research Methodology: It was a descriptive study of twenty patients of Angiofibroma carried out between Jan. 2002 to Dec. 2003 at the Department of ENT and Head and Neck surgery Khyber Teaching Hospital and PGMI Hayatabad Medical Complex Peshawar. As a main diagnostic methodology computed tomography (CT Scan) was done in all the patients (100%) and magnetic resonance imaging (MRI) in 6 patients (30%) apart from conventional X-Rays of the sinuses and nasopharynx. Treatment modality consisted of various surgical approaches according to the extent of the tumour and Radiotherapy as adjuvant treatment. Regular follow up of the patients was carried out to detect any tumour recurrence.

Results: All the patients were male (100%) with age ranging from 10-19 years and peak age incidence of 12-16 years (75%) with mean age of 14 years. Recurrent bouts of epistaxis and nasal obstruction were the leading clinical features (100%). Results of the CT and MRI showed involvement of the nose and nasopharynx in 40% and alongwith other sites like maxillary sinus 5%, Pterygopalatine fossa alone 10%, Pterygopalatine Fossa with orbital bone erosion 15%, Infratemporal fossa with cheek, 25% and Intracranial extension 5%. Of the various surgical approaches, transpalatine was the most commonly employed (75%) followed by lateral rhinotomy (45%), medial maxillectomy (30%), Sublabial (25%) and combined extra and intracranial approaches in 5% cases. On the average 2 to 4 pints of blood was used during surgery. No mortality was observed. At regular follow up tumour recurrence was found to be 10%. Radiotherapy used as a primary treatment for intracranial extension in one patient (50%) failed to cure while as adjuvant therapy for recurrent tumours in 2 patients significantly regressed the growth.

Conclusion: It is concluded that modern imaging techniques of CT and MR Scans are the most important tools of diagnosis and are of great help in selecting the proper mode of treatment and surgical approaches.

Key words: Angiofibroma, CT/MR Scans, surgical approaches.

INTRODUCTION

Angiofibroma is a benign fibrovascular tumour of prepubertal and adolescent males presenting mainly in the nose and nasopharynx. It is highly vascular accounting for bouts of massive epistaxis, unencapsulated and locally invasive thus invading the surrounding structures with potential to extend intracranially[1,2,3]. Recognised centuries ago, it remained without proper name till chaveau (1906)[4], who coined the term juvenile nasopharyngeal Angiofirbroma. Angiofirbroma was suggested by Friedberg (1940)[5] which is now the accepted terminology world over replacing all other alternative titles. Passing through several phases of speculations and controversies a clearer picture of the nature of these swellings, site of origin, behaviour and safe management has evolved in recent years. Originating near the region of the Sphenopalatine foramen it extends medially to invade the nose and nasopharynx while growing laterally it occupies the pterygopalatine and infratemporal fossae, orbit, cheek and on occasions intracranial compartment[2,6]. Strange enough it occurs exclusively in males largely influenced by the surge of androgenic hormones while showing some regression with advancing age[7,8]. Surgery for the tumour has undergone through several stages and now a days a particular surgical approach is largely based on the findings of the CT and MR Scans which would ensure proper tumour exposure, radical removal, and control of intraoperative haemorrhage and prevention of recurrence[9].

RESEARCH METHODOLOGY

It was a hospital based study of 20 patients of 2 years duration from Jan 2002 to Dec 2003. The

inclusion criteria were definite diagnostic evaluation, pathological proof (Histopathology of the resected tumours), institutional treatment with primary surgery and other adjuvant therapy (Radiotherapy) and clinical follow up. Two patients with recurrent tumors and four patients who were lost to follow up were excluded from the study.

Diagnostic methodology consisted of thorough history and meticulous examination of the nose, nasopharynx and allied regions. Laboratory investigations included heamoglobin estimation and coagulation profile. Preliminary radiological investigations involved X-ray nasopharynx lateral view and X-ray paranasal sinus occipitomental view (OM view) followed by CT Scan in every patient and MR Scan in 6 cases suspected of having intracranial extension.

As a treatment modality primary radiotherapy was employed in one patient and as adjuvant therapy in 2 patients. Surgery was the main stay of treatment and a variety of surgical approaches were adopted according to the extent of the tumour. One patient underwent combined extra and intracranial approach. All the resected tumours were subjected to histopathology. The patients were followed monthly for the first year and 2 monthly in the second year.

RESULTS

All the patients were male (100%) with age ranging from 10 to 19 years. The peak age prevalence was noted between 12-16 years (75%) with mean age of 14 years (Table No: 1). Recurrent epistaxis and nasal obstruction were the commonest symptoms (100%). Other important clinical features are shown in Table No. 2. 12 patients were found to have anaemia with haemoglobin of 7 to 8 gm % and were transfused 2 to 3 pints of blood to make them fit for surgery. Diagnostic yield of plain X-rays of nasopharynx lateral view and PNS (OM view) is shown in Table No. 3. They did not help in full localization of the tumour extent. On the other hand contrast enhanced CT scan with its axial and coronal

Table No. 1 Age Wise Prevalence

No.	Age of patients	No. of cases	%age
1	10 years	1	5
2	11 years	1	5
3	12 years	4	20
4	13 years	3	15
5	14 years	3	15
6	15 years	2	10
7	16 years	3	15
8	17 years	1	5
9	18 years	1	5
10	19 years	1	5

Table No. 2 Main Features of the Tumour

No.	Symptoms	No. of cases	%age
1	Nasal obstruction	20	100
2	Recurrent epistaxis	20	100
3	Headache	16	80
4	Conductive deafness	15	75
5	Speech defects	13	65
6	Proptosis	5	25
7	Swelling cheek	4	20
8	Intracranial extension with blindness	1	5

Table No. 3 Diagnostic Yield of Plain X-rays in 20 patients

No.	Name of X-ray	Findings	No. of patients	%age
1	X-ray Nasopharynx lateral view	Mass in the nasopharynx	6	30
2	X-ray Paranasal sinus occipitomental view (PNS OM view)	1- Opacity of the maxillary sinus	12	60
		a. Due to retained secretions		
		b. Due to tumour invasion.	1	5
		2- Erosion of the medial wall of the sinus.	2	10

planes fully delineated all possible extensions of the growth in 19 patients (95%). MR scan with its three dimensional reconstruction capacities clearly showed intracranial extension into the sphenoid sinus, sellar and suprasellar regions in one patient (5%). Based on the findings of these imaging techniques staging system of session's classifications[10] was used in the present series (Table No. 4).

Primary radiotherapy used in a patient with intracranial extensions did not show regression in size of the tumour on subsequent scans and combined approaches using bifrontal craniotomy by Neurosurgeon and transpalatine-lateral rhinotomy approaches by ENT Surgeon were adopted. Two patients with recurrent tumours, operated upon 3 times before, showed regression of the tumour on subsequent follow up who were treated with radiotherapy as an adjuvant treatment.

All the patients underwent curative surgery. Various surgical approaches adopted are shown in Table No. 5. Estimated average blood loss with different approaches is shown in Table No. 6. Intraop-

Table No. 4 Sessions Staging System Based on CT Scan Findings

Stage	Tumour Extent	No. of patients	%age
IA.	Limited to nose and nasopharyngeal vault	8	40
IB.	Extension into > 1 sinus	1	5
IIA.	Minimal extension into PPF	2	10
IIB.	Full occupation of PPF with or without erosion of orbital bones.	3	15
IIC.	Infratemporal fossa with cheek involvement.	5	25
III.	Intracranial extension	1	5

PPF = Pterygopalatine Fossa.

Table No. 5 Surgical Approaches Used

No.	Type of approach	No. of patients	%age
1	Transpalatine approach	15	75
	A: Used as a single approach in 8 cases		
	B: Combined with other approaches in 7 cases		
2	Lateral Rhinotomy approach	9	45
	A: Used alone in 2 cases.		
	B: Combined with other approaches in 7 cases.		
3	Medial maxillectomy via Weber Ferguson's incision	6	30
4	Sublabial approach	5	25
5	Combined Bifrontal craniotomy-transpalatine and lateral Rhinotomy approach	1	5

Table No. 6: Average Blood Loss with different Surgical Approaches in 20 cases

No.	Type of surgical approach	No. of times used	Average blood loss per case.
1	Transpalatine approach	75%	750ml
2	Lateral Rhinotomy	45%	825ml
3	Medial Maxillectomy	30%	1025ml
4	Sublabial approach	25%	1160ml
5	Combined approach	5%	1230ml

Table No. 7: Operative Complications

No.	Type of complication	No. of patients	%age
A: Immediate complications			
1	Hypovolumic shock	6	30
2	Cardiorespiratory arrest	1	5
B: Late complications			
1	Nasal crusting	16	80
2	Speech defects	4	20
3	Wound dehiscence	4	20
4	Palatal fistulae	3	15
5	Facial anaesthesia	2	10
6	Tumour recurrence	2	10

Table No. 8 Diagnostic yield of CT/MR Scans Versus Histopathology of Resected Tumour (Post Operative)

No.	CT/MR findings	No. of patients	Positive predictive value
1	A. CT showed extension into various regions of the Head & Neck.	19/20	95%
	B. MR scan showed intracranial extension	1/1	
2	Post operative histopathology of resected tumours established diagnosis of Angiofibroma	20	100%

erative complications included hypovolumic shock 6 patients (30%) and cardiorespiratory arrest one patient (5%). Other complications are listed in Table No. 7. On regular follow up recurrence was found to be 10%. Histopathology of all the resected tumours established the diagnosis of Angiofibroma (100%) showing mainly endothelial lined vascular spaces abounding in a stroma of mature fibrous tissue (Table No. 8).

DISCUSSION

Angiofibroma is like an iceberg, the tip of which is visible in the nose and nasopharynx while the rest lies hidden in the adjoining regions of the

head and neck[9,10]. In the past, due to lack of sophisticated imaging techniques, it was practically very difficult to delineate full extension of the tumour and thus the treatment offered was directed mainly to the visible parts of the growth which accounted for high rate of recurrences[11,12]. Advent of the modern era diagnostic tools specially CT and MR Scans have played a pivotal role in unveiling the unique characteristics of this fascinating tumour with all its possible extensions thus helping a lot in selecting a proper mode of treatment and appropriate surgical approaches[12,13,14]. Invasion of the sphenoid sinus, erosion of the greater wing of the sphenoid and extension into the pterygopalatine and infratemporal fossae is detected with remarkable clarity on the latest generation scanners[2,9,10,14,15]. CT scan with contrast enhancement and along-with its axial and coronal planes can clearly differentiate between the bony and the soft tissues interface and thus is very helpful in detecting extracranial extension of the disease while MRI with its multiplanner scans, enhancement capabilities and high soft tissue resolution is ideal for detecting all intracranial extensions[9,10,14].

The data shown in the present study regarding the spread of tumour is based on the imaging study (Table No. 3) and is comparable with most of the published series[2,9,10,14] Incidence of intracranial extension in the present study is 5% as compared to 5 to 20% in some of the published studies[16,17,18] These imaging techniques have obviated the need for preoperative biopsy in view of the risk of severe haemorrhage and because they establish diagnosis with high degree of accuracy[2,13,19]. In the present series histopathological diagnosis of all the resected tumour totally confirmed the diagnostic role of these scanners. CT and to a large extent MR scan have even pre-empted the routine use of angiography[2,14] which is indicated when preoperative therapeutic embolization of the feeding vessels is to be carried out[14,20], Unluckily we lack this modern facility.

Surgery is the main stay of treatment. Of the various surgical approaches, transpalatine has been used most commonly (75%) either alone, for tumours confined to nose and nasopharynx, and in combination with other approaches for tumour ablation from the adjoining areas in the present series (Table. 5). Our present cure rate of 90% with these approaches as opposed to 72.2%[21] and 81%[22] in our old studies clearly shows a therapeutic improvement which is at par with most of the published series i.e 100% cure rate by Yin Fang Wang[9] and Jafek[16], 79% by Branedra and SK Kocker[23], and 90.15 by IM Jafery & SH Zaidi[24]. Combined approach i.e extracranial by ENT and intracranial approach by Neurosurgeon has been advocated for intracranial extension of the disease with encouraging results.[16,17,18] One of our patient underwent such a joint venture and is disease free so far. We need more studies in this regard to establish superiority of this approach to radiotherapy. The latter has now been indicated for inaccessible intracranial extensions and as adjuvant therapy for highly recurrent tumours[9,25]. Three of our such patients were treated with radiotherapy. One with intracranial extension failed to respond (MR Scan confirmed) while two with recurrent tumours responded with marked regression of their tumours.

Recurrence of the disease is one of the major problems mainly due to left over tumours on account of illplanned surgical approaches, surgeon's lack of experience and severe intraoperative bleeding.[9,26] It has been cited differently in different series e.g 21.43% by Brajendra[23], 6.1% by IH Jafery and SH Zaidi[24], 2% by Chatterjee[27], 27.8% and 19% in our old series[21,22] while 10% in the present series. This improvement in terms of decline of recurrence appears to be due to proper selection of the mode of therapy mainly based on the findings of the CT and MR scans.

CONCLUSION

It is concluded that any prepubertal and adolescent male suspected of having the disease on the basis of clinical work up must be investigated with computed tomography. MR scan should be done if the intracranial extension of the disease is suspected.

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ORIGINAL ARTICLE

PREVALENCE OF DIABETIC DYSLIPIDEMIA IN 120 PATIENTS OF TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Diabetes mellitus is regarded as coronary heart disease risk equivalent. Therefore, aggressive therapy with statin drugs is recommended to prevent cardiovascular events. This observational study was carried out to find out prevalence of diabetic dyslipidemia in type 2 diabetics and to find those who can be benefited from lipid lowering therapy.

Research Methodology: This observational study was carried out at Medical A Unit, Khyber Teaching Hospital. A total of 120 type 2 diabetic patients were included. Fasting lipid profile and glycosylated hemoglobin of each patient was done.

Results: Hypertriglyceridemia was the predominant type of dyslipidemia present in 56.66% patients followed by low HDL-C, which was present in 52.50% patients. Only 21% patients were having good glycemic control. Dyslipdemia was more common in females as compared to males. Therapy with lipid lowering drugs was indicated in 59.16% of patients.

Conclusion: Diabetic dyslipdemia is a potential atherogenic dyslipdemia. Screening should be done as a routine and lipid-lowering agents should, be started to avoid fatal cardiovascular events.

Key words: Type II diabetes mellitus, Dyslipdemia, LDL-C (Low Density Lipoprotein Cholesterol), HDL-C (High Density Lipoprotein Cholesterol), TG (Triglycerides).

INTRODUCTION

Diabetes mellitus is characterized by markedly increased triglycerides and decreased HDL-C level[1]. Although LDL-C levels are the same in diabetics and nondiabetics patients, the LDL-C particles in diabetics are more dense, smaller and potentially more atherogenic[2]. There is no difference between total cholesterol in diabetic and non-diabetics however LDL-C is slightly higher in female diabetics than their normal counterpart[3]. Atherosclerosis is 2-4 times more common in diabetics than nondiabetics[4]. Because of these facts diabetes has been regarded as CHD-risk equivalent by American Diabetic Association and National Cholesterol Education Programme Adult Treatment Panel HI (NCEP ATPIII)[5,6].

Various studies and organizations like UKPDS, Heart Protection Study, American Diabetic Association, National Cholesterol Education Programme Adult Treatment Panel III and CARE (Cholestrol And Recurrent Events) trial showed the benefits of using statin drugs[7,8,9]. Diabetics with coronary heart disease and LDL-C > 100-mg/dl need pharmacological therapy with statin as per recommendation of NCEP-ATPIII. Similarly, diabetic patients without coronary artery disease, having LDL-C greater than 130 mg/dl need pharmacological therapy with statin straight away. While those with LDL-C between 100-129 mg/dl and without coronary artery disease need dietary therapy and exercise initially. If these measures don't work then lipid-lowering agents are recommended. Other studies like VA-HIT Study (Veteran Affair High Density Lipoprotein Cholestrol Intervention Trial) and DAIS (Diabetes Atherosclerosis Intervention Study) recommend addition of fibric acid to statins with 23-24% reduction in cardiovascular events[10,11]. American Diabetic Association recommends therapy with fibric acid derivatives if triglycerides are greater than 400 mg/dl.

The objective of this study was to asses status of diabetic dyslipidemia in type II diabetics in accordance with new guidelines of American Diabetic Association in our own patients and to identify those who can be benefited from lipid lowering therapy.

RESEARCH METHODOLOGY

This study was conducted at Medical A Unit Khyber Teaching Hospital. A total of 120 patients with type II diabetes mellitus were included in the study observing the selection criteria that included:

1- Established type II diabetes mellitus patients.

2- Having no other systemic diseases like hypothyroidism, nephrotic syndrome, chronic renal failure and patient with already established coronary artery disease.

3- Patients who were taking lipid-lowering drugs, beta-blockers, thiazide diuretics, steroids, alcohol and oral contraceptives were excluded. Beside base line investigations complete lipid profile and glycosylated hemoglobin of every patient were done. Dyslipdemia was assessed keeping the guidelines for desirable fasting lipid level of American Diabetic Association, which are as follow:

Cholesterol = < 200mg/dl, LDL-C = < 100mg/dl, HDL-C = > 40mg/dl and Triglycerides = < 150mg/dL.

Level greater than above desired level were labeled as dyslipidemia.

RESULTS

A total of 120 type II diabetes mellitus patients were included among which 52 were male and 68 were female patients. Their age ranged between 30-70 years with mean age of 53.95 years. The duration of diabetes ranged from I-25 years with a mean duration of 7.4 years. Ninty-five patients (79%) were having bad glycemic controls with glycosylated hemoglobin of more than 7%. [Table I]

Lipid profile of the cases is shown in Table II. Prevalence of dyslipidemia according to sex is shown in Table III. Profile of patients needing lipid lowering drugs is shown in Table IV.

Table No. I General characteristics of the patients

Age	Age range = 30-70 years
	Mean age = 53.95 years
Sex	Male = 52
	Female =68
Duration	Range of duration = 1-25 years
	Mean duration = 7.4 years
Glycemic status	Good glycemic control (HbA1c<7%) =25 patients (21%)
	Bad glycemic control (HbA1c>7%) = 95 patients (79%)

Table No. II Lipid profile of 120 patients

Total cholesterol	> 200 mg / dl = 36 patients (30%) < 200 mg / dl = 84 patients (70%)
Triglycerides	> 400 mg / dl = 12 patients (10%) 150-400 mg / dl = 56 patients (46.66%) < 150 mg / dl = 52 patients (43.33%)
HDL-C	< 40 mg / dl = 63 patients (52.5%) > 40 mg / dl = 57 patients (47.5%)
LDL-C	> 130 mg / dl = 28 patients (23.33%) 100-129 mg / dl = 31 patients (25.83%) < 100 mg / dl = 61 patients (50.83%)

Table No. III Prevalence of dyslipidemia and association with the sex of the patients

Dyslipidemia	Number of patients	% age	Male patients	Female patients
Hypertriglyceridemia > 150mg/dl	68 patients	56.66%	24 (35.29%)	44 (64.70%)
Low HD L-C< 40 mg / dl	63 patients	52.50%	27 (42.85%)	36(57.14%)
Increase LDL-C >100mg/dl	59 patients	49.16%	23 (38.98%)	36(61.01%)

Table No. IV Patients needing therapy with lipid lowering agents

Dyslipidemia	Number of patients	Therapy needed
TG > 400 mg / dl	12 patients (10%)	Fibrate derivatives
LDL-0130mg/dl	28 patients (23.33%)	Statin drugs
LDL-C = 100-130 mg/dl .	31 patients (25.83%)	Life style modification initially followed by statin drugs if needed.

DISCUSSION

Dyslipidemia is a group of biochemical disorder frequently encountered in diabetics. It is characterized by increased triglycerides and low HDL-C and normal LDL-C level. However LDL-C particles in diabetics are small, dense and more atherogenic. Increased triglycerides predispose patients to acute pancreatitis while low HDL-C and dense atherogenic LDL-C particles predispose to cardiovascular events.

In this study hypertriglyceridemia was the predominant type of dyslipidemia followed by low HDL-C, which are consistent with the world literature[1,2]. Hypertriglyceridemia is present in 42-65% of the patients in various studies done in the country, as observed in this study[12,13,14]. The prevalence of hypertriglyceridemia is more common in females and in those with poorly controlled diabetes as observed in various other studies in the country[12,13,15]. However a European study, reported that hypertriglyceridemia was more common in male gender[16]. This variation may be due to the fact that most of our female patients were housewives who were confined to house keeping without any active physical activity.

HDL-C is cardio protective cholesterol. Decreased LDL-C is associated with increased cardiovascular events. Low HDL-C is another characteristic finding of this study that goes in comparison with other studies carried out at the country and abroad[1,2,17,18].

Although there are no differences between the level of LDL-C in diabetics and non-diabetics. But LDL-C particles of diabetic patients are small dense and more atherogenic. This component is measured for monitoring of therapy. High level of LDL-C was present in 49.9% patients in this study and females were predominantly affected. In UKPDS study LDL-C was generally the same in both diabetic and non-diabetics but it was slightly higher in female diabetics[6]. Similarly raised LDL-C was reported in another study in the country as in this study[19].

Diabetic dyslipidemia is an atherogenic dyslipidemia. American Diabetic Association, National Cholesterol Education Programme Adult Treatment Panel III (NCEP-ATPIII) and United Kingdom Prospective Diabetes Study (UKPDS) recommends aggressive lipid lowering therapy in diabetic patients[4,5,7].

So, majority of the patients in this study had hypertrigylceridemia, followed by low HDL-C and raised LDL-C. Seventy nine percent patients were having poorly controlled diabetes and no patient in the study was taking lipid-lowering agents. Poor glycemic control, sedentary life style, lack of education and failure on the part of doctor to screen for dyslipidemia account for this threating senario. Diabetes is a metabolic syndrome. We not only need to achieve euglycemia but also to treat concurrent hypertension and dyslipdemia to avoid complications.

CONCLUSION

Diabetic dyslipidemia is common in our country. Patients are not usually screened for this atherogenic condition and therefore very few patients get lipid lowering agents. Statins are now available over the counter in UK. Therefore we have to be aggressive in our patients as well. Good glycemic control, cessation of smoking, weight, reduction, avoidance of alcohol and aggressive lipid lowering therapy is recommended in all diabetic patients. Only then we will be able to avoid amputation of the legs, laser therapy, renal transplants, angioplasty, stenting and coronary bypass surgeries.

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DISCUSSION

Table 1 and Fig. 1 delineate the sensitivity of Escherichia coli against cefuroxime alone and in combination with clavulanic acid. The cefuroxime alone has some antibacterial activity against Escherichia coli. But by combining 20, 30 and 30 μg cefuroxime with clavulanic acid in 1:1 ratio, the sensitivity is increased by 62.5%, 65% and 42.5% respectively. In 2:1 ratio, the combination produced 57.5% 65% and 42.5% increase in sensitivity.

This synergistic effect of the clavulanic acid with cefuroxime in this ratio is parallel to that with combination in 1:1 ratio, specially in higher concentration (30 μg and 40 μg). This shows that combination of cefuroxime with clavulanic acid has a significant synergistic effect.

The combinations of clavulanic acid with amoxicillin and ticarcillin are already in use. In several others studies, the β-lactamase mediated resistance and its control with β-lactamase inhibitors has been evaluated.[20]

Our study shows that the scope of the use of β-lactam/ β-lactamase inhibitors can be extended to the higher generation cephalosporins. This can prove to be a cheaper and a more appropriate approach to deal with the increasing resistance to caphalosporins.

Although indiscriminate use of β-lactam antibiotics including cephalosporins has been implicated as the major factor responsible for development of β-lactamase mediated resistance, it is worth mentioning here that β-lactam antibiotics often exhibited resistance as soon as they were first introduced. For instance in 1944, when benzyl penicillin was newly introduced in the market, it was active against 95% of Staphylococcus aureus isolates, but the remainder of 5% Staphylococcus aureus had β-lactamase and were resistant. Within 5 years, the proportion of enzyme producers had grown to 50%, reflecting gene transfer and strain selection. Subsequently the resistant proportion had risen to around 90%.[3]

In order to overcome the menace of resistance against β-lactam antibiotics, we can either think of developing new and extended spectrum β-lactams or using β-lactamase inhibitors in combination.

But the extended spectrum cephalogporins e.g. third generation cephalosporins have been correlated with appearance of extended spectrum β-lactamases, plasmid mediated enzymes that confer resistance to oxyimino cephalosporins and monobactams.[21] Moreover this option is also not much practicable due to huge financial liabilities in evaluating, synthesizing and marketing new drugs. More than a decade ego, it was estimated that enormous costs from $ 100 million to over $ 500 million were involved in the development of a single successful drug;[22] that is why very few new antibiotics were developed in 1990s.[23] Another disadvantage of the newer β-lactamase resistant cephalosporins is that they are quite expensive and usually available only by injection.[24]

Thus more than anything, the opportunities for control of resistance lie in the careful and prudent use of the power compounds that are available, rather than in undue optimism about any next generation of β-lactams.[3]

Some β-lactam/β-lactamase inhibitors combinations are already available in the market.[7] These are amoxillin and ticarcillin with clavulanic acid and ampicillin and cefoperazone with sulbactam.[5]

The combination in the present in-vitro study also shows significant degree of success at least against Escherichia coli.

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ORIGINAL ARTICLE

PREVALENCE OF VARIOUS TYPES OF INTRA-ARTICULAR INJURIES DETECTED BY MAGNETIC RESONANCE IMAGING IN TRAUMA TO THE KNEE JOINT

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ABSTRACT

Background: Injuries to the menisci and ligaments are common in knee joint trauma. Magnetic Resonance Imaging has emerged as the primary investigation for evaluation of the knee joint because of its high resolution, non-invasive nature and accuracy. The purpose of the study was to find out the most frequent abnormal findings in knee joint injuries on Magnetic Resonance Imaging.

Research Methodology: This descriptive study was conducted in Radiology Department of Postgraduate Medical Institute Hayatabad Medical Complex Peshawar from January 2003 to June 2004. Forty patients referred for knee MRI to the radiology department having knee injuries were included in this study. MRI of the knee was performed and abnormal findings in each case were recorded.

Results: Out of 40 cases, 30 (75%) were male and 10 (25%) were female. The age ranged from 12 to 60 years. 25 patients had accidental injuries and 15 had sports injuries. 60% had joint effusion. ACL tear was seen in 44% and PCL tear was demonstrated in 7% cases. 28% of cases had MM tear while 12% had LM tear. MCL injury was seen in 25% while LCL injury was seen in 12% of cases. Bone bruises and synovial cyst was seen in 6% and 5% of cases respectively.

Conclusion: The most common injuries were accidental and the most frequent lesion was ACL tear and medial meniscus tear.

Key words:

ACL	Anterior cruciate ligament	PCL	Posterior cruciate ligament
MM	Medial meniscus	LM	Lateral meniscus
MCL	Medial collateral ligament	LCL	Lateral collateral ligament
T1WI	TI weighted image	T2WI	T2 weighted image
FOV	Field of view		

INTRODUCTION

Although assessment of internal derangement of the knee begins with clinical evaluation including careful physical examination, imaging is fundamental to accurate diagnosis of many of these derangements. For both historical and practical reasons the knee is an important anatomic area for evaluation by MRI. In late 1980's MRI of the knee was the first musculoskeletal application of magnetic resonance to receive widespread acceptance. The reports in 1983 by Keanes and coworkers' and Moon and associates [2] were the first to describe the potential of MRI in assessing the knee. Since then because of its improved signal to noise ratio, higher resolution, reduced artifacts, shorter imaging times and improved accuracy, MRI has clearly emerged as the primary imaging tool in the work up of knee joint pathology. MRI not only depicts osseous lesions, but provides information on the cartilages, menisci, ligaments and surrounding soft-tissues. During this time MRI largely replaced arthography as the standard imaging study of choice for the clinical evaluation of knee pathology.

The knee joint is a compound condylar synovial joint and consists of three bones (the femur, tibia and patella). Cartilage cover the articular surfaces and the capsule enclose the joint and is attach to articular margins. The menisci of the knee are composed of fibrocartilage. They act as 'shock absorber'. Each knee joint contains a medial and lateral meniscus. They are crescent shape and attached to proximal tibia by ligaments. They are thick peripherally than medially. The PCL is much thicker and stronger than ACL. The ligaments join the bones together and provide stability to the knee joint. MCL and LCL provide stability to laterai and medial stresses, respectively. The patella helps to protect the knee and gives leverage to the quadriceps muscles. Jumping, standing, climbing, fall, running, stopping with sudden change of direction are the common causes of knee injuries. The knee, according to the American Academy of Orthopaedic Sur-

geons, is one of the most easily injured joints in the human body.

Joint effusion is a common abnormal finding in knee injuries on MRI and is seen as high signal fluid in joint. Meniscal tears are very common knee injuries. Medial meniscus is more commonly involved than the lateral meniscus. The medial meniscus is much less mobile than the lateral meniscus, accounting for its high rate of injury.[3] On MRI meniscal tears are characterized by linear, complex, or diffuse increased signal intensity within the meniscus which communicates with an articular surface.[4,5] Types of meniscal tears include horizontal cleavage, radial, bucket handle, and macerated. The most frequently injured ligament in the knee is the anterior cruciate ligament.[6] On MRI direct sign includes increased signal intensity in the expected location of the ACL on T2 weighted images, discontinuity / nonvisualization of the ACL and decreased steepness of the slope of the ACL.[7] The Secondary signs are segond fracture, acute hemarthrosis, lateral femoral condylar notch sign; and bone contusion. The posterior cruciate ligament is thicker and stronger than the anterior cruciate ligament. As a result, the PCL is injured less commonly. The direct signs for a tear of the PCL are similar to those of ACL tears. Frequently in chronic tears the PCL is thickened without signal changes due to the low intensity of scar tissue mimicking normal ligament structure.[8] The medial collateral ligament is the second most commonly injured ligament in the knee. Sprains of the collateral ligaments may lead to slight contour irregularity or thickening of the ligament, but there is no discontinuity of its fibers. Partial tears led to discontinuity of some fibers and complete tears are associated with evident discontinuity of all the fibers. In the chronic stage MR imaging may reveal a thickened ligament. The extensor mechanism consists of the quadriceps muscle/tendon, patella, and patellar tendon. Injury involving the extensor mechanism is relatively uncommon. Disruption of the tendinous portion of the extensor mechanism tend to be suprapatellar above the age of 40 and infrapatellar below the age of 40. A wide spectrum of osseous abnormalities have been described following trauma to the knee. Marrow edema almost always accompanies traumatic osseous lesion.

The aim of the study were to find the most frequent abnormal findings in knee injuries on MRI study.

RESEARCH METHODOLOGY

The study was conducted in Department of Radiology. Hayatabad Medical Complex Peshawar from January 2003 to June 2004.

Patients with knee injuries suspected to have meniscal, ligament or soft tissue injuries referred for MRI knee joint were studied. Patient having evident bone fracture around the knee, infective, inflammatory, neoplastic and degenerative knee diseases were excluded from the study. 40 MRI of knee joints were performed including both male and female patients having definite history of trauma for their knee complaints. The age group was 12 to 60 years.

Using 1.5 Tesla Siemens Magnetom symohony MR Machine with dedicated Knee coil. Images were obtained in sagittal, axial and coronal plane using SE (spin echo), FSE (fast spin echo) and STIR (short inversion recovery) sequences.

Slice thickness	4mm
FOV	16x16
Matrix	256 x 256

Patient was placed in supine position with the knee in a closely coupled extremity coil. The knee was externally rotated 15 to 20 degree, in order to facilitate the visualization of ACL completely on sagittal image. The knee was flexed slightly 5 to 10 degree to increase the accuracy of assessing the patellofemoral compartment and patellar alignment.

Axial acquisition through patellofemoral joint was used as an initial localizer for subsequent sagittal and coronal plane images. The study was reported and abnormality recorded for each case.

RESULTS

All the patients had either accidental or sports injuries: 25 (63%) patients had accidental injuries and 15 (38%) had sports injury. They underwent MR imaging within 6 months of their injury (25 cases presented within first month of their injuries). The common age group was in the range of 12 to 35 years. Gender distribution show 30 (75%) male and 10 (25%) females. The right knee was involved in 59% and the left knee in 41% cases.

The prevalence of various types of knee joint injuries detected on MRI are shown in Table 1.

Table I: MRI finding in Knee injuries

Type of lesion	No of cases	Percentage
Joint effusion	26	60
ACL tears	16	44
PCL tears	3	7
MM tears	11	28
LM tears	5	12
MCL injury	10	25
LCL injury	5	12
Bone bruises	6	6
Synovial cyst	2	5

DISCUSSION

Multiple imaging modalities are currently used to evaluate pathologic conditions of the knee. Over the past several years, the role of MRI in knee imaging has steadily increased and is often the main or only imaging tool for evaluation of suspected internal derangements. "Complete evaluation of the capsule, collateral ligaments, menisci and tendons about the knee has been difficult with conventional and CT arthrography. The Knee and shoulder are the most frequently requested examinations in sports medicine.[10] Knee MRI is accurate, non-invasive procedure, which provides exquisite depiction of the soft tissues and bone bruises. MRI is a orthopedic road map for subsequent therapeutic arthroscopic procedures. Acute lesions are optimally demonstrated by T2W1 because of high signal intensities."

Joint effusion was demonstrated in 60% cases in our study. Maffulli N et. al and Visuri T et al. had reported 67% and 69% joint effusion respectively in acute trauma of the knee.[12] "In our study ACL tear was the commonest condition accounting for 16 patients (44%) which correlated with study by Sonnin et al. who demonstrated 48% incidence." D S Shetty et al. has reported 36.5% and Sheldon et al. has reported 32% ACL tears in their study.[15] "'ACL tears are known to occur in isolation in only a small number of cases. Only 13% of ACL tears are isolated, the rest being associated with meniscal tears. In our study 35% of MM tear and 25% of LM tear was associated with ACL tear while La Prade et. al has reported an association of 45% of medical meniscus and 50% of lateral meniscus tears with an ACL tear.[17] PCL tear accounted for only a small percentage of patients which was 7% in our study and Sonnin et al.[12] in his study found an incidence of 2-23% as PCL injury.[14] Similarly Sheldon et al. has reported no posterior cruciate ligament injuries in his study.[16]

Meniscus injuries formed the largest number of the total abnormalities diagnosed on MR imaging in this study. A total of 16 patients out of 40 had meniscal tears either in isolation or in combination. The MM tear was more common (28 %) then LM (20 %) in our study which corresponded with study by La Prade and colleagues.[17] Maffulli et al. have also reported more common involvement of MM as compared to LM.[12]. Similarly D. S Shetty et al[15] have reported 36.5% MM tear and 17.3% LM rear in his study which are slightly high percentage compared to my study. Meniscal tears are associated with acute isolated ACL injury in 40-60% of cases.

MCL injury was reported in 25% and LCL in 12% cases in our study. Similarly bone bruises were reported in 6% cases. Different percentage of these pathologies has been reported in the literature. This difference is due to variable sensitivity and specificity of different diagnostic tests for their confirmation. Collateral ligaments injuries and bone bruises are rarely isolated and in O'Donoghue triade 73% cases are associated with significant knee injuries.[18,19]

CONCLUSION

The most frequent knee injuries were accidental resulting in joint effusion, anterior cruciate ligament and medial meniscal tear.

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ORIGINAL ARTICLE

FREQUENCY OF MALE SEXUAL DYSFUNCTION IN A TERTIARY CARE HOSPITAL

Mohammad Younas Khawaja

ABSTRACT

Background: There has been little research carried out in the types and frequency of sexual dysfunction in the Pakistani population although clinical observations are that such problems are relatively common. The study was carried out to assess the frequency of sexual dysfunction in male patients presenting to a teaching hospital with minor ailments.

Research Methodology: This is a hospital based randomised descriptive study. The study was done at Ayub Teaching Hospital Abbottabad from November 2004 to January 2005. One hundred male patients coming to male filter clinic of the hospital for minor ailments were randomly selected. The subjects were administered Arizona Sexual Experience Scale for Men to assess their sexual functioning.

Results: Erectile dysfunction (21%) and premature ejaculation (13%) were found to be the two most common sexual dysfunctions.

Conclusion: Sexual dysfunction among males is relatively common.

Key words: Prevalence, Erectile dysfunction. Premature ejaculation. Sexual Dysfunction.

INTRODUCTION

There are limited studies done on the type and frequency of sexual dysfunction in the general population although the clinical experience indicates that sexual problems are relatively common. For example in U.K. a prevalence of sexual problem of 33% was found in middle aged woman.[1] In U.S.A. a prevalence of impotence of 52% was estimated among men aged 40-70 years.[2] Review of local literature as indexed by MEDLIP from 1992 onwards didn't show any local study on the subject. Such problems are often underreported or never reported especially in case of females in our culture. Research in general practice in Australia has found that family doctors estimates of the prevalence of sexual problems are much lower than survey estimates ranging from 0.2% to 0.5% of practice population.[3] Similarly in America, family physicians reported 5.4% sexual dysfunction in their patients.[4] Previous studies have shown that major problem for men range from premature ejaculation[5] to impotence[2] or inhibited desire,[6] this study seeks to estimate the frequency of various sexual problems in a hospital based population.

RESEARCH METHODOLOGY

This study was done at Ayub Teaching Hospital in November 2004-Jaunary 2005. Ayub Teaching Hospital is a tertiary care hospital providing services for much of Hazara division in Pakistan. One hundred male patients attending male filter clinic of the hospital for minor ailments and who met the inclusion criteria were selected in a simple random manner. About seven hundred patients daily attend male filter clinic of the hospital. Patients with major illnesses are referred to specialist's outpatient's clinics while staff of the filter clinic manages patients with minor ailments. The patients who met the inclusion and exclusion criteria were referred to the reception desk where they were numbered 1-20. Daily twenty patients were numbered and out of this five patients were recruited for interview and administering Arizona Sexual Experience Scale (ASEX) by drawing lots. Inclusion criteria included giving informed consent, age range between 18-60 years, being male and married. Exclusion criteria included major illnesses like Diabetes mellitus, Hypertension, Ischemic Heart Disease, gonadal injury, endocrine disorder, use of medications and substance abuse. Female patients were excluded because of cultural reasons. (Discussing sex with doctors especially males on the part of females is a taboo and considered bad in this part of the country, hence their reluctance to answer questions regarding sexual functioning.) Sexual functioning was assessed by administering Arizona Sexual Experience Scale[7] (ASEX) for men, which contains questions about all aspects of sexual cycle that is, libido, erection, orgasmic, and ejaculatory functions. The questions were translated and explained to the patients by a trained interviewer. Subjects were recorded to have sexual dysfunction as measured by a total score of 19 or higher on ASEX or any individual item score greater than 5 or any 3 individual item score equal to 4.

Table 1: Proportion of Different Male sexual Dysfunctions n=100

Sexual Dysfunction	Percentage
Reduced Libido	6%
Erectile Dysfunction	21 %
Premature Ejaculation	13%
Orgasmic Dissatisfaction	7%

RESULTS

The types of sexual dysfunction experienced is shown in Table 1 while the same stratified by age is shown in Table 2. Overall 36% of men reported some form of sexual dysfunction. (Some subjects had more than one sexual dysfunction.) About 12% had combined erectile dysfunction and reduced libido. 4% had both erectile dysfunction and premature ejaculation. The proportion of subjects reporting sexual dysfunction increased with age. However only 6% thought the problem was abnormal for age. While only 2% of 30 years or younger reported some form of sexual dysfunction 22% of 51 years or older reported some form of sexual dysfunction.

DISCUSSION

The prevalence of sexual dysfunction in men varies widely because surveys generally fail to characterize the dysfunction with sufficient precision or fail to obtain a random sample. The results show that sexual dysfunctions are quite common and as would be expected increase with age. Subjects less than 40 years of age didn't report any decline in libido while 6% of 41 years or older reported reduced libido. Compared to this 21% of men including 16% of 41 years or older reported erectile dysfunction. These figures are generally consistent with other studies of erectile dysfunction.[9,10] This is also comparable with 19.2% erectile dysfunction reported in a survey of German men with steep age related increase.[11] Another study in Netherlands reported similar results with erectile dysfunction of about 20.3% increasing to 26% in men 70-78 years old.[12] The 13% premature ejaculation is slightly higher than that reported by Dunn and Croft[13] but it is difficult to determine the prevalence of premature ejaculation as it depends in part on the partner's expectations as well as her speed of sexual response.[7] However it is considerably less than 20% reported in a study of nine Asian countries.[14] This can be explained by the fact that Asian study included much older subjects. (About 17% of the men were of 70-80 years age group when sexual dysfunction is likely to increase.)

Orgasmic dissatisfaction reported by 7% of men is slightly lower than that reported in other studies (8-10%)[13,4]. These could be due to the fact that in this study interviewer directly translated questions and asked about the responses and also sensitive nature of the topic while most of the studies done in the west used postal surveys or anonymous questionnaires. A study has shown that more sexual dysfunction is likely to be reported in postal surveys and anonymous questionnaires. compared to when sex related questions are directly inquired at interview.[15]

CONCLUSIONS

The study suggests that sexual dysfunctions are relatively common among the male population.

Limitations

1. The number of subjects was relatively small and a study on large number of subjects is needed to accurately draw conclusions.
2. Female subjects could not be studied because of cultural reasons. There is need for trained female interviewers so that female sexual dysfunction could also be assessed.

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Table 2: Sexual Dysfunction by Age n=100

Age Groups (in years)	Reduced Libido	Erectile Dysfunction	Premature Ejaculation	Orgasmic Dissatisfaction
18-30	0%	1%	1%	0%
31-40	0%	4%	3%	0 %
41-50	2%	6%	4%	3%
51-60	4%	10%	4%	4%

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ORIGINAL ARTICLE

PREVALENCE OF EXCLUSIVE BREASTFEEDING IN INFANTS SUFFERING FROM DIARRHOEAL DISEASE

Tariq Ayub, Nadeem Khawar

ABSTRACT

Background: Diarrhoeal diseases are among the most common causes of global childhood morbidity and mortality, specially in the developing countries. Exclusive breastfeeding plays a vital role in the prevention of diarrhoeal disease. The objective of this study was to find the prevalence of exclusive breastfeeding in infants suffering from diarrhoeal disease and to compare the severity of diarrhoeal disease among exclusively breastfed, partially breastfed and non-breastfed infants.

Research Methodology: A hospital based, retrospective study was carried out in the department of Paediatrics Khyber Teaching Hospital Peshawar and Lady Reading Hospital Peshawar. One hundred infants aged 0-6 months suffering from diarrhoeal disease were randomly selected from OPD and indoor patients. Relevant history with special reference to breastfeeding was taken and relevant clinical examination was done. All the data was evaluated.

Results: Among the 100 cases of infantile diarrhoea 19 (19%) were exclusively breastfed, 56 (56%) were partially breastfed and 25 (25%) were non-breastfed.

Conclusion: The prevalence of exclusive breastfeeding was much lower (19%) as compared to the partial breastfeeding (56%) and non-breastfeeding (25%), among the infants suffering from diarrhoeal disease.

Key words: Diarrhoeal disease, Breastfeeding.

INTRODUCTION

Diarrhoeal diseases are among the most common causes of global childhood morbidity and mortality, specially in the developing countries. Diarrhoea is one of the major killers of world children. It is estimated that the infectious diseases are responsible for the majority of 5 million deaths annually in children under 5 years of age in Pakistan, diarrhoea and acute respiratory infections standing out as major killers.[1] In USA, children have average 1-2 episodes of diarrhoea each year and it accounts for 10% of post-neonatal deaths in infants.[2]

Among the microbiology of infantile diarrhoeal disease, the causative agents are viruses, bacteria, parasites and fungi. Viruses are commonly involved in the causation of acute diarrhoea. Rotavirus is the most important among the viruses, while the other viruses include astrovirus, calcivirus, coronavirus, enteric adenovirus, Norwalk agent, picornavirus and cytomegalovirus.[3] Almost all children have rotavirus infection by two years of age and repeated infections are common but re-infections are usually mild and asymptomatic. The serum antibodies developed during the acute infection provide only partial immunity, which is serotype specific.[4] The mucosal immunity is more important against this infection. Similarly passive immunity achieved by administering human milk containing high level of secretory IgA antibodies against rotavirus helps in postponing the rotavirus diarrhoea.[5]

The infectious agents responsible for diarrhoea spread by faeco – oral route. A number of predisposing factors, like failure to breastfed exclusively for first 4-6 months, failing to breastfeed until 2 years of age, poor hygiene, malnutrition, measles, chronic parasitic infestations, poverty, illiteracy, unsafe water and contaminated food, all predispose to the high incidence, severity, and often poor outcome of acute diarrhoea.[6] In one of the Pakistani studies done in the rural Sindh, it was found that 51% of the children had diarrhoea in the last 2 weeks and children who were breastfed for lesser duration were more likely to have diarrhoea. Similarly wasted children were found to have more diarrhoea than normal children. Also, vaccination for measles was found to have a degree of protection against diarrhoeal disease.[7]

Breast-feeding plays a crucial role in the prevention of diarrhoea. It should be exclusive for the first 6 months and should be continued for a period of two years. Breast milk contains antibodies, which impart passive immunity against diarrhoea. Furthermore avoidance of bottle-feeding prevents the introduction of diarrhoeal pathogens. For example rotavirus replication is inhibited by human milk mucin.[8]

This study was conducted to determine the prevalence of exclusive breastfeeding in the infants suffering from diarrhoeal disease and to compare the severity of diarrhoeal disease among exclusively breastfed, partially breastfed and non-breastfed infants.

RESEARCH METHODOLOGY

This study was conducted on 100 infants of 0-6 months age who suffered from diarrhoeal disease. All the cases were randomly selected from the indoor as well as outdoor patients of the Paediatric departments of Hayat Shaheed Teaching Hospital Peshawar and Lady Reading Hospital Peshawar.

The selection criteria were based on the clinical presentation as defined by the WHO i.e.; "passage of three or more loose or watery stools in a 24 hours period, a loose stool being one that would take the shape of the container."[9] The specific age group 0-6 months was selected because the exclusive breastfeeding is recommended maximally till 6 months of age. Relevant history was taken with special reference to the feeding history. Clinical examination was done and the nutritional status in terms of weight was recorded All the data was analysed and frequency counts were made. Finally the results and outcomes of the study were expressed in percentages.

RESULTS

The prevalence of feeding practices of the cases is shown in Fig. 1.

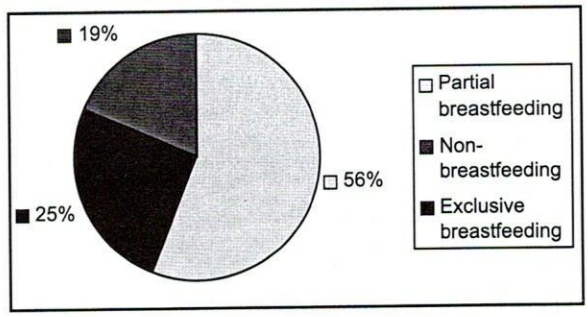

Fig. 1

Further stratification of breastfeeding practices according to age and sex is shown in Table 1.

Immunization status of the cases according to the three groups of feeding practices identified is shown in Table 2.

Table 1: AGE AND SEX DISTRIBUTION

	Exclusively breastfed		Partially breastfed		Non-breastfed		Total	
	No. of patients	%age	No. of patients	%age	No. of patients	%age	No. of patients	%age
Neonates	2	10.5%	8	14-2%	0	0%	10	10%
1-6 months	17	89.5%	48	85.8%	25	100%	90	90%
Males	11	57.9%	33	58.9%	14	56%	58	58%
Females	8	42.1%	23	41.1%	11	44%	42	42%

Table 2: IMMUNIZATION STATUS

	Exclusively breastfed		Partially breastfed		Non-breastfed		Total	
	No. of patients	%age	No. of patients	%age	No. of patients	%age	No. of patients	%age
Completely immunized	13	68.4%	32	57.4%	14	56%	59	59%
Partially immunized	2	10.5%	9	16.1%	6	24%	17	17%
Non-immunized	4	21.1%	15	26.8%	5	20%	24	24%

Table 3: CLINICAL FEATURES (SYMPTOMS)

	Exclusively breastfed		Partially breastfed		Non-breastfed		Total	
	No. of patients	%age	No. of patients	%age	No. of patients	%age	No. of patients	%age
Acute diarrhoea	17	89.5%	47	83.9%	20	80%	84	84%
Persistent diarrhoea	2	10.5%	9	16%	5	20%	16	16%
Straining with stools	12	63.1%	48	85.7%	13	52%	73	73%
Mucus in stools	6	31.6%	24	42.9%	9	36%	39	39%
Blood in stools	1	5.3%	5	10.42%	9	36%	15	15%
Vomiting	10	52.6%	33	58.9%	19	76%	62	62%
Fever	11	57.9%	46	82.1%	20	80%	77	77%

Table 4: CLINICAL FEATURES (SIGNS)

	Exclusively breastfed		Partially breastfed		Non-breastfed		Total	
	No. of patients	%age	No. of patients	%age	No. of patients	%age	No. of patients	%age
No dehydration	10	52.6%	20	35.7%	4	16%	34	34%
Some dehydration	7	36.8%	32	57.1%	16	64%	55	55%
Severe dehydration	2	10.5%	4	7.1%	4	16%	10	10%
Wasting	1	5.2%	19	33.9%	11	44%	31	31%

Clinical features in terms of symptoms are shown in Table 3 and clinical features in terms of signs are shown in Table 4.

DISCUSSION

In our study, among 100 cases of infantile diarrhoeal disease, only 19% were exclusively breastfed, while 81% were either partially breastfed or non-breastfed: this data retrospectively shows definite role of exclusive breastfeeding in the prevention of infantile diarrhoeal disease. This is comparable to many other studies, like a study conducted at Czechoslovakia which showed that infants breastfed for more than 4 months had significantly lower spells of illness.[10] Similarly a case control study done in Brazil showed that young infants who are not breastfed have a 25 times greater risk of dying of diarrhoea than exclusively breastfed.[11] Similarly a local study done at Karachi highlighted the fact that breastfed children are completely protected against the Campylobacter jejuni infection and were at a lower risk of developing other bacterial diarrhoeas as compared to the bottlefed.[12]

Furthermore this study showed that among the partial/non breastfed group, the most common mode was partial breastfeeding (56%). On the other hand exclusive breastfeeding and non-breastfeeding were 25% and 19% respectively. These figures are comparable with a study done in Lahore, which showed partial breastfeeding as the commonest mode of feeding.[13] Neonates suffered less commonly (10%) as compared to the age group 1-6 months (90%) which are in accordance with a study done in Argentina.[14] One possible reason for the lower inci-

dence of diarrhoea in the neonates may be the effect of maternal immunoglobulins but more important factor is the higher incidence of breast-feeding in the neonatal age group, which rapidly declines as the age increases, as shown by the study done at Lahore.[12]

Although immunization has no direct effect on the occurrence of diarrhoeal disease but diseases like measles and tuberculosis play a major role in reducing the immunity against many infections including diarrhoea. This study revealed complete immunization only in 59% of the children.

Figures pertaining to persistent diarrhoea revealed 10.5% in the exclusively breastfed, 16% in the partially breastfed and 20% in the non-breastfed groups respectively, showing a serial increase as the breastfeeding declines. This data supports that breastfeeding not only prevents occurrence of diarrhoea but also reduces the incidence of persistent diarrhoea which is one of the major contributor of infantile diarrhoeal deaths.[15] This fact was also highlighted in an Indian study done in New Delhi which identified various risk factors for diarrhoea to become persistent as: malnutrition, micronutrient deficiency particularly zinc and vitamin A, low cell mediated immunity, infection with E-agg E-coli and Cryptosporidium, and lack of exclusive breastfeeding during initial 4 months of life with particular use of bovine milk.[16] Mucus and blood in the stools was found in 31.6% and 5.3% respectively in the exclusively breastfed group, which are the lowest figures as compared to the partially breastfed and non-breastfed groups. These figures suggest the positive protective role of exclusive breastfeeding against virulent bacterial and parasitic aetiology, also shown by Huffman SL and Comest C.[10] Furthermore blood in the stools (dysentery) was most common feature in the non-breastfed group (20%) followed next by the partially breastfed (10.42%), and was least common feature in exclusively breastfed (5.3%). This data supports that even partial breastfeeding gives some protection against agents causing dysentery in comparison to the non-breastfed group. Similar fact was highlighted in an American study that human milk protects against Shigella causing dysentery due to high concentrations of IgA.[17] Similarly it was also shown in another study, that the Campylobacter associated diarrhoea and dysentery was much less common in breastfed infants due to IgA.[18] In this study, fever and vomiting was comparatively rare finding in the exclusively breastfed group, again reflecting a milder disease than the other two groups. Hydration status according to the WHO criteria[19] revealed "no dehydration" to be the commonest finding in the exclusively breastfed group (52.6%), while the least common finding in the non-breastfed group (16%). On the other hand "some dehydration" has a reverse relationship i.e. 36.8% and 64% in the said groups respectively, showing again a milder presentation of the disease in the exclusive breastfeeding group. Clinically evident wasting was most commonly found in the non-breastfed group (44%), relatively less in the partially breastfed group (33.9%) and the least in the exclusively breastfed group (5.2%). This data proves a definite protective role of breastfeeding against malnutrition that is in conformity with the result of Faisal et al (1993).[20]

The limitations of the study were non-exclusion of the non-infective causes of the diarrhoea like lactose intolerance, congenital chloridiarrhoea etc. Further refiner studies are needed in this context.

CONCLUSION

Exclusive breastfeeding is associated with a lower incidence of the infantile diarrhoeal disease. It also plays a positive role in reducing the diarrhoeal morbidity even if it occurs. Breastfeeding even if it is partial, still has a protective role against the infantile diarrhoeal disease but a lesser protective role than the exclusive breastfeeding. Exclusive breast-feeding provides a significant protection against malnutrition in the infants of 0-6 months. Partial breastfeeding has some protection against malnutrition but of lower degree than that of exclusive breastfeeding.

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ORIGINAL ARTICLE

EFFECTIVENESS OF FINE NEEDLE ASPIRATION CYTOLOGY IN DIAGNOSIS OF COLD THYROID NODULES

Afzal Khan, Mah Muneer Khan, Shoab Shah

ABSTRACT

Background: Thyroid nodules occur in 4-15% of adult population. The major challenge faced by a clinician is to determine whether a thyroid nodule is benign or malignant.

Research Methodology: This study was designed to determine the effectiveness of Fine needle aspiration cytology in diagnosing the pathological varieties of thyroid nodule presenting in a teaching hospital. 48 consecutive non-randomized patients presenting with thyroid nodule were included in the study and underwent fine needle aspiration cytology.

Results: 12.5% (6) cases were subsequently diagnosed as having thyroid malignancy (Papillary/ Follicular). Further stratification showed that 18% of cases with multiple nodules and 7.7% of cases with solitary nodules had malignancy.

Conclusion: Fine needle aspiration cytology is a cost effective and efficient tool in diagnosing early thyroid malignancies.

Key words: Cold nodule, Thyroid cancer

INTRODUCTION

Thyroid nodules occur in 4-15% of the adult population and can be found in up to 90% of women over the age of 60 years[1]. However the incidence of malignancy is only 50 per million population[2]. The major challenge faced by a clinician is to determine whether a thyroid nodule is benign or malignant. Although certain aspects of the history and physical examination may suggest malignancy, in most cases, these are nonspecific and are of no predictive value. Tests that may help in establishing a diagnosis of malignancy include, radioisotope imaging of the thyroid, thyroid ultrasound and fine needle aspiration cytology (FNAC). It is important to evaluate thyroid nodules in a way which is not only cost-efficient but also carries the lowest margin of error.

Based upon radioisotope image, nodules can be classified as cold, hot or indeterminate (warm). A cold nodule shows decreased tracer uptake compared to the surrounding normal thyroid tissue[3]. A cold nodule reflects lack of organification (or trapping) and subsequent thyroxine synthesis. A cold nodule may be benign or malignant. Benign lesions include simple cysts, adenomatous hyperplasia, focal haemorrhage, colloid cysts, non functioning follicular adenomas, abscesses, focal thyroiditis, parathyroid adenomas. Approximately 80% of thyroid nodules are cold and only about 10% of these are malignant.[5] 4% of hot nodules are shown to contain tumor. Thus, radioisotope imaging is unreliable in excluding or confirming the presence of cancer.[5]

Historically, radioisotope imaging has played a major role in the work up of thyroid nodules; however, with the advent of fine needle aspiration eytology (FNAC), this role has become less clear.

RESEARCH METHODOLOGY

This cross sectional study was carried out between November 2002 and April 2004 in the outpatient department of surgical A unit of Khyber Teaching Hospital. A total of 48 patients with cold nodules on thyroid radioisotope scan were studied. All the 48 patients either had solitary thyroid nodules or a dominant nodule in a background of multinodular goiter and underwent fine needle aspiration cytology.

Surgery was carried out in all patients. The type of surgery was dictated by fine needle aspiration results. Patients diagnosed with thyroid cancer on FNAC underwent total or near-total thyroidectomy. Patients with solitary thyroid nodules and a benign FNAC result, underwent lobectomy with isthmectomy. Patients with multinodular goiter with a dominant nodule and a benign FNAC result, underwent subtotal thyroidectomy. All specimens were sent for histopathology. Patients with benign FNAC results who turned out to have malignancy on histopathology underwent total-thyroidectomy or near-total thyroidectomy at a second stage.

RESULTS

The ages of these patients ranged between 11 and 60 years with the mean age being 36.2 years (S.D± 13.7). Further stratification of age is shown in Table-I. 91% (44) patients were female and 9% (4) were males. 45.8% (22) patients had a multinodular goiter with a dominant nodule while 44.2% (26) had a solitary nodule. Four patients with dominant nodules were found to have malignancy on FNAC. Further surgery and histology did not alter this figure. Among the 44.2% (26) patients with solitary nodules, 2% (1) was a cyst with benign cytology and was aspirated to dryness. In 6.25% (n=3) of patients the nodule was both cystic and solid while in the remaining 44.2% (22) patients, the nodules were solid. The FNA reported papillary carcinoma in only 2% (1) patient with a solitary solid nodule. This figure rose to 4% (2) on further histology after surgery. The total number of patients who had malignancy among the 48 patients with cold nodules was therefore, six (12.5%). This figure was 18 percent in multinodular goiter and 7.7 percent in solitary thyroid nodules.

Table 1: Age Wise Distribution of patients with Cold Nodules

Age	No. of Patients	Percentage
11-20 Years	6	12.5
21-30 Years	13	27.1
31-40 Years	14	29.1
41-50 Years	8	16.7
51-60 Years	7	14.6

DISCUSSION

The overall frequency of malignancy in cold nodules has been variably reported to be between 5 to 10 percent. Belfiore et al in a series has put this figure at 4.5%.[6] In our study, the overall frequency was 12.5%

In a large review of patients presenting for the evaluation of a cold thyroid nodule, the frequency of thyroid cancer was only about 5% (in an iodine sufficient area) and there was no change in the frequency of malignancy (4.9%) in patients with a multinodular goiter and a dominant nodule.[6,7] In another study[1] the frequency of malignancy in cold nodules in MNG was 9.8% and 8% in the single nodule group. Other authors have also concluded that there is not a statistically significant difference in the incidence of thyroid cancer in patients with solitary or multiple thyroid nodules.[8] Our study shows contrary results with the frequency of malignancy being 18 percent in multinodular goiters as compared to 7.7 percent in solitary thyroid nodules. This is likely to be due to the late presentation of patients in our setup.

The likelihood of a cold nodule being malignant was lower in iodine deficient patients (roughly 2.5-3%).[6] This was also seen in our study where three of the nine patients (33.3 percent) belonging to Peshawar had a malignant thyroid. Three of the thirty nine patients belonging to iodine deficient areas had a malignant thyroid (7.5 percent).

Certain factors have been shown to increase the risk of malignancy in a cold nodule.[6] These include:

1- History of radiation to head and neck as an adolescent or child
2- Regional lymphadenopathy
3- Age
4- Male sex
5- Evidence of local invasion
6- Nodule greater than 3 cm
7- Enlargement of nodule while on thyroid suppression
8- Family history[6]

The likelihood of malignancy in a solitary nodule is about 30% if there is a history of radiation, and 35%, if multiple nodules are detected. It is important to note that about 5% of patients who received radiation in childhood and have a normal thyroid scan are found to have a malignancy. In our study none of the patients gave a history of exposure to radiations.[4,9]

Regional lymphadenopathy increases the likelihood of malignancy in cold nodules.[6] In our study, two patients had regional lymphadenopathy but histology of the thyroid showed benign disease.

There is a two fold increased risk of malignancy in patients who are less than 20 years of age and a six fold increased risk in patients over 60 years.[6] In our study four patients were 60 years of age while two were in their forth decade.

The chance that a cold nodule is malignant is about 2 times greater in a male patient .[6] Generally, carcinoma is found in about 20-25% of cold nodules in men. In our study all patients with malignant thyroid glands were females.

Local invasion, nodules greater than 3 cm in size, a positive family history for thyroid cancer and enlargement of thyroid nodules while on thyroid suppression therapy all increase the chances of a cold nodule being malignant.[6] In our study, four patients with malignancy had evidence of local invasion and all six had nodules of greater than 3 cm in size. There was no positive family history for thyroid cancer in any patient while none of the patients were put on

preoperative thyroid suppression. Further trials are recommended to uncover the pre disposing factors of thyroid malignancy.

CONCLUSIONS

A thyroid scan has little to add in the diagnosis of malignancy. In our setup where a trend to use cost effective investigations should be followed, a thyroid radioisotope scan can be withheld, as this adds little in determining which nodules require surgical excision. All euthyroid patients with solitary nodules or dominant nodules, in a background of multinodular goiter should undergo FNAC followed by surgery.

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ORIGINAL ARTICLE

VISUAL OUTCOME IN INFECTIVE ENDOPHTHALMITIS

Ibrar Hussain, Naimatullah Khan Kundi

ABSTRACT

Background: Endophthalmitis is the syndrome of inflammation or infection of the ocular cavity and its adjacent structures that causes severe sequel such as visual loss. It is potentially most devastating complication of intraocular surgery or trauma. Despite major advances in asepsis, surgical techniques and antibiotic therapy, it remains a major concern for any ocular surgeon. In all good centres of the world the stress is on measures to prevent endophthalmitis, therefore, its occurrence is rare in such centres. Once it occurs, it is very difficult to treat and outcome is poor. We conducted this study to find out frequency and outcome of infective endophthalmitis in North West Frontier Province of Pakistan.

Research Methodology: It is a descriptive observational study, conducted at Department of Ophthalmology, Khyber Teaching Hospital, Peshawar Pakistan, over a period of two years (From January 2001 to December 2002). All patients with infective endophthalmitis admitted in our unit during the study period were included in study. Their files were retrieved and related information regarding age & sex distribution and anatomic & visual outcome was filled in a prepared Performa and final results compiled.

Results: During two years of study 114 (4.5%) admissions of the total were due to infective endophthalmitis. 70% of these patients were males and 30% were females. About 25% of these patients were in pediatric age group i.e., < 15 years, 38% were above 60 years and rest between 16 and 60 years. Regarding final outcome 61 (53.5%) eyes improved with some vision ranging from perception of light to 6/60. Twenty-one (18.4%) eyes had no perception of light with intact eye ball, 21 (18.4%) underwent evisceration and 11 (9.6%) became phthisic.

Conclusion: It can be concluded that infective endophthalmitis is relatively more frequent and its outcome is poorer in our setup.

Key words: Infective endophthalmitis, Visual outcome.

INTRODUCTION

Endophthalmitis is the syndrome of inflammation or infection of the ocular cavity and its adjacent structures that causes severe sequel such as visual loss. Infective endophthalmitis could be endogenous or exogenous. Endophthalmitis due to endogenous factors is rare in healthy individuals. Our main concern is endophthalmitis due to exogenous factors e.g., penetrating globe injuries, intraocular surgery, corneal ulcers, etc. It is potentially most devastating complication of intraocular surgery or trauma. Despite major advances in asepsis, surgical techniques and antibiotic therapy, it remains a major concern for any ocular surgeon[1].

The frequency of infective endophthalmitis is relatively higher in our setup because of higher rate of ocular trauma in this part of the world[2]. As far as visual outcome is concerned, it is poor. Different studies have given different results depending upon, etiology, prompt diagnosis and adequate treatment[1,6]. Its prevention by meticulous clinical evaluation of preoperative risk factors, accurate surgical procedure, pre and postoperative antibiotic prophylaxis is one of our first goals. The prognosis is grave in our country, due to multiple reasons, and many eyes end up with evisceration or enucleation. We planned our study to know final visual outcome of patients with infective endophthalmitis in our region.

Research Methodology

It is a retrospective study in which data of all patients with infective endophthalmitis admitted to eye "B" unit of Khyber Teaching Hospital, Peshawar between January 2001 and December 2002, were studied.

Patients with exogenous infective endophthalmitis were included in study. Those patients due to endogenous and autoimmune endophthalmitis were excluded. Such as age, sex, visual and anatomic outcome was retrieved and analysed.

Causative organisms of bacterial endophthalmitis were not included in the study because of incomplete information available from files. All patients had received topical broad spectrum antibiotics, topical steroids (where indicated) and intravitreal antibiotics (gentamycin). None of them underwent vitrectomy due to non-availability of this facility in this department.

RESULTS

During two years period of this study, 2521 cases were admitted in eye "B" unit of Khyber Teaching Hospital Peshawar in which 114 (4.5%) were having infective endophthalmitis. Eighty (70%) of these patients were males and 34 (30%) were females.

Age distribution of our cases is shown in Fig. 1.

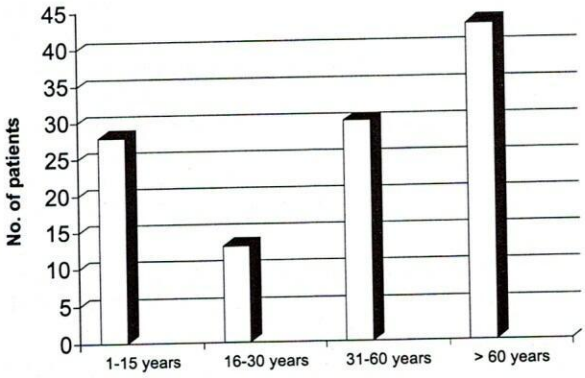

Fig. 1: Age distribution of infective endophthalmitis

Anatomic and Physiologic outcome of our cases is shown in Table 1.

Table 1: Outcome of infective endophthalmitis

No	Outcome	No. of patients	Percentage
1	Intact eyeball with some vision	61	53.5%
2	Intact eyeball with no vision	21	18.4%
3	Eviscerated	21	18.4%
4	Phthisis bulbi	11	9.6%

DISCUSSION

Infective endophthalmitis is a serious condition encountered in ophthalmic units. Its frequency is different in different parts of the world. In our set up it is not rare. One hundred and fourteen (4.5%) of all admitted patients during two years of our study period were having infective endophthalmitis. In a study by Somani[3] et al, a total of 164 patients with clinically suspected endophthalmitis were admitted in a period of 7 years (from Jan. 1989 to March 1996). This comparison suggests that condition is more frequent in our region. The reason could be that Khyber Teaching Hospital is one of the few tertiary centres looking after about 25 million population of NWFP and eastern Afghanistan.

Anatomic and visual outcome of eyes with infective endophthalmitis is generally very poor. It depends upon multiple factors including cause (postoperative, trauma, corneal ulcer, etc.), virulence of organism, treatment modality and time elapsed between infection[1,6] and treatment. In our study 53 (46.5%) eyes ended up with "no perception of light" (No PL). Out of these 21 (18.4%) eyes had intact eye balls, 11 (9.6%) became phthisic and 21 (18.4%) ended up in evisceration. 61 (53.5%) eyes had some vision ranging from perception of light (PL) to 6/60. In a study by Forster[4] on 140 eyes with suspected endophthalmitis a vision of 6/6 to 3/60 was achieved in 57% of recently operated, culture positive eyes treated with intraocular antibiotics and in 59% of those treated with combined vitrectomy and intraocular antibiotics. In a study by Bermig[5] 13 of 18 patients (72%) gained a visual acuity of 3/60 or better at final examination after vitrectomy. Two eyes were enucleated. In a study by Molinari[6] in which 50 cases of endophthalmitis following surgery, trauma, corneal ulcer or of endogenous origin are described, and where infected eyes were treated with topical, intravenous and subconjunctival injection of antibiotics, 57.2% of eyes were lost. However in 6 cases where vitrectomy and intravitreal injection of antibiotics were performed only one of the 6 eyes (16.6%) were lost. In a 10 years review of incidence and outcomes of postoperative endophthalmitis by Aaberg[7], median visual acuity after treatment was 6/60. In a study by Somani[2] in Toronto, out of the 83 patients with culture proven endophthalmitis, 29 (35%) had visual acuity of 6/18 or better and 15 (18%) had a vision of No PL, with four eyes undergoing enucleation. The treatment modality was intravitreal injection and vitrectomy where indicated. In a study by Payman[8], using pars plana vitrectomy with intravitreal antibiotics, out of 20 eyes of culture proved endophthalmitis, 13 (65%) eyes had a visual acuity of 3/60 or better. Three (15%) eyes were lost. The visual outcome in post-traumatic endophthalmitis is graver. It has been reported that endophthalmitis with trauma has a poorer prognosis than that associated with cataract extraction[9]. In a study by Sabaci[10], out of 19 eyes of culture proven post-traumatic endophthalmitis, only four (21. %) eye achieved visual acuity of 1/60 or better. Five (26.3%) were phthisic and five (26.3%) were enucleated or eviscerated. In a study[11] on paediatric post-traumatic endophthalmitis on 12 patients, where vitrectomy was performed on 8 eyes, visual acuity of 6/60 or better were obtained in 8 (66.7%) eyes. Three eyes had vision less than 1/60 and one eye developed phthisis bulbi. Comparing all these studies with our study (Table 2), we found that we lost more eyes. The main reason was lack of availability of vitrectomy in our setup. The results of a prospective, randomised, multicentre endophthalmitis vitrectomy study[12] show that vitrectomy gave better re-

Table 2: Comparison of present study with different International studies

Outcome	Present study	Forster et al	Bermig et al	Somani et al	Payman et al
V.A=3/60 or better	53.5%	57%	72%	35%	65%
V.A = No.P.L	21.4%	—	—	18%	—
Evisceration/ Enucleation	21.4%	—	16%	5%	15%
Phthisis	9.6%	—	—	—	—

sults in eyes with light perception or worse. Many of our patients fell into this group but did not undergo vitrectomy. The other cause for poor visual outcome was the fact that most of our cases were corneal ulcer and trauma related, which have got poorer outcome[10].

CONCLUSION

Anatomic and visual outcome of infective endophthalmitis is poorer in our setup. One of the reasons for this is lack of using vitrectomy on these eyes when indicated.

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ORIGINAL ARTICLE

OUTCOME OF CLOSE REDUCTION AND CASTING IN CLOSE TIBIAL DIAPHYSEAL FRACTURE

Muhammad Shoaib, Muhammad Shabir, Ahmed Sohail Sahibzada, Raja Gul

Background: Tibial fracture is the most common long bone fracture especially in young people and has many treatment modalities i.e, close reduction and casting, open reduction and internal fixation with plates and screws and interlocking nails. Tibial fracture in adults may go in to malunion or nonunion if not treated properly.

Research Methodology: This is descriptive, study on 30 patients, (22 male and 8 female) conducted at orthopedic department, Lady Reading Hospital Peshawar and Ayub Teaching Hospital Abbottabad from January 2001 to December 2003. Patients included were of each gender, adults and close diaphyseal fractures who presented within 1 week after injury All fractures were treated with close reduction and casting under analgesia. Follow up was done for 6 months with assessment of radiological (healing) and clinical outcome (joint movement, leg alignment and length).

Results: Out of 30 patients 22 (73.33%) were male and 8 (26.66%) were female with age range from 14 to 60 years. Left side was involved in 18 (60%) and right in 12 (40%) patients. Healing time was 12 to 20 weeks in 25 (83.33%) patients i.e. excellent and good results, and out of remaining 5 patients 3 (10%) got hypertrophic nonunion. 2 (6.66%) patients had less than 5 degree external rotation. Knee stiffness in 4 (13.33%) patients and ankle stiffness in 3 (10%) patients was seen, which resolved with exercises.

Conclusion: Closed reduction and POP cast application is a safe, cost effective method for treating closed diaphyseal fracture of the tibia and gives excellent results regarding function of the limb and healing time.

INTRODUCTION

Tibia is the most exposed bone and vulnerable to trauma and therefore its fractures are common among the long bone fractures[1]. In tibia due to its decreased soft tissue attachment in distal third healing problems can arise. Tibia is the common site of nonunion in long bone fractures[2,3]. Incidence of delayed union is also common that is 1-7%[4,5,6]. It has been studied that each tibial fracture can get this complication of delayed union[7,8]. There are various factors which affect the outcome of fracture healing and lead to delayed or nonunion. The local factors are damage to soft tissue, fracture morphology[9,10] and intact fibula[11] .The tibial shaft fractures had the worst reputation regarding union among other long bone diaphyseal fractures in adults due to various modality problems[7,12,13]. Now there are various treatment modalities for tibia fracture that is casting, functional brace, open reduction and internal fixation with plate or intramedulary nails (locked or unlocked), external fixation and skeletal traction.

One should select the best treatment modality after proper analysis of fracture morphology, mechanical characteristics of bone, the trauma severity to the extremity, age of patient, general condition of patient, fracture site and most important is the soft tissue (skin, muscle and neurovascular) status.[14,6].

According to Nicoll[15] tibial shaft fractures are important due to two reasons i.e. they are very common and they are controversial so therefore anything which is common and controversial must be important. Currently tibial shaft fractures are treated both conservatively and surgically which depends upon fracture type, availability of expertise and modern equipment.

Gustilo[16], Tscherene and Gotzen[17] and Henson have all given stress to evaluate soft tissue status in tibia fracture. Among conservative and surgical treatment in past few decades close reduction remains the corner stone of treatment. In open tibial fracture external fixator is the safest method for initial skeletal stabilization[18]. Close Intramedulary nails i.e. locked or unlocked have many advantages i.e. it gives greater stability to the fracture site, increases healing rate, less chances of infection and early weight bearing. Unreamed interlocking nails in open fracture tibia gives better results because of less microcirculation damage near the fracture site which increases the fracture healing and decreases the infection rate[19].

RESEARCH METHODOLGY

This is a descriptive study conducted at Orthopedic Department Lady Reading Hospital, Peshawar. & Ayub Teaching Hospital Abbottabad from January 2001 till December 2003 on 30 patients with closed tibial fractures. Patients were admitted either through emergency or OPD. Patients included were adults of both genders with close tibial diaphyseal fracture who presented with in one week after injury. Patients below 14 years and above 60 years of age, open fractures, pathological fractures and those presenting after one week were excluded from the study.

All patients were treated with conservative method, i.e. close reduction and casting. After receiving the patients in emergency room proper resuscitation was done i.e. Airway, Breathing and Circulation were checked and fractured limb was immobilized after analgesia and then X-ray was done. In close fracture with out swelling, long leg POP cast was applied under I/V analgesia. During casting involved limb was hanging over the edge of the table. Traction and counter traction was applied by assistants and reduction was checked clinically by a surgeon. Then firstly the fracture site of tibial shaft was immobilized with POP cast while maintaining the traction for reduction followed by extending the POP above the knee up to the groin with 5 to 15 degree flexion at the knee joint. Check X-rays in both planes of the tibia were advised, to look for reduction. Afterwards the leg was kept elevated for few days to reduce the swelling.

In case of swelling of the leg, back Slab was applied after close reduction which was changed to long leg POP cast after 3 days. Hospital stay was for 24 to 72 hours when needed, otherwise most of the patients were discharged on the same day.

Follow up was done for 6 months. Outcome measures during follow up dates, were clinical and radiological, While in POP cast, patients were checked for any swelling of the limb or cast loosening. On each visit X-rays AP and Lateral view of the involved limb were advised to look for healing, displacement and angulations. Acceptable criteria for fracture reduction maintenance is to look for any shortening, rotation and anterior posterior angulations which should be one centimeter, 5 degrees and 10 degrees respectively. 1st visit for each patient was advised after 1 week with check X-ray AP and Lateral view of the involved tibia. Patients were advised for non weight bearing.

Second visit after 2 weeks with check X-rays with advice of partial weight bearing. 3rd visit after one month of 2nd visit with change of POP in to patellar tendon bearing cast. Patient was advised for full weight bearing with crutches.

Then monthly visit was advised till evidence of healing seen on X-rays. Outcome measures were according to functional and radiological results and were graded as excellent, good and poor. Excellent means when there is no shortening, rotation and joint stiffness and radiological healing within 12 to 16 weeks. Good means no shortening, foot rotation less than 5 degree and anterior posterior (AP) angulations less than 10 degree and radiological healing within 16 to 20 weeks. Poor means shortening of more than 1 cm or rotation of more than 5 degrees or AP angulations more than 10 degrees and delayed radiological healing more than 20 weeks i.e. delayed union.

RESULTS

Sex distribution of the cases is shown in Table-1. Left tibia was involved in 18 (60%) patients and right in 12 (40%) patients.

Table-1 Sex wise distribution

Gender	No. of Patients	Percentage
Male	22	73.33%
Female	8	26.66%
Total	30	100%

The outcome of the procedure is shown in Table-2.

Table-2 Outcome of Study

Grading	No. of Patients	Percentage
Excellent	15	50%
Good	10	33.33%
Poor	5	16.66%
Total	30	100%

DISCUSSION

Close reduction and POP cast application is well known treatment modality for closed diaphyseal fractures of the tibia. It has got advantages i.e. safe, cheap, no use of metal (implant), no need of general anesthesia, no acquired infection (like viral hepatitis due to surgery) and less chances of infection (like occurring in implant use). The only disadvantage is delayed weight bearing and join stiffness. The knee joint stiffness problem has been reduced due to application of below knee patellar tendon brace after 4 to 6 weeks.

In our study we achieved union in 25 (83.33%) patients out of 30 within 12 to 20 weeks comparable with study by Bostman and Hanninen[20] which shows 15.3 weeks union time with POP cast. In our study 3 (10%) patients out of 30 got nonunion comparable to study by Haines et al[21] having 18.6% nonunion rate. One patient (3.33%) got anterior compartment syndrome of left leg diagnosed by clinical examination which was treated by splitting POP cast and limb elevation. Anterior compartment of the leg is most commonly involved part in compartment syndrome[22]. In another study by Michealin et al[23] 5 (20%) patients developed compartment syndrome out of 25 patients in close tibial fracture. We can also compare our results with another study by Sarmiento[4] in which union time is 14.1 weeks treated with POP cast. Digby et al[24] shows 16.7 weeks union time with

POP cast. The only problem in our study is stiffness of knee in 4 patients and ankle joint in 3 patients (which resolved after physiotherapy) and non-union in 3 patients (which were treated with ORIF with compression plates). We achieved excellent and good results in most of the cases i.e. 25 patients (83.33%) and poor results in 5 patients (16.66%).

CONCLUSION

Closed reduction and POP cast application is a safe, cost effective method for treating closed diaphyseal fracture of the tibia and gives excellent results regarding function of the limb and healing time.

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ORIGINAL ARTICLE

"APPRAISAL OF CLINICAL FEATURES AND COLOR FLOW DOPPLER STUDIES IN DIAGNOSING DEEP VEIN THROMBOSIS IN CLINICALLY SUSPECTED CASES OF DVT"

Mohammad Zahid, Mohammad Tahir, Rabeea Sadaf, Mah-e-Naz Khan, Ishaq Khattak

ABSTRACT

Background: Swelling of leg/s is a common presentation in the Out Patient Department, which can be due to deep venous thrombosis. A delay in the diagnosis of DVT can culminate in a life threatening condition. Therefore, to avoid the morbidity and mortality associated with deep vein thrombosis, an urgent diagnosis and management is essential. Therefore we decided to assess the role of clinical features and colour flow Doppler studies in the diagnosis of deep venous thrombosis.

Research Methodology: One-year cross-sectional study at Khyber Teaching Hospital Peshawar was carried out from January 2003 to January 2004. This study included 50-patients, admitted in medical wards of Khyber Teaching Hospital Peshawar, with a clinical suspicion of deep vein thrombosis. All cases had swelling and pain in lower limb/s with or without tenderness and or redness. Patients were selected according to the inclusion and exclusion criteria. In each case Colour flow Doppler Ultrasonography was performed on the whole length of the affected lower limb/s. The clinical features of patients with Doppler positive studies (having deep vein thrombosis) were compared to Doppler negative cases. The final diagnosis was established with the help of Colour Flow Doppler ultrasonography. The results were validated by subjective and objective improvement in the clinical condition after anticoagulant therapy.

Results: Out of 50 patients, 25 had deep vein thrombosis while 2 had post-thrombotic sequellae. 23 patients although had signs and symptoms of deep vein thrombosis but none had venous thrombosis. Patients with all four classical features of DVT have two and half times greater chance of having DVT as compared to those with only two clinical features. This means that the classical features of DVT are sufficiently specific to DVT and when present should prompt investigations for its early diagnosis and treatment. The observed major risk factor in this study was postpartum period, accounting for 26% of the total Doppler proven DVT cases. 37% had DVT of spontaneous origin. All patients with DVT established on colour flow doppler were started on anticoagulant therapy and all showed improvement in their clinical presentation. The study provides two valuable information i.e.

1. The four classical features of DVT are reasonably specific and when present provides a chance for an early diagnosis.
2. The overall accuracy of Colour Flow Doppler in this study is 100%.

Conclusion: Deep vein thrombosis is a clinical condition that can end in a life threatening state, "The Pulmonary Embolism" which can be prevented by a timely diagnosis of DVT. All the four characteristic features (swelling, pain, redness and tenderness) of DVT, when present, increase the probability of its early diagnosis and hence provide a chance to embark a prompt management to escape the complications. Colour flow Doppler Sonography, the non-invasive technique, alone is enough to diagnose DVT as it has got a high sensitivity and specificity. This offers a clinician the most reliable and accurate method just short of Venography.

Key words: Deep vein thrombosis, Pulmonary embolism, Color Flow Doppler Ultrasonography, Duplex Ultrasound, Ascending Venography.

INTRODUCTION

Swelling of one or both lower limb/s is a common presenting symptom. Deep venous thrombosis in the leg characteristically causes pain, swelling, redness, and tenderness. Often, however, there are only a few symptoms and DVT cannot be excluded without appropriate investigations.

Majority of ambulatory patients with clinically suspected venous thrombosis have another cause for their symptoms.

The most likely simulating conditions include:

Ruptured Baker's cyst.
Cellulitis.
A muscle tear.
A muscle cramp.
A muscle haematoma.
A muscle infarction.
External venous compression.
Superficial thrombophlebitis.
Postphlebitic syndrome.
Hypoalbuminaemia.

Deep vein thrombosis can result in grave complications; however, early diagnosis and management can prevent these.

The complications of DVT include:

1. Pulmonary embolism.
2. Post-phlebitic syndrome.

Usually there are three factors, which promote venous thrombosis, called Virchow's triad[1], which includes:

1) Stasis or turbulence of blood flow
2) Endothelial injury and
3) Blood hypercoagulability. Most patients have one or more well-recognized risk factors.

The most common risk factors are:

Any surgical procedure requiring 30 minutes or more of general anaesthesia, Postpartum period, Trauma, and Immobility, as well as serious illness, including congestive heart failure, stroke, malignancy, and inflammatory bowel disease.

The common risk factors in outpatients include:

Hospital admission within the past 6 months, malignancy, pregnancy; use of estrogens , presence of anti-phospholipid antibody, and familial thrombophilia.

Less common associations are paroxysmal nocturnal hemoglobinuria, nephrotic syndrome, and polycythemia vera.

RESEARCH METHODOLOGY

In this study we had 50 patients with clinically suspected deep vein thrombosis, admitted in Medical wards of Khyber Teaching Hospital. All cases were selected according to inclusion and exclusion criteria as given below. The clinical data of each case was recorded separately in a proforma. In each case Doppler was performed on the whole length of lower limb/s. The clinical features of Doppler positive cases, having deep vein thrombosis, were compared to the Doppler negative cases. The diagnosis of deep vein thrombosis was suspected on the basis of present and past history and thorough clinical examination. The final diagnosis was established with the help of Colour Flow Doppler Ultrasonography.

The results were validated by improvement in the clinical condition after the anticoagulant therapy.

Inclusion Criteria

This included:

1. Any patient presenting with swelling and pain alone or with redness, and or tenderness of lower limb/s.

EXCLUSION CRITERIA

This included:

1. Swelling of lower extremities alone without other features of deep vein thrombosis.
2. Recent history of trauma.
3. Known case of diabetes mellitus with diabetic foot.
4. Any patient with abdominopelvic masses pressing on the pelvic vessels (including pregnancy).
5. Patients with skin diseases.

RESULTS

Out of all 50 cases, 25 patients had deep vein thrombosis and 2 cases had post-thrombotic sequellae. 23 patients although had some of the features of DVT but non-had DVT. The distribution of clinical features in colour flow doppler proven cases of DVT is shown in Table No: I. This table declares that there are two and a half times greater chance of DVT in patients who present with all four classical features.

In the remaining 25 patients where DVT could not be established on colour flow doppler, the distribution of clinical features in these cases are represented in Table No: 2 which shows that the classical features of DVT are sufficiently specific to DVT and when present should prompt investigations for its early diagnosis and management.

The risk factors seen in this study are shown in Table No: 3. Postpartum period was the leading risk factor in this study.

Table 1: Distribution of Clinical features in Patients with C.F. Doppler +ve studies for DVT

C.F. Doppler	CLINICAL FEATURES	
i.e. DVT established on C.F. Doppler.	Swelling +Pain alone	Swelling + Pain + Redness & OR Tenderness
25 cases (50%)	07 cases (14%)	15 cases (36%)

Table 2: Distribution of Clinical features in Patients with C.F. Doppler –ve studies for DVT

C.F. Doppler	CLINICAL FEATURES	
i.e. DVT established on C.F. Doppler.	Swelling +Pain alone	Swelling + Pain + Redness & OR Tenderness
25 cases (50%)	23 cases (46%)	02 cases (04%) (post-thrombotic seq;)

Table: 3. Percentage of Major risk factors for DVT.

Risk Factors	No. of cases	Percentage
Post- Partum	7	26%
Cor pulmonale	3	11%
Congestive Cardiac failure	2	7%
Immobilization (old age)	2	7%
Gastroenteritis (shock)	1	4%
Nephrotic Syndrome	1	4%
Past Hx. of deep vein thrombosis	1	4%
Spontaneous	10	37%

DISCUSSION

Deep vein thrombosis is an important cause of morbidity and mortility[3]. Venous thrombosis of the lower limb is a source of more than 95% of pulmonary embolism and approximately 40% of patients with DVT have a pulmonary embolism, although most of these are clinically silent[4]. Since there is a poor correlation between symptoms and signs and presence of thrombosis, therefore, early and appropriate management requires continuation by objective methods; Screening investigations include D-dimer tests, plethysmographic techniques and for a definitive diagnosis Venography or ultra-sonography is required[3].

Most thrombi are clinically silent when they are first detected by objective methods. This is probably because they don't obstruct the vein completely and patent collateral circulation also plays an important role in it[5]. As a rule of thumb, for every 100 outpatients with suspected DVT 16 will have a proximal DVT and 4 will have a distal DVT[6].

In this study, colour flow Doppler studies were positive for deep vein thrombosis in 50% of the patients where 36% had all the four classical features (swelling, pain, redness and tenderness) while 14% had only swelling & pain as the presenting complaints.

In the study, the major group affected by DVT is post-partum females. The reason for this (in our set-up) is probably ignorance, poverty, social and financial problems. Majority of our general public restrict their females to their homes and many women do not step out of bed in the early postpartum period. Therefore, to overcome this problem, emphasis should be given on education, awareness, good ante-natal services and postpartum care with persuasion for an early mobility.

A diagnosis of suspected DVT must be confirmed by a sensitive and specific test. The best-evaluated tests are ascending venography, duplex ultrasound and impedance plethysmography, having sensitivity of 100%, 97%, 92% respectively, and specificity of 100%, 97%, 95% respectively.[7]

Ascending Venography, using contrast medium, is the most reliable method for diagnosing DVT. However, it is relatively more invasive, requires exposure to radiation and is not free from risks.

Non-invasive tests, such as Colour Flow Doppler Ultrasound. Duplex Ultrasound And Impedance Plethysmography, have largely replaced the ascending venography for detection of deep vein thrombosis.

Impedance Plethysmography has been reported to bear a sensitivity of 30-70% and specificity of 68-98% by Kristo et al, 1994[8]

Colour Flow Duplex Sonography is a new technique which combines compression ultrasound with doppler information and colour flow imaging. The colour flow duplex sonography has simplified the examination and reduced the examination time to 15-20 minutes for the whole limb. Various studies have shown promising results. In a comparative study by Mani and Regan et al, 1995[9] duplex ultrasound gave overall accuracies of 99% and 90 % for above and below knee venous thrombosis respectively.

Colour Flow Doppler is a technique in which Doppler signals are encoded in colour image, thus, direct visualisation of intravascular flow is possible. It is easy to perform. Spontaneous flow is evident in the femoropopliteal segment, whilst proximal half vein flow can only be appreciated with the aid of distal compression. Eccentric thrombus and partially recanalised thrombus can also be shown. Overall, the sensitivity and specificity for detection of lower limb venous thrombosis including calf vein assessment were 93% and 100% respectively[10]. The differences in sensitivity and specificity between MR-venography and color Doppler sonography are not statistically significant. Color Doppler sonography has a 100% specificity in detecting the extension of deep venous thrombosis[11]. This offers the clinician the most reliable and accurate information short of venography and in some cases surpassing it[12,13]. All patients understudy, underwent ultrasound examination by colour flow Doppler Sonography technique. 25 patients had deep vein thrombosis and 2 patients were diagnosed as having post thrombotic sequellae.

The results were validated by improvement in the clinical condition of the patients after instituting anticoagulant therapy. The sensitivity & specificity of colour flow Doppler was 100%.

CONCLUSION

Deep vein thrombosis is a clinical condition that can end in a life threatening state, "the Pulmonary Embolism" which can be prevented by a timely diagnosis of DVT. All the four characteristic features (swelling, pain, redness and tenderness) of DVT, when present, increase the probability of its early diagnosis and hence provide a chance to embark a prompt management to escape the complications. Colour flow Doppler Sonography, the non-invasive technique, alone is enough to diagnose DVT as it has got a high sensitivity and specificity. This offers a clinician the most reliable and accurate method just short of Venography.

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ORIGINAL ARTICLE

MATERNAL OUTCOME IN ECLAMPSIA

Shahnaz Nadir Jamil, Shahnaz Akhtar

ABSTRACT

Background: Our objective was to study the presentation and determinants of maternal outcome .

Research Methodology: A cross sectional study was designed and data was collected over six months from 1-1-03 to 30-6-03 at a tertiary care hospital, Postgraduate Medical Institute, Lady Reading Hospital Peshawar. All cases of eclampsia (n = 50) admitted to Gynae "A" unit during the study period were included in the study. The variables included, patient's age, parity, booking status, gestational age, location at the time of first seizure, number of fits, and seizure to hospitalization interval, mode of delivery and maternal complications.

Results: Among 2200 consecutive recorded deliveries, 50 women were eclamptic, yielding a frequency of 2.2%. The antenatal / intrapartum and postpartum incidences of eclampsia were 72%, and 28% respectively. All patients were unbooked and belonged to low socioeconomic class. A total of 19 maternal deaths occurred during the study period. Four out of these were due to eclampsia. Maternal mortality rate form eclampsia was 8% and accounted for 21% of the total maternal deaths during the study period. Maternal complications occurred in 20(40%) patients while 26(52%) patients had smooth uncomplicated recovery.

Conclusion: Eclampsia is still responsible for considerable morbidity and mortality for the mother and baby. HELLP (Haemolysis, Elevated liver enzymes, low platelet count) renal failure, coagulopathy and pulmonary edema are its serious complications. Prevention of eclampsia is a challenge. This challenge can be met only, if there is a willingness to invest more in maternal health. Improved antenatal care, early detection and aggressive management of severe pre-eclampsia will reduce the incidence of eclampsia and its dreadful complications.

Key words: Eclampsia, Magnesium sulphate, mode of delivery, maternal morbidity and mortality.

INTRODUCTION

Pre eclampsia / eclampsia is an unpredictable, multiorgan disorder unique to human pregnancies.[1].

Eclampsia in Greek means flash out in the sense of sudden event and dates back to seventeenth century. This is due to visual phenomena occurring before convulsions. Hippocrates wrote about the condition in about 500 B.C. Later in 1943 John Charles weaver of Guys Hospital, found that many of these women also had albuminuria. The association of hypertension with eclampsia was recognized in early twentieth century after the invention of sphygmomanometer. The condition was known toxemia of pregnancy for many years.[2]

Estimates of eclampsia, the occurrence of convulsions associated with signs of pre-eclampsia (hypertension and proteinuria) vary widely form 1 in 100 to 1 in 2000 pregnancies. Although uncommon in developed countries, it is still a major cause of maternal morbidity and mortality worldwide and accounts for 5000 maternal deaths / year internationally.[3].

The maternal mortality ratio of Pakistan has been estimated to be 905 per 100,000 maternities.[4].

Hypertensive disorders of pregnancy were ranked third important cause of maternal mortality in a Nation wide study in Pakistan, by Jaffrey SN.[5].

The pathogenesis of eclamptic convulsions remains unknown. Cerebral imaging suggests that cerebral abnormalities in eclampsia (mostly vasogenic edema) are similar to those found in hypertensive encephalopathy. However cerebral imaging is not necessary for the diagnosis or management of most women with eclampsia.

Delivery of the fetus with elimination of all placental and residual tissue is the only known definitive treatment for pre-eclampsia-eclampsia. The signs and symptoms of this pregnancy-specific disorder are not immediately reversible, and maternal risk persists until all signs and symptoms of the disease process have disappeared.

The optimal medical / obstetric management of eclamptic patients is challenging and can exceed the skills of even the most knowledgeable provider of obstetric care. The purpose of our study was to find the maternal outcome in eclamptic patients and identify how well equipped our emergency obstetric services are to meet this challenge.

RESEARCH METHODOLOGY

Our objective was to study the presentation and determinants of maternal outcome in eclampsia in order to design interventions for reduction in maternal mortality, for which we carried out a cross sectional / descriptive study of patients suffering form eclampsia, at a tertiary care hospital, at the department of obstetrics and gynaecology, Lady

Reading Hospital Peshawar, from 1st January to 3rd June 2003.

The diagnosis of eclampsia was made in women who had convulsions associated with signs of pre-eclampsia (B.P >140 / 90 mmHg and proteinuria > 300mg / L, 24 hrs or + 1 on urine dipstick or boiling method) during pregnancy, labour or within 7 days of delivery and not caused by epilepsy or other convulsive disorders. In the absence of a high blood pressure or if the convulsion occurred after day 7 post partum, the condition was referred to as atypical eclampsia. The data of a total of 50 patients presenting with eclampsia during the above period was analyzed. Socio demographic and clinical data was collected along with results of investigations to categorize the complications. All emergency measures and treatment given were taken into account. The study variables included age, parity, booking status, gestational age, location at the time of first seizure, number of fits, seizure to delivery interval, clinical management and maternal complications. Uniform treatment regime (magnesium sulphate for control of convulsions, alpha methyldopa and nifidipine, as antihypertensive agent) was administered. Once severe hypertension was treated and hypoxia corrected, patients were re-evaluated for labour and mode of delivery. Various biochemical and hematological investigations were performed. These included full blood count (FBC), urea and electrolytes (U&E) liver function tests (LFT's) coagulation screen (FDP, Fibrinogen), serum uric acid and creatinine.

Then, depending on Bishop score, induction of labour was carried out either with prostaglandin vaginal pessaries or syntocinon and amniotomy. Cesarean section was carried out only if there was obvious contra-indication to vaginal delivery or an additional obstetric indication to do so.

RESULTS

A total of 2200 deliveries were conducted during six months period, form 1st January to 30 June 2003. The prevalence of eclampsia in our study was 2.2%.

Majority of patients were primigravidae, aged less than 30 years and admitted with ante natal / intra natal eclampsia. Detail are shown in figure 1, 2, and 3 respectively.

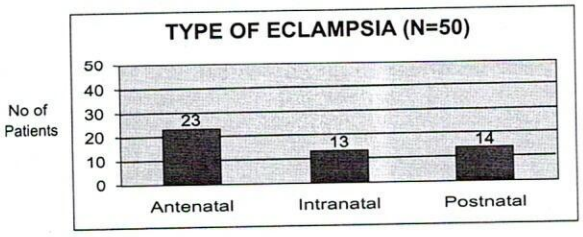

Fig. 1

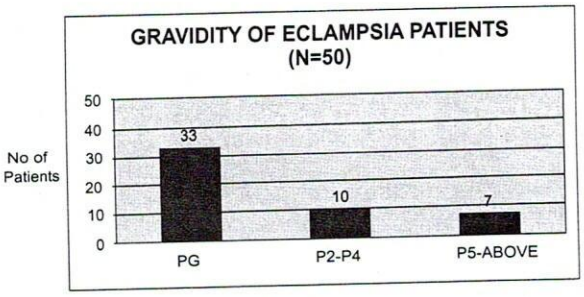

Fig. 2

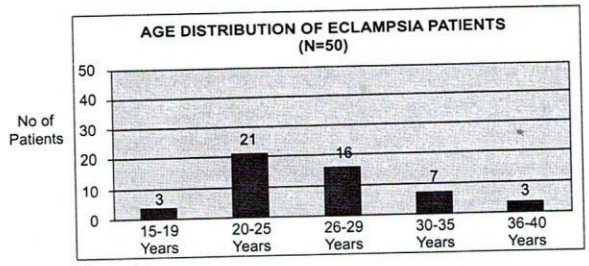

Fig. 3

Gestational age at admission was more than 32 in 35(70%) patients. Magnesium sulphate was an effective and safe anticonvulsant in all cases. Mode of delivery in antenatal/intranatal (n=36) is shown in Table 1.

Table 1

Mode of Delivery	No. of patients	% age
NVD	28	77.77%
Assisted Breech Delivery	4	11.11%
LSCS	1	2.77%
Died Undelivered	3	8.33%

Twenty-one babies (63%) were born alive and still births were noted in 14(37%) cases.

All patients were unbooked and belonged to low socioeconomic class. A total of 19 maternal deaths occurred during the study period. Four out of these were due to eclampsia. Maternal mortality rate form eclampsia was 8% and accounted for 21% of the total maternal deaths during the study period. Causes of maternal deaths are given in Table: 2

Table 2

Undelivered: (n=3)	Postnatal (n=I)
1. Acute renal failure and HELLP	Cardiac arrest and History of cardiac Disease)
2. Pulmonary edema	
3. Pulmonary edema +CVA + renal failure +HELLP	

Maternal complications occurred in 20(40%) cases, while 26(52%) cases had smooth uncomplicated recovery. Details are shown in Table 3.

Table 3

Complications	No. of patients	Percentage
HELLP Syndrome	8	16%
Pulmonary edema	5	10%
Acute renal failure	3	6%
Aspiration Pneumonia	4	8%
Neurological Deficit	1	2%
DIC	4	8%
Jaundice	4	8%
Hemoglobin less than 8 gm/dl	6	12%
Tongue bite and mouth ulcers	5	10%
Febrile	15	30%
P.P.H	1	2%
Labial Herpes	2	4%
CVA	1	2%
Psychosis	2	4%
Temporary Blindness	1	2%
Mortality	4	8%

DISCUSSION

The management of eclampsia has shown a gradual change during the past 100 years. Before the mid 19th century the treatment consisted of purge, puke, plaster and phlebotomy'. During this period maternal mortality rate from eclampsia ranged to be 22-47%, while perinatal mortality rate was over 66%. Later on during the second half of 19th century, heavy sedation with narcotics and anesthesia became the standard therapy. During this period maternal mortality rate centered around 22%. In early 20th century the Russian stroganoff introduced the concept of prophylaxis against recurrent seizures by using morphine, chloral hydrate and light chlorophorm anesthesia and reduced the maternal mortality rate to 10%.

Today, Magnesium sulphate is the drug of choice to prevent recurrent convulsions in eclampsia.[7].

However, eclampsia still kills. Pre eclampsia and eclampsia are the most important obstetric causes of maternal mortality in the western world, where the reported maternal mortality rate varies between 0-14%.[8]

Jaffrey SN in their, country wide, study ranked hypertensive disorders as third (18.63%) important cause of maternal mortality in Pakistan. This was proceeded by haemorrhage (24.49%) and sepsis (20.18%) respectively.[5]

In our study the prevalence of eclampsia was 2.2% out of total 2200 deliveries.

Maternal mortality rate due to eclampsia was 4(8%) and eclampsia accounted for 21% of maternal deaths during the study period. Maternal deaths occurred due to multi organ failure. (Table 3).

Maternal mortality was associated with complicated and neglected cases. Women who died of eclampsia had significantly higher blood pressures than those who survived. They were unconscious at admission. There was a delay of more than 8 hours in seeking hospitalization. These women experienced multiple fits and had pulmonary edema in 2(50%) cases. Paradoxically, although it is a disease of young women, having their first babies, those who die tend to be older and parous. [8,9].

In our study 33(66%) women had eclampsia having their first baby and aged less than 30 years. All of them survived.

Bashir et al reported a prevalence of eclampsia 1.2% and maternal mortality from eclampsia of 8.35-10.3% during 1991-1993 in Faisalabad city.[10] Farook recorded a 20-24% maternal mortality due to eclampsia.[11] Hashimi reported eclamptic mortality as 9% over a 5-year period.[12]

In addition to high maternal mortality, eclampsia continues to be associated with significant maternal morbidity. Acute life threatening complications can arise from functional derangement of multiple organ systems. Some of these are iatrogenic (Pulmonary edema or aspiration), whereas others are unavoidable (retinal detachment)[13].

Sudden increases in B.P to severe ranges (diastolic >120 mm Hg) are associated with increased maternal mortality and morbidity (short and Long term). Such severe episodes of hypertension can result in the development of intra cerebral hemorrhage, hypertensive encephalopathy, and acute renal failure, congestive cardiac failure, abruptio placenta with resultant DIC.[14]

In our study, 12(24%) women had blood pressure more than 180/120 mm Hg at admission. This group of patients developed most complications (table 2).

Major complications included HELLP syndrome, 8 (16%), pulmonary edema 5(10%) and acute renal failure 3(6%). One patient had temporary blindness, and one had psychosis. Patients, who suffered intra cranial hemorrhage didn't survive.

During our study period, all cases of eclampsia were preferably delivered vaginally, unless there

was a contraindication to vaginal delivery. Even cases remote from term were successfully induced with prostaglandin pessaries and delivered vaginally, except in one case, where emergency cesarean section was carried out for failed induction of labour. However 3 patients died undelivered due to multi organ failure. A survey of obstetric literature revealed evidence of at least 34 deaths in pregnancy complicated by HELLP syndrome with more than 90% of those women delivered by cesarean section and the remainder dying while preparations were underway for surgery. Cause of death was often multiple and difficult to discern. So, immediate delivery of ill mother with advanced HELLP syndrome does not insure maternal survival.[15]

Prevention of eclampsia is a challenge. Other than early detection of pre-eclampsia, there are no reliable tests or symptoms for predicting the development of eclampsia.[15]

In our country where the state of ante natal care is as good or bad as of any other-3rd world country, early detection of pre-eclampsia is a problem, not to mention the state of emergency obstetric care and referral system from peripheries to tertiary level hospital. Our customs of having large families and the craving for male offspring also plays havoc with maternal lives. More than 70% of multi para in this study declined permanent sterilization, knowing the chances of recurrent eclampsia as many of them had underlying renal problem or hypertension.

As rightly said, maternal mortality, is a sensitive indicator of inequality in health care access and health seeking behaviour. It indicates women's access to health care and the response of health care to their needs. Eclampsia is an important cause of maternal mortality and morbidity. To reduce its incidence and complications, there is a dire need to improve antenatal care at community level, enhance emergency obstetric care and a fast referral system in the peripheries and far-flung areas of the country. There is a need to strengthen community health care and to create awareness regarding such catastrophic emergencies.

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ORIGINAL ARTICLE

OUTCOME OF ONLAY PEDICLE SKIN FLAP AND TEMPORALIS FASCIA SANDWICH GRAFT IN CLOSURE OF TYMPANIC MEMBRANE PERFORATION

Ajmal Hussain, Naveed Yousaf, Arif Raza Khan

ABSTRACT

Background: This study was conducted to see the results of onlay pedicle skin flap in patients with tympanic membrane perforation in parse tensa.

Research Methodology: The study was conducted from 1995-97. Thirty cases were included in this study to see the results of onlay pedicle skin flap and temporalis fascia sandwich graft. The operation was successful in 20 (66.6%) of cases.

Conclusion: Sandwich onlay pedicle flap with temporalis fascia used in myringoplasty has 65% success rate. The complications are less.

Key words: Myringoplasty; pedicle skin flap; temporalis fascia.

INTRODUCTION

In 1878 Berthhold has done successful myringoplasty for the 1st time. Latter on myringoplasty has gone through many changes in technique and material. Different materials that can be used are autograft skin, dura mater and vein, temporalis fascia, tragal perichondrium, fat and synthetic prosthetic materials. Onlay and underlay techniques are used in grafting. In this study, simple, reliable technique for myringoplasty is described.

RESEARCH METHODOLOGY

Thirty cases were included in this study in which onlay pedicle skin flap and temporalis fascia sandwich graft used in myringoplasty. This study was conducted in Post-Graduate Medical Institute, Lady Reading Hospital Peshawar between 1995 to 1997. Patients included were having dry central perforation for at-least 6-months, functional eustachian tube, intact cochlear function, without any infection in middle ear cleft, nose, para-nasal sinuses and nasopharynx. Age range was 15-45 years. Cases with abnormality in nose like deviated nasal septum, nasal polyp, sinusitis or middle ear infection, were not included in this study. The procedure was done under local anaesthesia in all cases with injection of 2% xylocain with 1/80000 adrenaline into the external auditory meatus. Temporalis fascia was taken from the supra auricular area. The edges of the perforation were excised. Four radial incisions were made on the surface of the tympanic membrane. The outer squamous epithelium was elevated from the perforation margin for about 3-4 mm towards the annulus. Two parallel incisions were made in the skin of the deep posterior meatal wall starting at six o, Clock and finishing at 12 o clock. The medial of the two incisions is about 2-3 mm lateral to the tympanic annulus and the second is about 7-8 mm lateral to the first. Both incisions are joined at six o, Clock but not at 12 o, clock. The created flap was gently elevated and left attached superiorly. The dried temporalis fascia was applied over the perforation as onlay technique and then the pedicle flap was rotated to cover most of the grafted area. Gellfoam was put over the edge of the graft. Polyfax ointment pack was inserted for seven days. A loose head bandage was applied for 24 hours. All patients were given post operative antibiotics for seven days.

RESULTS

Gender distribution is shown in Table-1. Size of perforation is shown in Table-2. Success rate of the technique is shown in Table-3. Failure rates in different sizes of perforation is shown in Table-4.

DISCUSSION

Onlay grafting technique has given good results. This depends on the presence of an intact ossicular chain, the absence of pre-operative adhesions and regular post-operative follow-up. The success rate of

Table-1: Gender wise distribution

Gender	No. of cases	%age
Male	16	54.80%
Female	14	45.20%

Table-2: Size of Perforation

Size of Perforation	No. of cases	%age
Medium size perforation	14	45.20%
Large size perforation	10	33.33%
Small size perforation	6	20.0%

Table-3: Success Rate

	No. of cases	%age
Complete closure	20	66.60%
Failure	10	33.3%

Table-4: Failure rate in different size of perforation

Size of Perforation	No. of cases	%age
Medium size perforation	5	16.6%
Large size perforation	4	12.2%
Small size perforation	1	3.3%

myringoplasty in general varies between different authors and different techniques. The basic principle in all myringoplasty techniques is to de-epithelialise the edges of the perforation and the adjoining few millimetres of outer squamous epithelium. The graft is applied over the raw surface, which acts as a scaffold over which the outer squamous epithelium and mucosa tends to grow and close the perforation. This growth is from the periphery to the centre of the perforation. If this is too slow, the centre of the graft gets necrosed, before the epithelium can close the perforation completely, leaving a residual perforation. Various materials have been tried for grafting tympanic membrane perforations. Auricular skin, vein graft, temporalis fascia, fat graft, perichondrial graft, buccal mucosa, periostium and dura mater[1-9] have all been reported with varying success rate. In 1993 Vartiainen reported his findings of revision myringoplasty and suggested that better surgical technique and graft materials need to be developed.[10]

A success rate varying from 91.7 per cent to 97 per cent has been reported.[11,12] A success rate of 66.60 per cent was reported following sandwich technique using an endaural approach.[13] In most cases, the follow-up was under 12 months. Reports of long follow-up of over 10 years showed that the success rate tends to fall to nearly 70 per cent and to 60 per cent in revision cases.[14] The disadvantages of onlay grafting are epithelial pearl formation, lateralization of graft and anterior blunting. This is usually due to improper surgical techniques such as incomplete removal of the outer squamous epithelium from the grafting site.

The new technique described encourages the growth and migration of the squamous epithelium from the meatal flap as well as from the perforation margins. This should help in rapid closure of the perforation, as the squamous epithelium from the pedicle skin flap will cover the temporalis fascia graft along with the squamous epithelium from the perforation margins. The authors achieved closure of perforation in 66.6 per cent of ears, that were operated on for the first time. The follow-up period for these patients ranged between four months to six years. None of the 20 patients developed epithelial pearls, lateralization of graft or anterior blunting. This is due to the extreme care exercised during de-epithelialization and placement of graft and due to proper patient selection. Only 3-4 mm of outer squamous epithelium around the perforation was removed. As only a small area need to be de-epithelialized, the chance of leaving squamous epithelium behind is minimized. The meatal skin defect re-epithelializes and can be used again for revision cases.

CONCLUSION

Sandwich onlay material skin pedicle flap with temporalis fascia used for repair of various types of tympanic membrane perforations proves to be a technique with more than a 66.66 per cent success rate in primary repaired cases. The complications commonly associated with onlay grafting were not seen with this sandwich technique. This is a simple and reliable technique for onlay myringoplasty.

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CASE REPORT

STROMAL (MESENCHYMAL) TUMOR OF THE JEJUNUM — A RARE CAUSE OF MALENA (CASE REPORT)

Ijaz Ahmad, Mazhar Khan, Attaullah Jan

ABSTRACT

Gastrointestinal stromal tumors are relatively rare neoplasms. They are the primary non-epithelial neoplasms of the gastrointestinal tract derived from pleuripotential mesenchymal cells. They are capable of either partial or terminal differentiation along a variety of cell lines[1,2]. They are the most common form of sarcoma of G.I tract[3]. Their common presentation is bleeding due to their vascular nature.

This is a case report of a 43 year old male who presented with severe anemia and history of bleeding per rectum, on examination having a mass in the hypogastric region. Post operative biopsy reported the mass as a mesenchymal tumor of the jejunum.

Key words: *Stromal Tumors, Pleuripotential Cells, Sarcoma, Haematochezia.*

CASE REPORT

In October 2002, we received a call of a male patient, aged 43 years, from Medical C Unit of our hospital. His presenting complaints were generalized weakness and passage of black tarry stools per rectum. On clinical examination he was found to have severe anemia and a very vague mass in the hypogastric area. There was no history of pain abdomen and no previous history of peptic ulcer disease or jaundice. The investigations already performed showed hemoglobin of 5gm%, normal coagulation profile, normal upper and lower gastrointestinal endoscopy findings and normal barium studies. The ultrasound showed a mass in the hypogastric region, 10x8 cm in size, adherent to the urinary bladder and pelvic wall. The origin was not certain.

After he was shifted to our unit, a contrast enhanced CT of the abdomen was done showing a mass of 10x8 cm in the pelvic region attached to and pressing on the urinary bladder and adherent to the pelvic wall. Possibility of carcinoma and hemangiomatous lesion was considered. MRI was requested to find out the origin and operability of the tumor, showing the tumor to be arising from the pelvic wall, possibly a hemangioma.

These investigations took about 7 days. During this period at 2 occasions the patient suddenly collapsed. He had severe tachycardia, pallor and sweating.

Systolic blood pressure dropped to 50-60mmHg systolic followed by severe haematochezia. He was resuscitated with blood transfusions and plasma expanders. He required 9 pints of blood to bring his Hb to 9gm%.

The help of the cardiology and cardiovascular units in Lady Reading Hospital Peshawar was sought for catheter embolization of the tumor. They had no previous experience of catheter embolization so they regretted.

Finally it was decided to go ahead with a laparotomy. Peroperatively, it was found that the tumor on CT and MRI was a highly vascular, pedunculated fleshy mass, with a jelly like surface, 10x8 cm in size arising from distal jejunum. It was attached to the antimesenteric border of the jejunum, with big vessels from the jejunal mesentery supplying the tumor. It was loosely adherent to the urinary bladder, pelvic wall and rectum. There were no enlarged lymph nodes or metastasis in the liver.

The tumor along with about 20cm of jejunum and a wedge of mesentery was excised and end to end anastomosis was performed. Patient recovered uneventfully. At six months interval follow-up, he was in good health with no local or distant recurrence.

The specimen histopathology report was — A stromal (mesenchymal) tumor of the jejunum, looking benign, but follow-up was advised.

DISCUSSION

Gastrointestinal Stromal tumors are the primary non-epithelial neoplasms of the gastrointestinal tract. The tumors are derived from the pleuripotential mesenchymal cells (interstitial cells or stromal cells) of the gastrointestinal tract. They

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are capable of differentiating along a variety of cell lines[1]. Previously they were named Leiomyoma and Leiomyosarcoma but now the term Stromal Tumors is used because the biological behaviour of these tumors is unpredictable [2].

They are life threatening soft tissue tumors located generally in the upper gastrointestinal tract, approximately 60% in the stomach; 30% in small intestine and 10% in other parts of GIT. According to some, they are the most common malignant form of sarcoma (tumors arising from cells of mesoderm, muscle and connective tissue of gastrointestinal tract), but are still relatively rare[3].

There are about 12,000 new cases reported each year world wide. The incidence is highest in people aged 30-60 years; male to female ratio is 2:1.

The behaviour of the tumor can be predicted to some extent according to Amin's Classification:

	Size	No. of Mitosis
Benign	<5cm	<5/50HPF
Borderline	>5cm	<5/50HPF
Malignant	Any	>5/50HPF

STUMP (Stromal Tumors of Uncertain Malignant Potential) is the term used by pathologists to describe a neoplasm when they are unable to distinguish a benign from a malignant tumor [1].

The pathologist's report in our case was also of a tumor of uncertain malignant potential. This tumor had number of mitosis <5/50HPF and a size of >5cm, placing it in borderline category.

The behaviour of the tumor can be confirmed by various immunohistochemical staining for actin, desmin, vimontin, chromogranin A, C. etc; [4,5,6,7,8]

Clinical presentation of the patients is variable. The common symptoms are;

- Vague non-specific abdominal pain.
- GI tract bleeding which is acute and massive.
- Vomiting which is due to increased hCG production.
- Features of intestinal obstruction and perforation are rare.

This patient had no pain and vomiting. He only had acute and massive bleeding per rectum.

The commonest signs are:

- Pallor.
- Palpable mass; as was found in this reputed case.

The investigations normally required are:

- Blood complete.
- Upper GI endoscopy and biopsy (which is most of the time inconclusive because the tumor is extramural; as it was in our case).
- Ultrasound abdomen showing its extent and spread.
- Contrast studies are rarely required.

The Treatment Principles are:

- Surgery is the mainstay of treatment , involving resection of the tumor with regional lymph nodes.
- There is no role of extended lymphadenectomy.
- There is no role of conventional radio- or chemo-therapy except in metastatic disease.
- The recently developed drug (Gilvec) is said to be effective in stromal tumors of gastrointestinal tract[3].
- Transcatheter embolization of the jejunal stromal tumors presenting with haematochezia.[9,10,11,12] We did not have the facility available otherwise it could have been tested.

In patients presenting with malena (haematochezia), the possibility of stromal tumors should be kept in mind. Post-surgical follow-up of these patients is very important because of the unpredictable behavior of the tumor. The facility of catheter embolization can be life saving in these cases.

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"PET findings may be useful to guide biopsies of lesions with the highest SUV when clinically appropriate."

"It is impossible to discuss the role of PET in lymphoma without addressing the potential impact of the increasingly more widely used PET/CT systems, which combine a PET and a CT scanner in a single instrument," write Dr. Malik E. Juweid from University of Iowa City, Iowa City, and Dr. Bruce D. Cheson from Georgetown University Hospital, Washington, DC in a related editorial.

"It is likely that PET/CT will emerge as the preeminent tool in lymphoma imaging enabling an integrated functional-anatomic tumor assessment with a favorable impact on patient management and, possibly, outcome," the physicians conclude.

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AIDS in Asia Spread From Myanmar, Study Says

By Evelyn Leopold

Heroin users and prostitutes in Myanmar have spread HIV through large parts of Asia, according to a Council on Foreign Relations study released on Monday.

The use of genetic fingerprinting now allows scientists to identify changes in the evolution of the virus and thereby dispute accusations, such as the one Libya made against Bulgarian nurses, that one group or another was spreading the virus.

"With the exception of one serious outbreak in China, virtually all the strains of HIV now circulating in Asia - from Manipur, India, all the way to Vietnam, from mid-China all the way down to Indonesia, come from a single country," Laurie Garrett, author of the 67-page report, told a news conference.

"Several research teams have proven that these various HIV strains can be tracked along four major routes, all originating in Burma," she said, referring to Myanmar's former name.

The highest infection rates are among prostitutes and heroin users in Myanmar, ranked as the world's top opium producer until 2003 when Afghanistan moved to first place.

Garrett said that molecular epidemiology could counter accusations of who spread the epidemic. For example, a year ago, India charged that "promiscuous Pakistanis" spread HIV in Kashmir.

More serious is Libya's jailing in 1999 of five Bulgarian nurses and a Palestinian doctor, accused of deliberately infecting 426 children with HIV. Bulgaria countered that Libya failed to screen its blood transfusion supplies.

"Were the Libyan government willing to comply, a study of the HIV strains found in the 426 infected children might offer proof of their origin," Garrett's report, entitled "HIV and National Security: Where Are The Links?" said.

Using genetic techniques, researchers have also proved that the rapidly growing HIV epidemic in the former Soviet Union - Russia, Ukraine and the Baltic states - appears to stem from one strain spread by drug users nearly a decade ago.

"Nearly all of the HIV viruses circulating in that region...closely match one another genetically, were introduced into the area in 1996-97 and are being spread through injection by drug users," Garrett wrote.

GLOBAL RESEARCH UPDATES

GATIFLOXACIN SEEMS SAFE IN CHILDREN WITH OTITIS MEDIA

Despite concerns about arthrotoxicity, pooled data from clinical trials indicate that gatifloxacin is safe and effective in children with recurrent otitis media or acute otitis media treatment failure, researchers report in the July 15th issue of Clinical Infective Diseases.

Dr. Michael E. Pichichero of the University of Rochester Medical Center, New York, and colleagues note that the use of fluoroquinolones is restricted in children. This is based on observation of arthrotoxicity in juvenile animals. However, they also point out that there are few treatment options for children with refractory otitis media.

The researchers reviewed all pediatric clinical trials conducted with gatifloxacin for otitis media. In all, there were four clinical trials involving 1176 children.

The team concentrated on findings in the 867 children, ages 6 months to 7 years, who had experienced previous treatment failure or recurrent disease. Gatifloxacin dosage was 10 mg/kg once daily for 10 days.

There was no evidence of arthrotoxicity, hepatotoxicity or other serious untoward events either acutely or during 1 year of follow-up.

In the two non-comparative trials, the cure rate for recurrent disease was 89% at 3 to 10 days after completion of therapy.

In the other two trials, gatifloxacin achieved a 91% cure rate in those with treatment failure. In the subgroup of these patients under the age of 2 years, the cure rate was 89%. The corresponding proportions in patients given amoxicillin-clavulanate were 81% and 69%.

Dr. Pichichero told Reuters Health that "the issues of safety of the fluoroquinolones for use in children, especially with regard to arthropathy...do not appear to be validated as a concern."

In an accompanying editorial, Dr. Colin D. Marchant of Tufts University School of Medicine, Boston notes that development of quinolone antibiotics for use in children "has been under a black cloud for several decades."

There are still uncertainties about the safety of these agents, he stresses, but concludes that the solution is to conduct more trials, "not to create barriers" that result in a halt in development.

Clin Infect Dis 2005;41:470-480.

PET Scan Differentiates Indolent From Aggressive NHL

Lower fluorodeoxyglucose uptake on PET imaging differentiates indolent from aggressive non-Hodgkin lymphoma, according researchers at Memorial Sloan-Kettering Cancer Center in New York.

Fluorodeoxyglucose PET has been shown to be clinically useful in numerous lymphomas, the authors explain, but no studies have demonstrated that it can distinguish between different subgroups of lymphoma.

Dr. Heiko Schoeder and colleagues evaluated whether fluorodeoxyglucose PET could reliably distinguish between different WHO subtypes in 97 patients with non-Hodgkin lymphoma. The findings are published in the July 20th Journal of Clinical Oncology.

The average standardized uptake value (SUV) in patients with indolent lymphoma was 6.7, the authors report, compared with a mean SUV of 17.2 in patients with aggressive lymphoma. Fluorodeoxyglucose uptake was significantly higher in aggressive disease, the results indicate, and all indolent lymphomas showed an SUV no higher than 13.

An SUV above a cutoff value of 10 was 81% specific and 71% sensitive in detecting an aggressive lymphoma, the investigators report.

SUVs were also increased in patients with aggressive lymphoma who were previously diagnosed with indolent lymphoma, the researchers note. In contrast, about half the patients with previous aggressive lymphoma and indolent disease at the time of the PET scan had SUVs below 10 and half had levels near 15.

"This study demonstrates that fluorodeoxyglucose PET imaging can distinguish between patients with indolent and aggressive lymphoma, and that the likelihood for aggressive disease increases in parallel with increases in SUV," the authors conclude.

"Although fluorodeoxyglucose PET alone cannot reliably diagnose transformation from indolent to aggressive lymphoma," the researchers explain,