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EDITORIAL:

INSTITUTIONAL ETHICAL REVIEW COMMITTEE

Health research plays a pivotal role in addressing inequities in health and human development.[1] Research is meaningless if it does not benefit the human kind or if the benefits are not available to everyone. Advances in biomedical research have helped by providing health care professionals new avenues to under stand, prevent and treat diseases. Advances on one hand, had a tremendous influence on the quality of life while on the other had also raised several ethical and human rights issues. Research that involves patients or health subjects carries tremendous potential for risk and harm to research participants. This potential is magnified when the research subjects are drawn from the vulnerable and disadvantaged members of the society. Blessings of research to health care can not be underscored but research can be precarious to human race when undertaken without attention to professional obligation and ethical standards.[2]

Ethical issue needs due consideration in the large benefit of vulnerable as well as resource-less individuals and a need to safeguard them. Concomitant with the use of modern technology there is a rise in the ethical and moral issues faced by Pakistani doctors in both health care and research. Human subjects are particularly at risk owing to non-existent or weak accountability at institutional and governmental level.[3]

To ensure the protection of human subjects there should be a careful ethical review of research protocol. The institutional review board (IRB) or independent ethics committee(IEC) are charged with the responsibility of ensuring that the associated research risks are reasonable in relation to the potential benefits and knowledge to be gained.[4] In Pakistan, the concept of IERC is rather new and not many organizations have IERC. However the future seems bright as the bioethical movement is picking up momentum as witnessed by an increasing number of workshops, seminars and special sessions on ethics in various symposia in recent years.

All proposals to conduct research involving human subjects must be submitted for review of their scientific merit and ethical acceptability to an ethical review committee (ERC) which is responsible for safeguarding the rights, safety and well-being of the research subjects. The committee determines whether the procedures proposed for obtaining informed consent are satisfactory and those proposed for the selection of subjects are equitable. The basic responsibilities of ERC are:

- to determine that the proposed research is scientifically sound.
- to ensure that all ethical concerns arising from a protocol are satisfactorily resolved.
- to ensure that researchers have a clear plan for protecting the confidentiality of the subjects.
- to determine that all proposed interventions, particularly the administration of drugs and vaccine or the use of medical devices or procedures under development are acceptably safe to be undertaken in humans.
- to consider the qualification of the investigators and the condition of the research site.
- to keep record of decisions and to take measures to keep follow up of the ongoing research projects.[4]

The committee should be so composed as to be able to provide complete and adequate review of the research proposals. ERC should be multidisciplinary in composition having numbers with relevant scientific expertise of balanced age and gender distribution. Lay persons qualified to represent the cultural and moral values of the community must be involved in ERC.

ERCs' are required to monitor the implementation of an approved protocol and it's progression and to report to institutional or governmental authorities any serious or continuing non-compliance with ethical standards. Failure to submit a protocol to the committee is a serious violation of ethical standards. Sanctions imposed by authorities possessing disciplinary power should be employed as a last resort. Preferred methods of control include cultivation of an atmosphere of mutual trust, education and support to promote in researchers and in sponsors, the capacity for ethical conduct of research.[5]

IERC should not function as a dictator but as a facilitator about research ethics. It should not be the purpose of IERC to reject proposals rather to guarantee that the proper ethical protections are in place and the rejection decisions is required for rare instances. In cases where the proposal is rejected, researchers should be encouraged to revise and resubmit the proposals.

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POSTERIOR URETHRAL VALVES: VARIED PRESENTATIONS & OUTCOME AFTER PRELIMINARY SURGICAL TREATMENT.

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NAIMA ZAMIR, TARIQ HUSSAIN, FARHAT MIRZA.

ABSTRACT

Objective *To find out various modes of presentation and outcome after preliminary surgical treatment of posterior urethral valves in pediatric population.*

Study Design *Descriptive study.*

Place & Duration of study *Surgical Unit B National Institute of Child Health, Karachi, during the years 2004-2005.*

Patients and Methods *All consecutive patients coming in outpatient / emergency departments, diagnosed as having posterior urethral valves and those who had received initial treatment and came for follow up, were included in the study. All the neonates underwent vesicostomy initially, followed by valve ablation at appropriate age with plan for undiversion at later date. In infants valve ablation was performed if urethral size admitted pediatric cystoscope while older children underwent primary valve ablation.*

Results *There were total of 22 patients managed during the study period. They included 5 neonates (0-1 month), 11 infants (1-12 months) and 6 older children (1year-12 years). The main presenting complaint in majority of neonates was inability to pass urine and one had urinary ascites. Infants presented mainly with either difficulty in passing urine (n 5) or dribbling and acute urinary retention in 2 patients' each. Majority of older children (n 3) presented with poor urinary stream and dribbling while two had diurnal enuresis and one came with straining at micturition.*

In all the neonates vesicostomy was performed. Out of these 3 received valve ablation therapy, followed by undiversion. Two of them improved while one had bladder dysfunction. Of the remaining 2 patients with vesicostomy, 1 is still waiting for definitive procedure while the other is lost to follow up. Of infant group, 8 were subjected to vesicostomy and valves ablated at later stage whereas 2 received primary valve fulguration therapy. One patient of this group died before any intervention performed. In older age group, 3 received valve ablation as initial treatment while 3 were lost to follow up before any intervention. Outcome assessed clinically, biochemically and radiologically. Out of total 22, four had not received any intervention. Of the remaining 18, treatment completed in 12 patients, 8 of these improved and 4 had residual disease. Two patients expired and 4 were lost to follow up.

Conclusions: *The overall improvement rate observed at the end of our study was 44%. In 22% patients there were still residual ongoing problems that need to be addressed on long term basis*

KEY WORDS:- *PUV, Children, Varied presentations.*

INTRODUCTION:

Posterior urethral valves (PUV) is a congenital anomaly which is the most common cause of bladder outlet obstruction in a male child.[1] It occurs in a spectrum, ranging from disease incompatible with postnatal life to that which is minimal and may not manifest until later in life. As the severity is variable so is its clinical presentation. The symptoms in neonates may be inability to void or a poor urinary stream. Respiratory distress due to pulmonary hypoplasia may be the only manifestation in severe posterior urethral obstruction. Other common

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symptoms may be urinary ascites, urosepsis, poor feeding, abdominal mass and failure to thrive. Infants usually present with repeated urinary tract infection (UTI) whereas urinary incontinence and renal failure are the most common presenting symptoms in older children. Treatment of PUV remains a clinical challenge, requiring active management from infancy into adulthood to avoid progressive dysfunction and deterioration of both the upper and lower urinary tracts.[2]

The presentation of posterior urethral valves is extremely variable in children of different age groups and so is its outcome. In literature we found that the preliminary results may not predict the long term prognosis as it is not just the disease of the posterior urethra but invariably has got great implications upon upper urinary tract which may ultimately leads to end stage renal disease.

We conducted this study to look into various presentations in patients of different age groups, their treatment according to our protocol and to document the initial outcome in terms of improvement in symptoms and/or any residual problem.

PATIENTS & METHODS:

A total of 22 children with PUV were included in this study. It included 5 neonates, 11 infants and 6 older children. A proforma was designed to enter presenting complaints, patient's age at presentation, age when symptoms noticed first and any remedy used previously. Haemoglobin estimation, urine D/R with culture, blood urea, serum creatinine, ultrasound (U/S) urinary tract and voiding cystourethrogram (VCUG) were performed in all cases. Radioisotope renal scan was advised for estimation of renal function. All the neonates underwent urinary diversion procedure in the form of vesicostomy whereas older children were subjected to primary valve ablation. In infants both the options adopted depending upon the size of the urethra and availability of appropriate sized cystoscope. Older children underwent valves fulguration. Outcome assessed on post procedural, clinical (improvement in symptoms), biochemical (serial haemoglobin, blood urea, serum creatinine levels)and radiological assays (U/S, VCUG and MAG 3 scan).

RESULTS:

The main presenting complaint in majority of neonates (n=4) was inability to pass urine and only one had urinary ascites. Total of 5 infants presented with difficulty in passing urine and dribbling and acute urinary retention occurred in 2 patients' each. In older age group, of the total 6 patients, 3 presented with poor urinary stream and dribbling while 2 had diurnal enuresis and 1 patient came with straining at micturition.

In all the neonates vesicostomy was performed due to non availability of small scopes at our institute. Out of these 5 patients, 3 received valve ablation therapy, followed by undiversion. Two of them improved fulfilling all the parameters of assessment during initial follow up period while one had bladder dysfunction and needed bladder management. Of the remaining 2 patients with vesicostomy 1 is still waiting for definitive procedure while the other is lost to follow up.

In infantile group (n=11), 8 underwent vesicostomy. Out of these valves ablated and vesicostomy closed in 5. Of these 2 improved, one requiring bladder management while 2 developed deteriorating renal function with rising creatinine. They were incontinent and had signs of chronic renal failure (CRF). Two patients with vesicostomy need valves ablation whereas 1 patient in whom valves were fulgurated showed clinical and biochemical improvement, is waiting for undiversion. Two patients received primary valves ablation therapy, of whom one improved and 1 died due to poor kidney functions. One patient of this group expired before any surgical intervention.

In third group of older children (n=6), 3 had their valves ablated primarily and all showed signs of improvement. Three patients, who presented with renal failure, were lost to follow up.

So the final outcome assessment was possible in a total of 18 patients. Treatment completed in 12, of whom 8 (44%) improved, while 4 (22%) still having residual problems and need thorough bladder management. Two infants died, one before any surgical intervention and one after primary valve ablation, due to disease progression. A total of 4 patients were lost to follow up. Overall mortality was 11% (n 2). The results are shown diagrammatically in figure I.

DISCUSSION:

Posterior urethral valves may present with a broad array of symptoms or signs at any age during childhood and may vary from ascites in the neonate to renal failure in an infant or only minor voiding dysfunction in an older child. Urinary tract infection is common at all ages. It can be picked up antenatally, in a neonate or in childhood. In all time frames it has its own pathological severity and prognosis, irrespective of the age at which it presents. In our study children presented in all age groups from mild disease i.e. voiding dysfunction to severe uremia and features of chronic renal failure. In literature urinary ascites has also been quoted as a common presenting symptom[3, 4] but we found only a single neonate with urinary ascites. Similarly none of our patients were diagnosed antenatally for having PUV.

Table I Diagramatic Depiction of Results

NEONATES (n=5)

Vesicostomy closure 3 → 2 improved
1 needs bladder management.

Vesicostomy 2 → Fulguration due (n 1)
Poor kidney functions → Lost to follow up

INFANTS (n=11)

Primary valve ablation 2 → 1Expired due to uremia
1 Improving

Vesicostomy closure 5 → 2 incontinent/CRF/ Rising Scrtatinine
2 Improved
1 needs bladder management

Valves ablated 1 Improving

With vesicostomy 2 → 1 having Grade III/IV VUR
1 improving

One patient expired before any surgical intervention.

OLDER CHILDREN (n= 6)

Primary valve ablation 3 All well

Three patients with CRF secondary to PUV were lost to follow up without receiving any surgical treatment.

FINAL OUTCOME (n=18)

Treatment completed		12
Improved	8	
Residual disease	4	
Expired		2
Lost to follow up		4

Posterior urethral valves poses great impact over whole of the urinary tract. The bladder outlet obstruction leads to straining at voiding, which in turn leads to increase workload of bladder causing thickening of its wall by deposition of collagen in musculature. This increase in connective tissue reduces bladder compliance during filling and emptying phase. The high intravesical pressure, can be transmitted to the ureters and kidneys. If remains unchecked it can lead to end stage renal disease. The clinicians need to target this increased intravesical pressure.

The definitive treatment of PUV is valve ablation but many a times it is not feasible primarily, either due to non availability of small sized scope or severity of the disease that is inadequately draining the noncompliant system. Urinary diversion is performed as interim drainage procedure in these patients. Diversion may be cutaneous vesicostomy, ureterostomy or pyelostomy.[5,6,7] In the past it was a regular practice to make high diversion for a very dialted system but with advanced urological techniques, the trend gradually reduced to more conventional single staged procedure of valve ablation and to address the upper tract later, more aggressively if needed, in a believe that primary valve ablation allows bladder to fill and empty on a regular cycle, thus leading to more normal voiding pattern and to decrease collagen deposition and perhaps a reduction in the risk of bladder non compliance.[8,9,10] In a study from Seattle, it was proposed that even for patients with renal insufficiency, early primary ablation should be used as the definitive treatment. According to the study, the patients with severe obstructive changes show return of normal bladder capacity and compliance, and the renal insufficiency is secondary to primary renal dysplasia in majority of the patients of PUV.[11] But still there are reports showing good results with cutaneous vesicostomy[5, 12, 13] be it an early outcome or prognosis.

In our study we performed cutaneous vesicostomy in 13 out of 22 (59%) patients while 5 out of 22 (23%) underwent primary valve ablation, but we did not find any advantage of one procedure to another and both of them produced comparable results. Similar are the results of Farhat et al. In their study[14] they grouped their patients into primary valve fulguration and diversion group, results were equally good in both.

There is no fixed criterion for assessing the patients of PUV, to know the improvement after any treatment offered to them. There are multiple studies reported in literature where number of assessment tools were used to know about the outcome. Some studies justified serum creatinine alone and some researchers used creatinine levels along-with urodynamics and radiology as the assessment tools.[15, 16] In our study the assessment was made clinically by relief of symptoms i.e. improvement in urinary stream, achievement of continence, child thriving well. On biochemical analysis, reduction in serum creatinine levels were noted and radiologiocal improvement assessed by VCUG and renal scan.

In literature much has been proposed about long term prognosis in patients treated for PUV. At age 12 months, a nadir creatinine of 0.8mg/dl or less is associated with normal long term renal function and improved prognosis. Moreover, day time urinary incontinence after age of 5 years is associated with abnormal long term renal function.[8, 16] In a study from India it was suggested that along-with decreasing serum creatinine, early diagnosis is also a good prognostic factor for renal function

improvement. They also emphasized that choice of primary treatment needs to be individualized in a systematic manner according to the severity of the disease.[17] We studied only the initial outcome of the treatment with improvement rate of 44%. Long term effects are to be assessed. Yet, one can not overlook the fatal effects of the disease like bladder dysfunction and renal dysplasia. These underlying causes have got great implications on long term prognosis. It needs to be addressed promptly, no matter how successful is the fulguration of valves and the early outcome after preliminary treatment.

CONCLUSIONS:

The presentation of PUV is varied so is the outcome. Thus every patient has to be individualized by looking at how severe is the disease when first noted and the status of the bladder dysfunction and upper urinary tract. However, manifestations and consequences of posterior urethral valves may persist after removal of the valves. So, comprehensive evaluation, timely management and aggressive follow up of boys with posterior urethral valves is critically important for optimal outcome in the long term.

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RUPTURED ECTOPIC PREGNANCY: CLINICAL PRESENTATION & MANAGEMENT.

FAUZIA PERVEEN, SUBHANA TAYYAB

ABSTRACT

Objective *To determine the clinical presentations and the management modalities of ruptured ectopic pregnancy (EP).*

Study Design *This is a cross-sectional analytical study.*

Place & Duration of study *The study was conducted in Obstetrics & Gynaecology Department of Sindh Government Lyari General Hospital, Karachi , from 1st June 2002 to 31st May 2005.*

Patients and Methods *All women diagnosed with ruptured ectopic pregnancy were included in this study. Data were collected on a structured proforma. The variables studied included age, parity, presenting symptoms and signs, haemoglobin level, urinary hCG, beta hCG level, ultrasonographic findings, type of treatment provided and associated morbidity and mortality.*
Mean ± SD of continuous variables like age, parity and haemoglobin level were calculated while categorical variables like amenorrhea, abdominal pain, vaginal bleeding, anaemia, shock, abdominal tenderness, adnexal mass, cervical excitation and the other findings were given in numbers and percentages.

Results *A total of 34 women were diagnosed as having EP. Frequency of ectopic pregnancy found was 1.22% of total 2790 deliveries. Out of these 33 patients (97.6%) had ruptured EP. The mean age was 26.18 years and the mean parity was 1.9. Common presenting symptoms were amenorrhea and abdominal pain, both found in 27(81.8%) patients and vaginal bleeding was present in 9(27.3%) cases. Common physical signs detected were abdominal tenderness and cervical excitation in 24(72.7%) and 21(63.6%) cases respectively. Anaemia was found in 21 subjects (63.6%) and mass in adnexa in 12 cases. Laparotomy was done in 32(96.9%) out of 33 patients. Salpingectomy was carried out in 22(66.7%) cases and salpingostomy in 6(18.2%). One patient underwent hysterectomy having cornual ectopic pregnancy. There was no maternal death in this study. Blood transfusion was required in 27(81.8%) patients. Medical treatment was offered in only one patient who presented with a mass in adnexa and was haemodynamically stable but she left against medical advice.*

Conclusions: *Abdominal pain, amenorrhea, anaemia and cervical excitation were the most consistent features of ruptured ectopic pregnancy. Therefore EP must be kept in mind in women having these features as conservative management is an option for early diagnosed cases. Shock and shoulder tip pain are late findings to appear therefore found in less number of patients. Surgical treatment was done in most of the cases because of late referrals. Early diagnosis and intervention would also reduce the maternal morbidity and mortality.*

KEY WORDS:- *Ruptured ectopic pregnancy, Clinical presentations, Treatment.*

INTRODUCTION

Ectopic pregnancy is a major clinical problem occurring in 75,000 cases per year in United States.[1] It is the third biggest killer of pregnant women in UK and is the leading cause of maternal death in early pregnancy mainly because of bleeding from ruptured EP.[2,3] It accounts for 10-15% of maternal deaths.[4] Although the incidence of EP is rising but the diagnosis is still commonly missed in the emergency department as it needs high index of suspicion because the history, physical examination and single quantitative betahCG level cannot reliably rule out an EP.[5] Rapid and simple dipstick pregnancy tests has a high sensitivity and can be combined with transvaginal scan to locate the site of pregnancy in a women with positive pregnancy test.[6] More than 95% of EP occur in

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fallopian tubes and remainder sites are cornua of uterus, ovary, cervix , abdominal cavity and rarely in rudimentry horn of uterus.[7,8] Rupture of EP occurs earlier in tubal EP as compared to other EP. Although there are evidences that methotrexate is an effective and safe option for a proportion of women with unruptured EP, majority of women still undergo surgical management especially in developing countries, like Pakistan because most of the cases are diagnosed after rupture and need emergency surgery.[9] Up till now no large study is available regarding the incidence of ruptured ectopic pregnancy but small local studies reveal 70 -100% incidence of ruptured ectopic pregnancy.[10,11,12]

This study was conducted to find out the clinical presentation and management modalities of this common life threatening gynaecological emergency.

PATIENTS & METHODS:

This was a cross-sectional analytical study conducted at Obstetrics & Gynaecology Unit IV of Sindh Government Lyari General Hospital and Dow University of Health Sciences Karachi. This is a teaching hospital situated in a low socioeconomic area of Karachi. It caters mostly the local population comprising of mainly poor and illiterate people and some of the referrals from Balochistan province. The study was conducted from 1st June 2002 to 31st May 2005.

All patients diagnosed as ectopic pregnancy presenting during this period were selected and then those found with evidence of rupture were included in the study. Diagnosis of EP was based on clinical features, urinary hCG test or serum beta hCG level, ultrasound findings and was confirmed on laparotomy. Ruptured state was initially suspected on acuteness of presentation, anaemia, pulse and blood pressure level, sonographic finding of free fluid in peritoneal cavity and finally confirmed at the time of surgery.

Information regarding age, parity, presenting features, haemoglobin level, urinary hCG, serum beta hCG, sonographic findings, type of treatment and associated maternal morbidity and mortality were documented on a proforma. Important clinical features documented were history of amenorrhea, lower abdominal pain, vaginal bleeding and on examination the presence of anaemia, shock, abdominal tenderness or adnexal mass and cervical excitation noted. Shock was labelled if the blood pressure was <100/60 mm of Hg with weak rapid pulse (>100). Ultrasound was performed in all patients. Urinary hCG and ultrasonography were carried out in all cases but quantitative beta hCG could not be done in all patients because of shortage of time and nonavailability of facilities in emergency. Haemogolobin level was also recorded.

Mean ± SD of continuous variables like age, parity and haemoglobin level were calculated while categorical variables like amenorrhea, abdominal pain, vaginal bleeding, anaemia, shock, abdominal tenderness, adnexal mass, cervical excitation and the other findings were given in numbers and percentages.

RESULTS

A total of 34 patients with EP were admitted from 1st June 2002 to 31st May 2005 in our department. During this period 2790 deliveries were conducted giving a frequency of EP as 1.22%. Out of these 33 patients (97.6%) had ruptured EP. The mean age was 26.18 ± 8.7 years and mean parity was 1.9 ± 2.5 (Table-I).

Table I — Age and Parity of Women With Ruptured Ectopic Pregnancy N = 33

Age (Years)	No.	%
< 20	9	27.3
21 – 29	15	45.4
30 – 39	6	18.2
≥40	3	9.1

Parity	No.	%
0	15	45.5
1 – 2	9	27.3
3 – 4	3	9.1
> 4	4	12.1

Age: Mean (26.18±8.7) Range (18 – 48)
Parity: Mean (1.9±2.5) Range (1 – 8)

Table II — Clinical Features N = 33

Symptoms	No.	%
Amenorrhea	27	81.8
Abdominal pain	27	81.8
Vaginal bleeding	9	27.3
Syncope	9	27.3
Shoulder tip pain	3	9.1
Urinary symptoms	3	9.1

Signs	No.	%
Anaemia	21	63.6
Shock	12	36.4
Abdominal tenderness	24	72.7
Adnexal tenderness	3	9.1
Cervical excitation	21	63.6
Fullness in fornices	3	9.1
Mass in adnexa	12	36.4

Table- II depicts the presenting features. Abdominal pain and amenorrhea were the commonest presenting symptoms in 27(81.8%) cases while syncope and vaginal bleeding were present in 9 (27.3%) patients. Only 3 cases had shoulder tip pain. On examination commonest finding was abdominal tenderness and cervical excitation in 24(72.7%) and 21(63.6%) patients respectively.

Diagnosis was confirmed on ultrasound in 81.8% and urinary pregnancy test was found positive in only 12 patients. Serum beta hCG was done in only 6 patients. Laparotomy was the main treatment provided (in 32 patients out of 33) in our study. All underwent emergency laparotomy because of haemodynamic instability. None of the patient was offered laparoscopic treatment. One of the patient presenting with adnexal mass was given medical treatment but she left against medical advice after 2 days. 93.9% women had tubal EP and 2 had ovarian EP. Salpingectomy was performed in majority of patients (66.7%) followed by salpingostomy in 6 cases. Hysterectomy was performed in one patient because of uncontrolled bleeding from cornual EP. Blood was transfused in 27 (81.8%) patients and 9 of them required more than 3 units of blood.

DISCUSSION

The frequency of ruptured EP (97.6%) found in this study is comparable to other studies.[10,11,12] Literature review indicates higher incidence of EP in low socioeconomic group and in places where relatively less number of patients delivered in hospitals. As majority of EP are managed in hospital giving a higher frequency but no international data could be retrieved regarding the incidence of ruptured EP.[13] In the United States incidence of EP is reported as high as 20/1000 pregnancies showing more than 4 fold increase over the last 20 years.[14] Majority of women belonged to younger age group and were less parous which correlates with other studies.[3,13] Several studies demonstrate that the risk increased consistently with maternal age and mostly in women of low parity.[15] Strong etiological evidence is found between pelvic inflammatory disease with ectopic pregnancy.[16] Similar association is found with other risk factors affecting the tube that is previous EP, tubal ligation or tubal surgery.[17] About 46% of our women were nulliparous while a report from local study also show infertility as a risk factor for EP in 23.6%.[11] Many other studies also reported close association between ectopic pregnancy and infertility.[18,14]

Considerable number of patients presented in emergency with amenorrhea and abdominal pain. Amenorrhea was present fortunately in higher number of patients as compared to other study depicting 73.6% and 77.5%.[11,19] Presence of abdominal pain and tenderness was also found as most consistent symptom in other studies.[12,20] Although the classical triad of symptoms include vaginal bleeding as evident from a Nigerian study but it was found in less than one third of our cases as reported in other studies.[19,21] Cervical excitation was detected in 63.6% which is comparable to one study showing 64% but differing from another showing only 50% incidence.[10,11] Adnexal tenderness was detected as uncommon finding (9.1%) which is in contrast to other studies reporting 54% and 95.3% respectively.[2,20] Anaemia was the most frequent sign of intraperitoneal bleed due to rupture while shock and fullness in fornices were detected in only 36.4% and 9.1% respectively indicating that they are the late features to appear and not helpful for early diagnosis. Majority of patients were brought in emergency in haemodynamically unstable condition due to lack of awareness and suspicion of EP because of inconsistency of symptoms at the time of first presentation. This can be averted by making golden rule that any women in reproductive age group with abdominal or pelvic pain regardless of the presence of amenorrhea or vaginal bleeding should undergo further evaluation by ultrasonography to exclude ruptured EP as any delay in treatment will lead to maternal death.

The single most diagnostic tool found was ultrasonography, being diagnostic in 81.8% which is in accordance with other studies showing 81% diagnostic accuracy without the help of serum betahCG.[22] Transvaginal ultrasonography significantly improves the accuracy and early detection, so if facility available then this is the better option. If the gestational sac is questionable or absent, colour flow Doppler may aid in diagnosis.[21] 'Leash sign' on transvaginal colour Doppler has a sensitivity of 100% and specificity of 99% and thus help in diagnosis of early ectopic pregnancy.[23] The use of urinary dipstick test for hCG enables general practitioners to arrange prompt ultrasound assessment of women in first trimester.[24] Culdocentesis is less commonly performed to diagnose ruptured ectopic pregnancy now-a-days but still has a role where the emergency ultrasound scanning facility is not available. A study from Quetta documents 90.1% diagnostic accuracy for ruptured EP by culdocentesis.[13]

RCOG guidelines 2004 recommended that laparoscopic approach to surgical management is preferable to open approach in the haemodynamically stable patient but in this study majority of patients undergone laparotomy because of late referrals and nonavailability of laparoscopic equipment for emergency surgery.[25] This is correlating with other local studies showing laparotomy still as the choice of treatment in 92.2% and 94.5% of ectopic pregnancies.[10,11] Open surgery is preferred in haemodynamically unstable patients with tubal rupture or potential to rupture or EP larger than 3cm in diameter.[26] A

study from Canada reveals no difference in the reproductive outcome after treatment of EP by laparotomy and by laparoscopy.[27] Twetny two of our patients underwent salpingectomy as the affected tube was ruptured and contralateral tube was healthy. Cochrane Database systemic review reveals comparable number of subsequent intrauterine pregnancies following either salpingectomy or salpingostomy, but another study reveals higher subsequent intra uterine pregnancy rate after salpingostomy as compared to salpingectomy.[3,28] Also problem of persistent trophoblast is detected following salpingostomy especially by laparoscopic approach rather than following salpingectomy.[18,28] Thus there is still no consensus regarding these two procedures as the effects on subsequent fertility is uncertain and need further evaluation.[29]

Fortunately there was no maternal death in this series though studies report mortality rate varying from 1.6% to 5.9%.[13,30] Time interval between admission and laparotomy is a crucial factor in saving the life of the patient in shock as ectopic pregnancy is still responsible for 73% first trimester maternal deaths.[24] Considerable short term morbidity was found. Majority of patients required blood transfusions because of tubal rupture and anaemia. Long term morbidity in terms of risk of recurrence, chronic pelvic pain or infertility were not considered in this study. Literature reveal estimated recurrence risk ranging from 10% - 27%.[31]

CONCLUSION

Ruptured ectopic pregnancy remains not only a diagnostic challenge but also a therapeutic emergency. Early diagnosis in unruptured state is difficult because of its bizarre mode of presentation which may be overcome if any reproductive age women presenting with unexplained abdominal pain is suspected to have ectopic pregnancy until proved otherwise. A urinary pregnancy dipstick test is mandatory to perform and if positive then should be subjected to transvaginal sonography by skilled ultrasonologist for detection of adnexal mass, free fluid in pouch of Douglas and absence of intrauterine gestational sac. Laparoscopic treatment can be offered if diagnosed early depending upon the patients' haemodynamic condition and desire for future fertility. The health of contralateral tube should be considered before the decision of performing salpingostomy or salpingectomy. Early diagnosis, availability of blood, good anaesthesia and quick operative treatment play major role in reducing the maternal morbidity and mortality.

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FIVE YEARS EXPERIENCE OF CARCINOMA BREAST

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ABSTRACT

Objective *To evaluate the presentation, staging and histology of carcinoma breast patients admitted over a period of five years*

Patients and Methods *A retrospective analytical study was conducted at surgical unit II, Civil Hospital Karachi over a period of five years from October 2001 to October 2006. Eighty five female patients with biopsy proven carcinoma breast admitted and operated, were included in the study.*

Results *43.5% patients were under the age of 45 years. 4.7% ET had family history, 49.4% were premenopausal, none had history of oral contraceptive intake. 84.7% had breast fed there siblings, 12% were nulliparous. 29.4% had skin involvement at presentation, nipple retraction was seen in 23.5%. 90.5% had infiltrating ductal carcinoma with 58.8% having histological involvement of axillary lymph nodes. 50% had stage 3 and 41% stage 2 cancers.*

Conclusions: *The risk / predisposing factors for carcinoma breast were not significantly present in our study population. Most of the patients at presentation had stage II and III carcinoma, with the predominant cancer type being infiltrating ductal carcinoma.*

KEY WORDS:- *Pre menopausal, Post menopausal, Infiltrating ductal carcinoma breast, Hormone replacement therapy.*

INTRODUCTION:

Breast cancer is the commonest neoplastic disease in women, with lifetime risk of 11-12% in the general population.[1-3] It affects half a million women worldwide each year.[4] 25% of females suffer from carcinoma breast in Pakistan.[5] It has not only high mortality but also associated with psychological trauma under various social circumstances. It is the leading cause of cancer related deaths in women.

In one statistical review of cancer incidence in developing countries[6] breast cancer incidence and mortality appears to be rising, with younger women being affected. Japan and Singapore showed largest increase in breast cancer incidence.[7] This rate doubled for women between 35 to 44 years of age in Japan between 1960 and 1985.
Keeping in view the above facts this study was aimed at finding out the risk factors, clinical presentation, staging and histology of carcinoma breast patients in our clinical set up.

PATIENTS & METHODS:

This was a retrospective analytical study. Eighty five female patients with biopsy proven carcinoma breast admitted and operated in surgical unit II, Civil Hospital Karachi over a period of five years from October 2001 to October 2006 were included in the study. Detailed history, clinical examination and relevant investigations were retrieved from the records along with operative details and histopathology reports. After collection, the data was analyzed and results formulated.

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RESULTS:

Age of study population ranged from 25 years to 71 years with median age of 42 years (Figure-I). Thirty seven patients (43.5%) were under the age of 45. 4.4% were premenupausal. Considering the risk factors 4.7% had positive family history of breast carcinoma in first degree relatives, none had history of intake of oral contraceptive pills or hormonal treatment for any appreciable period of time. 84.8% had breast fed their children. 2% had the first baby after the age of thirty. 1% had early menarche and 12% were nulliparous .

A total of forty seven patients (55.2%) had left sided carcinoma breast. Upper outer quadrant involved in 42.3%, central region in 24.7%, lower quadrant in 45% patients and inner quadrant in 8.2%. 53% had lump size greater than 5 cm at the time of presentation. 29.4% had skin involvement at the time of presentation in form of pue-de-orange dimpling, fungation or ulceration. Fixation to the chest wall was present in 22.3%. Nipple

involvement in the form of retraction and erosion was present in 23.5% patients.

Clinically involved lymph nodes were seen in 56.4% patients, while histologically proven involvement was found in 58.8%. 50.5% had stage 3 carcinoma, 1.1% had stage 1, 41.1% had stage 2 and 8.2% had stage 4 breast cancers. Amongst 7% patients who had metastasis the common sites were liver, bone, brain and peritoneum. Histopathology revealed infiltrating ductal carcinoma in 90.5%, poorly differentiated carcinoma in 8.4%. Only 1.1% had carcinoma arising in phylloids tumor.

DISCUSSION:

Breast cancer causes 20% of cancer related deaths in women worldwide. Its incidence is on the rise. Many factors can influence a woman's risk of getting breast cancer, but having one or more risk factors does not necessarily mean that a woman will get breast cancer. Some women with one or more breast cancer risk factors never develop the disease, while the majority of women with breast cancer have no apparent risk factors. Even when a woman has a risk factor, it is not necessary that it was the actual cause of breast cancer. An array of factors, from family history and race to age at first menstruation and number of children are used to determine if a woman is at high risk of breast cancer. Majority of patients in our study group did not have any risk factors.

It is believed that as a woman ages, her risk of breast cancer also increases. Three quarters of women with breast cancer are over age 50 at the time of diagnosis. Women between the ages of 20 and 29 account for only 0.3% of breast cancer cases. In our study group 46 % of the patients were over the age of 50 at the time of presentation showing that this cancer is becoming common in progressively younger age group females. This finding corresponds to other studies conducted in the developing countries [8-9].

The median age of presentation was about 45 years with equal distribution of breast cancer among pre and post menopausal women, this data compares well with current literature about breast cancer.[10] Changes (or mutations) of certain genes may cause some cells to become cancerous. Recent studies have shown that up to 10% of breast cancer cases are hereditary. In 1994, researchers discovered that women who carry mutations of breast cancer gene 1 or breast cancer gene 2 are at higher risk of developing both breast and evarian cancer than women who do not have these genetic mutations Human epidermal growth factor receptor 2) is another gene found on the surface of cells that plays a key role in regulating cell growth. When the HER2 gene is altered, extra HER2 receptors may be produced. This over-expression of HER2 causes increased cell growth and reproduction, often resulting in more aggressive tumor cells. HER2 protein over-expression affects 25% to 30% of breast cancer patients. In our study we did not evaluate the role of these genetic factors.

If a woman's blood-related relatives on either her mother or father's side of the family have had breast cancer, then she is at increased risk for developing the disease. 4.7% of our study population had family history of breast/ ovarian carcinoma. Having a first-degree relative (mother, sister, daughter) with breast cancer can double a woman's risk.[11, 12] Women who have early menarche (< 12 years) and late menopause (> 55 years) have an increased risk of breast cancer[13] which may be due early onset of regular ovulatory cycles,[14, 15] whereas early menopause whether natural or induced provides protection against breast cancer. Having first child after the age of 30 and nulliparity are the risk factors for developing breast cancer.

Although studies have been inconsistent, there appears to be an emerging consensus that the use of hormone replacement therapy (HRT) does increase the risk of breast cancer. In August 2003, the results from the Million Women Study, a United Kingdom research project investigating reproductive and lifestyle factors affecting women's health, showed that women who use or have used HRT are more likely to develop breast cancer, compared to women who have never used HRT. None of the patients had a history of oral contraceptive intake in our study. Despite the fact that several risk factors are known to be associated with breast cancer, it is estimated that about 70% of women with breast cancer will not exhibit any risk factors.[16] The values in our study are lower than those of western literature where 20% of the population had positive risk factors. So the protective effect rendered by multiparity, breast feeding, absence of family history and short reproductive span were not significant in our study population.

Regarding the presentation of carcinoma breast it was more frequent on left side than right possibly because the left breast is usually larger than the right side which corresponds well with our results.[16,17] upper outer quadrants was involved in 42.3% of our study population as compared to the figures of 50% in United States.[16,18] Next common site of involvement was the central region. Tumors in these areas have a tendency of multicentricity and early spread.

Most of the patients (53%) had a lump size greater than 5 cms at the time of presentation. In west in 1950s one fourth to one fifth of the patients presented with a size of tumor greater than 5 cms [19] whereas now with the advent of screening mammography more than 90% of the cancers are detected on screening without having any palpable lesion in the breast. In our part of the world the

scenario is still the same with 29.4% having skin involvement and 22.3% having fixation to chest wall in our study population.

The diameter of the tumor is closely related to the presence of the lymph node metastasis. With tumor less than 2 cms in diameter about a quarter of cases have axillary metastasis and this increase to over three quarters when the size is greater than 10 cms. This has adverse effect on the survival as well. Women regardless of age with the tumor size more than 5 cms do much worse than those with size less than 5 cms.[20]

The physical examination is not a particularly accurate method of assessing the status of axillary lymph nodes due to false negative and positive results with an incidence of 30 and 25% respectively.[21] In our study the difference between clinically involved lymph nodes seen in 56.45 % and histological proven involvement seen in 58.8% was not marked, probably because most of the patients presented late with obvious involvement of axilla. The pathologic status of axillary lymph nodes is considered as the single most important indicator of prognosis in women with invasive breast cancer. The five year survival for patient with no axillary lymph nodes metastasis is 83%, 1-3 lymph nodes positive 73%, and those with more than 4 lymph nodes is 46%.[22] 50.5% of study population had stage 3 cancer 41.1% had stage 2 cancers at presentation. A study carried out at Rawalpindi estimated stage 3 cancer forming 40% of all breast cancer.[23] 7% of our study population had metastatic breast cancer. In UK, 5% of breast cancers present as locally advanced or metastatic disease as compared to our figures. This is due to improvement in early diagnosis as a result of cancer awareness among the population & better screening programs.[24]

In an estimate of duration of time from self discovery of lump or any other cancer symptom to consultation by doctor, it was found 41 patients had symptoms for more than 3 to 6 months before medical consult was sought. Delay appears to be related to socio medical habits, education, attitudes, nature & implication of disease itself. Other causes included fear, denial, lack of information about cancer and finances.[25] The duration of disease has its relation with stage and overall survival, delay period greater than 3 months results in significant drop in survival. Histopathology type of tumor in our study revealed infiltrating ductal carcinoma making up bulk of series. 90.5% as compared to 82. 9% in US.

CONCLUSION:

We conclude that carcinoma breast in females of our part of world is on the rise. Lack of cancer registry system in our country masks the gravity of this problem. It is seen more in younger age group females. Risk factors for carcinoma breast were not commonly present in our study population. Most of the patients presented at advanced stage. Prognosis of disease and treatment is better in early stages, so there is a need for early detection by increasing awareness, educating the masses, removing common misconceptions regarding breast cancer and introducing screening programs.

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ASSOCIATION BETWEEN PERITONEAL CLOSURE AT PRIMARY CESAREAN SECTION AND SIGNIFICANT ADHESIONS AT SECOND CESAREAN SECTION

SHAKIRA PERVEEN

ABSTRACT

Objective *To evaluate impact of peritonization at primary cesarean section in terms of abdominopelvic adhesions at second cesarean section.*

Study design: *A randomized trial.*

Patients and Methods *Women undergoing first cesarean delivery were randomized to either closure of both the visceral and parietal peritoneum (Group A, n =150) or non closure (Group B, n=150). At second cesarean, the variety and frequency of adhesions were examined.*

Results *The incidence of adhesions in the closure group was significantly higher than in the non closure group (p<0.05). The mean total operating time and the mean interval from skin incision to delivery in the closure group was significantly longer than in the non closure group (P <0.05, P<0.05 respectively) at second cesarean section.*

Conclusions: *Peritoneal closure in cesarean delivery is associated with significant adhesion formation. The practice of non-closure of peritoneum is therefore recommended.*

KEY WORDS:- *Primary cesarean section, Peritoneum, Adhesions, Abdominal closure.*

INTRODUCTION:

Kerr in 1926, described the lower uterine segment cesarean transverse incision for the cesarean delivery.[1] Now cesarean section (CS) is one of most frequently performed surgical procedures world wide, with the rate generally ranging from 5% to over 20% of all deliveries.[2,3,4] The saving babies report for South Africa showed a cesarean section rate of 15 % in public hospitals and 57% in private hospitals.[5] One quarter of all United States births occur by cesarean delivery.[6] In 2003 > 1 million cesarean deliveries were performed in United States i.e. 27.6 % of all deliveries, the highest ever.[7] There are many possible ways of performing a cesarean section and operative technique used varies considerably and small changes in surgical technique may significantly alter morbidity.[5,6] During cesarean section peritoneal surfaces have to be breached before the uterus can be incised. Traditionally both the visceral and parietal peritoneum are closed during cesarean section, cited reason for peritoneal closure is restoration of anatomy, approximation of tissues, to confine the pelvic and abdominal contents within their respective cavities and to prevent adhesion formation.[2,3,8]

The step of either suturing or not suturing the peritoneal surfaces is one of several surgical techniques used in performing cesarean section.[9] Evidence of the safety of not closing the peritoneum is overwhelming. Most studies show that this practice not only reduces the operative time but also that postoperative recovery is similar or even better than in those with peritoneal closure. This is applicable to both visceral and parietal peritoneum and to both cesarean and gynecological operations. The fewer requirement of suture material, analgesics and the short hospital stay are economical.[10, 11]

The data on long term benefits or hazards of leaving the peritoneum unsutured are inadequate but whatever results have been available are reassuring. These studies suggest long term benefits from peritoneal non-closure, particularly regarding adhesion formation.[4,5] To evaluate association between peritoneal closure and adhesion formation, this detailed study was carried out at the

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second cesarean section on patients who had a primary cesarean section with or without peritoneal closures.

PATIENTS & METHODS:

This randomized comparative study was carried out at Shaman General hospital and maternity home from 1st January 1999 to 30th December 2006. In this controlled trial we compared leaving the visceral and parietal peritoneum unsutured at cesarean section with suturing the peritoneum, in women undergoing elective or emergency cesarean section.

Patients with abdominal operation before the first cesarean section, chorioamnionitis, intervening laparotomy or laparoscopy, insulin dependent diabetes mellitus, steroid dependent disease, SLE (systemic lupus erythematosus), ITP (Idiopathic thrombocytopenic purpura) were excluded.

Three hundred women were recruited for study. After informed consent they were randomized into two groups, 150 to group A and 150 to group B. In women of group A, both visceral and parietal peritoneum were closed and in group B both layers of peritoneum were left unsutured. A standard surgical technique was performed in the first cesarean operation through a Pfannenstiel incision. After closing two layers of uterus with catgut suture, both visceral and parietal layers of peritoneum were closed with 2/0 catgut in patients of group A.

Out of 300 women 122 women (63 from group A and 59 from group B) had second cesarean section at this hospital. At the second cesarean operation, similar technique was applied, however peritoneum was not closed in all cases. At second cesarean operation detailed observation for extent and variety of adhesions were done. Total operating time and total skin incision delivery time as markers of adhesion were also noted. Chi square test was used to compare two groups and p-value < 0.05 considered significant.

RESULTS:

Overall cesarean section rate of this hospital was 20 % which has about 300-deliveries/ year. Three hundred women who met inclusion criteria were included in the study. There were no significant differences in the two groups as far as age, parity, gestational age and weight (Table I). The reason for cesarean section was almost similar in both groups (Table II and III).

The frequency of adhesion was significantly higher in group A (24/63) than in group B (2/59; p<0.05). Adhesiolysis prior to uterine incision, was required more in patients of group A (12/63) than in B-group (0/59; p<0.05). Anterior adhesion were main adhesion, seen significantly higher in group A (18/63) than in B (2/59; p<0.05). Mean total operation time at second cesarean operation was significantly longer in group A than in group B patients (55min versus 40min), mean total skin incision delivery time was also significantly longer in group A than in group B patients (10min Versus 6 min) (Table 1V).

Table I Clinical Features Of Women In Study

	Group A (n=150)	Group B (n=150)	p-value
Age (median)	27	29	n.s
Parity (median)	0	1	n.s
Gestational Age	39	40	n.s
Weight (kg)	57	55	n.s

n.s = not significant

Table II Indications Of Primary Cesarean Section

Indications	Group A (n=150)	Group B (n=150)
Failure to progress	62(41%)	59(39%)
Malpresentation	47(31%)	45(30%)
Fetal distress	41(27%)	46(31%)

Table III Indications Of Second Cesarean Section

Indications	Group A (n=63)	Group B (n=59)
Failure to progress	26(41%)	22(37%)
Scar tenderness	13(20%)	14(23%)
Malpresentation	12(19%)	12(20%)
Fetal distress	12(19%)	11(18%)

DISCUSSION :

The usefulness of closing or not closing the peritoneum in cesarean section is still being debated. There are more advantages than disadvantages to not close the peritoneum [8,10,12,13,14] Unlike other tissues, the peritoneum does not require apposition of tissue edges for closure. Large defects healed as rapidly as small defects and mesothelial integrity is obtained within 48 hours.[2, 15,16] The closure of peritoneal defects even with minimally reactive

Table IV Frequency & Variety/Markers of Adhesions At Second Cesarean Operation

	Group A (n=63)	Group B (n=59)	P value
Adhesion at second cesarean.	24(38%)	2(3.3%)	P<0.05
Adhesiolysis before delivery	12(19%)	0	P<0.05
Anterior adhesion	18(28%)	2(3.3%)	P<0.05
Adhesion to omentum	2(3%)	0	n.s
Mean operation time(min)	55	40	P<0.05
Mean skin incision delivery time(min)	10	6	P<0.05

suture results in increased tissue reaction and may result in adhesion formation.[17] It is proved many studies that peritoneal closure at primary cesarean section produces extensive adhesion formation in the peritoneal cavity.[9] Adhesion form when fibrinolysis is suppressed and fibrin persist. Fibrin is then infiltrated by fibroblast, which ultimately organize fibrin bands into adhesions. Peritoneum has rich nerve supply but poor blood supply so a minor insult to this delicate structure may compromise its vascular status and induces ischaemia, which suppresses fibrinolysis and provides an explanation for increased adhesions when the peritoneum is sutured.[18,19]

Frequency of adhesions in our study is 38 % in closure group and 3.3 % in non closure group. Adhesiolysis was required in 19% of closure group and none of non closure group. Anterior adhesions were seen in 28% of closure group and 3.3% of non closure group. Almost similar results are given in Komoto et al study.[9] In another study[20] by Mc Nally incidence of adhesion is 28% in closed group and 14% in open group. Some other studies showed less adhesion formation in open peritoneal group.[10,21,22]

Two studies by Lyll et al[8] and Myers and Bennett[23] found more pelvic adhesions in open peritoneal group at repeat cesarean section. Reason given by them is that suppression of fibrinolysis normally seen with peritoneal suturing is altered enough by amniotic fluid fibrinolytic activity, or in an unknown manner by pregnancy related changes such as maternal volume expansion or the presence of inflammatory cytokines, to favor less adhesion with peritoneal closure.

Total operation time and skin incision delivery time reflects degree of adhesions in peritoneal cavity. In our study total operation time and skin incision delivery time of second cesarean section were longer in peritoneal closure group as compare to non closure group (55 versus 40 and 10 versus 6 min respectively). In Elmar study[24] almost similar results were given, total operation time was (44 Vs 39 min) and skin incision delivery time 9.1 versus 6.7 min at second cesarean operation of closure and non closure group respectively. In komoto et al study[9] total operation time was (46.7 vesus 39.7 min) and skin incision delivery time 11.1 versus 7.6 min at second cesarean operation in closed and open peritoneal group respectively.

Surgical adhesions are responsible for intra operative complications like trauma to bladder, ureter and bowel. It is the most common cause of bowel obstruction.[25,26] With little change in surgical technique we can prevent these closure complications.

CONCLUSIONS:

Our study shows that peritoneal closure at first cesarean section is associated with dense adhesion formation in the peritoneal cavity. Considering present findings together with available results of short term benefits it is concluded that practice of peritoneal closure should be abandoned.

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TO DETERMINE THE EFFICACY & SAFETY OF CAUDAL BUPIVACAINE IN COMBINATION WITH RECTAL DICLOFENAC FOR POSTOPERATIVE ANALGESIA IN PAEDIATRIC PATIENTS.

MUHAMMAD TALAT MEHMOOD, JAVED AHMAD, SYED NURUL HAQUE, SADIQA AFTAB,

RAZIA HUSSAIN, MUHAMMAD JAMIL AKHTAR.

ABSTRACT

Objective *To assess the efficacy and safety of combination of caudal bupivacaine anesthesia and diclofenac sodium suppository for postoperative analgesia in pediatric patients.*

Study design: *Interventional study*

Place & Duration of study: *Imam Clinic (a private hospital) North Nazimabad Karachi. from May 2004 to March 2007.*

Patients and Methods *All pediatric patients ASA physical I & II between the ages 6 months to 12years of either sex undergoing infra umbilical surgery received caudal block with bupivacaine 0.25 % in a dose of 0.5ml/Kg and diclofenac sodium suppository 1mg/Kg rectally. Patients in whom caudal analgesia was contra indicated or failed were excluded from the study. Postoperative pain was assessed using observers' pain scale and self report of pain by child when he was greater than 2 years age. Postoperative complications were also recorded.*

Results *During the study period, 99 patients undergoing different infra umbilical procedures (hernia, hypospadias repair, PPV ligation, circumcision, orchidopexy etc) received combination of caudal bupivacaine analgesia and rectally administered diclofenac sodium for post- operative analgesia. There were 94 male patients. In all patients caudal block remained successful. All patients were pain free and none of them required additional/rescue analgesia. Postoperative nausea and vomiting were reported in 3 patients. No other side effects like retention of urine, respiratory depression etc was observed postoperatively.*

Conclusions: *Combination of single shot caudal block with bupivacine 0.25% in a dose of 0.5 ml/Kg and rectal diclofenac sodium for postoperative analgesia in pediatric patient is a simple, safe and effective procedure*

KEY WORDS:- *Caudal block, Bupivacaine, Diclofenac sodium, Postoperative analgesia*

INTRODUCTION:

Historically children have been under treated for pain because of the wrong perception that they neither feel pain nor respond to or remembered the unpleasant painful experiences to the same degree as the adults. An unproved safety and efficacy of the analgesics and worries about the risk of opioid induced respiratory depression further lead to under treatment of pain in children.[1] Failure to provide adequate analgesia is associated with an increased incidence of cardiovascular, respiratory and metabolic complications which can significantly increase perioperative morbidity and mortality.[2] During the last two decades, there has been considerable progress in the understanding of infants' and children's perception of pain and response to it.[3,4] At the same time advancement has occurred in the understanding and use of regional anesthetic techniques in pediatric patients.[5]

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Now a days caudal block is widely used for perioperative analgesia during infra umbilical surgical procedures.[6] Caudal bupivacine is used world wide to provide safe and effective perioperative analgesia for inguinoscrotal and urogenital surgical procedures in children.[7,8] However duration of analgesic effect of caudal bupivacine is 4- 10 hours. [9, 10, 11] Non-steroidal anti inflammatory drugs have also been used in the management of postoperative pain in pediatric patients.[12]

The aim of present study was to evaluate the efficacy and safety of caudal bupivacaine analgesia along with rectally administered diclofenac in the management of postoperative pain in children after infra umbilical surgical procedures.

PATIENTS AND METHODS:

All pediatric patients ASA physical status I & II, aged 6 months to 12 year, who were operated for infra umbilical surgery at Imam Clinic North Nazimabad Karachi from May 2004 to March 2007 were included in this study. Patients having local infection, pre existing neurological /vertebral disease, bleeding diathesis aspirin ingestion, history of allergic reaction to local anesthetic, and inadequate or failed block were excluded from the study. Informed written consent was obtained from their parents. After standard precaution and anesthetic preparation anesthesia was induced. After induction, patients were placed in left lateral position with flexion at knees and hips Caudal block was performed using standard aseptic technique by a consultant anesthetist. Patients' back was prepared using pyodine solution. The site for caudal block was covered with sterile towel having hole in the center. With left thumb tip of the coccyx was felt and traced upward. A triangular depression was felt at the upper end of inter gluteal cleft. When thumb was moved up and down, 2 nodules felt at the base of triangle, these being the sacral cornu, which confirmed the sacral hiatus. Using no. 22 disposable hypodermic needle, sacral hiatus was punctured at a 45 degree to the skin and needle was advanced till a "click" was felt as the sacrococcygeal ligament was pierced. Then hub of needle was depressed and advanced upwards. Care taken not to insert needle too far as the dura lies at or below the S2 level in children. After confirming negative aspiration of blood or cerebrospinal fluid, a small amount of bupivacaine injected as a test dose. If no subcutaneous lump or a feeling of resistance to injection or any systemic effects such as arrhythmias, hypotension etc occurred then the rest of the drug (bupivacaine 0.25% in a dose of 0.5 ml / kg) was injected. Needle was removed and punctured site was sealed with tinc. benzoin co. soaked cotton bud. Diclofenac sodium suppository was administered rectally in a dose of 1mg/Kg.The patient was then positioned for surgery.

Before transfer from recovery area to the ward, all patients were fully awake. Postoperative analgesia was prescribed as diclofenac sodium suppository in a dose of 1mg/Kg to be given after 12 hours of surgery. Postoperative pain was assessed using observer pain scale (Table I) and self report in children up to 2 years.[11, 12] Additional / rescue analgesia was given when pain score was 4. Patients were also observed for any side effects like nausea, vomiting respiratory depression, urinary retention etc. The need for any additional analgesia was also noted.

RESULTS:

During the study period, a total of 99 patients were operated for infra umbilical conditions. Out of them, 94 were males and 5 females. Age ranged from 6 months to 12 years. Maximum number of patients was between 1-6 years (Table II). Among them, 31 patients were operated for inguinal hernia, 22 cases had hypospadias repair while 18 patients were operated for undescended testis. Different surgical procedures performed is shown in table III. Bupivacaine caudal block combined with diclofenac sodium suppository produced reliable postoperative analgesia in all children and none of our patient required additional analgesia up to 12 hours. Postoperative nausea and vomiting were reported in 3 patients. No other side effects like retention of urine, respiratory depression etc were observed postoperatively.

Table I — Observer pain scale

Item	Score
No Pain	
Laughing Euphoric	1
Happy contented	2
Calm or Asleep	3
Mild-Moderate Pain	
Crying, Grimacing, Restless can distract with toys or parental presence	4
Severe Pain	
Crying Screaming Inconsolable	5

Table II — Age Distribution

Age Range	No of Cases
>6 month-1year	14
>1year-3year	30
>3year-6year	32
>6year-9year	12
>9year-12year	11

Table III Surgical Procedures Performed

Procedure	No Of Cases
Inguinal Herniotomy	31
Urethroplasty	22
Orchidopexy	18
Ligation & division of PPV	12
Circumcision	11
Miscellaneous (Ano-rectal Conditions, Torsion testis, Foreign body leg)	05

DISCUSSION:

In 1933 Campbell[13] for the first time described caudal block for pediatric urological intervention, since then it has evolved to become the most effective regional anesthetic technique for use in children. The reason for the widespread use of caudal block is that it can be used for most of the operations that make up the large bulk of everyday pediatric surgical procedures i.e. inguinal hernia, hypospadias and hydrocele repair, orchidopexy, circumcision, anorectal procedures, orthopedic interventions on the lower limb.[6, 7, 8] This block can be learned easily and mastered out of all regional anesthetic techniques.[14]

The potential complications of caudal block are unintentional dural puncture with total spinal anesthesia or inadvertent intravascular injection leading to grand mal seizures and/or cardio-respiratory arrest, sepsis and hematoma. However, the incidence of these complications is very low if proper technique is used.[15] Although it is a versatile block, but one of the major limitations of the single shot caudal block is the relatively short duration of postoperative analgesia .The duration of analgesia by single shot caudal block with bupivacaine 0.25 % as reported in different studies is variable and largely ranging from 2 -6 hours to 24 hours.[9, 10, 16, 17, 18] In most of the studies, the duration of analgesia by caudal bupivacaine epidural is reported around 7-10 hours.[10, 19] The most frequently used method to further prolong the effect of caudal block is to add different adjunct drugs like midazolam, ketamine, tramadol, clonidine, fentanyl, neostigmine, buprenorphine, diamorphine to the local anesthetic solution.[10,11,17] The results of these combinations are variable .Although in some cases they prolong the effect of caudal block but at the same time there is unacceptable increase in the number and severity of side effects. On the other hand non narcotic analgesics are effective for treating postoperative pain in children with few side effects. Among these drugs, diclofenac is a powerful analgesic, and has been used in combination with caudal block with good results.[20] There are few reports in which combination of of bupivacaine caudal block with diclofenac sodium suppository was used for postoperative analgesia in pediatric patients and to best of our knowledge no study has been reported locally so far.

We used combination of bupivacaine caudal block with diclofenac sodium suppository and found very effective. Patients were pain free for 12 hours when next scheduled dose of diclofenac sodium suppository was given. None of our patients complained of pain or required additional analgesia postoperatively. We beleive these results are because of combination of bupivacaine caudal block with diclofenac sodium suppository. Similar results are reported by Gadivar et al.[20]

Postoperative complications were minimal in our study. Nausea and vomiting occurred in 3 patients only. The reported incidence of postoperative nausea/vomiting is variable. In some studies no patient suffered from vomiting, while in other studies it varied from 3.3%-7%.[9] None of our patient developed retention of urine while Bano F et al[10] reported 3% and Sheikh JM et al[19] reported 1.4 % cases of retention of urine. No hemodynamic or respiratory complications were observed intra or postoperatively. We did not have problem of failed caudal block in any case in contrast to other studies.[21]
We conclude that combination of single shot caudal block with bupivacine 0.25% in a dose of 0.5 ml/Kg and rectal diclofenac sodium for postoperative analgesia in pediatric patient is a simple, safe and effective procedure.

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CAESAREAN SECTION RATE: CURRENT TRENDS

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ABSTRACT

Objective *To determine the rate and analyze indications of caesarean section*

Study design: *Observational study*

Place & Duration of study: *The study was conducted in Obstetrics & Gynaecology Unit IV, Sindh Govt Lyari General Hospital attached to Dow University of Health Sciences from April 2005 till March 2006.*

Patients and Methods *All pregnant women booked in antenatal clinic and unbooked patients admitted in early labour on whom caesarean section (CS) was performed, were included in the study. The medical records of all patients were examined to study the socio-demographic variables, nature of procedure and the indication of abdominal delivery.*

Results *The total number of births during study period were 930 of which 186 patients underwent caesarean section which makes 20% caesarean section rate (CSR) in our unit. Out of 186 CS done, 144 were performed in emergency and 42 as elective cases. The mean age was 30 years and the mean parity was 1.9. Primigravidas were 71(39%), multigravidas 75(40%) and grandmultiparas 40(21%). Commonest indication for caesarean section was repeat caesarean section. Failed progress of labour was the 2nd commonest indication among the 15% of cases. Obstructed labour and fetal distress were indications in 9.6% of cases. Other indications include breech presentation, ante partum hemorrhage, hypertensive disorders, twin pregnancies and transverse lie.*

Conclusions: *The most effective mean to control increasing CSR is the prevention of first caesarean section which could be achieved by adopting the policy of trial of vaginal birth after previous C-section, selective vaginal breech delivery and regular audit of C-section in the department.*

KEY WORDS:- *Caesarean section, Trial of labour, previous caesarean section.*

INTRODUCTION:

One of the profound alterations in the practice of obstetrics over the past century, is the progressive increase in the frequency of caesarean delivery.[1] Caesarean section is the commonest obstetric operation. Historians relate first caesarean section at around 715-672 BC, performed on woman dying late in pregnancy. The first documented operation on living patient was done in 1610 and the first successful operation was done in 1764 in Virginia, U.S.A.[2]

During the 1970s and early 1980s, the caesarean delivery rate progressively increased through out the world. In 1965 CSR was reported to be 5% in US which rose to 20-25% within two decades.[3] The reasons for this increase in CSR are multifactorial and include women with prior caesarean section, the increase in multifetal gestation, the use of intrapartum electronic fetal monitoring, changes in obstetric training, medico legal concerns, and maternal autonomy in decision making regarding mode of delivery.[1]

In the developing countries, most of the C sections are performed as an emergency procedure under suboptimal circumstances. The most profound impact of high CSR is on the management of subsequent pregnancy and labour in patients with previous scars. Because of traditional beliefs and socio-cultural norms, women with previous CS try to avoid the hospital delivery in subsequent pregnancies and engage the services of untrained and unskilled care providers. These patients usually report to hospital with life threatening complications which arise as a result of trial of labour at home.[4]

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This study was undertaken to determine the rate of caesarean section and analyze the indications, so as to introduce measures to control the caesarean section rate.

PATIENTS & METHODS:

The study was conducted at Obstetrics & Gynaecology Unit IV, Sindh Government Lyari General Hospital, for a period of one year i.e. from April 2005 till March 2006. It included all pregnant women booked in antenatal clinic and un-booked patients admitted in early labour for whom caesarean section was performed. It also included all those cases coming in emergency for whom C-section was indicated later. Patients with normal and operative vaginal deliveries were excluded.

The medical records of these cases were examined to study the socio-demographic variables, nature of procedure (elective or emergency), and the indications for abdominal delivery. Data sources included admission register, labour room records and operation theatre records.

RESULTS:

The total number of births during the study period was 930, out of which 186 underwent caesarean section which makes 20% caesarean section rate in our unit. Out of 186 caesarean sections done, 144 were emergency and 42 were elective. Age of patients ranged from 18 - 40 years. Mean age was 30. Parity of the study population ranged from zero to thirteen. Mean parity was 1.9. Out of 186 patients, 71 (39%) were primigravidas, 75(40%) were multigravdas and 40(21%) grand multiparas. Most of the cases were un-booked belonging to lower social class.

Commonest indication for caesarean section was repeat caesarean section, out of this 35 done as an emergency and 22 as elective procedure. Failed progress of labour was the second common indication that contributed 15% of cases. Obstructed labour and fetal distress were the indications in 9.6% of cases, breech presentation in 8.6%, ante-partum hemorrhage in 6.4 %, hypertensive disorder in 5.9%, twin pregnancy in 4.3%, transverse lie in 2.6% and intrauterine death in 1.6% cases. Miscellaneous group includes cases of bad obstetrical history, precious pregnancy and previous surgery such as Manchester repair and myomectomy (table I).

DISCUSSION:

The incidence of caesarean section is on the rise in both developed and developing countries over the last two to three decades. Caesarean section rate in our study was 20% which is almost comparable with local and international studies. Our hospital is located in an area, where the people are extremely poor and uneducated. They do not believe in antenatal care and consider birth a natural process.

Table I Indications For Caesarean Section N=186

Indications	Number	%
Previous 2 or more caesarean section.	40	21.5
Failed progress of labour	28	15.0
Obstructed labour	18	9.6
Fetal distress	18	9.6
Previous L.L.S.C.S	17	9.1
Breech	16	8.6
Ante partum hemorrhage	13	6.4
Hypertensive disorders	11	5.9
Twin pregnancy	8	4.3
Transverse lie	5	2.6
Intra uterine death	3	1.6
Miscellaneous	10	5.3

In our study, the rate of emergency caesarean section is on the rise due to poor attendance in antenatal clinics, educational level of the family and poor socio economic conditions. The ratio between elective (22.5%) and emergency (77.5%) operations are similar to the figures obtained in other studies.[6,7] Proportion of emergency cases in any hospital depends upon a number of factors eg. catchment area, type of obstetric population, ratio between booked and unbooked cases and referral role of nearby hospitals.[5] Problems of transports and false hopes given by traditional birth attendants and fear of big hospitals are other factors. Majority of our obstetric patients were unbooked, severely anemic, malnourished and likely to have more complications when operated in emergency than elective cases.[8]

The commonest indication in our study was repeat c-section due to previous two or more scars. Several studies have reported 35% chance of vaginal deliveries after more than one previous lower segment caesarean section.[9,10] Trial of vaginal birth in patients with previous two scars was never tried in our set up. Reluctance to attempt vaginal birth in these patients were presumed increased risk of maternal and fetal morbidity and mortality from ruptured uterus.[11]

Next common indication was failed progress of labour due to mal position, relative cephalo pelvic disproportion and cord around neck. Reduction in the percentage of c-sections done for dystocia could be achieved by employing protocol of the active management of labour which includes early diagnosis of adequate progress of labour, timely amniotomy, use of oxytocin and supervision of labour and delivery by senior staff. Cervical dilatation on admission in labour was the most important predictor of success.[12,13]

About 18 % of c-sections were carried out for obstructed labour and fetal distress. All cases of obstructed labour were mishandled which were referred to us at a late stage. Fetal distress was picked up by intermittent auscultation, cardiotocograph (CTG) and ultrasound. Availability of CTG and heavy reliance on it has led to increased in frequency of section due to fetal distress.[14] This was closely followed by breech and previous 1 LSCS. The percentage of C-section due to breech presentation is increasing. Breech presentation is associated with higher level of maternal and fetal morbidity irrespective of route of delivery. All patients with breech presentation in antenatal wards should be considered for external cephalic version (ECV) after 36 weeks of gestation by keeping in mind all the contra indication and pre-requisites of ECV.[4]

Currently repeat C-section is the most important cause of escalating section therefore a trial of scar should be considered in all cases except those having absolute indications of repeat c- sections. The success rate with trial of scar depends on appropriate selection criteria, adequate pelvis, known uterine scar, absence of medical complications and fetal macrosomia. The women in our set up do not accept the c-section as a mode of delivery. Majority of the parturient with previous c-section come in established or advanced labour with associated medical or obstetrical problems and without proper antenatal surveillance. This situation limits the number of cases which could be subjected to trial of scar.[14]

Antepartum hemorrhage (APH) was the indication in 6.4% of cases. Mode of delivery in cases of APH was decided on trans vaginal ultrasound in last trimester of pregnancy. Vaginal delivery is contra indicated when placenta is encroaching within 2cm of the internal os.[15] C-section is the preferred mode of delivery for all transverse lies and the safest mode of delivery even when child is dead.[16]

CONCLUSIONS:

This study revealed increased rate of c- section due to previous scars. Illiteracy, poverty, grand multiparity and previous operative deliveries were strong determinants of high c. rate. The most effective mean to control increasing CSR is the prevention of first caesarean section which could be achieved by adopting the policy of trial of vaginal birth after previous c-section, selective vaginal breech delivery and regular audit of c-section in the department ECV should be considered in patients with breech presentation keeping in mind all the contraindications and pre requisites for ECV.

Education of public regarding maternal health, antenatal care should be emphasized with the use of media, signboards basis. Departmental policy regarding the management of cases with previous c-section, breech, fetal distress/ dystocia should be clear to every resident and senior staff and should be analyzed and reviewed in order to decrease the number of CSR.

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RESULTS OF ONLY USING REAMED BONE GRAFT OBTAINED DURING INTERLOCKING NAILING AS AN OSTEO-INDUCER, WHILE TREATING TIBIAL SHAFT ASEPTIC NONUNION AFTER PLATING.

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ABSTRACT

Objective *To analyze the outcome of only using cancellous bone graft as an osteo-inducer,obtained during reaming, for intramedullary nail stabilization in treating tibial shaft aseptic nonunion after plating*

Study Design *An analytical study*

Place & Duration of study *Combined Military Hospital Peshawar, during a period of 20 months, between March 2005 and October 2006.*

Patients and Methods *This study included a total of 21 patients with tibial shaft aseptic nonunion after plating. Of the total patients nineteen were males and two females. All were treated initially with bone plating for their diaphysial tibial fractures in various peripheral hospitals. Reamed interlocking nailing was carried out in all these patients in the second stage. Following the first stage operation of plate removal, no additional iliac bone grafting was used.*

Results *Twenty one patients were followed up between 7 to 15 months postoperatively. Eight patients were lost to follow up after 7 months. All the tibial nonunion healed uneventfully. The median union period was 4.5 months (range, 3.0-7.5 months). Knee range of motion showed evident improvement after operation. The ankle range of motion also had some improvement and all the patients could walk without aid postoperatively. There were no deep infections, rotational (>10°) or angular (>10°) deformity, or shortening (>2 cm).*

Conclusions: *We recommend the use of reamed intramedullary nails without additional bone grafting in all suitable cases, so as to achieve a high success rate in management of tibial shaft aseptic nonunion after failed plating.*

KEY WORDS:- *Tibia, Shaft fractures, Aseptic non union, Reamed interlocking nailing*

INTRODUCTION:

The incidence of diaphysial fracture non- union is quite common in tibia.[1] The treatment of such patients still remains controversial and consequently a variety of nonoperative and operative methods have been proposed. [2-5] Moreover a single convincing treatment method has still not been conclusively recommended in those cases where the initial diaphysial plating to treat these fractures has met with failure.[6,7] We conducted a prospective study to assess the results of only utilizing cancellous bone graft, obtained during the reaming of intramedullary canal before insertion of universal tibial intramedullary nail, without any additional iliac bone graft supplementation, in management of such patients.

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PATIENTS & METHODS:

From March 2005 to October 2006, twenty one consecutive adult patients (age range, 22-36 years) who sustained tibial shaft aseptic nonunion after plating were treated with reamed tibial interlocking nailing technique at our institution. The male-to-female ratio was 9.5 : 1. Eighteen fractures were caused by motor vehicle accidents whereas 3 were due to fall and were treated at peripheral hospitals. Initial treatment included casting, external fixation, and finally plating. The time from injury

to treatment at our institution was 4 to 10 months. The fracture levels were composed of upper third (n=6), mid-third (n=18), and distal third (n=2). Indications for grafting treatment consisted of a tibial shaft nonunion with an inserted plate, fracture level fit for traditional or locked nail stabilization, no segmental bony defect, shortening of less than 1.5 cm and absence of infection. Patients with infected nonunion after plating were excluded.

In our study, the plate was removed and all patients were given plaster support as a first stage procedure. Following the removal of the plate, the skin was allowed to heal soundly(8 to 12 days), thus providing the closed environment needed to prevent any flow out or loss of reamed medullary graft obtained during the final second stage procedure of interlocking nailing . In 12 cases a rigid guide wire was inserted first to penetrate through the sclerosing zone which was drilled through and then was exchanged with a flexible guide wire. The reaming of marrow cavity was done as widely as possible until resistance occurred. A 1 mm-less sized UTN locked nail (Synthes®) was then inserted and locked. Patients were permitted knee and ankle range of motion with protected weight bearing as soon as possible. Patients were followed up in the Orthopedic Outpatients Department at 4 to 6 week intervals. Clinical and radiographical healing processes were recorded. All the patients were followed up for a mean period of 11 months (range 7- 15 months). All these patients achieved solid union. The average union period was 5.5 months (range, 3.0 - 8.0 months). Bony union was clinically gauged by the absence of pain and tenderness and radiographically by presence of solid callus bridging both fracture segments.

RESULTS:

Twenty one patients were followed up between 7 to 15 months postoperatively. Eight patients were lost to follow up after 7 months due to service reasons (posted to other stations of duty) and the last patient out of the remaining reported for follow up at 15 months. All the tibial nonunion healed uneventfully, giving a 100% union rate. The median union period was 4.5 months (range, 3.0-7.5 months). Knee range of motion showed evident improvement after operation. The ankle range of motion also had some improvement and all the patients could walk without aid postoperatively. There were no deep infections, rotational (>10º) or angular (>10º) deformity, or shortening (>2 cm).

DISCUSSION

Aseptic[6,7] nonunion is divided into a hypertrophic or avascular atrophic type for the convenience of treatment.[8] A tibial shaft aseptic nonunion after plating is normally classified as an atrophic variety as initial compression plating treatment involves a primary bony healing process, and fracture callus cannot be inspected by radiography.[9,10] Moreover, with a large wound dissection, periosteal vascularity is extensively damaged. Hence, a high incidence of atrophic nonunion should be anticipated. The treatment of atrophic nonunion mainly include adequate stability and stimulation of osteogenic process. The use of reamed intramedullary nails, with open cancellous bone graft supplementation, to treat tibial shaft nonunion has been successful in many studies.[11,12] However, the cancellous bone grafting done by a closed technique, as done in our study is not much reported in literature. In our study, the closed technique with reaming to provide internal cancellous bone graft, was used to treat tibial nonunion after plating , and it also achieved a high success rate. This technique also avoids morbidity associated while obtaining cancellous bone graft from donor sites, like iliac crest.

Although the specific outcome has not been reported much in the literature, in our study reaming bone graft to provoke osteogenic power showed to achieve a high success rate. Nevertheless, surgeons should bear in mind that it is a must that during the removal of the plate, dissection of soft tissues and handling of skin should be carried out carefully and gently, otherwise infection or nonunion or may occur. Reinserting a new plate with bone grafting, to replace the previous plate is usually not only difficult but needs extensive tissue dissection to recanalise and refresh the sclerosing ends of bony segments in order to speed up the bony healing process. The cortex, where the plate is inserted, becomes rough and local osteoporosis may restrict the stable fixation of a new plate. Once the nonunion site has been opened to remove the inserted plate, applying a cast, cast brace, or external fixator is inferior to using an intramedullary nail. The stability of a cast or cast brace is not always sufficient and the deterioration of tibial alignment is unavoidable.[3] Local wound care is sometimes very difficult, and long-term ankle joint immobilization can severely delay the recovery period. As for external fixation, pin tract problems and the bulky framework may create inconvenience for daily life. Therefore, they are better used under special conditions where intramedullary nails are unsuitable, such as when the nonunion site is too close to the knee or ankle joint.[13] Reamed, locked intramedullary nailing is a reliable and safe procedure in the treatment of nonunion in the distal one-fourth of the tibia, even in the setting of prior infection or external fixation. It allows for excellent correction of deformity, which is an essential component of the procedure.[14]

Reaming to provide cancellous bone graft should not be overdone. Although in this series nonunion at various levels was successfully treated with reaming bone graft, the lower tibia can be best provided with more bone graft than the upper tibia by intramedullary reaming and in many studies it has been found a good alternative to plating the distal tibial diaphysial fractures[15] and locked

intramedullary nailing is more appropriate in such fractures because of better preservation of periosteal circulation, and thus lower complication rates.[16]

CONCLUSIONS:

Using reamed intramedullary nails to treat tibial shaft aseptic nonunion after plating spares the need of supplemented cancellous bone grafting. Hence interlocking nailing is not only simple but has the coupled advantage of avoiding inflicting another wound and osteo-trauma as happens in obtaining iliac bone graft.

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LAPAROSCOPIC SURGERY IN CHILDREN

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ABSTRACT

Objective *To assess the efficacy and safety of various laparoscopic procedures in paediatric population.*

Study design: *An analytical case series*

Place & Duration of study: *Various public and private sectors hospitals of Karachi, from January 2001 to December 2006.*

Patients and Methods *Case records of all paediatric patients who underwent laparoscopy for diagnostic or therapeutic purposes were reviewed. Age, sex, investigations, preoperative diagnosis, per operative diagnosis, procedure, duration of operation, hospital stay and intra-operative and post-operative complications were recorded. Patients with impalpable testes were excluded from the study as they are reported in another study.*

Results *During the study period, 19 paediatric patients underwent laparoscopy for different surgical conditions. Age ranged from 5 to 12 years. Eight patients were males and 11 females. Six patients underwent cholecystectomy for cholelithiasis. Investigations did not reveal any cause for cholelithiasis. Appendicectomy was performed in 7 cases. Two of them had interval appendicectomy, while five were operated for acute appendicitis. Out of 5, three had acute appendicitis while two had mesenteric lymphadenitis. Adhesiolysis was performed in five patients. Adhesions in four of them were due to tuberculosis, band, recurrent appendicitis and post-operative adhesions, while in fifth patient no cause could be ascertained. One patient underwent left varicocelecotmy. None of the patients required conversion to open surgery. There was no intra-operative complication while post-operative complications were minimal.*

Conclusions: *We conclude that laparoscopic surgery is feasible, effective and safe in the management of a wide range of surgical conditions in children.*

KEY WORDS:- *Laparoscopy, Child, Cholecystectomy, Appendicectomy, Varicocelectomy.*

INTRODUCTION

Laparoscopy is in vogue in adult surgical practice yet it evolved very slowly in paediatric surgical arena for several reasons. Paediatric surgeons were slow to learn and took a long time to appreciate the advantages of this approach. One reason being short duration of many open surgical operations in infants and children that result in short hospitalization and relatively little discomfort.[1,2,3] The paediatric size equipment were also not available in early years. It is technically more demanding in paediatric population. Procedures like laparoscopic cholecystectomy which serves as a practicing ground for learning this surgery in adults, does not exist to that extent in paediatric surgery. Same happened with us.

We started doing laparoscopic surgery in 1997. We used laparoscopy in the management of impalpable testis for the first time.[4] Since then we have been using laparoscopy in the management of undescended testis regularly[5] but it took us 4 years to embark on laparoscopic surgery for other paediatric conditions. Since 2001 we were encouraged to broaden our indications for laparoscopic surgery. In this study we are reviewing our data to analyze the feasibility, efficacy and safety of laparoscopy for different surgical conditions in paediatric population.

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PATIENTS AND METHODS:

The medical records of all children who underwent laparoscopy for diagnostic or therapeutic purposes were reviewed, regarding age at operation, sex, investigations including haematological tests and ultrasound, operative procedures, duration of operation, hospital stay and post-operative complications. Written and informed consent was taken for the procedure as well as for conversion to open surgery if required. All patients were also informed about potential risks of laparoscopic surgery.

All patients were operated under general anaesthesia. Abdomen was prepared and draped as for open surgery. Nasogastric tube was passed and urinary bladder was emptied either by crede's maneuver or catheterization. We used adult laparoscopic instruments in all the patients. In all patients first port (P_1) was placed above or below the umbilicus by open Hassan technique under direct vision. An intra abdominal pressure of 8 - 10 mm of Hg was achieved in smaller children and 10 – 12 mm Hg for older children. All other ports were inserted under direct laparoscopic vision. The site of other ports was selected according to the procedure.

For laparoscopic cholecystcetomy 2nd trocar of 10 mm, was put in epigastrium or just to the left of epigastrium (P_2). 3rd port of 5mm in right upper abdomen was placed in anterior axillary line (P_3) and 4th port just above the inguinal crease on the right side (P_4). Table was tilted to the left and head end was tilted up by 15-20 degrees after inserting first trocar. A non toothed endograsper was introduced through P_4, fundus was grasped and pushed upward and laterally. Another non toothed grasper was introduced through P_3 to hold the Hartmann's pouch which was then pulled anteriorly and to patient's right to stretch the cystic duct and its peritoneal attachment. A Maryland forceps was then passed through P_2 . Dissection was started posteriorly and a window was created between cystic duct and gall bladder bed. Blunt dissection was used to separate cystic duct from cystic artery and common bile duct.

The anatomy of Callot's triangle was assessed and then cystic duct was doubly clipped proximally and single clip distally. Cystic artery was then doubly clipped proximally and cut distal to the clip to avoid possible avulsion of cystic artery on stretching the cystic duct. Cystic duct was then cut between the distal two clips with the help of scissors. Gall bladder was then dissected from its bed with hook diathermy by gradual superolateral retraction of infundibulum. The gall bladder was then delivered via P_2. Gall bladder bed was inspected for bleeders and leakage. Suction and lavage of the abdominal cavity was then done if necessary. No drain was placed.

For laparoscopic appendicectomy patient was laid supine with foot end up with slight left tilt. Surgeon stands on left. P_2 is placed 2-3 cm above pubic symphysis and telescope was then shifted to this port. Third port (P_3) 5mm was placed either in right or left iliac fossa. Abdominal cavity was examined. Small bowel loops were then carefully pushed to upper half of abdomen. Tip of appendix was held with grasper and the appendix was put on stretch and freed of adhesions. Mesoappendix was cauterized and then cut. Appendicular vessels may also be clipped after making a window in mesoappendix but one should not use diathermy in the vicinity of clips. The entire mesentery was cut close to appendix so as to bare the appendix all along its length up to the base. Pre tied absorbable endoloops (with Roeder's knots) were then passed through 5mm trocar. Three loops were placed around the appendix and tightened one above the other. Appendix was then cut between second and third loop. Appendicular stump was never buried in our cases. The appendix was then grasped at its free cut base and withdrawn through 10mm trocar. Irrigation of the area was then done with warm saline. Haemostasis was rechecked and deflation done.

Patient was placed supine with foot end up in laparoscopic varicocelectomy case. Ports P_2 and P_3 were placed at the level of umbilicus on either flank lateral to the recti muscle. Spermatic vessels were identified 3-5 cm cephalad to internal ring. Testicular artery preserved as far as possible. Spermatic artery generally located posteromedial to spermatic veins by looking for its pulsation. Clips (medium-large) where applied to spermatic veins. Any active bleeding was inspected after reducing the intra-abdominal pressure.

In all cases ports were removed under vision and abdomen was deflated as far as possible. The fascial defects and skin were closed. Port sites were infiltrated with bupivacaine. Rectal diclofenac suppository was given to all patients in a dose of 1mg /kg body weight.

RESULTS:

Over a period of 6 years we operated upon 6 cases of cholelithiasis, seven underwent appendicectomy, five patients underwent adhesiolysis and one patient underwent varicocelectomy. Of the 6 patients who underwent cholecystectomy, none had sickle cell anemia, spherocytosis or thalassemia. Two of them were real sisters. Five of the six were symptomatic. Four were females and two males. None had common bile duct (CBD) stone or dilatation of CBD. Youngest patient was 5 year old and eldest of 12 years. The average time taken for surgery was 70 minute. Drainage was not needed in any case. Only one patient had mild shoulder pain post-

operatively. Hospital stay ranged from 24 to 48 hours with an average stay of 37.7 hours.

Of the seven patients who underwent apendicectomy 5 were female and 2 males. Two of them underwent interval appendicectomy while five were operated for acute appendicitis. Of the five three had acute appendicitis while in 2 of them appendix was normal but they had mesenteric lymphadenitis. Age ranged from 6 to 12 years. Time required for surgery ranged from 55 to 105 minutes with average being 71.4 minutes. Hospital stay ranged from 24 to 48 hours with average being 33 hours. Only one patient had mild wound infection of umbilical port site.

Of the 5 patients who underwent adhesiolysis, 2 were females. Of the 5, one had post-operative adhesions another one had tuberculosis. One of them had history of acute appendicitis and so in addition to adhesiohysis, appendicectomy was also done. One of them had band extending from ileum to umbilicus while in one of them cause could not be ascertained. All the 5 patients had history of recurrent abdominal pain with or without history of sub-acute obstruction. The operative time ranged from 65 to 100 minutes with average of 82 minutes. The average hospital stay was 45.6 hours. None of the patients had postoperative complications. The hospital stay of the patient with tuberculosis was more because of prolonged ileus.

Only one patient who had left sided varicocele (proven by doppler ultrasound) underwent left sided varicocelectomy and it took us 65 minutes. The hospital stay was 26 hours. There was mild testicular pain post-operatively which resolved on analgesics (table I).

Table I Age, Sex, Diagnosis, Operating Time and Hospital Stay

No of Patient	Age	Sex	Diagnosis	Operative time	Hospital Stay
1	11 Y	F	Cholelithiasis	65 minutes	36 hours
2	12 Y	F	- do -	75 minutes	40 hours
3	5 Y	F	-do -	90 minutes	30 hours
4	7 Y	M	- do -	55 minutes	24 hours
5	9 Y	M	- do -	65 minutes	48 hours
6	9 Y		- do -	70 minutes	48 hours
1	12 Y	F	Adhesiolysis / abdominal pain with sub-acute obstruction	100 minutes	60 hours
2	11 Y		- do -	90 minutes	56 hours
3	10 Y	F	- do -	85 minutes	28 hours
4	6 Y	M	- do -	65 minutes	36 hours
5	9 Y	M	- do -	70 minutes	48 hours
1	6 Y	M	Appendicectomy	105 minutes	34 hours
2	12 Y	F	- do -	100 minutes	24 hours
3	10 Y	F	- do -	55 minutes	24 hours
4	8 Y	F	- do -	60 minutes	28 hours
5	8 Y	M	- do -	50 minutes	32 hours
6	7 Y	F	- do -	55 minute	28 hours
7	6 Y	F	- do -	75 minutes	48 hours
	11 Y	M	Varicocele	65 minutes	26 hours

DISCUSSION

Paediatric laparoscopic surgery was first described as early as 1973.[1] It was mainly restricted for diagnostic purposes, but today almost every operation performed by paediatric surgeons can be accomplished laparoscopically [2, 3,6-10] or thoracoscopically.[11] This development has been achieved through several milestones. Flexible fiberglass bundles were used for transmission of light by Lamm in 1930. Automatic insufflator was developed by Kurt Gemm, a German gynaecologist in 1966. Hopkins in 1966 developed rod-lens optical system which gave a large viewing angle more light transmission and good resolution. This made miniaturization of the system technically feasible. High intensity cold light and better video recording in late 70's made further contribution. In the early 90's an explosive expansion of laparoscopic surgery occurred in adults as a result of the success of laparoscopic cholecystectomy. Paediatric laparoscopy however remained confined to few enthusiasts initially,[12,13] rest of paediatric surgical community adopted a "wait and see" attitude. Today it is estimated that 82% of paediatric surgeons in USA are performing laparoscopic surgery.

Laparoscopy in children requires special care as the abdominal wall is pliable, so first trocar placement should be done by open technique. Subsequent trocars should be inserted under endoscopic vision. We make a small through and through stab incision using size 11 blade. This reduces the amount of pressure required to introduce the port, thus reducing the chances of accidental damage to vessels and viscera. Ports are placed so as to achieve traingularisation with primary port. Though most surgical procedures have been attempted laparoscopically, it should be kept in mind that it may not be possible in every case. It must be at least as safe and effective, as the standard procedure which it would replace. Furthermore surgeons must be skilled also in conventional open surgical methods for situation in which rapid conversion to an open operation is necessary. Acquiring skill in laparoscopic surgery in children however has long learning curve, needs expensive instruments and for advanced laparoscopic surgery the art of intracorporeal suturing needs to be learnt.[2, 3]

Cholelithiasis in infants [14] and children is rare but common in those with sickle cell disease.[15, 16, 17] None of our patients however had sickle cell disease, spherocytosis or thalassemia. The pick up rate of symptomatic and asymptomatic cholelithiasis has increased after liberal use of ultrasound for workup of cases of recurrent abdominal pain. We have performed laparoscopic cholecystectomy in six cases successfully with no conversion into open surgery. Similar results are reported

by others.[18] There is a definite learning curve for the procedure but for those who are practicing laparoscopic surgery in adult, it is easy.

In this series we have performed laparoscopic appendicectomy in seven cases. Though it was feasible and safe procedure it was time consuming probably because of our initial exercise of both extracorporeal and intracorporeal knotting. Laparoscopic appendicectomy though routinely performed by some,[19] its role in performing it in all cases of appendictis is controversial. But it has a definite place in cases of right lower quadrant pain of uncertain diagnosis and is a suitable procedure in obese female adolescents.

Recurrent abdominal pain is a common symptom in clinical practice. The usual investigations (blood, urine, and ultrasound) seldom yield any result. In these cases laparoscopy have an advantage to be a diagnostic modality[20] as well as a therapeutic value. All quadrants can be visualized, biopsies can be taken, adhesions can be lysed, Meckels diverticulum or diseased appendix can be removed at the same time. We did not have to convert to open surgery in any one of our cases while others have reported a high conversion rate.[18] It may be due to the fact that we are very selective. In our patients we had congenital bands, post-operative adhesions, history of recurrent attacks of appendicitis, tuberculous adhesions in four patients (one of each), while in the fifth patient no cause could be identified. Results are similar to other series.[6, 18] We performed left varicocelectomy in one case. The advantage of laparoscopic surgery in these cases is not only early recovery but in addition to that bilateral cases can be dealt effectively at the same time through the same ports. In our series there was no intra-operative complication while postoperative complications were minimal. The results are comparable or even better than other series.[18]

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ABDOMINAL TUBERCULOSIS: A SURGICAL PERSPECTIVE

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ABSTRACT

Objective *To document the clinical presentation, operative findings, surgical procedures and complications of abdominal tuberculosis.*

Study design: *Retrospective study.*

Place & Duration of study: *This study was conducted in Surgical Unit II of Bolan Medical Complex Hospital, Quetta during August 2001 to August 2006.*

Patients and Methods *This study included patients, who presented with clinical features of intestinal obstruction. They were either known cases of abdominal tuberculosis or diagnosed at the time of laparotomy. Tissue biopsy specimen was taken from all the cases for histopathological examination.*

Results *A total of 7983 patients were admitted during the last 5 years. Among them 294 were admitted with acute or chronic intestinal obstruction. All of them were operated. Two hundred were suffering from abdominal tuberculosis. Majority of them were in their 4th decade of life. The male to female ratio was1:1.63. The most common clinical presentation was the weight loss (88%), abdominal distension (73%) and abdominal pain (46%). Peroperative findings revealed ileal perforation in 44.0%, multiple adhesions in 26.5% and ileocaecal mass in 14.0%. Resection of gut and primary anastomosis was performed in 38.0% and adhesiolysis in 22.0%. The major cause of morbidity was wound infection (17.0%), faecal fistula (9.5%) and burst abdomen (6.5%). The mortality was 12.0%.*

Conclusions: *Abdominal tuberculosis is one of the major causes of acute abdomen in developing countries. It affects the people of working age group of the society. It imparts a great deal of morbidity as well as economic loss.*

KEY WORDS:- *Abdomen, Tuberculosis, Surgery.*

INTRODUCTION:

Tuberculosis is an infectious, systemic and chronic granulomatous disease. It is usually caused by mycobacterium tuberculosis. It causes a great deal of ill health and affects all communities. It has social implications particularly stigmatization and social isolation of tuberculosis patients and even their families. Due to social commotions, patients are often reluctant to accept or reject the diagnosis and treatment.[1, 2] Abdominal tuberculosis is usually one of the most neglected entities of the medicine by the patient.

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Pakistan is included in the sixteenth countries, where lack of progress in fighting tuberculosis is threatening global tuberculosis control efforts, case detection and case holding are very poor.[3,4] The abdominal tuberculosis is the second commonest extra pulmonary form of the disease.[5] Diagnosis of extra pulmonary tuberculosis is often difficult because of varied spectrum of clinical presentation and non availability of sensitive tests.[6] However in most cases diagnosis is reasonably accurate by the process of exclusion but absence of confirmatory test does not exclude abdominal tuberculosis.[7] The present study was designed in order to ascertain the mode of varied clinical presentations of abdominal tuberculosis, operative findings and to evaluate the outcome of different surgical procedures.

PATIENTS & METHODS

This study was conducted in Surgical Unit II of Bolan Medical Complex Hospital, Quetta from August 2001 to August 2006. All patients presented who presented with clinical features of intestinal obstruction either known cases of tuberculosis and those who later on histopathological examination turned out as having tuberculosis were included. The exclusion criteria were the patients, who were diagnosed clinically as a case of abdominal tuberculosis and treated conservatively and those, who were previously operated as a case of abdominal tuberculosis.

A detailed history and clinical examination were recorded. History regarding the duration of illness, clinical symptoms and signs, previous investigations and drug treatment was elaborated. In all the patients preoperatively blood complete picture, erythrocyte sedimentation rate, blood sugar, urea, creatinine, HbsAg, HCV, x-ray chest and abdomen were performed. Ultrasound examination was done in few cases. In all patients exploratory laparotomy was performed and varied presentations of abdominal tuberculosis were dealt accordingly. In all cases specimen was taken for histopathological confirmation. Postoperatively patients were given antituberculous drugs and followed for any adverse side effect.

All the data was recorded on the prescribed data sheet. In the end all the data was compiled, statistical tests were applied and results compared with local and international studies.

RESULTS:

A total of 7983 patients were admitted in SU II of Bolan Medical Complex Hospital, Quetta. There were 4209(52.72%) male and 3774 (47.27%) female patients. Among them 294 (3.6%) were admitted as cases of acute and chronic intestinal obstruction. All of them were operated and it was revealed that 200 (2.5%) were suffering from abdominal tuberculosis. Abdominal tuberculosis constitutes about 68.02% of the intestinal obstruction. The most common presenting age was the 4th decade of life. The age ranged from 12year -72 years. There were 76 (38.0%) male and 124 (62.0%) female patients. The male to female ratio was 1:1.63.

The most common mode of presentation was the weight loss in 176 patients (88.0%) followed by abdominal distension in 146 patients (73.0%), abdominal pain 92 (46.0%), (Table I). The operative findings of the patients revealed that 88 patients (44.0%) had ileal perforation followed by multiple adhesions in 53 patients (26.5%). Twenty eight patients (14.0%) had ileocaecal mass, 12 had intestinal stricture and in 19 cases frozen abdomen found. Resection of the gut and primary anastomosis done in 76 patients (38.0%), repair of perforation in 40 patients (20.0%), primary repair of perforation followed by proximal ileostomy in 34 patients (Table 2).

Postoperatively the major causes of morbidity were the wound infection in 34 patients followed by faecal fistula in 19 patients, burst abdomen in 13 and post operative intestinal obstruction in 12. It was observed that faecal fistula was common in those patients in whom only repair of the perforation was performed.

Table I Clinical Features of Abdominal Tuberculosis At The Time of Presentation (n=200)

S.No	Symptoms & Signs	No. of Patients	%
1	Abdominal Pain	92	46.0
2	Abdominal Distension	146	73.0
3	Vomiting	88	44.0
4	Constipation	46	23.0
5	Fever	41	20.5
6	Weight Loss	176	88.0
7	Abdominal Mass	28	14.0
8	Peritonitis	78	39.0
9	Associated Pulmonary Tuberculosis	25	12.5

Table II Different Surgical Procedures Performed

S. No	Surgical Procedures	No. of Patients	%
1	Adhesiolysis	44	22.0
2	Repair of perforation	40	20.0
3	Resection of gut and primary repair	76	38.0
4	Ileostomy followed by primary repair	34	17.0
5	Stricturoplasty	20	10.0
6	Right Hemicolectomy	12	6.0
7	By pass procedure Side to side anastomosis	16	8.0

DISCUSSION:

Abdominal tuberculosis along with pulmonary tuberculosis is very common in developing countries of South Asia and commonly encountered by the surgeons in Pakistan and other tropical countries. Abdominal tuberculosis mimics clinically and radiologically with Crohn's disease which is common in western countries.[8,9] The incidence of abdominal tuberculosis is variable. In a hospital based study by Hameed F, on 50 patients of abdominal tuberculosis the incidence was 46%, while in another study by Tariq NA, it was 21% in a series of 230 patients.[10,11]

In a study conducted in Civil Hospital, Quetta on 50 cases of abdominal tuberculosis patients majority were in their 3rd decade of life. Female to male ratio was 2.5:1.[12] In another study conducted in JPMC, Karachi on 83 patients majority were in the 2nd & 3rd decade of life. The female to male ratio was 1.4:1.[7] In our study majority of the patients were in 4th decade of life.

The operative findings in abdominal tuberculosis in Civil Hospital, Quetta series on 50 cases of abdominal tuberculosis patients, were strictures in 60%, adhesions in 16%, ileocaecal mass in 12%, perforation in 8% and inflamed appendix & lymphadenitis in 4%.[12] In another study conducted in JPMC, Karachi 21 patients presented with various tuberculous perforations, while 24 patients had Ileocaecal mass, multiple strictures, adhesions, frozen abdominal contents and rectal stricture.[7] In our series of 200 abdominal tuberculous patients multiple findings were observed as reported in other series.

The major cause of postoperative morbidity in our study was wound infection in 34 patients, burst abdomen in 13 patients. In a study conducted by Hameed F, patients with perforation of the gut with abdominal tuberculosis had a high mortality rate of 19.44%,[10] while Sicar S, had 11.0% mortality.[13] In our study 24 patients (12.0%) died due to postoperative complications.

CONCLUSIONS:

Abdominal tuberculosis is still one of the commonest causes of acute abdomen. The presentation of tuberculous abdomen was most frequently observed in 4th decade of life. Female has slight preponderance over male. The most frequent mode of presentation was weight loss, abdominal distension, abdominal pain and vomiting. Surgical intervention and postoperative antituberculous therapy were the main stay of treatment.

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IS LAPAROSCOPIC CHOLECYSTECTOMY TREATMENT OF CHOICE IN ACUTE CHOLECYSTITIS?

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ABSTRACT

Objective *To evaluate the role of early laparoscopic surgical intervention in acute cholecystitis in our setting.*

Study Design *Descriptive study.*

Place & Duration of study *At Hamdard University Hospital and some other private hospitals of Karachi from July 1998 till July 2005.*

Patients and Methods *All cases of acute cholecystitis admitted under our care at Hamdard University Hospital and some other private Hospitals of Karachi were included in this study. The data collected through review of files for presenting symptoms and signs, biochemical findings and histopathology of resected gall bladder specimen. Those cases who had known history of cholelithiasis and had a recurrent attacks were also included in this study. Those patients who had clinical jaundice, ultrasound examination suggestive of dilated common bile duct(CBD), impacted stone in CBD, empyema gall bladder on ultrasound with swinging pyrexia were excluded from the study.*

Results *There were 516 cases of acute cholecystitis with the age range of 16 to80 years. All cases were operated within 24 to 48 hours after admission. Our conversion rate was 6.4% with the mean operating time of 55 minutes.*

Conclusions: *Laparoscopic cholecystectomy is a safe and effective procedure in acute cholecystitis in experienced hands.*

KEY WORDS:- *Cholelithiasis, Acute cholecystitis, Laparoscopic cholecystectomy.*

INTRODUCTION:

Laparoscopic cholecystectomy is being the preferred treatment world wide for cholelithiasis. The treatment for acute cholecystitis is conservative management in many centers with antibiotics, rest, analgesia and majority of these patients are usually sent home after the recovery from acute attack and subsequently operated laparoscopically after 6 to 8 weeks. This increases the hospital stay and the total cost of treatment. In our unit at Hamdard university hospital and several other private hospitals of Karachi, we adopted the policy to operate upon all patients with acute cholecystitis in a single admission. This article is based upon our experience of this approach.

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PATIENTS AND METHODS:

All cases of acute cholecystitis operated by our surgical team from June 1998 till June 2005 were included in this study. All these patients had routine investigations including complete blood picture, random blood sugar, urine analysis, blood urea, liver function test, hepatitis B and C screening. The criteria for labeling acute cholecystitis were history, clinical examination and ultrasonic findings of thickness of gallbladder wall and surrounding adhesions and pericholecystic collection of fluid.

RESULTS:

There were 516 cases of acute cholecystitis admitted under our team in 7 years. There were 475 females and 41 males. The youngest patient was a 10 year old boy and the eldest was an 84 year old lady. Maximum number of patients were between 30 year – 50 year age group (n 373).

In this study multiple gall stones were found in 451 cases, solitary in 63 cases and acalculous cholecystitis in 2 cases. The conversion rate in our series was 6.4% (n 33). We normally decide of conversion in first 15 to 20 minutes to avoid complications and the reason for conversion were dense adhesion, distorted anatomy at Callot's triangle and empyema gall bladder. Post operative complications are shown in table I. Our average operative time was 55 minutes with a range of 35 minutes to 90 minutes. Majority of our patient sent home in 24-48 hours of the operation. Few of the patients stayed for 72hours. The average stay was 36 hours.

Table I Post operative complications.

Bleeding from epigastic port	08 Cases
Bleeding from umbilical port	11 cases
Minor haematoma around umbilical port	03 Cases
Port site hernia from umbilical port	20 Cases
Vascular Trauma	Nil
Injury to Common bile duct	Nil
Leak from gall bladder while dissecting	15 Cases

DISCUSSION:

Laparoscopic cholecystectomy (LC) is becoming popular among surgeons as well as in patients. It offers minimal surgical trauma, good cosmetic result, reduced hospital stay and early resumption to work. Therefore majority of surgeons are now inclined to provide laparoscopic cholecystectomy to their patients of cholelithiasis. More surgeons are acquiring training in laparoscopic surgery and laparoscopic cholecystectomy as it is one of the most commonly performed operations and established as a most favored treatment for elective management of cholelithiasis. [1,2]

In acute inflammation of gall bladder many surgeons are still reluctant to give the option of laparoscopic cholecystectomy as they know that acute inflammation of gall bladder is a known risk factor for adverse outcome in open cholecystectomy. Until recently acute inflammation has been considered as a relative contra-indication for laparoscopic cholecystectomy.[3] Just few years back the available reports on the safety and efficacy of LC in acute cholecystitis were scanty and conflicting. [4] Since the laparoscopic surgeries are becoming more common the attitude of trained laparoscopic surgeons in treating acute cholecystitis has changed entirely and now we see several studies in which laparoscopic cholecystectomy has been successfully carried out at various centers of excellence in the world. [5,6,7,8]

The pioneer of laparoscopic cholecystectomy initially considered acute cholycystitis to be a contraindication for laparoscopic surgery, and this view was also supported by other researchers. [9,10] The main reason was the fear of damaging common bile duct due to edema in the Callot's triangle due to acute cholecystitis. [10] With increasing expertise it has become possible to deal acute cholecystitis laparoscopically and the conversion rate is also decreasing with increasing awareness of the anatomy of the Callot's triangle in acute condition. The conversion rate in various reports has been mentioned form 9% to 30%.[11,12,13]

Our approach was to perform diagnostic laparoscopy in all cases of acute cholecystitis and to see the anatomy. If there were a lot of adhesions we normally convert to open procedures within 15 to 20 minutes of the start. The risk of injury to CBD in acute conditions while performing laparoscopic cholecystectomy is 0.3% to 0.6% as compared to 0.1% to 0.2% for open procedures. Fortunately we did not have any single injury to CBD in our 516 cases. [13,14] Our conversion rate was 6.4%. Our observations suggest that the risk factors for conversion are old age beyond 70 years, male gender and ultrasonic findings of gall bladder wall thickness more than 5 mm along with pericholecystic collection of fluid.

CONCLUSIONS:

Laparoscopic cholecystectomy is a safe and effective treatment for acute cholecystitis. It has fewer complications and shorter length of stay in the hospital. It is thus cost effective and patient resumes his day to day activity earlier as compared to open cholecystectomy. We recommend that laparoscopic cholecystectomy in acute cholecystitis by an experienced laparoscopic surgeon, well versed in elective laparoscopic cholecystectomy.

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PROLONGED SITTING OCCUPATION: ETIOLOGICAL FACTOR OF ANAL FISSURE

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ABSTRACT

Objective *To assess the correlation between prolonged sitting occupation and anal fissure as an etiological factor.*

Study design: *Observational study - case series.*

Place & Duration of study: *From June 2004 to June 2006 at Baqai Medical University & Korangi Surgical Clinic Karachi.*

Patients and Methods *All patients with anal fissure attending the out patient clinic of above mentioned hospitals were included. Their profession was recorded. Other information regarding duration of job, sitting duration during their work etc was also sought.*

Results *Out of 120 patients 108 were male. All were between the ages of 22-40years.Seventy three were having long duration sitting occupation causing external pressure on anal canal between the sitting object and coccyx.*

Conclusions: *Evidence from the present study suggests that long duration sitting occupation has played a role in pathogenesis of anal fissure.*

KEY WORDS:- *Anal fissure, Occupational diseases, Etiology.*

INTRODUCTION

Anal fissure is one of the common causes of anal pain but its etiology and pathophysiology are still not completely understood.[1] It is a vertical tear in the distal anal canal, presents with painful defecation and fresh bleeding.[2] Many theories have been advanced to explain the origin of anal fissures but trauma of faecal mass and hypertonocity of the internal sphincter seem to be the most important factors.

In this study we tried to look into the relationship between anal fissure and the profession, especially the nature of job so as to propose etiological significance of it.

PATIENTS & METHODS:

This study was conducted at Baqai Medical University Hospital and Korangi Surgical Clinic Karachi, during the two year period from June 2004 to June 2006. In these areas all patients belonged to low income families, and mostly performing labor work. They worked for 12 to 18 hours per day. 120 patients were studied to identify the etiological factor of anal fissure. Besides collecting routine data, special attention was focused on age, sex and occupational details like type of work, duration of work time and duration of total sitting time per day. Site of fissure was also noted. All patients presented with painful defecation and rectal bleeding. Clinical diagnosis of fissure was confirmed by visual inspection.

RESULTS:

Total number of patients having anal fissure was 120. Ninety-eight (81%) presented with acute and 22 (18.3%) with chronic fissures. There were 108 (90%) males. Female patients did not have history of prolonged sitting. One female had history of multiple episiotomies and fissure was anteriorly placed. All patients were young healthy between the ages of 22 to 40 years, with a median age of 28.4 years. Distribution of acute and chronic fissure among male and female is shown in table-1

Out of 120 patients 73 (60%) had history of long duration sitting, while 47 (39%) patients had other occupations. History of long sitting occupation in these patients was from 2 years to 6 years, with an average of 3.5 years. The nature of work is shown in table II.

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Table I Gender and Type of Fissures

Gender	Acute Fissure	Chronic Fissure
Male	79 (65%)	29 (24%)
female	04 (3.3)	08 (6.6%)
Total	83 (69%)	37 (30%)

Table II Nature of Work .

Nature of work	No of patients	%
Motor cycle riders	21	28%
Tailors	07	9.5%
Drivers	18	24.6%
Shopkeepers	09	12.3%
Computer operators	12	16.4%
Students	06	8.2%

Duration of daily sitting varied among different occupations, ranging from 8 hours to 16 hours. Single continuous sitting session was about two and half hour to three hour especially in drivers and computer operators. All patients were treated by application of 0.2% glycerin trinitrate paste, initially for the period of six weeks. Twenty four patients required lateral internal sphincterotomy.

DISCUSSION:

Anal fissure is a common condition, and although most are short-lived and heal spontaneously, those that persist and require intervention cause considerable morbidity in an otherwise healthy young population.[3] Our study had mostly young male patients. Outcome of our 120 cases of anal fissures, one feature was common in 73 patients, that is long duration sitting occupation. This prolonged sitting may be a cause of anal fissure. Prolonged sitting compresses the soft tissues supporting the anal canal, between coccyx and sitting object. That reduces the blood supply to the anal canal and increases the resting anal pressure. Normally the sitting compresses the posterior wall of anal canal, while anterior wall escapes this pressure effect. This may be one of the reasons of fissure commonly involving the posterior wall of anal canal.

Klosterhalfen et al demonstrated by postmortem angiographies that the posterior commissure in which up to 90% of fissure occur is less perfused than the other sections of the anal canal. This concept is also supported in the theory of Crohn's disease, where microvascular ischemia is a contributing factor of fissure formation.[4] Schouten et al confirmed the reduced blood flow in posterior wall of anal canal by doppler laser flow meter. Resting anal pressure (80—100mmhg) in healthy volunteers approximates the pressure within the arterioles of the inferior rectal artery.[5] Permanent elevated resting pressure is thought to impair the inter-sphincteric blood flow. This point augment our concept of long duration sitting in which there is constantly high resting anal pressure which reduces the blood flow to the anal mucosa. This correlation of anal pressure and ano-dermal blood flow at the posterior midline is responsible for fissure formation. In conclusion, our recommendation for anal fissure prevention is by avoiding long duration sitting.

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SPLENIC HYDATID CYST: A RARE SITE OF INVOLVEMENT

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ABSTRACT

A case of splenic hydatid cyst is reported in which the only complaint was left sided abdominal pain. Hydatid disease was diagnosed on ultrasound abdomen and CT scan. IHA was also significantly raised. Patient was kept on albendazole pre-operatively. On splenic exploration due to the presence of good splenic tissue cystectomy and capitonnage was done.

KEY WORDS:- *Splenic hydatid cyst, Computed tomography, Cystectomy.*

INTRODUCTION:

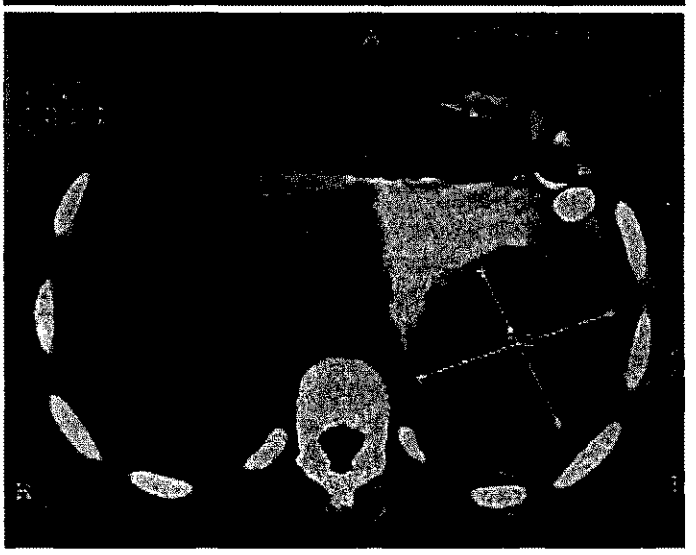
Hydatid disease (HD) is a unique parasitic disease that is endemic in many parts of the world. HD can involve any part of the body. The spleen is infrequently involved in hydatid disease even in endemic areas. After liver and lung the spleen is the third most common location of hydatid disease.[1] It occurs in 1% to 8% of all children with echinococcosis.[2] Splenic involvement of HD has no precise clinical expression; the diagnosis is usually delayed and often leads to organ removal. Organ-preserving measures are feasible only in cases with early diagnosis. For better results early diagnosis is a necessity.

CASE REPORT:

An eleven year old male child presented with complaint of abdominal pain in left upper quadrant for one year. Pain was intermittent, nonradiating, and moderate in severity. Each episode was relieved by either oral or intravenous analgesics. It was occasionally associated with fever. There were no complaints of vomiting, appetite loss, dyspepsia, and dyspnoea and weight loss.

Examination revealed a healthy child of average built. Vitals were within normal limits. Abdomen was full non-tender and soft. Spleen was just palpable. Blood complete picture revealed hemoglobin 10 gm/dl, total leucocytes 8400, and eosinophil 03.The liver and renal function tests were within normal range. Chest radiograph was normal. The ultrasonography of abdomen showed spleen as normal in size and outline, measuring 11.2 cm having a cystic mass with thin walls, good through transmission and echogenic material within measuring 5.6cm x 6.2cm. CT scan of abdomen revealed a cystic mass in the spleen having smooth margins and non-enhancement of central fluid, incomplete septa suggestive of hydatid cyst. It measured 5.6cm x 6.7cm in axial plane, craniocaudal extension was 6cm (fig. I). On the basis of ultrasound and CT scan diagnosis of splenic hydatid cyst was made. IHA was raised – 1:512. Initially splenectomy was planned. Patient was already on oral albendazole.

Figure I: CT scan showing splenic cyst.



After full preparation he was explored by left subcostal incision. Splenic flexure of colon and liver were retracted. The surroundings of the organ were covered with swabs

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soaked with hypertonic saline 15%. Cystic fluid was drained with puncture and aspiration to reduce the intracystic pressure. Then scolocidal agent was introduced into the cyst cavity and left for 5 minutes. It was noted that despite a large size cyst good healthy splenic tissue was present. Therefore spleen was not removed and cystectomy and capitonnage was done. Postoperative recovery was smooth. Albendazole was continued. Follow up in OPD was remained uneventful. Postoperatively US of abdomen showed a residual cavity in healing phase.

DISCUSSION

Splenic hydatid cysts are usually asymptomatic. In these asymptomatic patients, the diagnosis is established during investigations for other reasons. If the cyst is infected, or abscess formation occurs then left upper quadrant pain, fever, and leukocytosis develop.[3] Franquet et al suggested that percutaneous drainage of splenic abscess must be avoided when hydatid disease is suspected.[3]

Due to the risk of spontaneous or traumatic rupture, there is an absolute indication for splenic hydatid cysts to be treated surgically.[4] The standard treatment is open total or partial splenectomy. In our case on operating table we decided to go for organ preserving procedure instead of splenectomy keeping in mind hazards related with splenectomy such as hemorrhage, gastric injury, or pancreatic fistulae.

Two major causes of late morbidity due to splenectomy are thromboembolic complications and devastating postsplenectomy infections (PSIs).[5] There are some authors suggesting conservative surgery.[6] It is suggested that spleen-sparing surgery can be performed only if the cyst is completely inactivated with an adequate amount of parenchyma remaining - at least one third of the original size.[7] Postoperatively our patient remained well and coming for follow-ups regularly.

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RETROPERITONEAL LYMPHANGIOMA

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ABSTRACT

Retroperitoneal lymphangioma is a rare benign congenital malformation of lymphatic channels. This report is of a 35 years old male who presented with 1 month history of abdominal pain and swelling due to a large retroperitoneal cystic lymphangioma. The lesion was removed surgically with complete resection.

KEY WORDS:- *Lymphangioma , Retroperitoneal*

INTRODUCTION

Lymphangiomas are benign lesions of the lymphatic system the exact etiology of which remains uncertain. Ninety percent lymphangiomas occur in patients less than two years old,[1] mostly in the neck or axilla and are often referred to as cystic hygromas. However five percent occur sporadically in the lungs, mediastinum, adrenal gland, kidney or bone. Abdominal lymphangioma is very rare. First presentation in adulthood is uncommon, but retroperitoneal cystic lymphagiomas may present incidentally in later life, typically slowly enlarging and remaining asymptomatic for long period although if large they can present with pressure effects on adjacent organs. If a complication such as infection, hemorrhage, rupture, or torsion occurs presentation can be acute with abdominal pain.

CASE REPORT

A 35 year old male presented with complaints of abdominal pain along with swelling, nausea and vomiting for 1 month. At presentation he had a 20 x 10 cm tender swelling in right upper abdomen extending from right hypochondrium to right lumbar region. Its surface was smooth and swelling did not move with respiration. Its upper limit was reachable. Baseline blood tests were normal. His ultrasonography showed a large anechoic mass in the right upper abdomen, lying inferior to liver. It was cystic with internal septations.

CT scan showed a hypo dense, well defined cystic lesion with specks of calcification, extending from sub hepatic region up to pelvis, displacing duodenum and pancreas medially and inferior vana cava laterally (Figure 1). Upper

Figure I: CT scan showing a large retroperitoneal hypodense mass.

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G.I endoscopy was also done which showed undistensible antral area of stomach and compression at 1st & 2nd part of duodenum.

Patient was explored through bilateral sub costal incision and a large cystic mass found arising from right retroperitoneal area bulging through transverse mesocolon. It was coming in contact with anterior abdominal wall and having dense adhesion with duodenum, right colic flexure and IVC with focal mass effect, having internal septations and milky fluid in it. We were able to dissect it (Figure 2). Mass was completely excised while keeping the adherent structure completely intact.

Figure 2: Surgical excision of retroperitoneal lymphangioma.

Histopathology of the specimen showed a benign neoplasm, composed of variable sized channels lined by benign flattened to cuboidal endothelial cells. The walls were composed of hyalinized fibrocollagenous tissue. Many thick wall channels were also seen. Area with foci of calcification in a benign lymphoid tissue also seen. Few congested blood vessels were noted in fibrous stroma. Histopathology confirmed it as cystic lymphangioma. His post operative course in the hospital was uneventful and his 24 month follow up so far has not shown any recurrence.

DISCUSSION

Lymphangioma is a benign congenital malformation of lymphatic channels, which has been classified by their microstructure into capillary, cavernous and cystic type.[2] Lymphangioma is most commonly found in pediatric patients.[1] The most frequently involved region is the (75%) and Axilla (20%). Less than 5% are diagr intra abdominally,[1,3] and they have been report mesentry[4], gastrointestinal tract[5], splen[6], liver[7], pancreas[1]. They are infrequently encountered i retroperitoneum. Patient with retroperit lymphangioma are usually asymptomatic and diagr incidentally by imaging technique or surgery for purpose.[2] Occasionally, a patient can present tumor is large or when infection, hemorrhage, torsi rupture occur.[2] Malignant transformation is possib has been described only once.[8] In lymphangiom they are numerous and affect many organs inc bone.

Imaging by ultrasound and CT scan, is use diagnosis and forewarns the surgeon. The de diagnosis however requires histopathol examination, usually achieved by excision b Aspiration, drainage and irradiation of lymphan give poor result, therefore complete surgical excis the treatment of choice [9] and often it's readily pc with cystic lymphangiomas, however cave lymphangiomas are difficult to excise as multiple adhesions can be present sometimes, making exci a locally involved organ necessary. Surgery sho undertaken promptly unless the cyst has recently infected, in which case 3-month wait is recommen some lymphangiomas a stem with a small base identified macroscopically. It is important that excised to prevent local recurrence. If the stem of tl and the feeding lymphatics are not ligated c ascites will occur.

Resection of the involved organ is sometimes re If major resection of a vital organ is necessary, i peritoneal cavity marsupialization may occasion an acceptable alternative. A complete resectic negative microscopic margins is the optimal tre and the prognosis is excellent. If it is not e completely, the intra abdominal cystic lymphangioi a 10% post operative recurrence rate.[10]

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