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EDITORIAL:

SCIENTIFIC CONFERENCES & CME CREDIT AWARDING

The objective of holding scientific conferences and symposia is to promote exchange of knowledge, latest information and unique ideas. These are designed so as to fulfill the needs and aspirations of all those who intend to participate. It has been witnessed in the recent past that the number of scientific conferences and symposia has increased at a very fast pace. On one hand it is a nice change but on the other hand one finds it difficult to know, what actually is the purpose behind these so called academic activities as most of the proceedings contain very little research based presentations. Majority of the presentations are just the repetition of what is already presented elsewhere. This irks the participants a lot. It is also not understandable why every institute, society or association need to run its own show.

The officials of scientific conferences are also required to ensure that the abstracts send for presentation are of high quality and not presented before or published elsewhere. It is also suggested that instead of every institute, society or association, the big metropolis can hold a week long health related scientific activity in which all institutes of that city participate with representations from various societies and associations, so that all health related issues and subjects are presented at one time in a calendar year in that city. This definitely will be more fruitful and goal oriented rather than having plethora of conferences in a month or so with poor quality papers and meager attendance.

We also propose an establishment of a working group at national level the duty of which is to devise a formula to assign CME credit to any of the scientific activity, be it a conference, symposium or a workshop. This will ensure high quality of various scientific activities. The CME credit is also to be made mandatory for the promotion to higher position for the consultants and be made part of residency programme of the trainees. Minimum credit hours should be defined for this purpose. This definitely will ensure a research culture which at present is lacking. Pakistan Medical & Research Council has lot of money at it disposal but most of the faculty members of teaching and training institutes are not aware or are not trained to write a research proposal. Workshops on proposal writing both for the trainees and trainers are thus the need of the time.

DR. JAMSHED AKHTAR
EDITOR

ROLE OF VIDEO ASSISTED THORACOSCOPY IN THE MANAGEMENT OF CLOTTED HEMOTHORAX

TANVEER AHMAD, S. WAQAR AHMED

ABSTRACT

Objective : *To evaluate therapeutic value of videothoracoscopy in chest trauma patients with residual clotted hemothorax.*

Design *Prospective study*

Patient and Methods *Sixty five patients included in the study were seen at the Department of Thoracic Surgery, Jinnah Postgraduate Medical Centre, Karachi, after careful assessment of their haemodynamic status and the extent of injuries. Out of these, 15 presented in our casualty, while 50 were referred to the Department from elsewhere. Inclusion criteria for the study was an x-ray chest showing a retained haemothorax 72 hours after tube thoracostomy. They underwent therapeutic VATS on the next available operation day. One lung anaesthesia was used with collapse of the lung on the ipsilateral side. Two or three ports were used keeping the concept of triangulation in mind. The pleural cavity was washed with warm normal saline and one or two 36 Fr. thoracostomy tubes were inserted under vision.*

Results *Sixty-five hemodynamically stable patients (54 males and 11 females) with chest trauma (blunt 46, penetrating 19) were examined and treated videothoracoscopically over a period of 3 years from November 2001 to October 2004. The indication in this group of patients was clotted hemothorax, which failed to evacuate with a conventional large bore (36 F) thoracostomy tube. Most (77%) of the patients underwent VATS in the first week after injury, while 23% patients had video assisted thoracoscopy (VATS) in the second week. The rate of conversion to thoracotomy was 7.7% (5 patients). It was seen that in these 5 patients requiring thoracotomy, an increased time interval between injury and VATS was a significant factor in determining the outcome ($p<0.005$). In all these patients the time interval was more than 7 days. Post VATS full lung expansion was achieved in 51 (78.5 %) patients. The average duration of VATS was 70.16 minutes (min 60 minutes; max 100 minutes). Most patients (90.8%) had the thoracostomy tube removed in the first week after surgery. In 6 patients the tube was kept for a longer duration.*

Conclusion: *Therapeutic video assisted thoracoscopy is a safe and reliable operative technique for the evacuation of post traumatic clotted hemothorax in hemodynamically stable patients. VATS, if performed within the first 7 days of injury, obviates the need for later thoracotomy and decortication avoiding prolonged hospital stay and morbidity of an empyema thoracis.*

KEY WORDS:- *VATS, Chest trauma, Clotted hemothorax.*

INTRODUCTION:

The time honoured standard management of a stable hemothorax is a properly placed tube thoracostomy. In 20% patients retained clotted hemothorax after tube thoracostomy is a known complication and 40% of these residual clotted hemothoraces require thoracotomy to drain them[1]. The retained hemothorax is a major risk factor for the development of empyema leading to entrapped lung and fibrothorax resulting in prolonged hospitalization[2-7].

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Video-assisted thoracoscopy now provides another option for managing this problem[2]. Notably, retained hemothoraces have been successfully evacuated by this technique and it is currently indicated as one of the most suitable conditions amenable to thoracoscopic surgery[3,8,9].

We report our experience and describe our thoracoscopic technique used in the evacuation of retained clots and evaluate its results.

PATIENTS AND METHODS

Our study included sixty five patients with retained thoracic collections after traumatic injuries to the chest that were managed by VATS from November 2001 to October 2004 (that is over a period of 3 years) at our Department of Thoracic Surgery Jinnah Postgraduate Medical Centre. Among these, 15 patients presented primarily to our casualty with trauma, while 50 patients were those who were referred to us from elsewhere.

Patients were included in our study if chest x-ray showed a retained hemothorax or hemopneumothorax within 72 hours of initial tube thoracostomy. The patients were hemodynamically stable, maintaining adequate arterial oxygen saturation, with no associated intra-abdominal or head injury. A clotted hemothorax was defined as a residual clot estimated to be larger than 500 ml or occupying at least one third of the involved hemi- thorax[10]. Patients with poor pulmonary reserve and with associated injuries to other organs (like head injury, abdominal injury, etc) were excluded. Patients with a previous history of thoracotomy or thoracostomy on the same side were also excluded from the study.

VATS was performed in the operation theatre under general anesthesia, preferable with a double lumen endotracheal tube. An important prerequisite for VATS procedure is the complete collapse of the lung on the affected side. Patients in whom it was difficult to collapse the lung because of adhesions were excluded.

Patients were placed in the full lateral decubitus position with the involved side up, to facilitate the placement of thoracoscope and conversion to a posterolateral thoracotomy if required. Standard thoracoscopy equipment was used, including a scope with a 0 degree angle with 16x magnification, a xenon light source and a single high resolution video-monitor. Classically 3 port sites are used for thoracoscopy and the principle of triangulation is followed[10]. We used two port sites in our patients as in the study of Navsaria et al.[8] placed 8-10 cm apart placed in the same interspace for possible conversion to thoracotomy if later required. We usually used the previous thoracostomy site as the first port site, while the other port site was made below the tip of the scapula in the same intercostal space.

After aspiration of fluid contents, removal of soft adhesions and confirming collapse of the lung the thoracoscope was introduced. The amount and site of clots was assessed. A systematic search was made for any other injury like diaphragmatic rupture or bleeding from intercostal vessels. Clots were removed using ovum or ring forceps through the ports, while difficult to reach clots were dislodged and washed with a jet of warm normal saline. Adherent clots which could not be removed by the above mentioned methods were successfully removed by inserting dry sterilized ribbon gauze into the pleural cavity dislodging and entrapping the clots and removing them.

At the end of the procedure the volume of normal saline used to wash the clots was subtracted from the total volume of fluid in the suction bottle. This gave the approximate amount of clot and blood removed from the pleural cavity. At the end of the procedure one or two 36 Fr. chest tubes were placed and connected to under water seal. The chest drains were removed when drainage was clear and less than 50 ml with no air leaks.

RESULTS

Over a 3 year period from November 2001 to October 2004, Sixty five (65) patients with retained thoracic collections were included in this study. There were 54 males and 11 females. The ages ranged between 17 years to 49 years. Among these 65 patients 50 were those who were referred to us with retained collections from elsewhere (our department being the only tertiary care referral center in Karachi and Sindh province in the public sector), while 15 patients primarily presented with trauma to our casualty department.

The type of thoracic injury in these patients included blunt trauma in 46 patients and penetrating injuries in 19 patients (gunshot injuries 11 patients and stab wounds 8 patients). Blunt injuries were due to road traffic accident in 34 patients, fall from height in 8 patients and direct trauma to the chest with a heavy blunt object in 4 cases. Flail chest was associated in 15 patients, while 49 patients had associated rib fractures. Forty four (68%) patients presented with right sided injury while twenty one (32%) patients had left sided injury.

These patients were assessed for retained collections 72 hours after tube thoracostomy, or on their arrival in referred cases, with a chest x-ray and ultrasound examination. Pre operative ultrasound evaluation revealed clots in pleural cavity, volumes ranging between 350ml to 1050ml (average 541ml). In our series on an average the ultrasound under estimated the clot volume by 17.5%.

All these sixty five patients under went VATS for evacuation of clotted hemothorax. The time between

injury and VATS ranged from four days to fourteen days. Fifty (77%) patients had VATS within 7 days (1st week) of injury while 15 (23%) patients had VATS within 8-14 days (2nd week) after injury. Five (7.7%) patients required conversion to open thoracotomy for decortication. The reasons being dense adhesion, inability to collapse the lung and inability to adequately evacuate the clots.

VATS evacuation of clotted hemothorax was successful in 51 (78.5%) patients with complete evacuation, early chest tube removal, and absence of re-accumulation of fluid with full expansion of lung on that side. It was partially successful in 9 (13.8%) patients. These patients required multiple ultrasound guided aspirations before acceptable lung expansions. The mean operative time ranged from sixty minutes to hundred minutes (average time was 70.16 minutes). The chest tube was removed post –operatively in 59 (90.8%) patients within 1st week while in 6 (9.2%) patients it was removed in the second week. The total duration of hospital stay was 2 weeks in 42 (64.6%) patients, 3 weeks in 18 (27.7%) patients and 4 weeks in 5 (7.7%) patients.

Mechanism of injury did not correlate with a successful VATS outcome ($p = 0.39$; $df = 3$, chi square test), but it was seen that in all 5 patients requiring open thoracotomy, the increased time interval between injury and VATS was a significant factor in determining the outcome ($p < 0.005$; $df = 1$, chi square test). In all five cases it was 7 or more days. There were no deaths or life threatening complications in our series. One patient had a persistent air leak, which required a longer post-operative chest tube.

DISCUSSION

The time honoured standard practice for hemothorax or haemopneumothorax secondary to chest trauma is tube thoracostomy. A timely and properly placed chest tube is vital for the complete evacuation of hemothorax. In our series 50 patients were those who were referred to our department from else where. In most cases the cause was either an improperly placed chest tube, or use of small caliber chest tubes to drain hemothorax, (in some cases naso-gastric tubes were used.) and lack of care of chest tubes (i.e. no attention was paid to tubes blocked by clots).

According to Smith RS et al (9) retained hemothorax reportedly occurs in 1% to 20% patients with chest trauma. This is recognized as persistent dark maroonish black coloured effluent through the chest tube and evidence of clots on chest x-ray which can be confirmed on ultrasound of the chest. Traditionally about 40% of these retained collections will require thoracotomy to drain these collections (1). If untreated the natural history of these retained clots is variable. To wait for these retained blood clots to get liquefied and drained is impractical as by that time empyema invariably sets in. Early evacuation of a retained hemothorax has been shown to effectively decrease the incidence of the complication of empyema and fibrothorax and facilitate the overall management of these patients[3,4,11,12,13]. Early diagnosis and treatment of these retained clots is extremely important [11]. The timing of management has a direct bearing on the outcome. In our practice if by the 3rd day of the conventional management, there is a radiographic or clinical evidence of retained clots in thorax, it is confirmed on ultrasound and we consider the patients for active intervention. Although ultrasound examination is valuable in the management of retained clots, our experience is that ultrasound as a diagnostic modality underestimates the amount of clots present.

The use of VATS in the early evacuation of post traumatic retained hemothorax is a relatively new modality which has been well documented[1]. A successful VATS obviates the need for open thoracotomy and decortication reducing its associated morbidity and post operative hospital stay. It was observed that the duration of Post VATS stay had a direct relationship with the day on which VATS was performed (after trauma). The use of Thoracoscopy in the management of trauma is not a new concept. In 1946 Branco[5] used thoracoscopy to aid in the diagnosis and treatment of patients with penetrating injuries to the chest. Villavicencis and colleagues[14] in a review analyzing the role of thoracoscopy in retained hemothorax, identified eight studies with a total 99 patients[3,6,7,11,15,16]. Evacuation by VATS was successful in 89 of 99 (90%) patients. The timing of VATS in clotted hemothorax has a direct bearing on the outcome. In their review the time between injury and operation varied among different studies and ranged between 4.3 to 10.8 days. Their[14] recommendation was to perform VATS ideally within 3 days of injury. In our series the time between injury and VATS ranged between 4 days and 14 days.

Technical failure during VATS evacuation occurred as a result of poor visualization from incomplete lung deflation, dense adhesions, and clotted blood[8]. According to Heniford et al, in patients in whom VATS was preformed less than 7 days after injury, pleural infections and empyema did not occur[12]. The reason for failure of VATS in patients treated late (i.e. later than 7 days) is that in these patients there is a tendency towards loculation of the retained contents and difficulty to achieve collapse of the lung due to dense adhesions and increased incidence of empyema. Infact, in one of our patients we had to resort to thoracotomy and decortication after a failed VATS procedure as early as day 7 because of dense adhesions.

CONCLUSION

VATS is a safe, reliable and useful technique in the evacuation of clotted hemothorax, obviating the need for a thoracotomy. The timing of VATS after injury is important and early VATS within 7 days is associated with a successful outcome.

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AN EXPERIENCE OF TOTAL MESORECTAL EXCISION IN SURGERY FOR RECTAL CANCER

M.SHAMIM QURESHI, SHAZIA ALI, MUMTAZ MAHER

ABSTRACT

Objective : *To evaluate the results following total mesorectal excision in rectal cancers.*

Place & Duration of Study: *Surgical Ward 2, Jinnah Postgraduate Medical Centre (JPMC), Karachi. From January 2003 to December 2005.*

Patient and Methods *Fifty consecutive patients with histological diagnosis of rectal cancer were included in this study. In all cases tumor staging was carried out with ultrasound (US) and CT scan. Carcino-embryonic antigen (CEA) level was also done. They underwent surgery in the form of abdomino-perineal resection (APR), low anterior resection, ultra low anterior resection and Hartman's procedure. Total mesorectal excision (TME) was done in 42 patients and their postoperative morbidity and mortality were recorded.*

Results *Out of 50 patients 6 were irresectable. These patients had evidence of disseminated disease on US and CT scan. Forty two were resectable. Age range was14 -60 years. Thirty patients were between 20-40 years. Male to female ratio was 4:1. Thirty three patients had tumor at anorectal junction, four patients had tumor at 7 cm from anal verge, in five the tumor was not palpable as it was in the mid rectum. APR was carried out in thirty-three patients, low anterior resection in the four, ultra low anterior resection in four, with covering ileostomy in all cases of low and ultra low anterior resection. One patient had Hartman's procedure. In 42 patients curative surgery was done. With limited follow up over a period of two years one patient who had APR developed local recurrence.*

Conclusion: *Total mesorectal excision in rectal cancer surgery is known to give less postoperative morbidity and good local disease control. Appropriate training in total mesorectal excision should be given to surgeons under training in order to achieve standard surgical outcome.*

KEY WORDS:- *Total mesorectal excision, APR, Low anterior resection, Rectal cancer.*

INTRODUCTION:

Rectal carcinoma is the second commonest cancer[1] and it constitutes 75% of all colorectal tumors.[2] Abdominoperineal resection has been the standard treatment of rectal cancer since its description by Miles[3] at the beginning of the eighteenth century. With advances in the techniques for rectal anastomosis anterior resection with preservation of sphincter function has become the usual treatment for cancers of the upper and mid rectum. The advent of mechanical stapling devices and double stapling technique has rendered anastomosis at the distal rectum or anal canal technically easier.

Local recurrence has, however, always been a problem in the management of rectal cancer. In the 1980s and early 1990s; local recurrence rates of 20-30 percent were reported.[4] In 1979 Heald introduced the concept of total mesorectal excision[5] by using sharp dissection under direct vision, a relatively bloodless plane is followed along the outer surface of mesorectum with the preservation of pelvic autonomic nerves.[6] Local recurrence rate of less than 5% have been reported with a safe distal margin of 2cm with a marked reduction in genitourinary complications. Reduction in the local recurrence was further enhanced with circumferential marginal clearance of 2mm.

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APR is now reserved for distal rectal cancers where anastomoses is not possible.[4] Before the concept of TME, generally and more so in our setting, pelvic part of the surgery for carcinoma rectum was conducted as an excisional procedure without any regard for the fascial planes and preservation of nerves. The aim of this study was to review the outcome of total mesorectal excision in patients with rectal cancer

PATIENTS AND METHODS:

From January 2003 to August 2005, fifty consecutive patients with histologically proven diagnosis of rectal cancer were admitted to surgical Ward-2 JPMC. Of the presenting symptoms bleeding per rectum, was present in all patients, followed by tenesmus, spurious diarrhea, early morning diarrhea, weight loss and headache. In all cases tumor staging was carried out using US and CT scan. CEA levels were also done. These patients underwent resection in the form of APR, low anterior resection, ultra low anterior resection and Hartman's procedure.

TME was performed in forty-two patients, where rectal mobilization was carried out by sharp dissection under direct vision keeping the fascia propria of the mesorectum intact. Double stapling was considered possible when an adequate resection margin was obtained and an adequate healthy rectal stump was present for anastomosis with circular stapler. A proximal diversion was routinely performed in patients of LAR and ultra LAR, following TME and an anastomosis close to dentate line.

APR was performed in patients with tumors at a level at which the anal sphincter muscles could not be spared. Abdominal mobilization of the rectum was carried out in same manner as in LAR and ultra LAR using TME technique. Adjuvant postoperative chemo-radiotherapy was offered to all patients with stage II and III disease. Preoperative chemo-radiotherapy was given to patients with fixed tumors (T4) diagnosed preoperatively.

Usually follow-up period was 2-4 months interval during first 2 years and 6 months for 3 years thereafter, but many of the patients did not come for follow up regularly. Followup was by history, physical examination; determination of CEA levels. C.T scan was performed when there was suspicion of recurrence and to assess the operability of the recurrence. Local recurrence was defined as histologically or radiologically proven disease in pelvis within the field of surgery.

RESULTS:

Out of fifty patients, six had evidence of advanced disease according to U/S and C.T scan, and were considered irresectable, in these patients three presented with large bowel obstruction and colostomy was made, one had urinary bladder invasion presenting with haematuria, one had pelvic infiltration presenting with severe pain, and one had cerebral metastasis and presented with headache. All had history of bleeding P/R. Last three were offered APR followed by chemo radiotherapy. Two patients, who were operable on the basis of investigations, found irresectable at laparotomy because of presence of metastatic deposits all over the peritoneal cavity and liver.

In forty-two patients definitive procedures were performed. Age range was from 14-60 years. Thirty patients were in between 20-40 years, the young patients dominated this study. Male to female ratio was 4:1.Thirty three patients had tumor at anorectal junction and underwent APR, five had tumor which was not palpable on digital examination and it was in mid rectum, 4 of these underwent LAR with covering ileostomy in three patients and one of them had Hartman's procedure done. This patient didn't come back for reconstruction. Four had tumor at5cm from anal verge and ultra LAR with covering ileostomy was performed. Curative resection was achieved in forty-two patients.

Post operative complications were, genital nerve injury in two patients (one had APR and other had ultra LAR), urinary retention in nine patients (five of APR and three of ultra LAR, and one of LAR). Seven of these settled with conservative treatment and required self catheterization for some time. Wound infection occurred in nine patients. (seven were of APR and had perineal wound infected, two were of LAR and had abdominal wound infection), all were managed conservatively. Postoperative bleeding occurred in two patients and they required blood transfusion. Anastomotic leak occurred in two patients of LAR. Postoperative death occurred in one patient who had tumor recurrence. He was operated else where underwent LAR. We did APR and he died of uncontrolled sepsis. With the limited follow-up of three years one patient of APR developed local recurrence, which was picked up by elevated CEA level, and C.T scan abdomen. He was offered chemo-radiotherapy.

DISCUSSION:

In the past 25 years the importance of mesorectum in the treatment of rectal cancer has been recognized.[7-10] The TME concept is based on the loco regional recurrence following surgery for rectal carcinoma and it follows that an adequate en bloc clearance of the rectal mesentery, including its blood supply and lymphatic drainage would minimize possible disease relapse.[11] The high sphincter-preserving rate is achieved by meticulous pelvic dissection to mobilize the rectum with the entire mesorectum down to the pelvic floor and use of double stapling technique to perform low anastomosis. With the use of TME and a close distal resection margin, the need for sphincter ablation can be reduced. [4]

Anastomotic leakage remains a problem following LAR and ultra LAR. In this study proximal diversion was made in seven patients and anastomotic leakage occurred in two of them, which was managed without any surgical intervention. Urinary dysfunction after rectal cancer operation is often transient. The exact cause of this is unknown, but minor and temporary pelvic nerve injury caused by traction or diathermy causing incomplete division of nerves that later regenerate may be an explanation.[12] Several other studies reported an incidence of bladder denervation varying from 8-54% and frequency of impotence reported from 11- 70%. [13] In our patients, nine had mild to moderate urinary retention after operation, seven of them settled conservatively and two required intermittent self-catheterization. Two patients had genital nerve injury and they became impotent after the surgery. Since the main cause of postoperative genitourinary dysfunction is autonomic nerve injury, one would expect a low frequency of nerve complications after properly performed TME. [12]

Complications related to perineal wound are one of the major causes of postoperative morbidity. In this study nine of our patients had wound infection with seven having perineal wound affected and managed on conservative treatment Local recurrence is an important indicator of success in rectal cancer surgery. Wide variations in the incidence of local recurrence had been reported following curative resection of rectal cancer[3], ranging from 3% to 32%[8] . With the advent of TME most series have reported a local recurrence rate of about 10% or less. [8,9,15,16] In this study with a limited follow up, one patient of APR developed local recurrence within three years of surgery and was offered chemo-radiotherapy.

In conclusion this study shows that the introduction and training in TME has led to improved outcome in terms of local recurrence and genitourinary dysfunction. Although LAR and ultra LAR are frequently performed worldwide APR is still standard procedure in our setup because of presence of tumor at ano rectal junction in majority of patients. Sphincter saving surgery is being performed even in tumors at 5cm from anal verge. Thus appropriate training in TME should be given to surgeons in order to achieve a standard surgical outcome.

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POST OPERATIVE ANALGESIA IN INFANTS

WAJEEHUDDIN, TAYYABA BATOOL

ABSTRACT

Objective : *To compare the effects of local wound infiltration of bupivacaine with intramuscular nalbuphine in infants as post operative analgesia.*

Design: *Comparative study.*

Place & Duration of Study: *Department of Paediatric Surgery, National Institute of Child Health, Karachi, during years 2002 - 2003.*

Patient and Methods *A total of 60 patients included in this study. They were divided into 3 groups of 20 patients each. All were selected for elective inguinal herniotomy and randomly distributed in 3 groups. Group I was control group in which no analgesia was given and patients were observed for pain. Group II consisted of patients who were given nalbuphine post operatively and in group III bupivacaine was infiltrated into the wound margins just before wound closure. Observational pain assessment was performed according to Infants Pain Scale of Barrier et al. Results of the mean of 3 groups were compared with each other to assess severity of pain.*

Results *Group I (control) showed signs of moderate to severe pain. Out of 20 patients, 16 had moderate and 4 had severe pain. In Group II (nalbuphine) 18 patients demonstrated mild pain while only 2 patients remained symptom free and in group III (bupivacaine) out of 20 patients 9 developed mild pain while 11 patients had no pain at all. Thus bupivacaine proved significantly better than nalbuphine ($p < 0.01$) as post operative analgesia in infants.*

Conclusion: *Bupivacaine as compared to nalbuphine is more effective as a post operative analgesia. This makes the drug most suitable for routine use, especially in day care surgery.*

KEY WORDS:- *Post operative analgesia, Nalbuphine, Bupivacaine, Infants.*

INTRODUCTION:

Pain has been our constant companion since the dawn of human existence. Efforts to relieve pain parallel its existence. There are many misconcepts regarding pain even amongst the medical community. It has always been a matter of debate whether newborns and infants have the neurologic integrity to feel and interpret pain. Use of narcotic analgesia in the immediate post operative period in neonate is fraught with difficulty. The diagnosis of pain is not easy to establish, and concerns about side effects as respiratory depression can lead to intermittent and sub therapeutic dosing. Accordingly, pain relief is not properly thought of, particularly in post operative period. Usually post operative pain medications are either not given at all or if given, as required, which is not appropriate for infants who can not communicate.[1]

Pain assessment and its management is gaining importance, as it is now known that it adversely affects the physiology of an individual and may have grave consequences.[2] It is our responsibility to treat pain in neonate and infant as effectively as we can, since management of acute pain especially the post operative pain has been consistently inadequate. Therefore we performed a study to assess the effects of administration of analgesic on behavior of infants according to the pain scale of Barrier et al [3] in post operative period. In this regard we compared the effects of local wound infiltration of bupivacain, and intra-muscular nalbuphine.

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PATIENTS & METHODS

This study was conducted in Department of Paediatric Surgery at National Institute of Child Health, Karachi, from Jan. 2002 to Dec. 2003. It was a single blinded, analytic, comparative study. The study was carried out on 60 patients divided into three comparable groups. Patients who were selected had normal weight according to age, active, healthy and selected for inguinal elective surgery. Patients were divided into three groups, the distribution of which was as follows:

Group I: Patients in whom pain was assessed. No analgesics were given. It was control group.

Group II: Patients in whom nalbuphine was given intramuscularly. The dose was according to weight that is 0.1 mg/kg.

Group III: In this group before closing the incision, local anaesthetic bupivacain, in a dose of 2mg/kg was infiltrated into wound margins.

Each group was observed for behavioral and physiological changes following surgery. Observational pain assessment was performed according to infants pain scale of Barrier et al (Table 1). We assigned a score of 0, 1 and 2 based on the infants' response. After getting net score, we assigned following degrees of pain to the individual patient.

0	———	No pain
0-5	———	Mild
5-15	———	Moderate
5-20	———	Severe

Table I Infants Pain Scale Scoring System 3

	Score		
Category	2	1	0
Sleep in preceding hours	None or naps of <5 min	Short naps (5-10 min)	Long naps (>10 min)
Facial expressions	Mouth open, squared, eyes tightly closed; brows lowered; nasal bridge flat	Grimace mouth corners pulled down; eyes tightly closed	Face calm and relaxed
Spontaneous Motor activity	Thrashing or continuous agitation	Legs bicycling or intermittent agitation	Normal activity
Reactivity	Tremulous or clonic motions or spontaneous Moro reflex	Excessively reactive to any stimulus; irritable	Quiet
Flexion of fingers and toes	Marked and constant	Intermittent	Absent
Suck (place finger on tongue)	Absent	Intermittent; stops with cry	Strong, rhythmic
Global Tone	Persistently Hypertonic	Intermittently hypertonic	Normal for age
Consolability (with effort)	Unconsoled after 2 min	Quiet after 1 min	Quiet before 1 min
Eye contact (response to voice)	Absent	Difficult to obtain; intermittent	Easy to obtain; prolonged
Defensive postures	Constant rigidity or tightly flexed posture	Intermittent rigidity tightly flexed posture	No rigidity; no tightly flexed posture

A score of 0 to 2 is assigned in each of 10 separate categories.

As soon as subject became ready to take orally, the analgesic was used through oral route. The effects of analgesics on behaviour and physiology and the direct assessment of pain according to the scale mentioned were entered on a proforma.

In group A, no analgesia were given, we only assessed pain and physiological changes, after full recovery of patient from anaesthesia that is about 1/2 hour and at different intervals postoperatively.

In group B, nalbuphine intramuscularly was given and we assessed pain and vitals after half hour of injection, then at 1 hour 3 hour 6 hour and 8 hour post operatively.

In group C, bupivacaine was infiltrated into wound margins, at the time of closure. Pain was assessed, after 1/2 hour and then at 1 , 3 , 6 , and 8 hours postoperatively. After administration of study drugs, any unwanted side effects were observed, like nausea, vomiting, excessive sedation or respiratory depression in above mentioned times that is up to 8 hours, and managed accordingly. Patients' who scored more than 15 points were labeled as severe, while score between 5-15 were labeled as moderate and 1-5, mild pain. Patients who didn't show any sign of pain scored 0.

Results were statistically analyzed by using Student t test.

RESULTS

A total number of 60 patients were included in the study All patients included in the study were infants (0-1 year). Group I acted as control (n=20), where no postoperative analgesia used. The age range in this group was 4-6 months. The mean weight was 4kg. There were 15 males and 5 females. Out of 20 patients, 16 had moderate and 4 had severe pain. The mean of the pain score remained 13.79, which was categorized as moderate according to the pain score of Barrier et al.

Group II in which we administered nalbuphine (0.1 mg/kg) by intramuscular route. The age range in this group was 3-6 months. The mean weight was 4.5 kg. There were 15 males and 4 females. In this category the mean of the pain at 1/2 hr was 1.7, at 1 hr was 0.1, at 3hrs was 1.15, at 6 hrs was 0.14 and at 8hrs was 1.3. So 18 patients demonstrated mild pain while only 2 patients remained symptom free. The overall mean of the pain score was 0.9, so categorized as mild pain.

Group III had patients who received local infiltration of bupivacaine (2 mg/kg) on the wound edges at the time of closure. The age range was 4-7 months. The mean weight

was 4 kg. There were 18 males and 2 females. The mean pain score at ? hr. after injection was 0.2, at 1hr was 0.34, at 3hrs was 0.65, at 6hrs was 0.35 and at 8th hr. was 0.3. The overall mean of the pain score was 0.39. Only 9 patients developed mild pain while 11 patients had no pain at all.

Five different groups of each interval were taken, both for control and study medicines. These make 20 different values in each group. In order to summarize them average of times first taken from all the three groups and these were tested with Student t test. These two different medicines when compared individually with control group were proved highly significant. The 't' between control and nalbuphine was highly significant 30.457 with 19 df. bupivacaine was highly significant that was t=30.45 with 19 df. The 't' between nalbuphine and bupivacaine was 2.856 with 19 df. (Table 2)

Table II Comparison of Three Groups

	Mean	Standard. deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper	T	Df	Sig.(2-tailed)
Control + Nalbuphine	12.895	19.204	0.4294	11.9962	13.7938	30.03	19	0
Control + Bupivacaine	13.405	1.9683	0.4401	12.4838	14.3262	30.457	19	0
Nalbuphine + Bupivacaine	0.51	0.7986	0.1786	0.1362	0.8838	2.856	19	0.01

These two treatment groups (B&C) were then tested statistically with Student t test and thus bupivacaine was found highly significant when compared with nalbuphine as a postoperative analgesia in infants. (P<0.01)

DISCUSSION

There is good evidence that children suffer severe pain after surgery.[4] Pain assessment and its management is gaining importance as it is now known that it adversely affects the physiology of an individual that may result in grave consequences.[2] Pain management in children is increasingly recognized as an important issue and the aim is relief of surgical pain in postoperative period and providing pain free state. It is of common interest for anaesthetist as well as paediatric surgeons. However, while trying to achieve these aims there should be no serious side effects.

Assessment of pain in children is usually addressed from one of the three aspects, self-reporting (subjective), behavioral and physiological.[5] Predictably, no single method of pain assessment has been validated for children of all ages throughout the whole postoperative period. Recent work has focused on characterizing the infant's behavioral responses to pain [6] and has resulted in the development of a number of pain assessment tools for neonatal patients that approve a caretaker's ability to recognize the clinical manifestation of pain.[7,8] In addition infants exhibit a variety of recognizable physiological responses to pain such as elevations in serum cortisol and catecholamines concentrations, which can be ablated by the use of analgesics.[9]

In our study analgesic efficacy was measured to ensure that both treatment groups received comparable analgesia. In infants, both behavioral and physiological measures are useful to assess pain perception. In our study we used IPS (Infants Pain Scale behavioral scoring system) which is easy to understand and implement and provides a measure of behavioral distress that correlate well with painful stimuli.

A wide range of drugs are used for analgesic effects. There are three basic classes, then a number of miscellaneous other groups, most of which are exerting their effects centrally, locally or in spinal cord that is opioids, NSAIDs and local anesthetics. Use of local analgesia reduces the requirement of NSAIDs and opioids. Local anesthetics have been successfully used to reduce postoperative opiate requirement when administered by epidural route[10] or when given as a single shot local infiltration. However, neither opioids nor nerve block can provide the whole answer. Opioids have only partial effects in modulating the response of second order neurons. Local anesthetic may be only partially effective because dermatomes often overlap and also because sympathetic fibers and in the trunk parasympathetic fibers play a part in pain transmission. Systemic analgesics is usually given by i.m route, may only block the visceral and / or central pain, the somatic portion of pain remains partially unblocked.

Our study was performed dealing with acute pain i.e. postoperative pain in infants undergoing inguinal surgeries. In a condition requiring immediate and good relief of pain, to evaluate wound infiltration with local analgesics and then to compare it with the opioids analgesics given by I.M route, we also selected 20 patients for assessment of pain without giving any analgesia. Comparison was made between this control group and study medicine group and then both the study drugs. Nalbuphine as opioid analgesic was administered postoperatively, after assessing the mild pain and pain score counted at different intervals up to 8 hours.

Bupivacaine was locally infiltrated on wound edges, at the time of closure and pain was assessed again after different intervals up to 8 hours. Idea was to block the

somatic pain and use narcotic analgesic in low doses to control somatic pain, visceral pain by local infiltration of local anesthetics into the wound edges; we may improve the quality of postoperative analgesia by blocking somatic pain. In our study we concluded that local infiltration of bupivacaine was found significantly effective than nalbuphine to relief postoperative pain. There are many studies whose authors claim the superiority of wound infiltration technique to control acute postoperative pain over conventional methods such as; oral sedatives and oral analgesics. A prospective, randomized, double blind trial was conducted by Iqbal J et al[11] to assess contribution of postoperative analgesia by local infiltration of Bupivacain. The result showed that bupivacaine delays the analgesic demand by more than twice, obviates the need and reduces the dose of analgesic by 45% and expedites mobility and reduces hospital stay by 38.5%
In another double blind study Dahl Vet al [12] studied the pre-emptive effects of pre-incisional versus post-incisional infiltration of local anesthesia in children undergoing herniotomy. They concluded that perioperative infiltration with local anesthetics results in a smooth recovery with little need for opioids postoperatively. Shenfeld O et al conducted a study to see efficacy of intraoperative surgical wound irrigation with Bupivacain for postoperative analgesia in 90 children undergoing elective inguinoscrotal surgeries. They found that this method effectively reduced postoperative pain and narcotic drug requirement.[13] Wright JE et al have given controlled trial of wound infiltration with bupivacaine for postoperative pain relief after appendicectomies in children and recommended the use of bupivacain wound infiltration as a supplement to other current method to pain control.[14] A simple technique of wound instillation with bupivacaine provides a sustained postoperative analgesia as described by Thomas DF et al. Neither complications nor side effects related to toxicity, hypersensitivity, infection or impaired wound healing were encountered [15].

Other relevant studies in favor of local wound infiltration with bupivacaine are conducted by Grant GJ et al [16], Cherian MN[17] and Tverskoy M et al.[18] Furthermore there are number of studies, which had failed to show any advantage of wound infiltration or found to be ineffective to reduce the opioid requirement. In this regard Tverskoy M et al conducted a randomized, blind and controlled trial study in a series of 20 infants undergoing general anesthesia for pyloromyotomy, to determine the postoperative behavioral and cardio-respiratory effects of wound infiltration of bupivacaine. Their results indicate that wound infiltration with bupivacaine offered no obvious advantage to infants following pyloromytomy. [19]

Qureshi conducted a study to evaluate the intermittent wound infiltration with local analgesic, bupivacaine as part of balanced analgesia for postoperative pain. He concluded that intermittent infiltration with local anesthesia alone was not effective technique for control of postoperative pain [20].

Angerpointter TA conducted a study for pain relief after appendicectomy in children; he concluded that the use of subcutaneous infiltration of bupivacaine had no significant effect o the use of postoperative morphine[21]. Other related studies, which found to be ineffective are Hamid SK et al [22], Cobby et al[23], Ramsay AH et al.[24]

In addition to affectivity no drug is available without side effects. Opioids analgesics also has side effects especially in infants,[9] the most common is respiratory depression, which may lead to attacks of apnea, second is sedation, which can mask the other morbid symptoms and infant may aspirate the gastric contents. Other less hazardous are nausea and vomiting. It is expensive and not easily available also. What we experienced in our study patients that in postoperative period, after administering nalbuphine, patient was usually orally allowed late, and parents always found anxious that the baby was continuously sleeping or drowsy, whereas local infiltration of bupivacaine had less complications. Patients were allowed orally soon, and were active soon and parents were more satisfied when baby was active and did not cry. It is cheap and easily available in different strengths.

In our study we closely observed the pain scale in infants postoperatively after administering these study medicines. Although no side effects have been observed except sedation in nalbuphine group, but pain score was higher than bupivacaine group. Postoperative analgesic effects of bupivacain was significantly higher than nalbuphine ($p<0.01$) whereas infants who were not given any analgesia experienced moderate to severe pain.

In conclusion there is high efficacy and lower incidence of side effects of bupivacaine as compared to nalbuphine. In addition its easy availability and cost effectiveness makes the drug more suitable for routine use as a post operative analgesia, especially in day care surgery. It also reduces the need of other postoperative opioid analgesia.

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TYPHOID FEVER: COMPARISON OF TESTS AVAILABLE FOR ITS DIAGNOSIS

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SHAHINA UROOJ KAZMI

ABSTRACT

Objective : *To determine the most reliable, rapid, easy to perform and cheaper test for the diagnosis of typhoid fever.*

Study design: *Two years hospital based comparative and analytical study.*

Place & Duration of Study: *This study was carried out at the National Institute of Child Health, Karachi in collaboration with Department of Microbiology, University of Karachi from April 2003 to March 2005.*

Patient and Methods *One hundred & ten patients up to 13 years of age were included in the study after taking verbal informed consent from their parents / caregivers. Patients had fever of more than five days with presumptive diagnosis of typhoid. Patients who did not meet the above mentioned inclusion criteria or suffering with any other / obvious cause of fever were excluded from the study. Total leucocyte count, Widal test, blood / bone marrow cultures and typhi dot tests were performed for comparison.*

Results *Out of 110 patients 90 (81.82%) were confirmed positive for typhoid fever taking bone marrow cultures as standard. Most of the typhoid fever positive cases had normal or slightly raised total leucocyte count. By blood culture isolation rate of pathogen was only 14 % while by bone marrow culture isolation rate was 82%. Widal test correlated in about 65% cases. Typhi dot test was performed on 32 patients only with the positivtiy of 75% and the sensitivity about 100 %.*

Conclusion: *It is concluded that Dot Elisa (Typhi Dot) is specific and sensitive and comparatively rapid test, but bone marrow culture still remains the gold standard as it provides high isolation rate of organism and sensitivity pattern too.*

KEY WORDS:- *Typhoid fever, Bone marrow culture, Typhi dot.*

INTRODUCTION:

Typhoid fever is caused through infection by Salmonella typhi and Para typhoid fever by one of the three Para typhoid bacilli, Salmonella Para typhi A, B and C[1].Typhoid is an extensive health problem. It is often labelled as fever of unknown origin[2,3]. The current clinical pattern of typhoid fever in endemic areas often posses diagnostic difficulties even for experienced clinicians as its symptoms may mimic other diseases and vice versa. Like clinical presentation, routine laboratory tests are not helpful for its diagnosis. However laboratory diagnosis of typhoid fever plays a critical role in accurate and definitive diagnosis and management of the disease.

The most dependable way to establish a definitive diagnosis of typhoid fever is by blood, bone marrow, urine and faeces cultures. Unfortunately in developing countries, like Pakistan, facilities for isolation and culture are generally not available, especially in small hospitals

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and in many small cities and the diagnosis is based mainly on clinical features and on serological tests. The main objective of this study was to find out the most reliable, easy to perform and cheaper test for the diagnosis of typhoid fever.

PATIENTS AND METHODS

One hundred & ten patients with a presumptive diagnosis of enteric fever having fever of unknown origin for more than 05 days with age up to 13 years were included in this study. Main physical signs were fever, toxemia, abdominal discomfort, diarrhoea, cough, hepatomegaly, splenomegaly and jaundice.

About 08ml blood collected from patient, 2ml for total leucocyte count in EDTA, 2ml for blood culture and 4ml coagulated blood for Widal test and typhi dot test. Leucocyte count was done on Sysmex K-1000 Hematology auto analyzer counter checked by Neubauear chamber and on Leishman stained slide smear. For Widal tests, serum separated by centrifugation. The tests were done by slide agglutination method and according to manufacturers instructions (Cromatest, Pasteaur) with different serial dilutions using O and H antisera of S. typhi, para typhi "A" and "B" and examined macroscopically for agglutination.

Two ml each blood and bone marrow culture samples were delivered separately in blood culture bottles containing 25 ml thioglycollate broths (Oxide). Cultures were incubated at 37 ºC for 7 days and sub cultured on to blood agar and MacConkey media (Oxide) after 24 and 72 hours and on the seventh day of incubation. Non lactose fermenting colonies from MacConkey media were tested for S.typhi, by slide agglutination test with specific anti sera (Pasteaur) after doing the biochemical tests.

The typhi dot test (Sure Biodiagnostics and Pharmaceuticals) was carried out by incubating nitrocellulose strips dotted with the specific antigenic protein with patients sera and control sera. The antigen-antibody complex is visualized by incubating the strips with peroxidase-conjugated anti-human IgM and IgG. Upon addition of the chromogenic substrate, the results were read visually. Total assay time was 01 hour.

RESULTS:

Ninety patients out of 110 study cases were confirmed positive for typhoid fever, taking culture as gold standard. Fifty one were males and 37 females, majority of them were between 5 to 9 years of age. The disease manifested its peak prevalence between April to July. The results of blood culture were poor, with isolation rate of about 14% only but by bone marrow culture result showed more than 81% isolation rate of salmonella typhi. Comparing results of widal test with blood and bone marrow culture it was concluded that 65% cases correlated with culture, while 35% cases were not correlated causing limitation and confusions in interpretation thereof. The Dot ELISA (Typhi dot) test was performed on 32 randomly selected patients. Among them Salmonella typhi was isolated in 24 cases by bone marrow culture, comparatively Widal test was positive in 21 patients, while typhi dot test was positive in all 24 (100%) culture positive patients. The sensitivity of the test was calculated by considering the bone marrow culture as standard (table I).

Table I: Comparison of Methods For Diagnosis of Salmonellae

Diagnostic Method (N)	Salmonellae +ve				Salmoenllae -ve n (%)	Expected time per test cycle
	Salmonella Typhi n (%)	Salmonella Para A n (%)	Salmonella Para B n (%)	Total +ve n (%)		
Blood Culture (110)	14 (12.7)	01 (0.9)	0	15 (13.74)	95 (86.36)	Minimum 04 days
Bone marrow culture (110)	85 (77.27)	05 (4.55)	0	90 (81.82)	20 (18.18)	Minimum 04 days
Typhi Dot Test (32)	24 (75)	-	-	24 (75)	08 (25)	Within 01 hour
Widal Test (100)	58 (58)	04 (4)	03 (3)	65 (65)	35 (35)	_ hour (significant after 5 days of fever)

DISCUSSION

In general, 2 – 5 % of all individuals who develop clinical or sub clinical infection become chronic gall bladder carriers and serve to maintain the endemicity of the disease in a community[4,5]. Its peak prevalence is during summer season. In children clinical presentation ranges from mild gastroenteritis to a severe septicaemia, vomiting, abdominal distention, diarrohea, high grade fever, cough, hepatosplenomegaly, jaundice and delirium[6,7].

Total leucocytes count is not helpful in as it does not correspond to the degree of toxaemia. Leucopenia is not a diagnostic criteria[8]. Widal test has been used very extensively in the sero diagnosis of typhoid fever and in developing countries especially. It remains the only practical test available in the absence of culture facilities, but it shows positivity minimum after 5th day of fever[9,10]. Widal test has several other limitations and causes confusions in interpreting typhoid fever[11,12,13]. The base line titer in our population appears to be more than or equal to 1:160 for 'O' (somatic) and 'H' (flagellar) agglutinins[14]. The test is used as suggestive rather than diagnostic[15].

In untreated patients, culture of blood is helpful and test is positive in about 80 % cases, during the first week of the disease. Thereafter, the percentage of Salmonella typhi bacteremia rapidly decreases[16,17]. An injudicious or sub-optimal antibiotic regimen may diminish or eliminate the

organism from blood resulting in negative blood culture. As observed by Gillman et al, prior administration of antibiotics could hinder the bacteriological diagnosis of typhoid fever in a febrile patient. Salmonella typhi being an intra-cellular organism and resides in monocytes macrophages can be more rapidly and successfully discovered from bone marrow than from blood in chronic salmonellosis, especially if the patient has been treated with antibiotics[18].

A dot enzyme immunoassay test (Typhi dot) has been developed in Malaysia to detect antibodies IgG and IgM to a specific 50 Kda outer membrane protein on Salmonella typhi. The test is rapid, specific, sensitive and not need expensive equipments[19,20]. In order to determine the correct and effective course of therapy, it is imperative to adopt the most dependable means for its diagnosis. More reliable tests with ELISA, PCR and RAPD method for detection of typhoid fever are available, but are very expensive and beyond the limits of poor people.

In this study out of 110 suspected cases of typhoid fever 90(81.82%) patients were found bacteriological positive by bone marrow culture and only 15 (13.74%) were positive by blood culture. Similar finding have been reported by others. Hence it can be concluded that bone marrow culture is consistent and reliable for recovery of salmonella typhi than peripheral blood culture, especially in patient who had taken antibiotics. As earlier pointed out organism may disappear from peripheral blood due to antibiotic administration but it reside longer within reticuloendothelial cells of bone marrow and can be recovered from there more successfully. Hemoglobin percentage and total leucocytes count were within normal range in most of the cases in the present study . The sensitivity of Widal test in this study came out to be 65% and is consistent with other studies.

The sensitivity of typhi dot test was calculated by considering bone marrow culture as standard and in this study it came out 100 %. These findings are consistent with the findings of Ismail et.al and Karamat et.al[20,21]. It was observed that disease was uncommon under the age of one year and occurrence of disease was found greater during summer and autumn seasons in our study. According to this study there is no significant sex predilection as it came out 1:1.316 Female to Male. These findings are consistent with the findings of Guerra et.al.

Finally, it is concluded that Dot ELISA (Typhi dot) test is more specific and sensitive as compared to widal test, blood and bone marrow cultures. As the Typhi Dot test is rapid, specific, sensitive, easy to interpret results and does not involve use of any special equipment. The drawback of Typhi Dot test is that it is not specified for para typhoid fever and more important that it does not give the sensitivity pattern of antibiotics. It is recommended for early diagnosis of typhoid fever especially in areas where culture facilities are not available.

Nevertheless bone marrow culture still remains the gold standard as it provides high isolation rate of organism and antibiotic sensitivity pattern. For experienced hands the procedure of bone marrow aspiration is not difficult, time consuming and traumatic as the general belief goes.

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ROLE OF DIOSMIN IN THE TREATMENT OF HAEMORRHOIDS

MUHAMMAD ARIF, AFZAL JUNEJO, SHAHIDA KHATOON

ABSTRACT

Objective : *To determine the role of diosmin in the management of haemorrhoidal disease.*

Design: *Interventional study.*

Place & Duration of Study: *Department of Surgery, Liaquat University Hospital Jamshoro/Hyderabad and Sindh Employees Social Security Institute (SESSI) Hospital Kotri, from 1st January 2003 to 31st December 2004.*

Patient and Methods *A total number of 147 patients (99 males and 48 females) with haemorrhoids presented to outpatient department. All of them after evaluation of symptoms and signs of haemorrhoidal disease were prescribed diosmin (Tab. Daflon 500-mg 2xBD) for four weeks and patients were reviewed weekly for four weeks. Improvement of symptoms and proctoscopic findings were observed, and comparison done between first visit and last visit. Patients were followed for the maximum period of six months.*

Results *Out of total 147 patients 142 (96.5%) came up to 3-months and 136 (92.5%) followed up to 6-months. Out of these 136 patients 67 (49.3%) patients had no recurrence of symptoms while 43 (31.6%) patients had no improvements in symptoms and 26 (19.1%) patients had recurrence of symptoms after temporary relief. Therefore these 69 (50.7%) were submitted for surgery.*

Conclusion: *It was concluded that diosmin improves haemorrhoidal symptoms significantly for sufficient time so patients should initially be treated with diosmin.*

KEY WORDS:- *Haemorrhoids, Medical treatment, Diosmin*

INTRODUCTION

Haemorrhoidal disease is a common entity in general population and clinical practice. It has plagued human kind since time immemorial [1,2]. It is a trophic disorder of the anal canal characterized by recurrent self resolving acute episodes.[3] Haemorrhoids commonly present with bleeding, pain, pruiritis and prolapse. Clinically haemorrhoids are graded by their degree of prolapse. No matter how bad the haemorrhoids look to the practitioner they should not be treated unless they bother the patient.[2]

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Treatment of haemorrhoids is directed solely at symptoms and not at the appearance. Numerous methods are available to treat haemorrhoids, these include non-surgical techniques like sclerotherapy, rubber band ligation, infrared photo coagulation, low voltage direct current, laser ablation, cryotherapy and surgical excision. This aggressive therapy is reserved for patients who fail to respond to conservative and medical treatment or for more severe cases [1,2,4].

Conservative measures include adopting a high fibre diet, sitting down less, plenty of fluids, exercise and regular bowel habits.[4] Medical treatment includes stool softener, local anaesthetics, analgesics and flavonoids (Diosmin). Diosmin is a phlebotropic agent and is used to treat various venous disorders like chronic venous

insufficiency, haemorrhoids, lymphoedema and varicose veins.[5,6] Diosmin is a naturally occurring flavonoid glycoside isolated from plant source. Diosmin works by improving venous tone, increasing lymphatic drainage, protection of capillary bed microcirculation, inhibition of inflammatory reaction, reducing capillary permeability. [5,6] Diosmin is considered to have no mutagenic activity, embryo toxicity, no major side effect as well as excellent tolerability. This drug is safe to use in acute haemorrhoids, chronic haemorrhoids and also safe in pregnancy [5,7,8].

As the most common and troublesome presentation of haemorrhoids is bleeding which over a period of time produces anaemia and generalized weakness. More over it has sever psychological effects and apprehension in the mind of patient when he/she sees fresh blood spreading in pan for that he/she seeks treatment which is often surgical. In this study we planned to evaluate the results of diosmin whether it can provide sufficient relief of symptoms especially bleeding for a period of time so that in future rate of operations can be reduced.

PATIENTS & METHODS

This experimental study was designed to determine the efficacy of Diosmin in the treatment of haemorrhoids. This study included 147 patients and was conducted at Surgical Unit-II Liaquat University Hospital Jamshoro/Hyderabad and Sindh Employees Social Security Institute (SESSI) Hospital, Kotri, over a period of 2-years i.e. from 1st January 2003 to 31st December 2004. Sample technique was non-probable purposive. Patients of both sexes with symptoms of haemorrhoids (bleeding, prolapse, pain, pruritis ani), having 1st, 2nd and 3rd degree haemorrhoids were included in the study. Patients with grade 4 haemorrhoids, complicated haemorrhoids (thrombosed, strangulated, infected), haemorrhoids associated with other anal disorders (fissure, fistula, abscess) and secondary to carcinoma rectum, pregnancy, mass in pelvis and patients not willing for medical treatment were excluded from the study. These were the patients who had received various medicines from general practitioners with no improvements and were fad up of medicines not willing for any other trial and opting for surgery straight away.

Well informed consent obtained from the patients after assuring them that their personal data will be kept classified and will only be used to analyze the study results. All patients were evaluated by detailed clinical history (including age, sex, haemorrhoidal symptoms, bowel habits, previous treatment, presence of any associated medical disease) and clinical examination (inspection, digital rectal examination, proctoscopy). After establishing the site, size and degree of haemorrhoids all patients were started on diosmin (Tab. Daflon 500-mg 2xBD) for four weeks. Patients were called weekly and interviewed regarding their improvement of symptoms and proctoscopic examination done at each consultation to assess objective improvement. Improvement of symptoms was assessed by making scoring for each symptom. Scoring is given in table I.

Table I: Scoring System

			Score
Bleeding	Mild	Less than 3 times/week	1
	Moderate	3-5 times/week	2
	Severe	More than 5 times/week	3
Prolapse	Grade I	No prolapse	1
	Grade II	Prolapse with spontaneous reduction	2
	Grade III	Prolapse with manual reduction	3
Pruritis	Mild	Requiring no any medication and local application	1
	Moderate	Requiring medication but no any akin rashes	2
	Severe	Requiring medication having skin rashes	3
Pain	Mild	Requiring no medication	1
	Moderate	Requiring analgesics (Tab/Cap)	2
	Severe	Requiring injectable analgesics	3

Symptoms score of 9-12 severe, 5-8 moderate, 1-4 mild.

Patients were also enquired for side effects of diosmin. All patients were followed up to 6-months. Results were analyzed and statistical analysis done by using SPSS version 10.0. Data was collected on especially designed proforma.

RESULTS

During this study total 147 patients were included in study. Amongst them 99 (67.4%) were males and 48 (32.6%) were females. Mean age was 35-years. Bleeding was the most common symptom and all patients (100%) presented with this complaint. Prolapse was present in 81 (55%) patients, 42 (28.5%) came with pain and pruritis ani was complained by 74 (50.4%) patients. Constipation was present in 121 (82.3%) patients while 26 (17.68%) patients had normal bowel habits. Eighty-eight (59.8%) patients had history of some treatment like local applications, analgesics and laxatives but without improvement. Seventy-five (51%) patients were anaemic. Number of patients with haemorrhoidal symptoms according to scoring is shown in table II.

Out of total 147 patients 38 (25.8%) had 1st degree haemorrhoids, 79 (53.7%) had 2nd degree and 30 (20.5%) had 3rd degree haemorrhoids. Most common sites of hemorrhoids were 3, 7 and 11 o'clock position. Significant improvement was observed in symptoms. Comparison of symptoms was done between first visit and last visit because some patients did not came weekly. Comparison of symptoms improvement at 1st visit and after 4-weeks is shown in table III.

Table II: Patients with haemorrhoidal symptoms according to scoring.

Symptom	Mild	Moderate	Severe	Total
Bleeding	46	81	20	147
Prolapse	--	50	31	81
Pain	23	17	2	42
Pruritis Ani	40	27	7	74

Table III: Comparison of symptoms improvement.

Symptom	Degree of Severity	First Visit	Last Visit
Bleeding (n=147)	Mild	46	21
	Moderate	81	38
	Severe	20	11
Prolapse (n=81)	Mild	-	-
	Moderate	50	27
	Severe	31	19
Pain (n=42)	Mild	23	10
	Moderate	17	9
	Severe	2	2
Pruritis ani (n=74)	Mild	40	18
	Moderate	27	14
	Severe	7	4

Improvement in proctoscopic findings were observed in 68 (46.2%) patients i.e. size of haemorrhoids decreased. Out of total 147 patients 5 (3.4%) never came to follow up, 142 (96.5%) came up to three months and 136 (92.5%) patients came up to six months. During follow up it was observed that out of total 136 patients 67 (49.3%) patients had no recurrence of symptoms while 69 (50.7%) patients were submitted to surgery. Out of these 69 patients 43 (31.6%) had no improvement and 26 (19.1%) patients had recurrence of symptoms after temporary relief (table IV).

No major side effects were observed. Only 15 (10.2%) patients had mild GI upset.

DISCUSSION

Haemorrhoid is a common disease with which patient present at surgical OPD. In our study we observed that it is more common in labour class. Prevalence of haemorrhoids increases with age, no sex predilection

Table IV: Symptomatic improvement after Diosmin therapy with relation to degree of haemorrhoids.

Degree	Frequency	Improved	Submitted to Surgery	Lost Follow Up
1st degree	38	24	11	3
2nd degree	79	33	40	6
3rd degree	30	10	18	2
Total	147	67	69	11

known, although men are more likely to seek treatment.[1] Ten million peoples in the United States have haemorrhoids leading to prevalence rate greater than 4%.[1,2] The rate of haemorrhoidectomy in USA was 117 per 100,000 in 1974 and this rate is declining (37 per 100,000) because of out patient and office treatment of haemorrhoids.[2] Straining and constipation have long been thought of as culprits in the formation of haemorrhoids.[1,2] Same is observed during this study. One-hundred twenty-one (82.3%) patients had history of constipation. Various modes of treatment of haemorrhoids are available. All of them have advantages and hazards. Surgery is gold standard treatment but it has many hazards like pain, bleeding, urinary retention, anal stenosis, incontinence, hospitalisation, absence from work leading to decrease in earning and long postoperative incapacitation [1]. Like wise injection sclerotherapy and rubber band ligation are useful in 1st and 2nd degree haemorrhoids. They are ineffective in 3rd and 4th degree haemorrhoids. Moreover they require specialized expertise and sometimes result in severe complications like abscess, post-procedure pain, impotence and urinary retention.[1] Recurrence rate of non-operative technique is approximately 30-50%.[1,2]

Diosmin has been studied because of its phlebotropic activity and protective effect on capillaries and anti-inflammatory effects.[5,7,9] Advantages of diosmin are pain free, outpatient treatment, good patient compliance, no significant side effects, patient continues his/her normal work and earning. Misra MC reported 94% improvement in bleeding on 7th day of treatment with diosmin.[9] Meshikhes WA showed 82% improvement in bleeding, 78% in pain and 88% in heaviness, 84% in pruritis and 88.4% in discharge.[10] Shoukat A reported 72% improvement in bleeding. Diana G observed 98% improvement in pain and 86% in bleeding in second week of treatment.[12] Other studies also show overall improvement of haemorrhoidal symptoms (acute and chronic.[6,13,14]

During this study improvement in pain is 50%, bleeding 52%, prolapse 43%, pruritis ani 51%. The total number of patients relieved from symptoms was also significant i.e. 67. No side effect of the diosmin observed as in other

studies.[13,15,16] Surgical burden of haemorrhoidectomies decreased in our patients though the results of our study are not as good as shown in other studies. The reasons might be they have not taken the drug properly.

The addition of fibre with diosmin enhances its efficacy.[16,17] In out study we did not add fibre with diosmin, so further studies with addition of fibre and continuation of drug with proper adjustment of dosage are advised. However it is concluded that diosmin is very useful in mild and moderate symptomatology of haemorrhoids as reported by other studies also.[9] It significantly reduces the frequency of surgery and it is without significant complications.[7,9] It should be advised initially to patients with haemorrhoids and surgery should be reserved for patients who fail to respond on this treatment.

CONCLUSION

Diosmin for treatment of haemorrhoids, though not ideal, but is moderately effective. It is a non-invasive method of treatment with good patient compliance and almost no complication. It reduces the number of patients submitted to surgery, hence the burden of surgery decreases. More over many patients enjoy their normal life and earning and get cured without hospitalization. All patients with haemorrhoidal disease should be given a trial of diosmin and then only those patients (50.7% in our study) who do not respond or have recurrence of symptoms should be submitted for surgery.

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BEST FIT PREFABRICATED ARCH

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ABSTRACT

Objective : *To determine the best-fit arch wires using the 3M MBT arch wire system*

Study Design : *Cross-sectional analytical*

Setting : *Orthodontic department, Karachi Medical & Dental College.*

Patient and Methods *Best-fit arch wire was determined by superimposing scanned image of the occlusal surface of the patients' casts and the three different arch wires (orthoform I, II and III).*

Results *Two hundred patients were enrolled. In the maxillary arch, none of the arch wires fits best by both cuspid and maximum number of teeth methods (69% and 81%) (P< .001). In the mandibular arch, arch wire fits best by cuspid method is Orthoform I (35%) and Orthoform III (53%)according to maximum number of teeth method (P< .001)*

Conclusion: *It was concluded that when treating Pakistani patients, one should expect to use tapered arch forms in a significant percentage of patients. The current preformed NiTi wires are too wide for many patients and should be modified when these patients are being treated.*

KEY WORDS:- *Dental Arch, Best-fit*

INTRODUCTION

With the advent of nickel-titanium highly elastic preformed arch wires, the clinician often fails to recognize a particular patient's uniqueness of arch form and size, because of the great and confusing variability in arch form classification encountered in clinical practice.

The patient's original arch[1] form and inter-canine[2] width should be preserved during orthodontic treatment. This would replace the teeth in a position of maximum stability. Preformed nickel titanium arch wires are highly elastic and so the clinician is often able to introduce larger cross-section wire in the early stages of "leveling and alignment." This type of arch wire has become popular for it is believed to provide "greater efficiency" during this stage of treatment.[3]

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According to several authors, the stability of the form and dimension of the mandibular dental arcade is a factor of stability of the therapeutic results.[4] Long-term retention studies support the view that post treatment changes are greater when arch form is altered than when it is maintained.[5] Boone[6] has suggested that the individuality of a patient's arch form and dimensions must be recognized and respected if a successful treatment outcome is to be achieved. Many believe that arch form and size are unique for each individual and are principally controlled by the form of the basal bones initially and by the balance of energy imparted to the teeth in all planes of space.[7] Arch form and size should be recognized as part of a morphologic human pattern.[8] Also application of a single ideal arch form to every member of an ethnic group, despite individual variations, might adversely affect post-treatment occlusal stability.[9]

Therefore, it is important in the leveling and alignment stage to select the shape that most closely matches the patient's pretreatment arch form, according to both his and her ethnicity and type of malocclusion. For more than

100 years, researchers have been trying to define the "ideal" arch form, frequently using the concept that the dental arch is symmetric and can be represented by algebraic or geometric formulae.

In arch-form studies, attempts have been made to define an ideal arch shape, but considerable individual variability existed[10]. Various methods have been used to define these arch forms mathematically, including geometric curves, such as ellipses[5], parabolas[6], catenary curves[7] and equations, such as polynomial functions[8], cubic splines[9], conic sections[10], b functions[11] and the Bezier cubic equation.[12] Studies of untreated subjects showed a pentamorphic arch system, which included 5 different types of arch form: normal, ovoid, tapered, narrow ovoid and narrow tapered.[13]

Recent articles have reported that a clinical bracket point derived from the contact point has been mathematically estimated from the most facial portion of the proximal contact area for each tooth and used as a landmark for mandibular arch form assessment.[11] This method seems to be of great clinical value in modern orthodontic techniques, in which preformed super elastic arch wires are frequently used. The process of individualizing arch forms from the original mandibular arch has become popular.[12] Many recent studies have used normal, untreated samples for determining arch form mathematically[13] or for characterizing arch form through various measurements, with incisal edges and cusp tips as landmarks.[14]

PATIENTS AND METHOD

This research work conducted in the department of orthodontics at Karachi medical and dental college, Karachi. This was a Cross-sectional analytical study and was completed in 6 months. Two hundred patients were included in our study out of which females were more in number. (138 out of 200 patients). The sampling technique was non-probable, purposive.

The inclusion criteria were patients not orthodontically treated, having symmetric arches with adult dentition of either sex with age ranging between 14years and 25years. The patients exhibiting incisal or cuspal attrition, fractures of teeth or ectopically erupted teeth, those with mixed dentition and anomalies of tooth size e.g. microdontia, macrodontia, peg laterals, hyperdontia, hypodontia etc were excluded.

For operational purposes best-fit was described according to maximum number of teeth as the wire which touches the incisal edges of anterior teeth and buccal cusp tips of posterior teeth at six or more points and best-fit according to canine was a wire which touches the canine cup tips

All patients were taken from orthodontic OPD of Karachi Medical and Dental College Hospital. After taking consent from the patient impressions of the maxillary and mandibular arches was taken with alginate. Ortho plaster was be used for making the cast. On the maxillary and mandibular dental casts, the following landmarks was marked with a black pencil: the midpoint of the incisal edges of the central incisors; the midpoint of the incisal edges of the lateral incisors; buccal cusp tips of the canines; buccal cusp tips of the first premolars; buccal cusp tips of the second premolars; and mesiobuccal cusp tips of the first molars.

Occlusal surface of the casts were scanned, with a ruler included for magnification error using HP scanner version 1200. Using Photoshop software program version 7(Adobe System), the proximal contact between the two central incisors will be used as the origin of the X and Y coordinate. The landmarks were joined starting from one molar and ending on the other. This gave the arch form of the patient's arch. MBT™ arch wires of three different shapes were also be scanned maintaining the resolution of the scanner again with a scale. The wires were superimposed on the scanned images maintaining the x and y coordinate. Wire which touches the incisal edges of anterior teeth and buccal cusp tips of posterior teeth at six or more points are termed as best-fit by maximum number of teeth method. Wire, which touches the canines which may or may not touches the other points on the teeth are termed as best-fit by canine method.

Data was be analyzed by using SPSS version 10 on computer. Frequency and percentage were computed for presentation of types of arch form, sex etc. Quantitative response like difference of inter-canine width etc. is presented by Mean+- Standard deviation. Student's t-test applied to test the hypothesis at $p<0.05$ level of significance. Chi-square test of proportions is used to compare the proportions of types of arch form.

RESULTS:

Correlation between the prefabricated arch wires and patients' dental arch forms was identified on 200 cases. Both upper and lower dental arches were included in the study.

Figure- 1 shows the gender distribution of the patients included in the study. According to canine and maximum number of teeth methods, in the maxillary arch, the values for best fit wire for all three different types of arch wires were not significant. (table I and II)
According to canine method, in the mandibular arch, the values for best fit wire for type I was found significant. (table III). According to maximum number of teeth method, in the mandibular arch, the values for best fit wire for type III was found significant. (table IV)

Table I: Frequency and percentage of best-fit arch wire according to cuspids in the maxillary arch

Type of arch form	Frequency	Percentage
I	34	17.0
II	16	8.0
III	12	6.0
None	138*	69.0
Total	200	100.0

Shows significantly high at p < 0.001.

Table II: Frequency and percentage of best-fit arch wire according to maximum number of teeth in the maxillary arch

Type of arch form	Frequency	Percentage
I	20	10.0
III	18	9.0
None	162*	81.0
Total	200	100.0

Shows significantly high at p < 0.001.

Table III: Frequency and percentage of best-fit arch wire according to cuspids in the mandibular arch

Type of arch form	Frequency	Percentage
0	2	1.0
I	70*	35.0
II	20	10.0
III	48	24.0
None	60	30.0
Total	200	100.0

Shows significantly high at p < 0.001.

Table IV: Frequency and percentage of best-fit arch wire according to maximum number of teeth in the mandibular arch

Type of arch form	Frequency	Percentage
I	38	19.0
III	106*	53.0
None	56	28.0
Total	200	100.0

Shows significantly high at p < 0.001.

DISCUSSION

With the advent of nickel-titanium highly elastic preformed arch wires, the clinician often fails to recognize a particular patient's uniqueness of arch form and size, because of the great and confusing variability in arch form classification encountered in clinical practice. The present study followed OrthoForm methodology by classifying dental arches into Tapered Arch Form(Orthoform I), Modified Square Arch Form(Orthoform II) and Ovoid Arch Form(Orthoform III) to determine the frequency distribution of the 3 arch forms for our sample.

Analyses were done on the maxillary and mandibular casts of 200 patients. Total 1200 linear measurements were made; females were more in our sample, 138 out of 200 patients shows that more females visited for orthodontic treatment. The sample size was smaller than the study done by Raberin on 278 dental casts of untreated French adults with normal occlusions among whom 159 were male and 119 female.[1]

A similar study was done by Kook, who compared the frequency distribution of the 3 arch forms (tapered, ovoid, and square) between the ethnic groups in each Angle classification. The sample included 160 white (60 Class I, 50 Class II, and 50 Class III) and 368 Korean (114 Class I, 119 Class II, and 135 Class III) subjects.[15] However our sample size is much greater than the sample taken by Braun, who used fifteen sets of casts exhibiting Class I occlusion.[16]

The method used in our study to determine the best fit arch wire on casts, is very similar to that used by Kook[70]. He photocopied the occlusal surface of each cast on a paper. The photocopied images were placed on a digitizer, and the most facial portions of 13 proximal contact areas around the arch were digitized. In our study we superimposed each wire image on the scanned image of

the arch. The wire which touched the canine cusp tip was termed as best fit according to canine method and the wire which touched the most facial portion of the teeth (minimum six areas) termed as best fit by maximum number of teeth.

The sample for our study was collected at Karachi Medical and Dental College Hospital in Karachi; patients were from different ethnic groups which included mainly Indian origined (Urdu speaking), and small proportion of other ethnic groups, such as Punjabi, Pathan, Sindhi and Balauchi, so in future similar studies are required on a larger scale to evaluate the best fit arch wire for our population. The dentists in our country use arch wires of different brands for treating the patients with out knowing which arch wire form is best for that patient. It is very important that the Orthodontists and general dental practitioners of our country must utilize the arch wire which best fits to their patients, irrespective of any brand. In the literature there are various studies done to determine the human dental arch form. Since Angle, orthodontists have tried to determine a single, ideal arch form that can ensure the stability of the therapeutic results. Findings from Raberin[1] confirm that the ideal dental arch has not a single and universal form, but that there are at least five different forms among the most frequently seen in untreated adults with normal occlusions. Our study is different from those conducted by Braun and Raberin as it was not aimed towards determining the ideal arch form but to find out the best available arch wire form for our sample of casts. Our study is similar to that conducted by Kook in the aspect that we had also utilized the Orthoform system of wires to classify the patients' dental arch form. Apart from the sample size which is much greater in the study by Kook, our study also differs in sampling technique. Kook conducted his study among different classes of malocclusion as classified by Angle. In our study we have randomly picked the sample from the Orthodontic OPD of Karachi Medical and Dental College, irrespective of which class they belong.

In our study, none of the arch forms fits best for the maxillary arch. However, Orthoform type I, which is the tapered form, was found best fit in a higher percentage of maxillary casts among other types by both cuspid and maximum no. of teeth methods. The study done by Nojima,[18] favors our above findings. His study showed increased frequencies of ovoid and tapered arch forms and a decreased frequency of square arch form, showing a tendency to shift to narrower arch forms.

Square arch forms (Orthoform II) were found in 8% of the sample by cuspid method. This is opposite to the findings of a recent Japanese study which showed 58% sample belonging to square arch form group. This can be attributed to the fact that the sample for the Japanese study purely comprises of Angle class III malocclusion and this similarity can be explained by the common developmental pattern of Class III malocclusion.

Our findings for the maxillary casts analyses is favored by Felton[18] who studied the casts of 30 untreated normal cases, 30 Class I non-extraction cases, and 30 Class II non-extraction. After computerized digitizing and the use of a mathematical function called a polynomial of the fourth degree, he determined that no particular arch form predominated in any of the three samples. They therefore stated that customizing arch forms appeared to be necessary in many cases to obtain optimum long term stability, because of the great variability in arch form observed in the study.

For mandibular arches, our study reveals that the most persistent preformed arch wire according to cuspid method is type I (tapered) found in 35% of our sample. In the study by Kook, the tapered arch form had the highest frequency distribution, followed by ovoid and square arch forms for both class I and class II white groups.

In the Class I and II white groups, the tapered arch form had the highest frequency distribution, followed by ovoid and square arch forms. For the Class I samples, more than 90% of the white group consisted of the ovoid and tapered arch forms, compared with only 55% of the Korean group. Again, square arch forms were more common in the Korean group (44.7%) than in the white (8.3%). In the Class II samples, the white incidence of ovoid and tapered arch forms rose to 96%, whereas the Korean incidence was almost 60%. The frequency of square arch forms in the white group was only 4%, compared with 40% in the Korean.

In the Class III samples, the white group showed the highest frequency of the square arch form compared with the Class I and II samples. Both ethnic groups showed increased incidence of the square arch form, at 44% in the white and 54% in the Korean. In our study, the tapered arch form had the highest frequency distribution, followed by ovoid 24% and square arch forms 10%.There fore we can conclude that our results for mandibular arch by canine method resembles the results of study by Kook for white group. However, our results for the mandibular arches, antagonizes the results from the Korean samples.

In our study we have also determined the best fit arch wire for the mandibular arch according to the maximum no. of teeth method. Our findings suggests that the most frequently encountered arch form in the mandibular arch by maximum no. of teeth method is Type III , which

comprises of 53 % of our sample followed by None 28% and Type I 19%. By keeping these results in mind, we ca conclude that the most prevalent arch form for mandibular arch is Ovoid (Type III). Our above results opposes Kook study that there is a decreased frequency of ovoid arch form and an increased frequency of tapered arch form in class II arches of Whites and Koreans. However, our study is favored by Nojima[19], who showed increased frequencies of ovoid arch form and a decreased frequency of square arch form.

CONCLUSION

There is no single ideal arch form available which fits best for our sample. For maxillary arch, Tapered arch form was found best fit in more samples than the other types
In mandibular arch, Tapered and Ovoid arch form is more prevalent.

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MANAGEMENT OF URETEROVAGINAL FISTULA

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NISAR A SHAIKH, ALTAF H JOKHIO

ABSTRACT

Objective : *To evaluate the outcome of surgical management of uretero-vaginal fistula (UVF).*

Design: *It was a descriptive study.*

Setting & Duration of Study: *The study was conducted at the Department of Urology, Chandka Medical College teaching Hospital and Almas Kidney and Lithotripsy Centre Larkana from February 1995 to November 2006.*

Patient and Methods *The criterion for selection of the patients and screening workup included complete history, clinical examination and investigations like complete blood count and biochemistry, ultrasound, intravenous urography and retrograde ureteric brash or ureterogram were performed to confirm the level of fistula and also to assess the function of affected kidney. The neo-ureterocystostomy was made with modified Lich Gregoir, Boari Ockeblade flap, Psoas hitch and endoscopic methods as deemed necessary.*

Results *Our study included 20 cases. The ages of the patients ranged from 22 year to 45 years (average 36 years). We used modified Lich George method, Boari Ockeblade flap, Psoas hitch method and internal stenting in 09(45%), 05(25%), 04(20%) and 02(10%) of cases respectively. The ureteric catheter or DJ stent were kept postoperatively in 06(30%) and 04(20%) cases respectively. Although all patients had no leakage after surgery; but 06(30%) cases developed transient urgency, frequency, dysuria and persistent pain. These were resolved with conservative treatment. The complications occurred in 4(20%) cases which were wound infection in 01(05%), recurrent urinary tract infection in 02(10%) cases and 01(5%) developed a small bladder capacity.*

Conclusion: *There was no significant difference in outcome of different techniques, rather choice depends upon individual case and preference of surgeon. We conclude that modified Lich surgical procedure is simple, successful and quick method of treatment for repairing the cases of uretero-vaginal fistulae. We suggest bilateral ureteric catheterizations prior to difficult female pelvic and gynecological surgery to prevent such disaster.*

KEY WORDS:- *Uretero-vaginal Fistula, Neo-ureterocystostomy.*

INTRODUCTION

Urinary fistulae have been well described as early as ancient times by Hippocratic. The uretero-vaginal fistulae is one of the most feared and devastating complications of female pelvic and gynecological surgery. The incidence of the uretero-vaginal fistulae is not known, however review of literature revealed 0.4 to 2.5% after pelvic and gynecological Surgery.[1] Typically this complication occurs due to difficult gynecological procedures. The ureter may be injured during the dissection around the infundibulo-pelvic ligament or ligation of uterine vessels. Unexpected pelvic hemorrhage may obscure the surgeon's vision resulting into ureteric injury that manifests as delayed uretero-vaginal fistula.[2]

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The clinical history of ureterovaginal fistulae is usually straight forward. Acute onset of the constitutional symptoms after operation like flank pain, malaise, fever and chills are due to hydronephrosis or extravasation of urine into retroperitoneal space followed by leakage of urine per-vaginum.[3] The cases of uretero-vaginal fistulae can be differentiated by vesicovaginal fistula as in former situation there is normal voiding along with leakage of urine per vaginum whereas in later case there is constant leakage of urine from vagina and normal voiding is absent in bilateral casers. [4]

The aim of the treatment for ureterovaginal fistulae is the restoration of anatomy by reconstruction - neo-ureterocystomy. In this context various methods to re-implant the ureter with bladder like modified Lich George, Boari Ockeblade flap and psoas hitch have been described. Nowadays ureterovaginal fistulae may also be treated with endoscopic successful attempt by internal stenting and through laparoscopic approach.[5] However, persistent fistulae despite stent placement warrant surgical exploration and ureteral reimplantation. The modified Lich, Boari flap and psoas hitch methods are still the acceptable procedures for management of ureterovaginal fistulae. Each technique has its own indication. Lich and coworkers in 1961[6,7] introduced a technique for re-implantation of refluxing ureter extravesically by creating sub mucosal tunnel. After that mucosa opened and ureter introduce into the bladder and fixed by direct anchoring stitch Later on Aboutuis et al in1996 [8] also suggested that modified Lich method is simple and quick technique of choice for repairing the cases of ureterovaginal fistulae.

With all the options of treatment, the method of choice depends upon individuality of the case, level of injured ureter and experience of the surgeon. The objective of our study was to evaluate the outcome of managing ureterovaginal fistulae in our setup.

PATIENTS AND METHODS

This study was conducted at the Department of Urology, Chandka Medical College Hospital and Almas Medical Centre Larkana, from February 1996 to November 2006. A total of 20 cases having ureterovaginal fistula were selected for the study. The criterion for selection of the patients and screening workup included complete history, clinical examination including examination under anesthesia and investigations like complete blood count and biochemistry, ultrasound, intravenous urography, cystoscopy and retrograde ureteric brash or ureterogram were performed to confirm the level of fistula and also to assess the function of affected kidney. The patients who had bilateral ureteric injuries, and associated with vesicovaginal fistula or patients with preexisting malignant pelvic pathology were excluded from the study.

The surgical procedure neo-ureterocystostomy was made with all aforementioned methods. One patient had exploration with the removal of obstructing stitches followed by double J stent where as endoscopic treatment with DJ stent insertion was possible in another case. All the procedures were performed under general anesthesia in supine or in modified Lyoid Davis position. The ureteric catheter and Foley catheter were removed on 7th and 10th postoperative day respectively. Where as, the DJ stent was removed after 06 weeks. All the patients were followed up weekly for a month later and then fortnightly for next 02 months.

RESULTS

Our study included 20 cases. Their age ranged from 22 to 45 years (average 36 years). We used modified Lich George method, Boari Ockeblade flap, psoas hitch method and internal stenting in 09(45%), 05(25%), 04(20%) and 02(10) of cases respectively (Fig: 1, 2 & 3). The ureteric catheter or DJ stent were kept postoperatively in 06(30%) and 04(20%) cases respectively.

Fig: 1 Ureter is mobilized and divided

Fig: 2 Window made on antero-lateral surface of urinary bladder

Fig: 3 Ureter spatulated and ready for Re-implantation

All the patients became dry from the day of operation and post operative recovery was uneventful but 06(30%) cases developed transient urgency, frequency, dysuria and persistent pain. These were resolved with conservative treatment. The complication occurred in 04(20%) cases. These were wound infection in 01(05%), recurrent urinary tract infection in 02(10%) cases and small bladder capacity was observed in 01 (5%) case.

The follow up radiography was carried out in 03(15%) cases who experienced a persisting pain and ultrasound revealed a mild hydronephrosis. The finding of IVU was not significant in 02(10%) cases where as remaining 01(5%) case required re-stenting.

DISCUSSION

The injury to the ureter during technically challenging gynecologic procedures and difficult hysterectomy are still frequently seen in the developing world. In the last 10 years we selected 20 cases of ureterovaginal fistulae for study. All the patients had undergone gynecologic surgery in the past. In all these patients, the treatment was successful. We did not come across with major complication. Our results and complication rate are comparable to other studies presented worldwide. [2, 5-6, 8-13] We have followed the basic rules for fistula repair, that the first operation has the best chance of success and surgeons should use the approach with which they feel most comfortable. Preoperative measures include moral support and general health care and these were strictly observed. Sufficient time was allocated for stabilization of both local tissue and general health of patient before reconstructive surgery.

Our aim was to achieve a long lasting successful restoration of anatomy of ureter and urinary bladder, therefore we least bothered about the type of technique. We selected a suitable method according to our feasibility on operation table. When there was no problem with length of ureter like in low-lying ureteric fistula, we used modified Lich George method whereas Boari Ockeblade flaps and psoas hitch procedures were used in cases where the length of ureter was found deficit. We supported our newly made anastomosis with anchoring stitch where as compromised cases were stented either with ureteric catheter or DJ Stent.

Although all patients had no leakage or extravasations after surgery; but 03(15%) cases developed transient urgency, frequency, dysuria in those who underwent for Boari flap and psoas hitch surgical procedures. These were may be due to initial stretch on urinary bladder. The long term follow up radiography revealed proximal ureteric dilatation in 01(5%) cases. This case was deal by achieving successful negotiation of JJ stent endoscopically.

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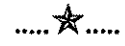

ROLE OF ULTRASOUND IN DENSE BREAST TISSUE (BI RADS BREAST DENSITY CATEGORY 3-4) ON MAMMOGRAM

ABDUL GHAFFAR, GHULAM QADIR BULEDI, MUHAMMAD IMRAN.

ABSTRACT

Objective : *To assess the role of high resolution ultrasound to find breast masses undetectable on high quality mammography in women with radio logically dense breast tissue (BI RADS category 3-4) on mammogram.*

Design: *Analytical study.*

Place & Duration of Study: *PNS Shifa hospital Karachi, from 1st October 2004 to 30th June 2005*

Patient and Methods *Hundred women were enrolled into the study. All these patients had BI RADS breast density category 3 and BI RADS breast density category 4 on mammogram and they were negative.*

Results *The age range of patients was 30-60 years with mean age of 45 years. Out of 100 patients, 78 were related with HRT group and 22 patients with breast abnormality group.. On ultrasound 58 patients had normal ultrasound (45 from hormone replacement therapy - HRT group and 13 from breast abnormality group.) as well as negative mammogram; remaining 42 patients were abnormal on ultrasound (33 from HRT group and 9 from breast abnormality group).*

Conclusion: *Ultrasound can find unsuspected, mammographically occult masses especially in dense breast ((BI RADS category 3-4) on mammogram.*

KEY WORDS:- *BI RADS Breast Density Category 3-4, Ultrasound Breast*

INTRODUCTION

Mammography is the only proved efficacious radiographic screening modality for breast masses. The sensitivity of mammogarphic detection diminishes in women with radiologically dense breast[1] because breast cancers have an x-ray attenuation that is similar to that of glandular and fibrous elements[2] and the malignant features of non calcified breast cancers might go undetected when the cancer is within an area of fibro glandular tissue. Therefore, the denser and more complex the mammography pattern, the less confident radiologists are in their diagnosis[3]. In these settings, sonography is the most important breast imaging modality because it does not use ionizing radiation, it is the examination of choice in young women and is valuable in the assessment of the mammographically dense breast. Sonography has been used as an adjunct to mammography in women with radiologically dense breast since its introduction into routine clinical use[4].

The main role of ultrasound is in the differentiation of cystic and solid lesions so on the basis of appearance the lesions are divided in to cystic lesion and solid lesion. Cysts are by far the most common mass in the female breast. Approximately half of all women 30 to 40 years and older develop fibrocystic changes in the breast that manifest as cyst of varying sizes. The solid lesions on ultrasound are usually tumors either benign or malignant depend upon their appearances and characteristics.

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The ability of ultrasound for differentiation of cystic and solid mass with marginal characterization, has improved dramatically with the advent of high frequency transducers, therefore we evaluate the role of ultrasound in dense breast tissue.[5-8]

The purpose of our study is to determine sensitivity of breast ultrasound in detection of breast lesion in mammographically dense breast (BI RADS Breast Density Category 3-4). The role of ultrasound to detect the breast abnormality in BI RADS breast density category 3 and BI RADS breast density category 4 help the patient to avoid, delay in diagnosis and management of breast diseases.

PATIENTS AND METHOD

Between 1st October 2004 to 30th June 2005, 100 women (age range, 30 – 60 years; mean age 45 years) referred from physician for base line mammography for HRT (Hormone Replacement Therapy) or for mammography for palpable abnormalities of breast. Ultrasound of breast was performed in all patients who had heterogeneously dense breast tissue (BIRADS breast density category 3) or (BIRADS breast density category 4), with clinically no abnormality or palpable abnormality with negative mammogram. Technologist performed mammogram and either resident or radiologist checked the films and at the same time they decided for ultrasound of breast. Patient was informed of the recommendation of bilateral ultrasound on the basis of dense breast tissue on mammogram. Mammogram were obtained with dedicated mammography unit (Metaltronica Flat Se). Dedicated image- receptor system (film- screen combination) (Konica) were used. Routine cranio caudal and oblique views were obtained in all patients and if required, cone compression or magnification views also obtained. Ultrasound examinations were performed by experience radiologist who had interpreted the mammograms of that patient .Ultrasound performed by using a high frequency (7.5 MHz) linear array transducer with a ultrasound unit (Aloka Ssd 1400/Toshiba Nemio 20) .All examinations were performed in supine position with arms raised. Scanning performed either in transverse and longitudinal or in radial and antiradial planes. The mean time required for ultrasound is 15 minutes with range of 30 minutes. Images obtained and the lesion classified as simple cyst, complex cyst, and solid benign nodule/mass, solid malignant nodule/mass and solid indeterminate nodule/mass. Simple cyst is defined as entirely anechoic mass with smooth wall & posterior wall enhancement. A mass considered to be complex cyst, if it appears as anechoic multiloculated mass with septa. Solid mass is divide into three category, A mass considered to be solid benign if it appear as intensely hyper echoic, had ellipsoid shape, gentle bi or tri lobulation with thin echogenic pseudo capsule. Solid malignant mass considered if it appear as markedly hypo echoic with shadowing, had speculation, angular margins , branch pattern, ductal extension , microlobulation and calcifications, if malignant feature were not found and non of benign features was seen then the lesion classified as Indeterminate. We compare our sonographic findings with literature[4] and calculate the sensitivity of ultrasound breast to detect the lesion in patients having heterogeneously dense breast tissue (BIRADS breast density category 3) or (BIRADS breast density category 4), with clinically no abnormality or palpable abnormality and negative mammogram.

RESULTS

Bilateral mammogram and ultrasound of 100 patients were performed. Seventy eight patients came for routine mammogram before starting HRT, and 22 patients had breast abnormality including 15 patients had nodule, 3 patients had nipple discharge and 4 patients had mastalgia. In all mammograms the breast density were BI RADS breast density category 3 & category 4. No suspicious lesion or abnormality was detected on mammogram. Out of 100 patients, 58 patients had normal breast ultrasound. in which 45 (77 %) patients who had HRT group and 13 (23 %) patients from clinically breast abnormality group. Out of 100 patients, 42 patients had abnormal ultrasound findings despite of negative mammogram, in which 33 (78 %) patients from HRT group and 9 (22% patients from clinically breast abnormality group. Out of 42 patients 15 (35%) had cystic lesions and 27 patients (65%) had solid lesions, in which 11 (73 %) from HRT group, 4 (27 %) from clinically breast abnormality group, 22 (82 %) from HRT group and 5 (18 %) from clinically breast abnormality group respectively. Out of 15 patients who had cystic lesions, 12 (80 %) had simple cyst and 3 (20 %) had complicated cyst. Out of 27 patients who had solid lesions, 20 (74%), 2 (7%) and 5 (19%) had benign, (Fig.1A, 1B) malignant and indeterminate characteristic features respectively as compare with features described in literature[4]. The sensitivity of ultrasound to detect the abnormality correctly in patients who had BI RADS breast density category 3 and category 4 on mammogram is 89%.

DISCUSSION

The incidence of carcinoma breast increases with increasing age[9]. The breast cancer mortality rate has been greatly reduced by the mammographic detection of early, non palpable breast cancer. In women with radiologically dense breasts the sensitivity of mammographic detection is reduced because breast cancers have an x-ray attenuation that is similar to that of glandular and fibrous elements, and the malignant features of a no calcified breast cancer might go undetected when the cancer is within an area of fibro glandular tissue. Therefore the denser and more complex the mammographic pattern, the less confident we are in

Fig 1A: Cranio caudal view of right breast. *Normal mammogram.* (BI RADS density category 3)

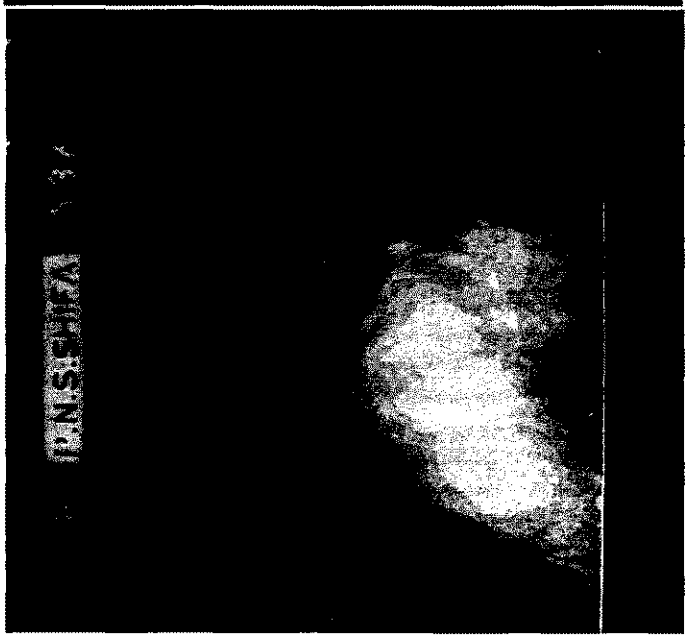
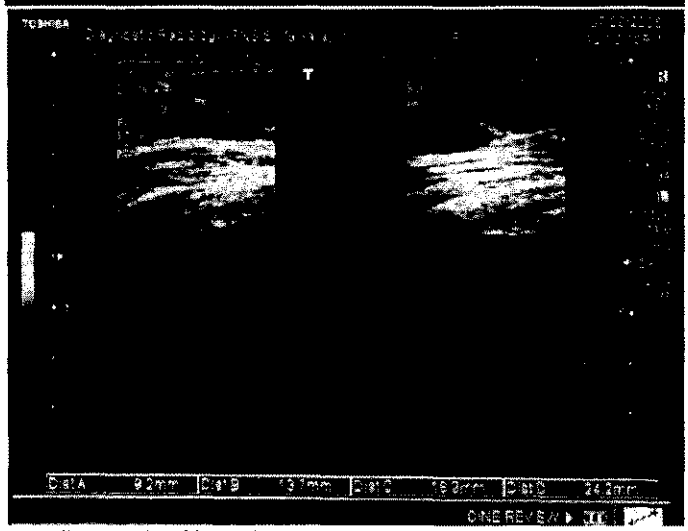


Fig 1B: Multiple Fibro adenoma- Ellipsoid shape, smooth wall and well defined homogenous masses with lobulation.



our diagnosis. Also, dense breast pose inherent technical problems for optional mammography, which may lead to reduced image contrast, increased motion unsharpness from longer exposure times, difficulty in optimally depicting all areas of the breast and possibly diminished spatial resolution. Since a false negative mammogram may lead to a delay in the diagnosis and treatment of breast cancer. The newer high-resolution ultrasound machines and probes are capable of high contrast and spatial resolution. The use of high –resolution sonography as an adjunct to mammography in women with dense breasts may lead to detection of a significant number of otherwise occult malignancies that are no different in size from non palpable mammographically detected malignancies .

The sonographic characteristic features we follow in our study were same and compare them with the features described in literature[4] and they are proved by follow up, biopsy and final diagnosis as in the literature [4] , so the features in literature become international standard to describe the breast lesion on ultrasound. The biopsy rate can be held within acceptable limits by using sonographic characteristics to define a subgroup with a risk of malignancy sufficiently low to allow imaging follow-up rather than biopsy because ultrasound imaging is beneficial against the cost, patient discomfort and possible morbidity caused by resulting increased number of biopsies.

We have used and compared the sonographic features describing the breast lesion in to cystic lesion (simple, complicated) and solid lesion (benign, malignant, indeterminate) of our study and literature[4] to get the result and they are also helpful to know the sensitivity of ultrasound to detect the lesion in BI RADS breast density category 3 and BI RADS breast density category 4.

Mammography and ultrasonography are complementary breast imaging techniques. Mammography is the standard for screening asymptomatic women, but it is well accepted that a cancer may be undetected mammographically when it is masked by surrounding dense breast tissue. It is accepted that ultrasonography can detect a palpable cancer that may be non visualized on mammography.[10-11].

CONCLUSION

The use of high resolution sonography as an adjunct to mammography in women with dense breast tissue (BI RADS breast density category 3 and BI RADS breast density category 4) on mammogram may lead to detection of a significant number of undetected masses. The classification of breast masses based on sonographic characteristics results in a significant reduction in cost, patient discomfort and possible morbidity caused by a number of unnecessary biopsies performed.

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DISEASE SPECTRUM IN CHILDREN PRESENTING WITH PROPTOSIS

SEEMA QAYYUM, ABID

ABSTRACT

Objective : *The aim of this study was to provide the reader an overview of the subject of childhood proptosis with an emphasis on the systematic and practical approach for the work-up of proptosis in children.*

Patient and Methods *All children with proptosis who presented to the department of Paediatric Ophthalmology of The Children's Hospital and Institute of Child Health Lahore were included in the study from January 2004 to December 2005.*

Results *A total of 64 patients were evaluated. There were 40 males and 24 females. Tumors were the most common (42.18%) cause of proptosis. Out of these vascular tumors, retinoblastoma and optic nerve gliomas were on the top of the list, followed by inflammatory diseases (28.15%).*

Conclusion: *Detailed history and clinical examination remains the most useful tool to reach the correct diagnosis. Radio imaging plays an important role in coming to a diagnosis. Tumors form the most common cause of proptosis in our study followed by inflammatory lesions. A systematic and multidisciplinary approach is mandatory in managing a child presenting from proptosis*

KEY WORDS:- *Children, Proptosis*

INTRODUCTION

The term proptosis is usually used to describe eye prominence due to space occupying lesions whereas exophthalmos is used to describe eye protrusion due to thyroid orbitopathy and exorbitism is due to shallow orbits. In general, tumors located superficially around the orbit present as subcutaneous masses while tumors located deep in the orbit present with proptosis. Congenital lesions such as choriostomas, teratomas, and capillary haemangioma usually present early in the first decade of life. On the other hand, acquired orbital lesions such as lymphangioma, orbital varix, rhabdomyosarcoma and optic nerve gliomas may present at the end of the first decade of life.

Orbital tumors may present with globe displacement, visual acuity changes and congestion. When the tumor is located in the intraconal area the proptosis is usually axial, an extraconal mass may present with non-axial globe displacement, as in processes involving the lacrimal fossa area. Metastatic tumors to the orbit, adenocarcinoma of lacrimal gland and rapidly growing masses may present with proptosis associated with pain. Visual loss may be the presenting symptom in patients with gliomas, orbital meningiomas and posteriorly located tumors.

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PATIENTS AND METHODS

This study was conducted in the Department of Paediatric. Ophthalmology in collaboration of the Radiology of The Children's Hospital and Institute of Child Health Lahore from January 2004 to December 2005. A special performa was designed for data collection, history and record of subject patients. A total of 64 patients of both sexes with equal or less than 15 years of age presenting with proptosis and swelling in and around orbit attending the outdoor clinic of the Deptartment of Paediatric Ophthalmology were included in the study. A meticulous history of the patient's ocular and systemic

systems was taken, addressing the duration and the rate of onset of the proptosis. The patient was inquired about pain, change in visual acuity or refraction, diplopia, and decreased fields of vision. Patients' parents were specifically asked about transient visual loss or blackout periods as it may signify optic nerve compromise and may call for rapid intervention. History of past trauma and family history were taken in detail.

Complete physical evaluation of the patient was carried out. When concomitant sinus disease or an intranasal source was suspected, a speculum or endoscopic intranasal examination was asked for. Hertel exophthalmometry was used to quantitate proptosis. Auscultation of the orbit was done to detect a high flow state in the orbit.

Assessment of visual acuity in preverbal children was done by noting the fixation and following movements. CSM and response to occlusion of eye whereas in older children Snellen's chart or picture test was used. A note of pupillary reflex was made. Slit lamp examination was done. Dilated fundus examination with direct ophthalmoscope was carried out with special attention to the state of optic disc and blood vessels. A detailed systemic examination was asked for to rule out the presence of any associated systemic problem. Routine blood tests were asked for. MRI was carried out in all the patients and help of other radiological investigations such as x-ray and ultrasound was taken when required. Later MRI findings were verified against operative findings, excisional / incisional biopsy or clinical follow up.

RESULTS

The age of patients ranged from 0 month to 13 years, 62.5% of patients were under 5 years of age. Out of 64 patients, 40 were males and 24 were females with a male to female ratio of 5:3. Fifteen cases had an acute onset i.e. duration of proptosis was < 1 month. 12 cases within 1 to 3 months and 23 cases presented with more than 2 months duration. Among the 64 cases, tumors accounted for 42.18%, inflammatory lesions 28.15%, and congenital anomalies 14% and trauma in 6.2%. Vascular lesions were the most frequent orbital tumor among the total orbital lesions i.e. 18.9% followed by optic nerve tumor 9.3%%. Retinoblastoma was 6.2% while muscular tumor was 6.4%. Hemopoitic reticuloendothelial system tumors formed 14.06% of total orbital lesions. Craniofacial anomalies 7.8%, dermoid cyst 4.6% of total lesions. Inflammatory causes were divided into infectious and non-infectious groups. Among the infectious group 7.8% were secondary to sinusitis and 15.6% due to spread from local infection. Non-infectious group formed 6.4% of total cases (Table I).

Table I Type of Lesions Causing Proptosis

Type of lesion	No. of cases
Vascular tumors	7 (10.93%)
Neurogenic tumors	5 (7.8%)
Retinoblastoma	4 (6.25%)
Infectious lesions	18 (28.1%)
Pseudotumor	3 (4.6%)
Blood dyscrasias	9 (14.06%)
Rhabdomyosarcoma	3 (4.6%)
Lacrimal Origin	3 (4.6%)
Dermoid	3 (4.6%)
Craniofacial anomalies	5 (7.8%)
Post-traumatic	4 (6. 25%)
Total	64

DISCUSSION

Sixty four patients up to the age of 13 years were investigated and included in the study. Abnormalities of the orbit in childhood may result from developmental anomalies, or may be acquired from orbital disease. Developmental abnormalities may be confined to the orbit or be part of a more widespread craniofacial malformation[1]. The relative frequencies of the conditions causing proptosis in childhood vary considerably in different series depending in part on the source of material. Series from eye hospitals are different from those from neurosurgical or pediatric units. Geographical factors are also important[1]

Age at the onset of a condition is important in pediatric diagnosis because of the narrow age spectrum of some conditions, as well as the more limited number of lesions that may appear. The age in our study ranged from 4 months to 13 years. Forty patients were under 2 years of age whereas 24 were between the ages of 5-13 years. In our study, majority of patients (70%) developed proptosis over a period of months. This is in agreement with Rootman[5] who reported chronic onset of disease in 60%

of cases. Acute onset of proptosis was largely due to trauma and acute inflammatory lesions.

The orbital tumors were the top most causes of proptosis in our study i.e.42.18%. Khan AA[2] showed this figure to be 54.5% in their study 6 which is quite comparable to our study. Among the orbital tumors the vascular tumors formed 10.9 % of total orbital lesions. This is in contrary to previous study, our hospital is a tertiary care center and so it could be because of referral bias. Mahsud[6] in their study found it to be 2.0%. 5 cases of capillary haemangioma were detected making it 7.8% of total orbital lesion. Khan etal[2] found it to be 5.4% of total orbital lesions. Capillary haemangioma occurs primarily in infants during the 1st years of life. In our study, the earliest patient suffering from capillary haemangioma was one day old. These tumors are more compressible than those in adults, as connective tissue capsule does not develop till later in life. Second in frequency in our study among orbital tumors leading to proptosis were optic nerve tumors i.e. 9.3% of total orbital lesions. Comparison with the study by Khan etal[2] showed optic nerve tumors to be 18% of the total orbital lesion. The age at presentation mentioned in the literature is during first decade and loss of vision is the first symptom. In our study, the mean age of the patients was 9.3years.

Four patients i.e. 6.24% of total orbital lesions were found to be suffering from retinoblastoma this is in contrary to the study conducted by Mahsud et al.[6] This may be due to the reason that we have included only those patients in our study who presented with proptosis. Most of the patients in our setup present early. Rhabdomyosarcoma was the most common primary orbital malignant in the pediatric age group with most presenting below 6 years of age.[3] In our study, they formed 4.6% of total orbital lesions with mean age of 8 years at presentation. Khan et al[2] showed rhabdomyosarcoma to be 5.4% of all orbital lesions. In contrast, this figure is higher in 2 similar studies from Sydney[4] and Morocco[7] giving a value of 12.2 and 16% respectively.

There were 9 cases of bilateral orbital leukemic infiltration making it 14.06% of total orbital lesion. Khan et al[2] showed leukemic infiltrates to be 5.8% of all orbital lesions. This high figure is again due to referral bias. 3 cases of intraconal dermoid were identified were identified i.e 4.6% of total orbital lesions.

After orbital tumors the second most common orbital pathology in children was inflammatory disease process (28.15%) which was further divided into infectious and non-infectious groups. The infectious conditions usually occur secondary to direct injury or spread from an adjacent focus particularly the paranasal sinuses or face. Reider et al[8] demonstrated in their study the concomitant orbital and paranasal sinuses involvement. MRI findings were of help in evaluating the extent of the disease processes. In our study, 7.8%% were secondary to paranasal infection whereas 15.6% were due to direct infection. In non-infections category 3 cases (4.6%) were due to idiopathic orbital inflammatory disease (pseudotumor) with bilateral involvement. All of them showed improvement with oral steroids. Khan et al[2] showed inflammatory causes to be 19% of total orbital lesion while Sindhu et al showed that the most common cause of proptosis is children presenting to their institute was infective orbital cellulites and the most useful initial investigation was an orbital computed tomography.
There were 5 cases (7.8%) of craniofacial anomalies. Traumatic lesions also behave like tumors. In our study, 4 patients presented with proptosis secondary to trauma and displacement of eyeball was due to organized hematoma in the orbit. Overall traumatic lesion formed 6.2% of the total orbital lesions. Khan et al[2] showed this figure to be 5.5% in his study whereas mahsud et al[6] showed it to be 5.5%.

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COMPLICATIONS OF LAPAROSCOPIC CHOLECYSTECTOMY: A LEARNING CURVE

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ABSTRACT

Objective *The objective of the study was to find out the rate of complications of laparoscopic cholecystectomy being performed by trainees under supervision.*

Design *Case Series*

Place and Duration *Study was conducted in Surgical unit –1 (ward –3) of JPMC karachi from November 2001 to November 2005.*

Patient and Methods *All the patients above twelve years of age of both sexes were admitted for laparoscopic cholecystectomy after evaluation in the outpatients department who were diagnosed as cases of chronic cholecystitis with cholelithiasis.*

Results *A total of 620 patients were included in the study. Biliary complications were 0.16% and non biliary 0.8% . Vascular injury , diaphragmatic injury and pneumothorax did not occur in our study.*

Conclusion: *Complications of laparoscopic cholecystectomy in the hands of trainees can be minimized by adhering to the principles of good laparoscopic surgery.*

KEY WORDS:- *Laparoscopic cholecystectomy , Complications of laparoscopic cholecystectomy.*

INTRODUCTION:

The most important complications of laparoscopic cholecystectomies are biliary tract injuries. Intraoperative non biliary injuries during laparoscopic cholecystectomy occur as frequently as biliary injuries and can be life threatening and difficult to manage. Incidence of biliary injuries (0.6%) is similar to non biliary injuries (0.5%)[1]. Injuries to extrahepatic biliary tree during laparoscopic cholecystectomy causes major morbidity[2,3] and laparoscopic cholecystectomy is associated with higher incidence of bile duct injury than open cholecystectomy 3.Operative cholangiography is not a pre-requsite for the safe performance of laparoscopic cholecystectomy and cannot be relied upon to prevent all biliary injuries [4].

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Our objective of study was to find out the complications rate of laparoscopic cholecystectomy in hands of doctors in surgical training both senior registrars and residents working under supervision .

PATIENTS AND METHODS

All patients over 12 years of age were included in the study. Patients diagnosed as chronic cholecystitis with cholelithiasis , admitted after complete evaluation in OPD and their laparoscopic cholecystectomy done under supervision of consultants.The patients with minor bleeding that was controlled early during surgery and did not require conversion and the spilled stones which were retrieved also not included as complications.

RESULTS

A total of 620 patients were included in the study. The conversion rate due to complications when Calot triangle was distorted because of adhesions was 6.13%. Incidence of non biliary injury was 0.8%, which is more

than biliary injury 0.16%. In 20 laparoscopic cholecystectomies , gallbladder ruptured during removal from the gallbladder bed, but we successfully retrieved all the spilt stones from the peritoneal cavity into retrieval bags. Bleeding from cystic artery after slippage of liga clip and minor bleeding from gallbladder bed were successfully controlled with little effort.

Two cases got liver laceration due to penetration by the grasper were managed by applying pressure over the bleeding site using guaze piece and grasper instrument. Duodenal and colonic injuries occurred during dissection of Calot's triangle due to adhesion and distorted anatomy. One patient had duodenal fistula with gallbladder, so open cholecystectomy and primary repair of duodenum was done. One case of CBD injury was identified during surgery in whom hepaticojejunostomy was done and postoperatively it was confirmed with HIDA scan that anastomosis was working well (Table I).

Table I Complications of Laparoscopic Cholecystectomy.

S.No	Complication	No. of Patients	Percentage of Complications
1.	Bile duct injury	1	0.16 %
2.	Duodenal injury	2	0.32 %
3.	Colonic injury	1	0.16 %
4.	Laceration of liver	2	0.32 %
5.	Port site infection	30	4.83 %
6.	Port site hernia	1	0.16 %
7	Conversion	38	6.13 %

Total No. of patients = 620

DISCUSSION

Identification of duodenal or colonic injuries during surgery is life saving. Incidence of laparocsopic cholecystectomy complications in our series was quite low. Our non biliary complications were 0.8 % and bile duct injury was 0.16 %. The reason behind more of non biliary complications presence of dense adhesions in which cystic pedicle was not visible. Trail dissection in some cases failed and we converted them into open cholecystectomy. But still our conversion rate was 6.3 % which is less than other studies. 1 Mr .Mohnihan said that the hand of starting surgeon is always heavy, but we proved otherwise as over period of time complication rate decreased.

Injuries to the extrahepatic biliary tree in laparoscopic cholecystectomy cause major morbidity and are major source of litigation. Injuries are often diagnosed late leading to further complications and decreasing the chance of a successful repair. In our study one patient sustained bile duct injury which was identified on the table and hepaticojejunostomy was done.

Intrahepatic nonbiliary injuries during laparoscopic cholecystectomy occurs as frequently as biliary injuries and can be life threatening and difficult to manage. We recognized duodenal and colonic injuries and managed during surgery with good results. Now after laparoscopic cholecystectomy we routinely examine the duodenum and colon.

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EVALUATION OF LEVELS AND PATTERNS OF SPINAL CORD INJURIES IN THE EARTHQUAKE VICTIMS

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ABSTRACT

Objective *To determine the extent of spinal cord injuries among patients affected by the earth quake of October 8th 2005 in Pakistan.*

Design *Cross-sectional study*

Place and Duration *The study was conducted from 10th October to 10th December 2005 in surgical and neurosurgical units of Rawalpindi Medical College and allied hospitals (Holy family hospital, Rawalpindi general hospital and District Headquarter hospital) and Melody relief and rehabilitation center, Islamabad.*

Patient and Methods *Level and patterns of spinal cord injuries was evaluated according to ASIA (American spinal injuries association) scoring system in one hundred and ninety four patients. Stability of spine and number of patients operated for spinal cord injuries was also assessed.*

Results *One hundred and ninety four patients comprised of 74%(n=144) females and 26%(n=50) males.78%(n=151) patients were of 16-39 yrs of age.62%(n=120) of patients had injury at lumbar level,25%(n=48) at thoracic level,9%(n=18) at thoracolumbar level, a few had injuries at cervical and sacral level.46.4%(n=90) patients had spinal cord injuries which were graded "A" according to ASIA scoring system.4.12%(n=8) graded as "B",10.82%(n=21)graded as "C",9.2%(n=18) graded as "D"and 13.91%(n=27) graded as "E".69%(n=134) patients' spine was stable and 31%(n=60) had unstable spine.77 %(n=150) patients were operated and in 23 %(n=44) patients, operation was not indicated.*

Conclusion: *Majority of spinal cord injuries occurred at thoracolumbar level leading to paraplegia. Those with ASIA score "A" would be bedridden for life. Proper rehabilitation programs should be inculcated to enable them to live an independent life.*

KEY WORDS:- *Spinal cord injuries, levels, ASIA scoring system*

INTRODUCTION

Patients with spinal cord injury (SCI) usually have permanent and often devastating neurologic deficits and disability. According to the National Institutes of Health, "among neurological disorders, the cost to society of automotive SCI is exceeded only by the cost of mental retardation."[1] In the earth quake of October 8th, 2005, about 600 patients suffered from spinal cord injuries[2] and many of them developed paraplegia. This is a large number as compared to earthquakes of Bam in Iran[3] (300) and Bhuj in India [4](108). In this study we document our experience of assessing these patients in relation to spinal cord injuries.

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PATIENTS AND METHODS

This cross-sectional study focussed surgical and neurosurgical units of Rawalpindi Medical College and

allied hospitals of which are Holy Family Hospital (HFH), Rawalpindi General Hospital (RGH) and District Headquarters Hospital (DHQ). Study was also conducted in Melody Relief and Rehabilitation Center Islamabad over a period of two months from 10th October to 10th December 2005.

Data of one hundred and ninety four (one hundred and twenty two in Rawalpindi medical college and allied hospitals and seventy two in Melody relief and rehabilitation center, Islamabad) earthquake victims who suffered from spinal cord injuries was collected. The data included age and sex distribution, level of injuries and patterns of injuries according to ASIA scoring system[5]. Stability of spine in these patients was assessed and data about the number of patients undergoing spinal cord surgeries was also collected.

RESULTS

One hundred and forty four patients with spinal cord injuries were admitted to Rawalpindi medical college and its allied hospitals of which twenty two were discharged very early and therefore could not be included in the study. One hundred and twenty two patients in Rawalpindi Medical College and allied hospitals and seventy two patients in Melody relief and rehabilitation centre, Islamabad comprised of 74 %(n=144) females and 26 %(n=50) males;77 %(n=151) were of 16-39 yrs of age. 62 %(n=120) of patients had injury at lumbar level;. 24.74% (n=48) patients had injury at thoracic level; 9.27% (n=18) patients had injury at thoracolumbar level and 2.57% (n=5) suffered from spinal cord injury at cervical level. 46.4 %(n=90) patients had spinal cord injuries which were graded "A" (no sensory and no motor function) according to ASIA scoring system.

69 %(n=134) patients' spine was stable and 31 %(n=60) patients' spine was unstable.77 %(n=150) patients were operated0 and in 23 %(n=44) patients operation was not indicated.

DISCUSSION

In this study it was found that females are more affected than males as at the time of the disaster they were mostly at home and were trying to protect their children from collapsing roof. Majority of patients (77%) were of 16-39 years of age. From 1973 to 1979, the average age at injury was 28.7 years, and most injuries occurred between the ages of 16 and 30.[6]

The most common level of injury was lower thoracic and upper lumbar level because of junction between the stiff thoracic spine and the mobile lumbar spine.46.4% of patients were graded "A" according to ASIA scoring system[5], i.e. they have no sensory and no motor function below the level of spinal cord injury. The most common type of injury on admission is ASIA level A.[7] Patients with a complete cord injury have a less than 5% chance of recovery. If complete paralysis persists at 72 hours after injury, recovery is essentially zero[1]. 4% were graded "B" i.e. sensory intact but no motor function; if some sensory function is preserved; the chance that the patient will eventually be able walk is greater than 50%.11% graded "C" i.e. sensory present, motor present but not useful; 9% graded "D" i.e. sensory present, some useful motor function present and 14% were graded "E" i.e. normal sensory and motor functions present. Currently, the 5-year survival rate for patients with a traumatic quadriplegia exceeds 90%. The hospital mortality rate for isolated acute spinal cord injuries is low.[1]

69% patient were having stable spine while 31% unstable. The stability of spine depends on: level of injury, anterior element/structure (body) disruption, posterior element/structure (pedicle) disruption, type of fracture, cord injury, root damage, abnormal disc narrowing and soft tissue damage.[8]

Patients with unstable spine were provided with thoracic jackets and plaster of paris casts as unstable fractures are best treated with posterior stabilization of the spine. Spine immobilization should continue until in such victims the spine can be stabilized or until healing has occurred.[8]

77% patients of spinal cord injuries were operated and in 23%, operation was not indicated. Depending on local policy, patients with acute spinal cord injuries are best treated at a regional spinal cord injury center. Once stabilized, early referral to a regional spinal cord injury center is best. The center should be organized to provide ongoing definitive care. Other reasons to transfer the patient include the lack of appropriate diagnostic imaging (CT scanning or MRI) and/or inadequate spine consultant support (orthopedist or neurosurgeon). Orthopedic and/or neurosurgical consultants should determine the need for and timing of any surgical intervention.[1] The role of immediate surgical intervention is limited. Impingement of spinal nerves from injuries, such as facet dislocation or cauda equina syndrome, requires emergent surgical intervention.[9]

The best that can be done for the paraplegic patients is to carry out effective medical, psychological and social rehabilitation programs. Medical rehabilitation includes, physiotherapy, wheelchairs, standing and walking using tilt table or oswestry stand frame, if level of injury is L2-L4 below knee crutches will enable walking to take place.[10] Psychological rehabilitation includes, good listening, don't give false hope, validate their feelings, indulge them in

healthy activities, and encourage them in performing their own work like eating by themselves and alike. Social rehabilitation includes; enhancement of personal skills of patient, teaching of skills to earn livelihood and sports. With regard to the quality of life it is also important that the ill person succeeds in maintaining a positive self-perception. This may be one of the most important adjustment processes after the occurrence of the disability, which, again, depends on ways of coping with illness, defence styles and possible developmental delays. In the psychosocial field, quality of life is defined by contentment with the special methods of educational and professional rehabilitation, in particular during the rehabilitative phase. In the psychosocial field it is also of importance whether the ill person succeeds in forming friendships, which may be seen as a basis of social integration, because social isolation can impair the quality of life severely. A satisfactory organization of leisure time is also important. [11]

These patients need proper attention and a lot of efforts have to be put in their rehabilitation. Availability of funds is the major problem in long term care of these patients as most of them are not going to recover, maybe... for life.

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VARICOCELECTOMY PERFORMED UNDER LOCAL ANAESTHESIA

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ABSTRACT

Objective : *To report a series of varicocelectomy performed under local anaesthesia.*

Design: *Interventional study.*

Place and Duration *Fatima Hospital Karachi from April 2003 to April 2006.*

Patient and Methods *Thirty consecutive patients with varicolcele were included in this study. All patient were evaluated with a complete clinical history, physical examination and scrotal ultrasonography to assess the testicular volume and to confirm varicocele.*

Results *All surgeries were done on day care basis. About 76 patients had grade II varicocele. 0.5% xylocaine with adrenaline (1:200000) was used for local infiltration Post operative pain level was assessed with visual analog scale (VAS). It varied from 10mm to 30mm with an average of 21.3. No intra-operative complications occurred. All patients were discharged within 12 hrs after surgery. Overall 5 patients had minor complication: 2 had scrotal haematoma, 3 had surgical wound infection one patient had flank pain for 24 hours.*

Conclusion: *This study has shown varicocelectomy under local anaesthesia to be possible, simple, cheap, reliable and a safe method with minimal complications.*

KEY WORDS:- *Local anaesthesia, varicocelectomy, varicocele.*

INTRODUCTION:

The incidence of varicocele has been reported to occur 9-22 % of young adult males[1]. Several studies confirmed an association between varicocele and subsequent testicular damage, reflected by loss of testicular volume and male infertility[2]. The successful surgical treatment of varicocele results in increased testicular growth within a year of correction, with an improvement in the sperm count and sperm quality[3]. Varicocelectomy is a well excepted and well-describe procedure and its indication and methodology have long been established[4]. The most common surgical methods are the high ligation of the testicular vein according to Palomo, either open or laparoscopically, the ligature of the testicular veins by the classic inguinal approach according to Ivanissevich, the microscopic inguinal approach as described by Goldstein, retrograde percutaneous sclerotherapy and recently antegrade sclerotherapy according to Tauber and Johnsen[2,3,5]. There is no consensus on which operative approach is best suited for the adolescent with a varicocele, it is imperative to weight the advantages and disadvantages of a given therapeutic method before adopting its use[6].

We report our experience in treating varicocele using inguinal ligation of testicular vein under local anaesthesia with or without sedation. It offers the advantages of cost-saving, simple, safe, reliable and rapid return to normal life.

PATIENTS & METHODS

This is an interventional study of consecutive 30 patients who presented with primary varicocele at Fatima Hospital, Karachi over a period of 3 years from April 2003 to April 2006. Age distribution was between 15 years to 40 years, with a mean age of 22.4 years. All patients were having left sided varicocele. All patient were evaluated with a complete clinical history, physical examination and scrotal ultrasonography to assess the testicular volume and to confirm varicocele.

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All procedures were performed in well-equipped operation theatre with anaesthetist coverage. Intravenous line maintained and low-dose I/V sedation were given in 50% patients, while half of the patients did not require sedation. 0.5% xylocaine with adrenaline (1:200000) was used for local infiltration. A 23-gauge disposable needle connected to a 10ml syringe was used to inject the local anaesthesia. Initially the injection was given superficially, relative to the aponeurosis of the external oblique muscle, subsequent injection were given into a deeper layer whenever necessary. The total lignocaine consumption ranged from 250 to 325 mg. with an average of 283.33 mg. Inguinal cord being opened and spermatic cord delivered. The main mass of dilated veins are freed from surrounding structures and then excised between ligatures about 3-5cm distance between ends. All patients were discharged after 12 hours of surgery and re-examined after one week.

RESULTS

All procedures were performed as day case surgery. No patient required general anaesthesia during surgery. The mean operative duration was 30 minutes. The distribution of varicocele reflex grade is shown in table 1.

Table I — Grades of Varicocele

Varicocele	Grade – I	Grade – II	Grade – III
Total (30)	5 (20.6%)	23 (76.6%)	2 (6.6%)

Post operative pain level was assessed with a 100mm visual analog scale (VAS) at immediately after surgery then 02 hourly till discharged. The VAS scores varied from 10mm to 30mm with an average of 21.3 that was regarded as tolerable. No intra-operative complications were recorded. All patients were discharged within 12 hours after surgery and reported being fully satisfied with the minimal disturbance and the rapid return to work (3-4 days). Overall 5 patients had minor complication: 2 had scrotal haematoma, 3 had surgical wound infection one patient had flank pain for 24 hrs. Only 5 patients were examined after 6 months of treatment no complication were found in these patients.

DISCUSSION

In the world Health Organization study, the incidence of varicocele was 25.4% in men with abnormal semen and 11.7% in men with normal semen. Varicoceles are the most common and easily correctable cause of male factor subfertility, with varicocelectomy resulting in seminal improvement and natural pregnancy in 60 to 80%and 20 to 60% of couples, respectively. If left untreated, varicoceles are associated with a progressive decline in seminal parameter[2]

Varicocele can be ligated in the adolescent with few significant surgical complications[5]. The main reported complications after varicocelectomy are recurrence/persistence of varicocele, hydrocele formation and testicular atrophy. To avoid these complications many techniques has been described with their advantages and disadvantages. When selecting a surgical technique, the optimum procedure should be the one with the best results that is the lowest failure rate and the less risk of complications[6,7,8].

With high ligation of testicular vein, using an open approach, the reported recurrence rate is 4.4 to 14% and has significant hydrocele formation rate, as compared with inguinal ligation of vein. Although this complication can be reduced by laparoscopic procedure. [3]. Recently adolescent varicocele has been repaired by microsurgery described by Goldstein et al .[9] In our study there was meticulous dissection of tissues and a precise manipulation of vessels under local anaesthesia. There was no need for any special equipment therefore this was time saving procedure and can be used in any hospital.

In conclusion, the procedure of varicocelectomy under local anaesthesia is effective, reliable, safe, and simple method with minimal complications. It offers the advantages of a lower morbidity, a low cost and a rapid return to work.

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CHILDHOOD NEPHRECTOMIES FOR BENIGN RENAL LESIONS

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ABSTRACT

Objective *To conduct an audit of of nephrectomies done in children for benign renal pathology.*

Design *Evidence based study.*

Place and Duration *National Institute of Child Health, Karachi , during the year 2004-2005.*

Patient and Methods *The record of all the paediatric age group patients undergoing unilateral nephrectomy for benign renal diseases over a 2-year period were reviewed for the underlying diagnosis and indication for nephrectomy. Patients of Wilms' tumor subjected to nephrectomy were excluded.*

Results *In the study nephrectomy was carried out in a total of 12 patients. There were 8 males and 4 females. The age range was 4 to 12 years. Nephrectomy was performed for renal tuberculosis in 5, pelvi-ureteric junction obstruction (PUJO) in 5, congenital hypoplastic kidney in 1 and one for multicystic dysplastic kidney.. All the patients following nephrectomy remained well in the immediate post operative period and thereafter.*

Conclusion: *Late presentation and delay in diagnosis of benign lesions of the kidney remained the main culprit in loosing a vital organ in childhood.*

KEY WORDS:- *Nephrectomy, Children, Benign renal lesions.*

INTRODUCTION

Nephrectomy in childhood is a major undertaking as the child has to spend rest of his life with remaining one functioning unit. Moreover, if renal function is lost in the remaining kidney, the patient will require chronic dialysis treatment or transplantation of a healthy kidney to sustain life.[1] it is therefore mandatory to search for early diagnosis and provide expectant treatment in suspected cases. The common indications of nephrectomy are; any conditions leading to end stage renal disease like childhood kidney tumors, cystic diseases of the kidney and serious renal infections.

Renal tuberculosis is a rare disease in children. It poses major diagnostic problems because of clinical symptoms, which are often atypical and misleading.[2,3] Pelvi-ureteric junction obstruction though easy to diagnose due to the presence of hydronephrosis, may be missed if it remains asymptomatic or the symptoms overlooked by the treating doctor or due to the delay in seeking advice. Nephrostomy is often an urgent and simple method of initial management of patients with obstructive renal failure. It has been reported that PUJO and vesico-ureteric obstruction (UVJO) are the most frequent indications for as many as 87% of percutaneous neprostomy (PN). It is also reported that this procedure provides clear improvement in biochemical imbalance and clinical symptoms and allows crucial time until definitive treatment is offered.[4,5]

The purpose of this study was to analyze benign lesions leading to end stage renal disease in our group of patients who underwent nephrectomy.

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PATIENTS & METHODS

All patients who had any pathology related to kidney, leading to end stage renal disease and ultimately undergone nephrectomy, were included in the study. Data collected regarding presenting complaints and age at presentation. All of them were subjected to baseline investigations i.e. blood CP, urine DR, blood urea, serum creatinine, ultrasound for the diagnosis and IVuU and renal scintigraphy for the assessment of split renal function (SRF) as per requirement. Nephrostomy trial was also given in selected cases.

RESULTS

A total of 12 patients underwent nephrectomy over a period of 2 years for benign renal lesions. There were 8 boys and 4 girls with age range of 4 year -12 year. The major causes of end stage renal disease observed were PUJO and renal tuberculosis, each comprising 5 patients, whereas congenital hypoplastic kidney and multicystic dysplastic kidney were removed in 1 patient each.

All patients of PUJO (n=5) presented late. Youngest patient was 7 years of age and oldest was of 12 years. Male to female ratio was 4:1. Three presented with abdominal distension, later proved to have severe hydronephrosis and 2 with obstructive symptoms and evidence of UTI. Three out of 5 patients were given nephrostomy trial which initially responded with drainage of the urine from the involved kidney, but repeat renal scan did not show improvement in split renal function (SRF) thus removed later. In nephrectomised specimen virtually no functional tissue found in a flabby kidney. Out of 5 patients, SRF of the involved kidney was 0% in two, 5% in one, <10% in one and 10% in one.

Renal tuberculosis (n=5) the second leading cause found in children between the age groups of 4-12 years. Male to female ratio was 3:2 and the main presenting complaint observed was discharging sinuses in lumbar region. It was not responding to medical treatment. Ultrasound showed pyonephrosis in three cases and 2 patients also had renal stones. MAG 3 scan performed later showed non functioning right kidney in all 3. Another patient who presented with a large renal calculus investigated further with IVU showing non functioning kidney and DMSA revealed 0% function. One more patient referred from nephrology unit after treatment of renal failure with a renal scan showing 0% SRF of left kidney. Nephrectomy performed in all 5 patients and histology reported to be granulomatous lesion compatible with tuberculosis.

A 10 years old male child who presented with hypertension along with obstructive symptoms, on further investigation proved to have multiple renal stones with 0% SRF of left kidney. On exploration kidney was found small with no evidence of any underlying acquired infective process. Nephrectomy done and histopathology of nephrectomised specimen proved to be congenital hypoplastic kidney. Another 12 years old male child presented with a large renal calculus in left renal pelvis on radiological examination. Further on MAG 3 examination had evidence of non functioning multicystic left kidney.

DISCUSSION

This evidence report suggests PUJO and renal tuberculosis to be the real threats in progressing to ESRD in our group of patients, which is contrary to the western literature where these are rarely the indications for nephrectomy in children. In a study conducted on 45 patients with PUJO, 34 underwent pyeloplasty. Normalization of function observed only in children who were younger than 1 year old at surgery (n=11), during a minimum of 3 years of follow up.[6] This indicates importance of not only the early detection of the disease but also the early intervention, that helped in restoration of the kidney function in all the infants, whereas our study patients presented very late with age range of 7-12 years. Furthermore, there is a well known recommendation in relation to nephrostomy as an initial treatment to drain the system in a hope to regain the function and then to perform the surgical correction after 4-6 weeks. The similar strategy opted in 3 of our patients but what our findings were different from that of Aziz et al and Gupta et al.[7,8] They highly recommend nephrostomy to be the initial treatment in all the patients of PUJO with hydronephrosis, no matter which age they presented and even in the kidneys showing <10% SRF. None of the 3 patients in our study group improved following nephrostomy. One patient was lost to follow up and then turned up after 8 months and there was no improvement in SRF on MAG 3 scan. Looking at the compliance we abandoned nephrostomy in next 2 patients who had <10% function in the involved kidney and directly subjected them to nephrectomy. Hydronephrosis picked by the radiologist should be taken as an alarming sign in any child and must be referred to the pediatric surgeon readily for evaluation as this may be the only sign for worse outcome and patient may loose a vital organ.[9]

Establishing the diagnosis of renal tuberculosis is always difficult as observed in most of the studies. This leads to a delayed treatment and sequellae.[3,4] In our study, 3 patients were clinically suspected of renal tuberculosis due to the presence of multiple discharging sinuses in lumbar area. A high level of clinical suspicion is thus necessary for the diagnosis of urinary tract tuberculosis. Rest of the 2 patients had presented in a quite unusual way, one with a large renal calculus and on further evaluation proved to have non functioning kidney, the other patient also had non functioning kidney. Per operative findings were not

suggestive of tuberculosis but histopathology showed caseous lesion with granulomas.

During nephrogenesis, genes, transcription factors, and growth factors control the essential interaction between the ureteric bud and the metanephric mesenchyme. A heterozygous mutation defect of the growth factor bone morphogenetic protein 4 leads to genitourinary abnormalities, such as hypoplasia or dysplasia, ureterovesicular junction obstruction, hydronephrosis, or the bifid/duplex kidney. This is a defect of ureteric branching and not induction of the ureteric bud. Almost exclusively, congenital hypoplasia and dysplasia in infants and young children is due to developmental anomaly rather than destruction by malignancy or infectious processes.[11] In a report from Australia an otherwise healthy child who presented with hypertension and ureteric obstruction deteriorated with progressive loss of function in the right kidney. Nephrectomy solved the purpose.[10]

Management of unilateral multicystic dysplastic kidneys (MCDK) presents physicians and surgeons with a significant dilemma. Recent studies have indicated that the incidence of short term complications of MCDK is low and many authors have recommended conservative non-operative treatment. Surgery has been proposed by some because of the potential complications of hypertension, infection, and malignant change.[12] Patient of MCDK included in our study, presented in an unusual way. He had obstructive symptoms due to the presence of a stone at pelvis. Since the kidney showed 0% function thus decision of its removal taken.

In conclusion, renal tuberculosis observed in a fairly large number of patients which is surprisingly very high as a reason of removal of an important organ. Early diagnosis is the mainstay in restoring the function and save the kidneys in cases of PUJO. In this regard an organised referral system would help in achieving the goal.

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LAPAROSCOPIC SURGICAL CORRECTION OF RETROCAVAL URETER

ROY V. PATANKAR, ANIL BRADOO, RAMESH PUNJANI, ASHOK DHONDE, JIMMY C. JOHN

ABSTRACT

Laparoscopic transposition and reanastomosis of a circumcaval ureter was performed in 47-year-old man with right flank pain. The ureter was transected 2 cm. below renal pelvis and the ureter was relocated from behind the vena cava. The anastomosis was completed with interrupted sutures by intracorporeal knot tying. The postoperative convalescence was uneventful. The intravenous urogram obtained 8 weeks later revealed remarkable improvement in drainage of right kidney.

KEY WORDS:- *Key words: Laparoscopy, Ureteroureterostomy, Sea horse sign.*

INTRODUCTION

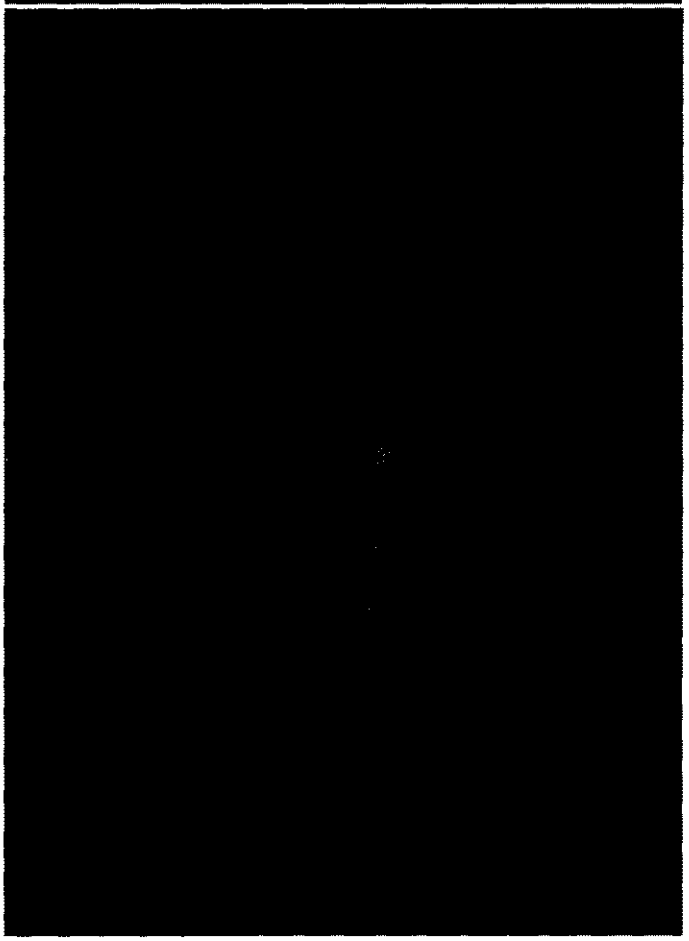
Conventionally, retrocaval ureter, which is a rare congenital anomaly, requires surgical correction, when the patient is symptomatic or develops significant obstruction. We present a minimally invasive laparoscopic approach to correct this anomaly.

CASE REPORT

A 47-year-old man presented with dull, persistent pain in right flank for 18 months duration. There was no history suggestive of urinary tract infection or other urinary symptoms. Intravenous urography showed delayed excretion and drainage of contrast and a classical Sea-horse sign confirming retrocaval ureter (Fig. I). Cystoscopy and retrograde urography confirmed our diagnosis. A zebra wire was placed beyond the obstruction and double J stent was inserted.

The patient was placed in right lateral position with 700 tilt. Pneumoperitoneum was achieved by open Hassan's technique. Four ports were utilized, a supraumbilical 10 mm. port for telescope, a 5 mm. port in right iliac fossa and 5 mm port in right midclavicular line. Fourth port was placed laterally in flank for retraction. Mobilisation of ascending colon was done adequately to bring the ureter and inferior vena cava into view. After achieving adequate ureteric mobilisation both above and behind the IVC, the ureter was transected 2 cm. below renal pelvis. The circumcaval segment of ureter was transposed anteriorly. Uretro-ureteral anastomosis was performed with 4-0 interrupted polyglycolic suture. Double J stent was positioned into renal pelvis. The position was confirmed on fluroscopy. A 16 F abdominal drain was inserted and operative site was extraperitonealised.

Figure: 1 IVP showing "Sea Horse Sign"



The total blood loss was < 100 ml and the surgery took

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205 minutes. Patient was ambulatory and on regular diet after 24 hours. Patient was discharged after removal of drain in 72 hours. Patient resumed normal activity within a week. The double J stent was removed at the end of 4 weeks. Intravenous urography done at 8 weeks revealed good drainage. The patient has continued to do well over last ten months.

DISCUSSION

Retrocaval ureter results because of abnormal persistence of right sub-cardinal vein instead of supra-cardinal vein. This causes the right ureter to encircle the inferior vena cava from behind. There are two anatomic types. In the first type, renal pelvis and upper ureter are almost horizontal as they pass behind inferior vena cava. Obstruction rarely occurs in this type. In the second type, the ureter descends normally up to the level of L3 and then curves back in the shape of reverse J to pass behind inferior vena cava. This type invariably results into obstruction. Diagnosis is easily confirmed by intravenous urography (sea-horse sign). Presence of obstruction is obvious by delayed excretion and drainage. Repair of retrocaval ureter has been traditionally performed by open surgical technique. With the advent of laparoscopy and reteroperitoneoscopy there is a change in trend towards the approach to tackle this anomaly[1]. Transperitoneal intracorporeal suturing has been found to be less time consuming and relatively easier than retroperitoneoscopic suturing[2]. With improved techniques it is possible to repair retrocaval ureter without any significant morbidity by laparoscopy[3]. Several advantages including decreased post operative pain and hospital stay, rapid recovery and a small cosmetic scar are the key to strongly recommend this technique[4].

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