Approved by the Pakistan Medical & Dental Council & Index Medicus for the Eastern Mediterranean Region

Published by: Prof Abdul Aziz for Prof.F.U.Baqai, Baqai Postgraduate Medical Institute, IIIC, 1/12, Nazimabad, Karachi

Address for correspondence:
Dr. Jamshed Akhtar
Editor
Department of Paediatric Surgery
National Institute of Child Health
Rafiquee Shaheed Road, Karachi 75510, Pakistan
Tel no. : 00 92 21 9201261 - 3 / 204
Fax no. : 00 92 21 9201270

Subscription rates: Per copy-in Pakistan Rs.100/= in SAARC countries U.S. $20, in other countries U.S.$30, Annual- in Pakistan Rs.300/= in SARRC countries US $ 60, in other countries U.S.$90.

Design & Layout by : Aleemuddin Siddiqui
Published at: DAWN Printing Press, Karachi
Ph: 6607042

ISSN 1817 - 0242

VOL. 12 NO. 3 (JULY – SEPTEMBER 2007) QUARTERLY

JSP JOURNAL OF SURGERY PAKISTAN INTERNATIONAL

EDITORIAL:

FUTURE OF SURGICAL SUB-SPECIALTIES

General surgery as a discipline is considered to be the nursery for all aspirants seeking their career as a surgeon. It is taught as a main subject at undergraduate level in all the medical colleges. At postgraduate level all trainees spend at least 2 years in general surgery before they enter into surgical sub-specialties. The issue that has surfaced very strongly in recent years is decline in number of trainees opting for surgical sub-specialties. The main reason behind it, is the perceived bleak future of surgical sub specialties and this perception is not wrong. At present the surgical sub-specialties are not given their due status. In this modern era when more focused training related to various surgical disciplines is stressed, in Pakistan, still old trend of being general surgeon, prevails. It is not possible for a postgraduate with present training program in general surgery, to be well versed with basics of different surgical sub-specialties. This lead to production of increasing number of half cooked and half baked young surgeons having hardly any knowledge of other fields of surgery.

The solution of this important issue can be addressed at two levels. Firstly all surgical sub specialties must be included in the curriculum at undergraduate level. The percentage of curriculum related to general surgery be reduced to 50% and rest be distributed among neurosurgery, orthopedics, pediatric surgery, plastic surgery, cardio thoracic surgery and urology. The lectures / tutorials be delivered by subject specialists and not by general surgeons. Where possible the medical students should have their clinical rotation through sub specialties. All medical colleges / medical universities should have separate wards related to surgical sub specialties. It should be made mandatory by Pakistan Medical & Dental Council.

At postgraduate level the only comprehensive clinical teaching program is run by College of Physicians & Surgeons Pakistan (CPSP). At present the fellowship requirement in general surgery is only 4 years. It should be enhanced so that a more meaningful training is provided in general surgery plus a significant time is spend on rotation in surgical sub specialties. At present only 2 months rotation on elective basis is the requirement which is not sufficient. It is hoped that by implementation of such program more trainees will be exposed to various sub specialties that may generate interest in pursuing career in these disciplines.

PROF. ABDUL AZIZ
CHIEF EDITOR

COMPARISON OF SALBUTAMOL AND NIFEDIPINE IN THE TREATMENT OF PRETERM LABOUR

RAZIA KOREJO, AYESHA NASIR, SADIA WASEEM, SHEREEN Z BHUTTA

ABSTRACT

Objectives *To compare the efficacy and safety of beta-agonist-salbutamol and calcium channel blocker - nifedipine in inhibiting uterine contractions and to compare the maternal side effects and neonatal outcome of the two drugs.*

Study design *Quasi experimental.*

Place & Duration of study *Department of Obstetrics and Gynaecology, Ward-8, Unit-I, Jinnah Postgraduate Medical Centre, Karachi, from October 2005 to September 2006.*

Patients And Methods *Patients admitted in the Department of Obstetrics and Gynaecology, Unit - I of Jinnah Postgraduate Medical Centre, Karachi with the diagnosis of preterm labour and fulfilling the inclusion criteria were selected. These patients were divided into two groups. Group-A received salbutamol (beta agonist) treatment and group-B nifedipine (calcium channel blocker). Salbutamol was given intravenously at the start and then maintained with 4mg oral dose. Nifedipine was given as 20mg oral tablets.*

Results *A total 100 patients were divided into two groups of 50 each. Mean age in group-A was 27.64 ± 6.06 years and in group-B 27.84 ± 6.16 years. Mean parity in group-A was 2.34 ± 1.97 and in group-B 2.58 ± 1.99. Mean gestational age in group-A was 31.94 ± 2.43 weeks and in group-B 32.34 ± 2.68 weeks. In the group A the contractions stopped in 1 hour, in 31 (62%) patients as compared to group B where only 7 (14%) patients were tocolysed in the first hour. Forty percent of patients had no contractions during the 3rd hour of treatment in this group. Three (6%) patients suffered from side effects with nifedipine as compared to 14 (28%) patients with salbutamol. Neonatal outcome and pregnancy prolongation results were similar in both groups.*

Conclusion *This study shows that the tocolytic effect of prolongation of the pregnancy and the neonatal outcome of the two drugs are the same; however nifedipine is associated with fewer side effects.*

KEY WORDS:- *Salbutamol, Nifedipine, Preterm labour.*

INTRODUCTION:

Preterm labour complicates 5% - 10% of pregnancies and is a leading cause of neonatal morbidity and mortality throughout the world. Unfortunately, the incidence of preterm labour has changed very little over the last 40 years and uncertainties still persist regarding the best strategies for its management. It has been widely recognized that its prevention and/or effective management will improve neonatal outcome and have a profound impact on societal and long-term public

Correspondence:
Dr. Razia Korejo
Department of Obstetrics & Gynaecology
Jinnah Postgraduate Medical Center
Karachi.

healthcare costs.[1] Approximately 13 million preterm births occur worldwide annually from an incidence of 11% in North America to 5.6% in Oceania[2]. In Europe, the incidence of preterm birth is 5.8%, which accounts for approximately 400,000 preterm births each year and it is estimated that around 100,000 of these are potentially preventable.[3]

Early detection and effective management are important steps for preventing preterm labour which is the leading cause of infant morbidity and mortality and accounts for 35% of all health care spending on infants[4]. Prediction and prevention of preterm labour is more important and beneficial than treating it. Once preterm labour starts it may be difficult or sometimes impossible to halt the process. Preterm labour can result in a serious sequel for both mother and foetus including maternal and foetal infections and prolonged hospital stay. Treatment of this condition is vital.

The aim of inhibiting preterm labour is to achieve time for in-utero transfer to a tertiary care centre with perinatal facilities, and also to prolong the pregnancy for at least 48 hours so that corticosteroid may be administered to enhance foetal pulmonary maturity. The therapeutic measures carried out usually are in the form of tocolytics, antibiotics and corticosteroids. Tocolytic agents currently used are beta mimetics, calcium channel blockers, prostaglandin synthetase inhibitors, magnesium sulphate, oxytocin receptor antagonist and uterine myometrial relaxant, nitric oxide donor. Most commonly used group is beta-2 selective agonist including salbutamol, terbutalin and ritodrine.[5,6] Adverse effects include palpitations, tremors, nausea, vomiting, headache and restlessness. Pulmonary oedema occurs 1 in 400 cases.[7] Because of these side effects close monitoring of patient is mandatory. The second most commonly used drugs are calcium channel blockers like nifedipine. Adverse effects are dizziness, flushing, headache, hypotension and peripheral oedema.[5,6]

Because to achieve tocolysis and to avoid adverse effects of prematurity, a drug which is effective, less expansive, has less side effects and easy administration, and which needs less active monitoring should be used. It is desirable to use a drug that will prevent or tocolyse preterm labour improving maternal and neonatal outcome with relatively few side effects. Therefore this study was conducted with the view to compare the efficacy and safety of a beta-agonist and a calcium channel blocker in inhibiting uterine contractions and to compare the maternal side effects and neonatal outcome with the two drugs.

PATIENTS AND METHODS:

This study was conducted in the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi for one year period from October 2005 to September 2006. All patients who were admitted through Out Patient Department or Casualty in the Department of Gynaecology and Obstetrics Unit - I of Jinnah Postgraduate Medical Centre, Karachi with the diagnosis of preterm labour and who fulfilled the inclusion criteria were selected. Total 100 patients with diagnosis of preterm labour were studied. Group A consisting of 50 patients were treated with salbutamol and Group B, 50 patients were treated with nifedipine. The inclusion criteria was gestational age between 28 – 36 weeks, single normal foetus, palpable uterine contractions 3 in 10 minutes, at least 50% cervical effacement and dilatation less than 4cm with intact membranes and patients having no medical problem like pre-eclampsia, eclampsia, cardiac disease and diabetes. The patients who had severe foetal growth retardation, foetal distress and severe maternal haemorrhage were excluded.

Each alternative patient was assigned a group viz, group-A for salbutamol treatment and group-B for nifedipine treatment. The informed consent for each patient was taken before starting treatment. The proforma developed for the purpose of study was filled for each patient. Salbutamol was given intravenously as follows: 4mg of salbutamol was diluted in 400CC of 5% dextrose solution and started at 10 drops per minute, increasing the dose at an interval of 15 – 20 minutes until the contractions stopped or the maternal pulse increased to 140 beats/minute or above. This was supported by oral salbutamol 4mg twice daily after the contractions stopped and maintained for further five days. Nifedipine was given as 20mg stat tablet which was repeated after 20 minutes. If contractions did not stop another 20mg dose was given after 30 minutes. If the contractions stopped nifedipine was given 20mg twice daily for further 5-days. If contractions continued 20mg nifedipine was given at an interval of 4 hours till contractions stopped.

The data from the filled proforma was converted into database on SPSS version 10.0. The scale measurement such as number of uterine contractions, time of delivery or neonatal outcome was compared for the two groups by student t-test. The observations related to percentage of two groups were done by chi-square test of proportion for qualitative outcomes and t-test for quantitative outcomes.

RESULTS:

Total of 100 patients with diagnosis of preterm labour were studied. The demographic profile and clinical characteristics of the labour for both groups are shown in table – I & II with no significant findings. Within one hour

time for tocolysis, there were 31 (62%) patients in group-A whereas 7 (14%) were in group-B. For the next three consecutive hours of 2, 3 and 4 the trend showed vice versa and there were higher percentages of patients in group-B as compared to group-A. (Table III). The statistical test of chi-square revealed that time for tocolysis is dependent on two groups (P = 0.001, chi-square = 24.8)

In group-A 7 (14%) patients delivered in less than 24 hours, 12 (24%) patients were delivered between 24 – 48 hours, 13 (26%) patients were delivered between 48 hours to one week and 18 (36%) patients were delivered after one week. In group-B 8 (16%) patients were delivered in less than 24 hours, 17 (34%) patients were delivered between 24 – 48 hours and 7 (14%) patients were delivered between 48 hours and one week, 24 (48%) patients were delivered after one week. The p value was non significant.

More mothers in group A than group B had side effects. Headache, palpitation and tachycardia were found in 14 (28%) patients in group-A. In group-B 3 (6%) patients had hypotension and tachycardia. Statistically the difference in percentage among two groups was found significant with P <0.04, chi-square = 4.00. (Table IV). Neonatal outcome did not show any dependency on mortality and survival and showed statistically non significant value with P = 0.21, chi-square = 1.52. Stay in Nursery also showed non-significant results when compared for two groups A and B (P = 0.67), Chi-square = 0.79). (Table V).

DISCUSSION:

Preterm birth is the most important single determinant of adverse infant outcome, in terms of both survival and quality of life. Numerous pharmacological agents have been utilized in inhibiting preterm labour. The aim of tocolytic therapy is to prolong pregnancy long enough until growth and maturation of foetus is complete. This is done to delay delivery for at least 48 hours so that corticosteroid administration is effective in (to enhance foetal pulmonary maturity), or for transfer of patient to a tertiary care centre with perinatal facilities.

In this study the highest number of patients (53%) were in the age group of 21 – 30 years and lowest number (21%) were below the age of 20 years. This study was in contrast with the study of Iqbal J et al[8] where no patient was below the age of 20 years.[8] Mean age in our study for group-A was 25.8 ± 5.2 and for group-B was 27.0 ± 5.7, which is comparable to the study of Phupong V et al.[9] But our study was in contrast to the study by Lockwood et al[10] who found that increase risk of preterm delivery was in women less than 20 years and over 35 years of age. This may be due to the lack of knowledge about their ages in our females.

TABLE-I DEMOGRAPHIC PROFILE

Mean	Group-A (n=50)	Group-B (n=50)	t-value	p-value
Age (years)	27.64 ± 6.06	27.84 ± 6.16	0.16	0.87
Parity	2.34 ± 1.97	2.58 ± 1.99	0.61	0.545
Gestational age (weeks)	31.94 ± 2.43	32.34 ± 2.68	0.78	0.436
Delivery interval	131.16 ± 106.19	455.04 ± 274.41	7.78	0.001

TABLE-II CLINICAL CHARACTERISTICS OF LABOUR

Uterine contractions	Group-A (n=50)	Group-B (n=50)
1 – 2	14 (28%)	16 (32%)
3 – 4	31 (62%)	30 (60%)
> 4	5 (10%)	4 (8%)
Cervical dilatation		
<2cm	12 (24%)	11 (22%)
2 – 3cm	23 (46%)	26 (52%)
3 – 4cm	15 (30%)	13 (26%)
Cervical effacement		
Less than 50%	24 (48%)	25 (50%)
50 – 60%	16 (32%)	18 (36%)
60%	10 (20%)	7 (14%)

TABLE-III TIME FOR TOCOLYSIS

	Group-A (n=50)	Group-B (n=50)
1st hour	31 (62%)	7 (14%)
2nd hour	8 (16%)	15 (30%)
3rd hour	7 (14%)	20 (40%)
4th hour	4 (8%)	8 (16%)

P = 0.01, Chi-square = 24.8

TABLE-IV MATERNAL SIDE EFFECTS

Side effects	Group-A (n=50)	Group-B (n=50)
Headache	4 (8%)	0
Hypotension	0	1(2%)
Nausea/vomiting	2 (4%)	0
Palpitation	4 (8%)	0
Tachycardia	4 (8%)	2 (4%)

P < 0.04, Chi-square = 4.00

TABLE-IV NEONATAL OUTCOME

	Group-A (n=50)	Group-B (n=50)
Alive	42 (84%)	46 (92%)
Neonatal Death	8 (16%)	4 (8%)
Stay in Nursery:		
< 24 hours	15 (60%	19 (70.4%)
24 – 48 hours	6 (24%)	4 (14.8%)
> 48 hours	4 (16%)	4 (14.8%)

P = 0.67, Chi-square = 0.79

In this study highest number of patients were of low parity i.e. 82%. This is contradictory to the results found in the study of Bakketeig LS et al[11] in 1981 where incidence of preterm labour was high in multiparae. This may be due small sample size in our study or due to the fact that more multiparae deliver at home and do not come to the hospital. In this study mean gestational age was 32.0 ± 2.34 in group-A and for group-B it was 32.3 ± 2.34. This is comparable to the study by Weerakul W et al,[12] where mean gestational age was 31.7 ± 1.8.

In this study 43 (86%) patients with salbutamol delivered after 24 hours showing it to be an effective drug and this is comparable to studies[13,11,9] whose results were 85%, 86% and 81% respectively. In this study delivery interval with nifedipine was found to be comparable to salbutamol and this is also proved in many different studies.[14,15,16] In this study 14 (28%) patients in group-A as compared to only 3 (6%) in group B had side effects, thus as compared to salbutamol, nifedipine had no serious maternal side effects. This is comparable to study by Tsatsaris V et al[17] and Ferguson JE et al.[18] Only one systemic review reported 1 case of pulmonary oedema among 852 women[18] which was treated with beta-agonist. This was not found in our study possibly because of small sample size. Regarding neonatal outcome in terms of stay was similar in nursery in both groups. This shows no significant difference in the birth related outcomes between the two groups. Similar results were found in different randomised controlled trials.[19,20,21] This study shows that nifedipine is a better choice for tocolysis compared with salbutamol in view of less maternal side effects and comparable results regarding prolongation of pregnancy and neonatal outcome. The recent Cochrane Review on preterm labour.[22] corroborates the outcome of this study

CONCLUSIONS:

This study concludes that salbutamol and nifedipine are equally effective regarding delay of delivery, prolongation of gestation and neonatal outcome but nifedipine is more effective in view of easy intake, less active maternal and foetal monitoring and very few side effects as compared to salbutamol which requires strict monitoring of both mother and foetus. Salbutamol has further disadvantage of an intravenous route.

REFERENCES

1. Chandraharan E, Arulkumaran S. Recent advances in management of preterm labour. J Obstet Gynaecol India 2005; 55: 118 – 24.
2. Ronnie F, Lamont M, Mason R, Paul E, Adinkra. Advances in use of antibiotics in the prevention of preterm birth. In: Bonnar J editor. Recent advances in obstetrics and gynaecology 21st ed. London: Churchill Livingstone 2001; 36 – 7.
3. Ingemarsson I, Lamont RF. An update on the controversies of tocolytic therapy for the prevention of preterm birth. Acta Obstet Gynaecol Scand 2003; 82: 1 – 9.
4. Berkman ND, Throp Jr JM, Lohr NK, Carey TS, Hartmann KE, Gavin NI et al. Tocolytic treatment for the management of preterm labour. A review of the evidence. Am J Obstet Gynecol 2003; 188: 1648 – 59.
5. Walkinshaw SA. Preterm labour and delivery of preterm infant. In; Chamberlain G, Steer PJ editors. Turnbull's obstetrics. 3rd ed. New York: Churchill Livingstone 2001: 493 – 520.
6. Mumtaz N, Soomro N. Preterm labour risk factors and outcome. Med Channel 1999; 5: 45 – 9.
7. Almont RF. Evidence based labour ward guidelines for the diagnosis, management and treatment of spontaneous preterm labour. J Obstet Gynaecol 2003; 23: 469 – 78.
8. Iqbal J, Nausheen F, Bhatti FA. Management of preterm labour. Annals 2004; 10: 423 – 6.
9. Phupong V, Charakorn C, Charoenvidhya D. Oral salbutamol for treatment of preterm labour. J Med Assoc Thai 2004; 87: 1012 – 6.
10. Lockwood CJ, Kuczyuski E. Risk stratification and pathological mechanisms in preterm delivery. Paediatr Perinat Epidemiol 2001; 15 (Suppl 2): 78 – 89.
11. Bakketeig LS, Hoffman HJ. Epidemiology of preterm birth: result from a longitudinal study of births in Norway. In Elder MG, Hendricks CH (editors). Preterm labour. Buttee-Worth London 1981: 17-86.
12. Weerakul W, Chittacharoen A, Suthutvorauvt S. Nifedipine versus terbutaline in management of preterm labour. Int J Gynaecol Obstet 2002; 76: 311 – 3.
13. Liggins GC, Vaughan GS. Intravenous infusion of

Salbutamol in the management of premature labour. Br J Obstet Gynaecol 1973; 80: 29 – 32.

14. VanGeijn HP, Lenglet JE, Bolte AC. Nifedipine trials: effectiveness and safety aspects. Br J Obstet Gynaecol 2005; 112: 79 – 83.
15. Kupferminc M, Lessing JN, Peyser MR. Nifedipine versus ritodrine for suppression of preterm labour. Br J Obstet Gynaecol 1993; 100: 1090 – 4.
16. Garcia-Velasco JA, Gonzalez A. A prospective, randomized trial of nifedipine vs ritodrine in threatened preterm labour. Int J Gynaecol Obstet 1998; 61: 239 – 44.
17. Tsatsaris V, Papatsonis D, goffinet F, Dekker G, Carbonne B. Tocolysis with nifedipine or beta-adrenergic agonists: a meta-analysis. Obstet Gynaecol 2001; 97: 840 – 7.
18. Ferguson JE, Dyson DC, Holbrook RH, Schutz T, Stevenson DK. Cardiovascular and metabolic effects associated with nifedipine and ritodrine tocolysis. Am J Obstet Gynecol 1989; 161: 788 - 95.
19. Koks GAM, Brolann HAM, DeKleine MJK, Manger PA. A randomized comparison of nifedipine and nitodrine for auppression of preterm labour. Eur J Obstet Gynaecol Repro Biol 1998; 77: 171 – 6.
20. Garcia-Velasco JA, Gonzalez GA. A prospective, randomized trial of nifedipine vs ritodrine in threatened preterm labour. Int J Gynaecol Obstet 1998; 61: 239 – 44.
21. Smith CS, Woodland MB. Clinical comparison of oral nifedipine and subcutaneous for initial tocolysis. Am J Perinatol 1993; 10: 280 – 4.
22. King JF, Flenady VJ, Papatsonis DNM. Calcium channel blockers for inhibiting preterm labour

ROLE OF ALVARADO SCORE TO MINIMIZE RATE OF NEGATIVE APPENDECTOMY WITHOUT INCREASING RISK OF PERFORATION

ASHAR AHMAD KHAN, MUHAMMAD ZEESHAN AZHAR, ABDUL RASHEED, MIAN USMAN FAROOQ

ABSTRACT

Objectives *To apply the Alvarado score as a criterion for admission and treatment plan for acute appendicitis to reduce the rate of negative appendicectomy and risk of perforation.*

Study design *Interventional study.*

Place & Duration of study *In the emergency department of Al-noor specialist Hospital, Makkah, Kingdom of Saudi Arabia (KSA) from 15-09-2004 to 14-03-2005*

Patients And Methods *This study based upon the data in which use of Alvarado score system was assessed prospectively in a consecutive case series of 205 subjects >12 years of age with right iliac fossa pain with or without features of acute abdomen. Twelve patients were withdrawn from study due to deficient data. Alvarado score's validity was confirmed by intraoperative findings and histological report of the appendix.*

Results *The study group consists of 205 patients. Forty (19.5%) patients were observed with Alvarado score of 4 or below, discharged and advised to follow in the out patient clinic after 24 hours. Sixty one (29.75 %) were admitted for observation due to Alvarado score 5-6. Some patients improved (19.7%) and 80.3% underwent appendicectomy due to their increased score up to 7 or above. Alvarado score of 7 or above had 104 patients. All were admitted and underwent appendicectomy, but we found perforated or gangrenous appendix in 40(38.5 %) cases. Overall rate of negative appendicectomy was 11.3%. In males this rate was 4% and in females 23.3%.*

Conclusion *In acute appendicitis, Alvarado score can be used as an objective criterion in selecting the patients for admission and conservative or operative treatment. In females adjunct ultrasound (USG) abdomen and pelvis should be done to exclude other pathology.*

KEY WORDS:- *Appendicitis, Alvarado score, Diagnosis.*

Correspondence:
Dr. Ashar Ahmad Khan
Department of General Surgery
Al-Noor Specialist Hospital
P.O. Box 6251
Holy Makkah, Kingdom of Saudi Arabia
Asharahmad71@Hotmail.Com

INTRODUCTION:

Acute appendicitis is a commonest surgical emergency with abdominal pain which start in periumbilical area then shift to right iliac fossa. It is associated with nausea, vomiting, anorexia and sometimes with low grade fever. Abdominal examination show tenderness and rebound tenderness in right iliac fossa or generalized abdominal

tenderness in case of perforated appendicitis. Simple appendicitis can progress to perforation and peritonitis which is associated with much higher mortality and morbidity especially in old age and surgeon should operate early on suspicion rather than wait for full established diagnosis.

A clinical decision for operation leads to removal of normal appendix in 15—30% of the cases. Diagnosis of acute appendicitis is difficult in females in their childbearing age [1] especially during pregnancy,[2] patients with extremes of age and immunocompromised status like renal failure, post organ transplant [3] or patients on steroid treatment. The proportion of negative appendicectomy can be reduced by observing equivocal cases for a period of time.[4,5] Reduction in number of unnecessary or non therapeutic operations should not be achieved at the expense of increase number of perforations.

To make a definite diagnosis before surgery is impractical,[6] but we can reduce the rate of negative appendicectomy by using simple clinical scoring system like Alvarado score [7], Ohmann score and Eskelinen score.[8] Alvarado score first described in 1986,[9] is a simple scoring system that can be instituted easily in outpatient, emergency and inpatients. Alvarado scoring system (describe in table.1) depends upon the presence and absence of certain variables which provides an accurate guide to whether or not the patient has acute appendicitis. This study was conducted to evaluate Alvarado scoring system as a criterion for admission, observation or operative treatment in acute appendicitis.

TABLE-I ALVARADO SCORE

FEATURES	SCORE
Migration of pain RIF	1
Anorexia	1
Nausea / Vomiting	1
Tenderness in RIF	1
Temp. >37.5C	1
Rebound tenderness in RIF	2
Leukocytosis >10,000	2
Shift to the left of neutrophills	1
TOTAL	10

PATIENTS & METHODS:

This was a prospective consecutive case series study done in Emergency as well as general surgery department in Alnoor hospital Makkah, KSA, over a period of 6 months from 15-09-2004 to 14-03-2005. A total of 205 patients were taken as a study group with age group >12years irrespective of gender. The data was collected on a proforma by the on call surgical specialist. The decision of surgery in our hospital was taken by the surgical specialist/consultant on call. Alvarado score (as shown in table I) was applied on all the patients presented with short history of pain in right iliac fossa with or without the features of acute abdomen. Patients were divided into 3 groups according to the Alvarado score. Group 1 consisted of patients with Alvarado score of 4 or below while those having Alvarado score 5-6 were placed in group 2 and subjects having Alvarado score of 7 or above were placed in group 3.

Time lapse between admission and surgery was different in different groups of patients. In group 3 (Alvarado score of 7 or above) time duration between admission and surgery was 4 to 6 hours. In group 2 (Alvarado score 5-6), patients admitted for observation first and operated if their Alvarado score increased to 7. In this group time lapse was more and ranged between 12 to 36 hours.

For every patient who was admitted complete blood count and chemistry was done. In patients who were 35years or above, ECG and x-ray chest were also done as a perusal of anaesthesia protocol. In few selected patients where findings were equivocal especially in young females, additional ultrasound abdomen/pelvis was also done. Diagnosis was confirmed in two stages. First by the intraoperative findings and secondly by histopathology reports. All these patients were followed up in the surgical outpatient clinic up to three months. Descriptive analysis was applied to Alvarado score. Reliability of the Alvarado scoring system was assessed by calculating the negative appendicectomy rate and positive predictive value. Simple Chi-Squared test was applied to find out the significant relationship among negative appendicectomy rate in subjects with different Alvarado score while double classification test was applied to gender.

RESULTS:

Alvarado score was applied on total of 205 patients as a criterion for admission, observation and operative treatment. Out of 205 patients males were predominent 125 (61%). The prominent age group was 12-20 years i.e. 86(41.9%), followed by the group of 21-30years (table II). Overall mean of the Alvarado score was 6.22 with 95% CI 6.22 ± 0.15 (mean$\pm$s.e.;n=205). First group (Alvarado score below 4) contained 40 patients(19.5%). All of these patients were seen in the emergency and discharged to be followed up in general surgery outpatient clinic after 24

TABLE-II DEMOGRAPHIC DATA (N=205)

Age groups in years	Gender	
	Male, n(%)	Female, n(%)
12-20	48(23.4)	38(18.5)
21-30	57(27.8)	28(13.6)
>30	20(9.7)	14(6.8)
Total	125(61)	80(39)

TABLE-III FREQUENCY DISTRIBUTION OF SUBJECTS WITH ALVARADO SCORE(N=205)

Groups	Score	n(%)
Group 1	1	8(3.9)
	2	6(3)
	3	12(5.6)
	4	14(6.8)
Group 2	5	24(11.7)
	6	37(18)
Group 3	7	41(20)
	8	38(18.5)
	9	20(9.8)
	10	5(2.4)

TABLE-IV SUGGESTED MANAGEMENT AFTER APPLICATION OF ALVARADO SCORE IN EMERGENCY DEPARTMENT (N=205)

Suggested Management	Groups	Results	Mean Score
Surgery	Group 3	104(50.7)	7.9
Observation	Group 2	61(29.8)	5.6
Discharge	Group 1	40(19.5)	2.8

TABLE-V POSITIVE PREDICTIVE VALUE (N=158))

Gender	n	Operated, n(%)	Negative appendicectomy n(%)	Positive predictive value (%)
Male	125	98(62)	4(4.08)	96
Female	80	60(38)	14(23.3)	76.7

hours. Only 28 patients came in the outpatient department, out of which 21(75%) were completely resolved, 7 (25%) admitted for observation. In 5(17.5%) patients who complained of increased pain and tenderness in right iliac fossa having their Alvarado score increased to 7 underwent for appendicectomy. Out of these five appendicectomies, 4 were inflamed and 1(2.5%) was normal. Two patients out of 7 were discharged on improvement after observation.

In the next group 61(29.8%) patients out of 205 came with Alvarado score 5—6, all were admitted in surgical ward for observation. After admission 12(19.7%) improved clinically and discharged home in good condition. But in 49(80.3%), Alvarado score increased to 7 or above and were operated. In these subjects appendix was normal in 13(26.5%). In 3 females there was ruptured ovarian cyst and in one patient ectopic pregnancy was found. Appendix was also removed in these patients to avoid any confusion or diagnostic difficulty in future due to the incision given (grid iron).

In group 3 (Alvarado score 7-10), 104(50.7%) patients were admitted and underwent surgery. During surgery only 4(3.8%) were found to be normal, and 58(55.76%) were acutely inflamed while 40(38.5%) were found to be complicated (gangrenous, perforated and appendicular abscess). Histopathological examinations proved the above described data. On histopathological examination one appendix was found to have tuberculous and another had bilharzias. In 39 patients, where diagnosis was difficult ultrasound abdomen/pelvis was done. It was done in 10 males and 29 females and, was normal in 3 males and 12 females. Features of acute appendicitis were found in 4 males and 9 females on ultrasonography. Free fluid was found in right lower abdomen in 4 males and 8 females. In 4 females right ovarian cyst was found and 2 patients had ectopic pregnancy. Two patients with ectopic pregnancy and one with ovarian cyst were shifted to Obstetrics/Gynaecology ward while three patients were operated by general surgeon because still in these patients, suspicion of acute appendicitis was high. Out of total 158 the rate of negative appendicectomy was 18(11.3%). In males this rate was 4% while in females 23.3% (table III & IV).

As a whole positive predictive value of Alvarado score

was 88.6% while in male it was 96% and females showed 76.6% (p=0.01) (Table V). There was a significant difference among the negative appendicectomy rate of the subjects of group 3 and those with group 2, and 1, who got surgery due to there increase of Alvarado score (0.01>p>0.001).

DISCUSSION:

Appendicitis still posses a diagnostic challenge and many methods have been investigated to try to reduce the removal of a normal appendix without increasing the perforation rate. Acute appendicitis can be reliably diagnosed clinically without implementation of additional investigation. These can be reserved for equivocal cases.[10,11] Laboratory tests of the white cell count, neutrophil count and C- reactive protein are more effective in supporting a clinical diagnosis of acute appendicitis in patients with typical clinical features than in excluding the diagnosis.[12] Alvarado scoring system is simple, effective and objective criterion for admission, observation or surgical treatment. Acute appendicitis is a progressive disease and Alvarado score can easily be repeated to assess the progress of disease after admission on patients who are kept under observation. In equivocal patients, ultrasound abdomen and pelvis[13] and diagnostic laparoscopy[14] are excellent diagnostic tool but in difficult cases, computed tomography[15] can be done. Computed tomography should not be done at the cost of delay in treatment. [16]

In our study, out of total 205 patients, 61 % were males while females were 39 % with male to female ratio 1.5: 1. This ratio can be compared with the studies of Arfa et al[5], Mohammed et al, [17] and Chan et al[4], i.e. 0.7: 1, 1.5: 1, 2.85:1, respectively. Our study highlighted the rate of overall negative appendicectomy (11.3 %) but the studies of Chan 2001 and 2003 it was 21%[18] and 13%[4], respectively. The studies of Mohamed (27.3%),[17] Arfa (15-20%)[5] and Khan (15.6%)[6] had shown greater tendency than ours negative appendicectomy rate, on the other hand Rajan (11.8%)[14] showed almost equal to ours. The negative appendicectomy rate in female (23.3%) in our study was almost five times greater than that of male (4%). Same trend was seen in other studies e.g. rates of negative appendicectomy in female and male patients were 21% and 6.3% respectively as reported by Rajan,[14] and 17.9% and 12% by Khan[6]. Likewise positive predictive value of our study (88.6%) is greater than that of Khan (84.3%),[6] and this value in males (96%) is higher while in females (76.6%) lower than Khan's study i.e. 88% and 82.1%, respectively. Rare causes of acute appendicitis were cancer caecum and parasitic infections like Enterobious Vermicularis and Entamoeba histolytica,[19] but we found one tuberculosis appendix and one bilharzias.

Alvarado score has a high diagnostic value below 4 and above 7. As we could not find any patient with Alvarado score 4 or below with appendicitis like the studies of Chan from Singapore (2003 & 2001).[4,18] The current study provided further evidence that the rate of negative appendicectomy with Alvarado score 7-10 was only 3.8%(with Alvarado score 7) but the rate of perforated or gangrenous appendicitis increased to 38.5%(mostly with Alvarado score 9). Zero percent negative appendicectomy with Alvarado score 9 was reported by Chan.[18] All patients with Alvarado score 5-6 were admitted but 19.6% discharged after observation on improvement and 80.3% operated because of increase in Alvarado score. Rate of negative appendicitis was highest (26.5%) in this group similarly rate of negative appendicectomy was much higher in female as compared to males. Delay in performing appendicectomy for acute appendicitis had adverse effects in terms of post operative complications but in selective cases delaying appendicectomy for few hours after presentation did not significantly increase the rate of perforation, operative time or length of stay. It decreased the use of nursing staff, anesthesia team and surgical house staff during the night shift.[20]

Alvarado score described in 1986 had its own limitations. It does not consider age and sex of the patient, and duration of symptoms. In extremes of age, early surgery should be done even if the score is less. There should be separate Alvarado score for males and females because of greater chances of misdiagnosis of acute appendicitis in females. Our study is a hospital based with no control group to find the difference between postoperative outcome of the subjects with and without applying the score. Likewise, Alvarado score was applied by different on call specialist surgeons who probably had the bias of its interpretation resulting in difference in scoring criterion.

CONCLUSIONS:

By applying Alvarado score, we can decrease the rate of negative appendicectomy without increasing risk of perforation. Alvarado score is simple, cost effective and can be repeated at any time. We can use it as a criterion for admission and treatment plan. It will decrease the number of hospital admissions, rate of negative appendicectomy as well as perforated appendicitis, hospitals stay and postoperative complications like wound infection and pelvic abscess. In equivocal cases (Alvarado scores 5-7, females during child bearing age) ultrasound abdomen and pelvis will be helpful to make diagnosis.

REFERENCES

1. Rennie AT, Tytherleigh MG, Theodoroupolou K. A prospective audit of 300 consecutive young women with acute presentation of RIF pain. Ann R Coll Surg Eng 2006;88:140-3.

2. Butte BJM, Bellolio AMF, Fernandez LF. Appendicectomies for suspected acute appendicitis during pregnancy: Experience at a Chilean public hospital. Rev Med Chil, 2006;134:145-51.
3. Hegde S, Moghal NE , Coulthard MG. Acute appendicitis occurring immediately post renal transplant. Pediatr Transplant 2006;10: 119-20.
4. Chan MYP, Tan C, Chiu MT, Ng YY. Alvarado score; an admission criterion in patients with right fossa pain, Surg JR Coll Surg Edinb Irel 2003;39-41
5. Arfa N, GharbiL, Marsaoui L. Value of admission for observation in the management of acute abdominal RIF pain, a prospective study of 205 cases. Presse Med 2006;35:393-8.
6. Khan I, Rehman A. Application of Alvarado scoring system in diagnosis of acute appendicitis. J Ayub Med Coll Abbottabad 2005;7:41-4.
7. Klinika ZA. abdominalnu I endokurgiji, Institut za hirurgiju, Validation of the Alvarado score in the diagnosis of acute appendicitis. Med Pregl.2001;54:557-61.
8. Horzic M, Salmon A, Kopljar M. Analysis of scores in diagnosis of acute appendicitis in women. Coll Antropol 2005;29:133-8.
9. Alvarado A. A practical score for the early diagnosis of acute appendicitis. Ann Emerg Med. 1986;15:557-64.
10. Kalliakmanis V, Pikoulis E, Karavokyros IG. Acute appendicitis: the reliability of diagnosis by clinical assessment alone. Scand J Surg 2005;94:201-6.
11. Bergeron E. Clinical Judgment remains of great value in the diagnosis of acute appendicitis. Can J Surg 2006;49:96-100.
12. Birchley D. Patients with clinical acute appendicitis shoud have preoperative full blood count and C-reactive protein assays. Ann R Coll Surg Engl 2006; 88:27-32.
13. Douglas CD, Macpherson NE, Davidson PM. Randomised controlled trial of ultrasonography in diagnosis of acute appendicitis, incorporating the Alvarado score. BMJ 2000 October 14; 321:919.
14. Rajan P, Sharma DC, Watson CJE. A Retrospective review of appendicectomy management in a UK teaching hospital. Proceedings of audit symposium of department of surgery, Addenbrook's Hospital, Cambridge 2004 Mar;Edinburgh, UK.
15. Jacobs JE. CT and sonography for suspected acute appendicitis: a commentary. Am J Roentgenol 2006;186:1094-6.
16. Menes TS, Aufses AH Jr, Rojas M. Increased use of computed tomography does not harm the patients with acute appendicitis. Am Surg 2006;72:326-9.
17. Salem MI, Al-Hashemy AM. Appraisals of the modified Alvarado score for acute appendicitis in the adults. Saudi Med J 2004;25:1229-1231.
18. Chan MYP, Teo BS. The Alvarado score and Acute appendicitis. Acad Med Singapore 2001;30:51-2
19. Yildirim S, Nursal TZ, Tarim A. A rare cause of acute appendicitis: parasitic infection. Scand J Infect Dis 2005;37:757-9.
20. Abou-Nukta F, Bakhos C, Arroyo K, Koo Y, Martin J, Reinhold R, et al. Effects of delaying appendicectomy for acute appendicitis for 12 to 24 hours . Arch Surg. 2006;141:504-6.

.....★.....

URETEROLITHOTRIPSY WITH SEMI-RIGID URETEROSCOPE: AN EARLY EXPERIENCE WITH 100 CASES.

ABDUL RASHEED SHAIKH , QURBAN ALI SHAIKH, ABDUL FATAH SHAIKH,
MUHAMMAD IQBAL SOOMRO, NISAR AHMED SHAIKH, ALTAF HUSSAIN JOKHIO

ABSTRACT

Objectives *To evaluate success rate, safety, morbidity and complications of intra - ureteric lithotripsy.*

Study design *It was a quasi-experimental study.*

Place & Duration of study *The study was conducted at Department of Urology, Chandka Medical College teaching Hospital and Almas kidney and Lithotripsy Centre Larkana from February 2001 to January 2007.*

Patients And Methods *All the patients (n-100) of either sex having ureteric stone less than 1.5 cm in diameter were selected on the basis of routine clinical examination, laboratory investigation like complete blood count and biochemistry, ultra-sound and x-rays etc for intra ureteric lithotripsy. The semi-rigid ureteroscope 7.5 Fr with Swiss lithoclast lithotripter were used.*

Results *Average age of patients was 28 years. Male to female ratio was 1.5: 1. The stone was successfully disintegrated in 88 cases. Among them, a more favorable significant outcome was obtained for those with stone less than 11mm than for those with stone greater than 11mm (96% versus 84%, $P < 0.05$). Similarly, statistically significant results that are more favorable were found for those with distal ureteric stones than for those with proximal ones (stone free rate of 92.6% versus 78.2%, respectively, $P < 0.05$). The over all success rates achieved in 80% cases. The procedure was converted into open surgery in 12 cases. Of them six cases were due to failure of access to stone and in remaining 6 cases due to complications. Complications like ureteric perforation, operative bleeding and infection occurred in 02%, 18%, and 12% cases respectively. Mean hospital stay was 2.3 days.*

Conclusion *We conclude that this method of treatment is simple, safe, cost effective and successful in majority of patients having ureteric stone. Further, there is definite role of surgery where there is failure or complications.*

KEY WORDS:- *Ureteric stone, Ureteroscope, Lithoclast.*

Correspondence:
Dr. Abdul Rasheed Shaikh
Department of Nephro-Urology
Chandka Medical College
Larkana.

INTRODUCTION:

Urolithiasis is the most common urological ailment. It constitutes about 10% to 25% of the total workload in the urological practice.[1] Geographically this disorder is also wide spread and well recognized almost in all the countries. There are marked differences in prevalence

from one part of world to another. It is more or less endemic in agriculture developing countries where the soil, diet, drinking water and climate, influence the stone prevalence.[2] Pakistan is also located in high stone belt of the Asia.[3] A USA study reports that approximately 12% population will have stone disease at some point in their lives.[4] Primary stones rarely form in ureter. They are formed in kidney and trapped during its passage through ureter where they produce more symptoms and complications.[5]

Various surgical and non-surgical modalities of treatment for ureteric stone are being practiced. With all the options of treatment, the method of choice should be minimally invasive and successful. The conservative method of treatment is simple, safe and economical for certain group of patients under restricted criteria.[6,7] Undoubtedly, extra-corporeal shock wave lithotripsy (ESWL) has become a most valuable asset to the urologist and greatly benefits patients who had renal stones.[8] Its use for ureteric stone is again limited and requires further larger studies.[9] The open surgical method is still popular in primary and secondary health care centers. Now days its usage is occasionally needed in tertiary / referral health centres.[10] Among minimally invasive endoscopic methods, the use of dormia basket with or without fluoroscope is replaced with the advent of ureteroscope.[11] Further advances in endoscopic technology and fiber-optic engineering have enabled the development of thin ureteroscope that are small enough to allow access to entire upper urinary tract even in children.[12] Recently, another timely advance in progression of endoscope occurred. These are prototypes flexible ureteroscope. It led to a final version which incorporated >300° primary active deflection.[13] Thus, today uretero-renoscopy continues to gain popularity with ever-increasing indications. Its use, both for diagnostic as well as therapeutic purposes are well documented.[13]

The indications of intra- corporeal ureterolithotripsy are not different from those of surgery. It includes recurrent episodes of pain, haematuria, upper urinary tract dilatation, recurrent infection and failure of the stone to progress over 4-6 weekly times.[13]

The objective of our study was to evaluate success rate, safety, morbidity and complications of ureterolithotripsy with semi-rigid 7.5Fr ureteroscope and to ascertain that there is still a place for open surgery in modern era.

PATIENTS & METHODS:

It was a quasi-experimental study conducted at department of urology, CMC teaching Hospital and Almas kidney and Lithotripsy Centre Larkana from February 2001 to January 2007. One hundred cases were selected for the study. The criterion for selection of the patient was the presence of single ureteric calculus measuring radiologically less than 1.5 cm in diameter. Screening work up included complete history, clinical examination and investigation like urine DR, haemoglobin, complete blood count and biochemistry like serum cretinine, random blood sugar, ultrasound, x-ray chest, ECG and intravenous urography. Bleeding profile was not carried out routinely. Bleeding time, clotting time and prothrombin time were measured in those patients who had previous history of bleeding disorder. Urine culture and sensitivity report was advised in some cases if required. The patients, who were under 15 years of age, non-functioning kidney, associated anomalies, obvious infection and pregnant women, were excluded from study. All patients were followed up routinely at weekly interval for 4-6 weeks. Ultra-sound examination, plain abdominal x-ray of KUB and urine culture were repeated as warranted by the patient's condition.

A semi-rigid ureteroscope 7.5Fr (Karl Storz, Germany) with Swiss pneumatic lithotriptor (lithoclast) were used. The elective procedure was done under spinal /general anesthesia in modified lithotomic position. Preliminary check cystoscopy was done to assess the status of the lower urinary tract and ureteric ostium. Ureteroscopy then proceeded. If difficulty encountered in inserting the ureteroscope through ureteric orifice then ureteric dilatation performed with balloon ureteric dilator. Once ureteroscope was in the ureter, it was passed up to stone carefully using a least amount of irrigation fluid consistent with good vision to prevent the float up of the stone. Other precautions for this purpose taken include intra-venous frusemide infusion of 40mg with 500ml dextrose water and raising the operative table from cranial side. When the ureteric stone was in view, 0.8mm probe of lithoclast passed through working channel of ureteroscope. The treatment procedure started and stone fragmented under direct vision. The fragments were left in situ (smash & go) whereas in some cases larger fragments were extracted out with the help of dormia basket. At the end of procedure, 4Fr ureteric catheter was left and tide around the 18 or 16Fr Foley catheter. These were removed after 36-48 hours.

The numerical data was analyzed, using a commercially available SPSS version 10. The chi-square test or Fisher test when appropriate, used to determine any statistical significant differences in the nominal data between the out come of two groups in our results. A, P value <0.05 was consider significant.

RESULTS:

Our study comprises 100 patients. Among them 60 were males, the male to female ratio was 1.5:1. Their ages ranged from 22 to 54 years (average 38 years). The stone was located in 64 cases on right side and 36 cases on left

side. Among them stone was further distributed in proximal (42) and distal ureter (58). The overall mean stone diameter was 11 mm (range 8 to15). No significant difference was found in size between proximal and distal ureteric stones (P=NS). Radiological grade –1 hydronephrosis and dilated ureter was present in 44 cases whereas grade-2 hydronephrosis in 10. The balloon ureteric dilatation was carried out in 14 cases. It was statistically significant, where ureteric dilatation was not required (P<0.002). The stones successfully disintegrated in 88 cases. Among them, a more favorable significant outcome was obtained for those with stone less than 11mm than for those with stone greater than 11mm (96% versus 84%, P < 0.05). Similarly, statistically significant results more favorable were found for those with distal ureteric stones than for those with proximal ones (stone free rate of 97.6% versus 78.4%, respectively, P < 0.001). The duration of procedure ranged from 30 to 85 minutes (average 45 minutes). The procedure was converted into open surgery in 12 cases. Of them six cases were due to failure of access to stone and in remaining 6 cases complications occurred.

The operative complications like mucosal perforation and profuse bleeding that obscured the field of vision had occurred in two and four cases respectively. Minor type of mucosal injury and bleeding which did not cloud the field of vision occurred in 14 cases. Overall, the minor hemorrhage (4%) was significantly low versus major hemorrhage (14%) cases (P < 0.001). Postoperative urinary tract infection and fever occurred in 12 cases. The average hospital stay was 2.5 days (range 2-4 days) who successfully under went the procedure. Residual fragments noted in eight (8%) cases during 6 weeks follow up.

DISCUSSION:

The last two decades has witnessed revolutionary changes in the surgical management of stone disease.[11] The treatment of ureteric calculi has also shared in these changes. The decision is more or less configured to the age of patient, size of stone, tortousity of ureter, abdominal or retroperitoneal masses, availability of equipments or skill and preference of patients.[14] Lyon and his colleagues in 1981 started to use pediatric cystoscope to examine the lower ureter in woman and were able to remove ureteric calculi under direct vision. In the same year, Prez-Castro began to employ the first ureteroscope. Later on, with the advent of new small caliber semi-rigid and prototypes flexible ureteroscope made it possible to achieve a high success rate with intra- corporeal ureterolithotripsy.

We have successfully approached and disintegrated stones in 88% cases. The remaining 12 cases were subjected to open surgery because of failure of access to stone and complications. We found residual fragments in eight cases in first 04 weeks of follow-up. These cases were treated with either ESWL or repeating procedure followed by double-J stenting. Thus, we achieved over all 80% significant success rate (P<0.05). More or less similar results are reported from many distinguished centers of the world.

The overall operative and post-operative complications occurred in 32 cases. The main complication was bleeding. The factors responsible for this were mucosal oedema and inflammation at the site of stone. Furthermore, it was enhanced by mucosal injury due to striking of probe. In majority of cases, bleeding was minor and did not pose any problem during the procedure. To avoid the mucosal injury during the procedure, Halfbauer et al[15] recommended that the constant direct vision must be maintained and no energy is applied until and unless there is contact between stone and probe. Comparing with other studies, our success rate was about 7% lower and complications rate was 12% high. This may be due to our initial learning phase. Further, we did not use guide wire, uromat or JJ stent in any of our cases. Ureteric dilatation carried out in only 14 cases with balloon ureteric dilator.

We converted our patients into open surgical method if we encountered any difficulty during the procedure. Postoperative urinary tract infection and fever occurred in 12 cases. These cases had treated conservatively. Despite, the undoubted value, this procedure has obstacle and some limitation. First, that there is retrograde displacement of small calculus or fragments during the procedure. We tried to minimize it by traditional methods i-e keeping the head and body of the patient up at 30 to 45 degree and using intravenous frusemide 40mg infusion. In this context, Ayaz et al [16] described a novel method to prevent retrograde displacement by introducing lubricating jelly proximal to stone via ureteric catheter. He claimed that, the viscosity of the jelly not only acts as a barrier but also allows improvement in fragmentation. Secondly, larger ureteric calculi usually are associated with edematous ureteric wall. This may cause difficulties and complications. Thirdly, high quality skill and expertise are required.

Few studies [17] revealed that ureteroscopy tends to make patients stone free faster and is more effective than ESWL for the treatment of ureteric calculi. However, most patients prefer ESWL because there is less discomfort after treatment. As far as the choice for use of intra-corporeal lithotriptor in ureteroscopy we have used Swiss lithoclast lithotriptor. Many authors advocate that lithoclast is more effective in fragmenting larger and harder stones than other lithotriptors. More over it is user-friendly and highly cost effective.[18] Simultaneously, recently some

scholars[19] favor the new Holmium: YAG laser lithotriptor and warrant its superiority and safe usage over other lithotriptors but they costly. As the prevalence of urolithiasis is high in our country, we recommend that this facility should be established in every urologic centre.

REFERENCES:

1. Javaid SH, Khan JH, Iqbal Z, Iqbal S and Khan FA. Aetiology: upper urinary tract urolithiasis. Pak Post .Mmed J 1993;4; 81-98.
2. Rasheed SA, Zuberi BF, Nisar SA and Saiyal AR. Intracorporeal cystolithotripsy in children. J Coll Physicians Surg Pakistan 2001;11: 156-57.
3. Khan FA. Introduction. In: calculus renal failure. Ist Ed. New fine printing press, Lahore, 1981. 1-14.
4. Frangos DN, Stephen NR. Incidence and economic factors in urolithiasis. In: Stephen NR (Ed). Stone disease. Diagnosis and management. Ist Ed: New York, Grune and Stratton, Orlando. 1987, 3-10.
5. Smith LH. The medical aspect of urolithiasis. An overview. J Urol 1989;141:707-710.
6. Drach GW. Surgical overview of urolithiasis. J Urol 1989; 141:711-3.
7. Oakley N and Hastie. Stone disease of the upper urinary tract surgery. Surgery. 1996; 279-84.
8. Rasheed SA, Nisar SA, Saiyal AR. Extra-corporeal shock wave lithotripsy; Early experience with chinese lithotriptor at Larkana. The Prof Med J 2001;8: 71-5.
9. Hofbauer J, Tuerk C, Hobarth K, Hasun R, Marberger M. ESWL in situ or ureteroscopy for ureteric stones. World J Urol 1993;11: 54-8.
10. Macfarlane MT. Urinary calculi. In: Urology for House officers. 1st Ed, Baltimore USA. Williams and Wilkins 1988; p: 113-8.
11. Spirnak JP, Resnik MI. Urinary stones In: Tanago EA & Aninch JW. Smith General Urology. 12th Ed: California Lange Medical book. 1988; 275-301.
12. Erdenetsesteg G, Manohar T, Singh H, Desai MR. Endourologic management of pediatric urolithiasis: Proposed clinical guidelines. J Endourol 2006; 20:737-48
13. Johnson GB, Grasso M. Exaggerated primary endoscope deflection: Initial clinical experience with prototypes flexible ureteroscopes. Br J Urol Int 2004;93:109-114.
14. Segura JW. Ureteroscopy including lithotripsy and the stone. In: Stephen NR (Ed). Stone disease. Diagnosis and management. Ist Ed: New York, Grune and Stratton, Orlando. 1987, 213-222
15. Hafbauer j, Hobarth k, Marberger M. Lithoclast. New and inexpensive mode of intracorporeal lithotripsy. J Endo Urol 1992; 6: 22-4.
16. Ayyz AA, Ziad AA, James CH, Yousaf MW, Peter E. A novel method to prevent retrograde displacement of ureteric calculi during intracorporeal lithotripsy. Br J Urol Int. 2004;94:441-42.
17. Karisen SJ, Renkel J, Tahir AR, Angelsen A, Diep LM. Extracorporeal shockwave lithotripsy versus ureteroscopy for 5-to10-mm Stones in the Proximal Ureter: Prospective Effectiveness Patient-Preference Trial. J Endourol 2007;21:28-33.
18. Razvi HA, Song TY, Denstedt JD. Management of vesical calculi. Comparison of lithotripsy devices. J Endo Urol 1996;10:559-63.
19. Yeong-chin JOU, Shen CH, Cheng MC, Lin CT and Chen PC. High power Holmium: Yttrium-Aluminium-Garnet laser for percutaneous treatment of large renal stones. Urology 2007;69:22-6.

OUTCOME AFTER TOTAL VERSUS SUBTOTAL ABDOMINAL HYSTERECTOMY IN BENIGN UTERINE DISEASES

RAZIA IFTIKHAR

ABSTRACT

Objectives *To determine the outcome of total abdominal hysterectomy (TAH) versus subtotal abdominal hysterectomy(STAH) in terms of intraoperative and post operative complications in women with benign uterine conditions.*

Study design *A comparative study.*

Place & Duration of study *The Jinnah Medical and Dental College and hospital Karachi, from January 2003 to January 2006.*

Patients And Methods *The study included 50 women who underwent total abdominal hysterectomy and 50 women had subtotal abdominal hysterectomy for benign uterine diseases. Inclusion criteria were menorrhagia and pelvic pain, dysfunctional uterine bleeding, fibroid uterus, adenomyosis of uterus. Patients over 60 years of age, uterine prolapse and suspected cancer of cervix were excluded from the study. Detailed history was taken and examination done. Routine investigations including ultrasound were carried out and hysterectomy was performed by clamp-cut and ligate method.*

Results *The mean age of patients was 47 years and parity between 4-10.The most common complaint was excessive menstrual loss. Fibroid was found in 20(20%), dysfunctional uterine bleeding in 30 (30%), adenomyosis of uterus in 26 26%) and repeated pelvic infection refractory to medical treatment in 24 (24%).There was no injury to adjacent viscera during the procedure. Early post operative complications like pyrexia 5 (10%), wound infection 1(2%)and urine infection1(2%) occurred in STAH, while in TAH pyrexia occurred in15 (30%), wound haematoma 1 (2%) and paralytic ileus 4 (8%). Late complications like vaginal bleeding was noted in 1(2%) of STAH while persistent pelvic pain in 4 (8%), urge incontinence in 5 (10%) and constipation in 4 (8%) of TAH cases.*

Conclusion *Subtotal abdominal hysterectomy took less operation time, rapid recovery, short term complications, but frequently resulted in cyclical bleeding and vaginal discharge while total abdominal hysterectomy was associated with a significantly longer duration of surgery, greater blood loss and longer hospital stay. The STAH resulted in complications despite having advance pathology and technical difficulty, the only problem was vaginal bleeding which can be prevented by regular conisation of cervix.*

KEY WORDS:- *Total abdominal hysterectomy, Subtotal hysterectomy, Complications.*

Correspondence:
Dr. Razia Iftikhar
Department of Obstetrics & Gynaecology
Jinnah Medical & Dental College
Karachi.

INTRODUCTION:

Hysterectomy is the frequently performed operation in gynaecology. Total abdominal hysterectomy involves the removal of both the uterus and cervix where as subtotal hysterectomy means conservation of cervix. Total abdominal hysterectomy is associated with greater

anatomical distortion and disruption of the nerve supply to the pelvic organs and may adversely effect organ function.[1] The reason for retaining the cervix at the time of hysterectomy for benign diseases are mostly based not on the particular benefits of preserving cervical stroma, but rather the avoidance of injury to the pelvic floor that can result from cervical removal. Subtotal abdominal hysterectomy is technically easier as there is lower incidence of vesicourethral dysfunction, also the utero-sacral and cardinal ligaments remain intact thus, preserving pelvic floor support. There is less per-operative blood loss, less post operative infections and haematoma and complications like vault granulation and vault prolapse.[1,2] The life time contemporary risk of cervical cancer with three normal Papanicolaou smears is 0.05%. Injury to the urinary tract is also less frequent after subtotal abdominal hysterectomy.

The purpose of this study was to determine the outcome of subtotal abdominal hysterectomy versus total hysterectomy in terms of intra-operative and post operative complications in women with benign uterine conditions.

PATIENTS & METHODS:

The study was conducted over a period of three years from January 2003 to January 2006 in Gynecology and Obstetrics Department of Jinnah Medical & Dental College & Hospital. All patients in the study were selected from the consultant OPD. Patient's age, parity, weight, menstrual history and presenting complaints were noted. All of them gave history of treatment in various clinics/hospitals. They presented with history of abnormal bleeding, repeated pelvic infection and pelvic discomfort. A complete general physical and pelvic examination was performed. Investigations including ultrasound were performed and findings noted. Diagnostic curettage was done and malignancy excluded. All the patients were counseled about the disease and surgical procedure they had to undergo.

The operation steps for hysterectomy were same in both types except in subtotal hysterectomy the uterus was removed above the internal cervical os to avoid bothersome bleeding from remnant of endometrium. Duration of operation was calculated from the time of incision of skin to the time of closure, while the blood loss was assessed by counting swabs and measuring the volume of blood collected by suction. All patients received single dose of prophylactic intravenous antibiotic except patients with repeated pelvic infections who received complete course of antibiotics for seven days.

The inclusion criteria were menorrhagia and pelvic pain, dysfunctional uterine bleeding, fibroid uterus and adenomyosis of uterus. Exclusion criteria were age over 52 years, uterine prolapse, suspected cancer of cervix. All patients were followed 3, 6 and 12 monthly. The analysis was performed by using SPSS version 10. Frequency and percentage were computed for presentation of all categorical variables. The chi-square test was used for calculating p value applicable for early complications of hysterectomy.

RESULTS:

A total of 200 patients underwent hysterectomy during the study period, out of which 100 patients were selected for the study, 50 patients each for STAH and TAH .The mean age was 47 years, parity between 4-10 and weight 52-78 kg. The most common complaint was menstrual loss unresponsive to medical treatment. Fibroid uterus was found in 20 (20%) cases, dysfunctional uterine bleeding in 30 (30%), adenomyosis of uterus in 26 (26 %) and repeated pelvic infection refractory to medical treatment in 24 (24%) of the cases. In STAH the duration of operation was 30-40 minutes and blood loss was between 250-300 ml. Only two 2(4%) patients were transfused blood. Hospital stay was 4-5 days and haemoglobin on third postoperative day was10-11 gm/dl. In TAH the duration of operation was 60-70 minutes and blood loss was 350-400ml. Five patients were transfused blood during surgery. Hospital stay was 7-8 days and haemoglobin on third post operative day was 9.5—10 gm/dl. There was no injury to adjacent viscera in either of the cases.

Early complications like rise of temperature was noted in 5 (10%) cases of STAH while in 15 (30%) cases of TAH. wound infection, urine infection and wound haematoma were found in 1,1,0 cases respectively in STAH and 1,5,1 cases of TAH . The p value for short term complications came out to be 4.76 which is of significance. Late complications (12 months) like cyclical menstrual bleeding were noted in 1(2%), vaginal discharge in 2 (4%) cases of STAH, while there were no urinary and bowel complaints. In TAH there was no cyclical menstrual bleeding and vaginal discharge but urge incontinence was noted in 5 (10%) and vault haematoma in 1 (2%) and persistent pelvic pain in 4 (8%) cases. Use of antibiotics was more in TAH group, therefore longer stay was required in hospital. The hospital stay was 6-7 days for TAH and 4-5 days for STAH.

DISCUSSION:

Hysterectomy is the most common major gynaecological surgery performed all over the world. The concern about the appropriate performance of hysterectomy includes neurological and anatomic disruption of the pelvic region that may lead to adverse effects on bowel, bladder and on sexual function. Subtotal hysterectomy has been advocated as a less invasive option than total hysterectomy. It has been argued recently that total

abdominal hysterectomy could be reinstituted by subtotal abdominal hysterectomy. Particularly as some of the cancer of the cervix are declining as a consequence of screening. Increased interest in subtotal abdominal hysterectomy by doctors and general public reflects the recent trend towards more conservative pelvic surgical procedures such as endometrial ablations. The primary reason / advantage for subtotal abdominal hysterectomy is to retain normal sexual functions. The alleged sexual and genitourinary benefits of subtotal abdominal hysterectomy over total abdominal hysterectomy are not proven and well designed prospective trial are still needed to address these issues. All women should understand that a second operation may be required to remove the cervix mainly because of continued menses and pelvic pain . The chance of removal of cervix should be made clear to women before making the decision on whether to carry out total abdominal hysterectomy or subtotal hysterectomy which ever option the female chooses. Discussing her preferences is likely to increase her satisfaction with the operation.[1]

Supra cervical hysterectomy has long been considered appropriate if intra operative complications dictate completing the essential surgery as rapidly as possible. It is believed that the advantages of a shorter operative time, less soft tissue dissection, less potential for collateral organ injury and a potential reduction in infectious morbidity must be considered.[2] Morbidity associated with hysterectomy was pyrexia, urinary tract infections, wound infection, bladder injury in a study conducted in Pakistan. The commonest indication was menorrhagia with or without fibroid.[3] The first study to focus on sexual problems that are experienced as bothersome proved not statistically significant. The result of study showed that sexual pleasure significantly improved in all patients, independent of the type of hysterectomy.[4] In the present climate of medical litigation, the increased amount of uterine and bladder damage associated with total but is minimized by subtotal abdominal hysterectomy. Subtotal abdominal hysterectomy is not a popular operation in U.K just because either gynaecologists do not consider the bladder and bowel effects important, or that the risk of carcinoma cervix stump have an overriding impact on practice.[5]

A smaller proportion of female had urinary incontinence after total abdominal hysterectomy than after subtotal abdominal hysterectomy. A negligible proportion of women experienced regular or irregular vaginal bleeding after subtotal abdominal hysterectomy.[6] Hysterectomy is associated with higher rates of patient satisfaction than are other methods of treatment for dysfunctional uterine bleeding. However hysterectomy disrupts the local nerve supply and anatomical relationship. It has been thought that overall pelvic organ's function might be affected adversely. Injury to the urinary tract which occurred in 0.5% to 3%, is the most frequent cause of litigation after total abdominal hysterectomy. Total abdominal hysterectomy was associated with longer hospital stay, more blood loss, longer duration of surgery. Pyrexia was frequent after total abdominal hysterectomy as was anti-biotic use.[7] A validated questionnaire was designed to establish respondents views and their current practice on the issue of total abdominal hysterectomy and subtotal abdominal hysterectomy. 78% of gynaecologists prefer total abdominal hysterectomy if they themselves were to undergo surgery for benign indication while 71% of the males said that they would recommend total abdominal hysterectomy for their partner. If a woman's serial cervical smears, had always been normal, 36% of the respondents said that they would offer the women the option of subtotal abdominal hysterectomy.[8]

Increasing consumer and physician interest in subtotal abdominal hysterectomy reflects the recent trend towards more conservative pelvic surgical procedure such as myomectomy and endometrial ablation. The only reason / advantage for subtotal abdominal hysterectomy is to retain normal sexual function but there are few conflicting data to show that total abdominal hysterectomy is related to long term sexual dysfunction. The preponderance of evidence suggests that detrimental effects on sexual functions are rare. Sexual activity appears to be the most important factor in predicting post operative sexual satisfaction.[9] No significant differences were found between the two operation methods in any of the outcome measures at 12 months.[10] Many gynaecologists and patients globally have questioned the routine removal of the benign cervix, as the agreement of conserving the cervix is less disturbance to bladder, bowel and sexual functions.[11]

A questionnaire with 18 questions on physicians attitude and practice regarding total versus subtotal abdominal hysterectomy was mailed to 1647 gynaecologists in Washington, Maryland and Virginia. The most common reason for removing the cervix was to eliminate the risk of cervical cancer. The most common reason for subtotal abdominal hysterectomy was surgical difficulty leading to an intra-operative changes of procedure.[12] Pelosi M.A et al states that their experience suggests the safety and utility of subtotal abdominal hysterectomy is in properly selected cases. It's use as an alternative for hysterosopic ablation is warranted.[13] Abdel-fattah says that both total and subtotal abdominal hysterectomies have no detrimental effect on the pelvic floor up to one

year post operatively.[14] One of the advantages of subtotal hysterectomy is better support of pelvic structure and there is no apparent advantage to subtotal hysterectomy compared with total hysterectomy with respect to bowel and sexual function.[15]An important finding in the study by Thaker and colleagues is that urinary function improved in both groups after hysterectomy[16] and incontinence might not develop for many years after hysterectomy. The findings were stratified according to age and it was found that women who were 60 years or older the odd ratio for incontinence was increased by 60%, but odd ratio wase not increased for women younger than 60 years.[17]Michael says that the number of total abdominal hysterectomies performed annually has decreased and the number of subtotal hysterectomies increased by >400%.[18] Urinary incontinence is highly prevalent among middle aged women. Potential risk factors include age, race, body mass index, parity, smoking , diabetes and hysterectomy.[19,20] Our study has shown that subtotal hysterectomy is definitely a better option in properly selected cases.

CONCLUSIONS:

Subtotal hysterectomy results in few short term complications but infrequently causes cyclical vaginal bleeding from the remnant of endometrium which can be avoided by routine conisation of cervix. In total hysterectomy a few patients develop urinary complications and vaginal vault prolapse in long term. The quality of life is definitely better in subtotal hysterectomy group.

REFERENCES:

1 Ewies AAA, Olah KSJ. Subtotal abdominal hysterectomy: a surgical advance or a backward step?. Br J Obstet Gynaecol 2000; 07: 1376-79.

2 Jones DE, Ford DS, Robert G. Supracervical hysterectomy: back to the future?.Am.J Obstet Gynecol 1999;180: 513-15.

3 Ahsan S, Naeem S, Ahsan A. A case notes analysis of hysterectomy performed for non-neoplastic indications at Liaquat National Hospital, Karachi. J Pak Med Assoc 2001; 51: 346-49.

4 Jan-Paul WR, Johanna R, Vanderbom G et al. Hysterectomy and sexual well being: prospective observational study of vaginal hysterectomy, subtotal abdominal hysterectomy and total abdominal hysterectomy . Br Med J 2003;327:1-5.

5 Thaker R, Mayonda I, Gillian RP et al. Total versus subtotal hysterectomy: a survey of current view and practice among British Gynaecologist. J Obstet Gynaecol 1998;18: 267-69.

6 Gimbel H, Zobbe V, Andersen BM et al. Randomised controlled trial of total compared with subtotal hysterectomy with one year follow up results. Br J Obstet Gynaecol 2003;110:1088-98.

7 Thakar R, Ayers S, Clarkson P et al. Outcome after total versus subtotal abdominal hysterectomy. New Eng J Med 2002; 347:1318-25.

8 Scott JA, Sharp HT, Dodson M et al. Subtotal hysterectomy in modern gynaecology: A decision analysis. Am J Obstet Gynecol 1997;176: 1186-92.

9 Gimbe H, Zobbe V, Andersen BM etal. Total versus subtotal hysterectomy: An observational study with one year follow up. Aust N Z J Obstet Gynecol. 2003;45: 64-7.

10 Parrikh J, Lesseps A. Outcome following subtotal hysterectomy. J Obstet Gynaecol 2000;1:70-3.

11 Zekam N, Oyiese Y, Goodwin K et al. Total versus subtotal hysterectomy: a survey of gynaecologists. J Obstet Gynaecol. 2003;102: 301-5.

12 Pelosi MA. Subtotal Vaginal hysterectomy: A new role for an old procedure. J Am Assoc Gynecol Laparosc. 1997; 4: 479-83.

13 Fattah A, Yousef B. Effect of total abdominal hysterectomy on pelvic floor function. Obstet Gynaecol Survey. 2004;59: 299-304.

14 Billzep F. Does any advantage result from subtotal hysterectomy? Am Acad Family Phy.2003;1-2.

15 Vander Vaart CH, Vander Bom JG, de Leeu WJR et al. The contribution of hysterectomy to the occurrence of urge and stress incontinence symptoms. B J Obstet Gynaecol. 2002;109: 149-54.

16 Kjeruff KH, Langenberg PW, Greenaway L et al. Urinary incontinence and hysterectomy in a large prospective cohort study in American women. J Urol. 2002;167:2088-092.

17 Gupta S, Mayonda I. Hysterectomy for benign gynaecological diseases. Current Obstet Gynaecology 2006;16:147-53.

18 Baggish MS. Total and subtotal abdominal hysterectomy. Best practice and research. Clin Obstet Gynaecol 2005;19:333-56.

19 Kim N. Danforth MPH, Mary K, Town S, Lifford K et al. Risk factor for urinary incontinence among middle-aged women. Am J Obstet Gynecol 2006 ;194;339-45.

20 Gallagher K, Truemen P. Subtotal versus total hysterectomy. Medical Encyclopedia 2006.

.....★.....

LIBERAL VERSUS RESTRICTED USE OF EPISIOTOMY IN PRIMIGRAVIDA.

IFFAT JAVED, TABASSUM SHOAIB, SHEREEN BHUTTA

ABSTRACT

Objectives *To compare maternal and fetal outcome in primigravida delivering with or without episiotomy.*

Study design *Randomized controlled study.*

Place & Duration of study *Department of Obstetrics & Gynaecology at Jinnah Postgraduate Medical Center in 2006.*

Patients And Methods *Three hundred primigravida with singleton spontaneous vertex deliveries were included. They were divided into two groups: A - in whom episiotomy was done and group B with no episiotomy. Extent of perineal injury, blood loss, the number of sutures used and time required for suturing the episiotomy or tear were noted. After two months patients were followed up in out patient department to assess the frequency of any perineal infection, urinary retention, constipation and dyspareunia. Results were compiled in a tabular form and analyzed.*

Results *In patients, who did not undergo episiotomy, 55 women had intact perineum, 54 had first degree tear and 41 second degree tear. Average weight of baby was 2.84 kg, average blood loss was 6.56 ml, perineal wound was 0.88 cm deep, 0.87 sutures and 4.90 minutes were needed to repair the tears in study group (B) compared to 3.05 kg, 18.21ml, 2.31cm deep, 2.15 sutures and 13.31 minutes in control group. Urinary retention occurred in 1 patient (0.9%), constipation in 8 (7.7%), infection in 1 (0.97%) dyspareunia in 6 (5.8%) patients in study group as compared to 3 (2.3%),17 (13.2%), 4 (3.1%) and 29 (22.4%) in control group (A) respectively.*

Conclusion *The study revealed a significant reduction in terms of perineal injury blood loss, material and time taken to suture the tears during delivery in patients with restricted use of episiotomy. In addition there was a significant reduction in constipation and dyspareunia during puerperium.*

KEY WORDS:- *Primigravida, Episiotomy, Blood loss.*

INTRODUCTION:

Episiotomy is a procedure as unnatural as any elective surgery. It was first described by Sir Fielding Ould[1] in 1741. Since then it has become an established procedure in obstetrics. Episiotomy was routinely carried out in our unit despite altered practice all over the world, of delivering primigravida without episiotomy until a young primigravida who developed vaginal haematoma at the apex of episiotomy that extended up to the broad ligament. Obstetrical hysterectomy had to be done after failure of all medical and surgical corrective measures. Triggered by this event a trial was started under strict

Correspondence:
Dr. Iffat Javed
Department of Obstetrics & Gynaecology
Jinnah Postgraduate Medical Center
Karachi

supervision in our unit to deliver primigravida without episiotomy.

PATIENTS & METHODS:

It was a randomized controlled study conducted in the Department of Obstetrics & Gynaecology at Jinnah Postgraduate Medical Center in 2006. Three hundred primigravida were selected randomly by lottery system but when a patient included in group B, who was not to undergo episiotomy, needed that due to fetal indication, she was shifted to the other group A who were to undergo episiotomy, medio-lateral in every case. All multigravida, patients with previous caesarean section, breech presentation and instrumental deliveries were excluded from the study. Extent of perineal injury was measured in cm from mucosa to muscles vertically. Blood loss from episiotomy or tears was measured in a graduated bowl put close to the perineum. After two months patients were followed up in out patient department to assess the frequency of any perineal infection, urinary complaints, constipation and dyspareunia. Results were compiled in a tabular form and were analyzed statistically, using SSP version 10.

RESULTS:

Total 150 primigravida were included in each group. In group-A episiotomy was routinely carried out on every patient. In group B episiotomy was not performed. In group B 55 (36.6%) women had intact perineum, 54 (36%) had first degree tear and 41 (27.3%) had second degree tear. Table I compares all parameters between two groups during parturition. Forty seven patients from study group (B) and 21 patients from control group (A) were lost to follow up after puerperium.

TABLE-I COMPARISON DURING DELIVERY

Group Statistics	Groups	n	Mean ± SEM	t-value	p-value
Perineal injury (cm)	With Episiotomy	150	2.31 ± 0.06	16.67	0.001
	Without Episiotomy	150	0.88 ± 0.06		
Blood loss (ml)	With Episiotomy	150	18.21 ± 1.14	9.25	0.001
	Without Episiotomy	150	6.56 ± 0.53		
Time taken to suture (min)	With Episiotomy	150	13.31 ± 0.46	16.67	0.001
	Without Episiotomy	150	4.90 ± 0.42		
No. of catgut	With Episiotomy	150	2.15 ± 0.05	15.97	0.001
	Without Episiotomy	150	0.87 ±0.07		
Weight of baby (Kg.)	With Episiotomy	150	3.05 ± 0.04	3.57	0.001
	Without Episiotomy	150	2.84 ± 0.04		

Comparison of various parameters between the two groups after puerperium is given in table II.

TABLE-II COMPARISONS AFTER PUERPERIUM

S.No	Parameters	With Episiotomy (n=129)	Without Episiotomy (n=103)	Chi-Square	p-value
1	Urinary retention	3 (2.3%)	1 (0.97%)	0.08	0.78 (n.s.)
2	Constipation	17 (13.2%)	8 (7.7%)	9.62	0.01 (s)
3	Infection	4 (3.1%)	1 (0.97%)	0.43	0.51 (n.s)
4	Dyspareunia	29 (22.4%)	6 (5.8%)	12.40	0.001 (s)

* Yates Corrected Chi-square,
(n.s.): Non-significant
(s) : Significant

DISCUSSION:

Like any other surgery, episiotomy has risks, including extension of the incision, blood loss, dyspareunia, pain, poor healing, and infection. The risks of episiotomy are more severe than many might appreciate. Although rarely associated with a life threatening problem, the complications of this procedure can be a source of serious morbidity in young mothers who already have major personal and social adjustments to undergo. Despite several decades of research, which many interpret as definitive evidence against routine use of episiotomy, little professional consensus has developed about the appropriateness of routine use. Lack of consensus is illustrated[2] by variation in rates of use, ranging from 13.3% to 84.6% in one study with a prospectively enrolled low-risk population; with an average of 51 percent among spontaneous term births.

Episiotomy is one of the most common procedures experienced by women in the United States.[3] Based on national hospital discharge data for 1999[4], just over 35 percent of women who gave birth vaginally had an episiotomy performed; the figure was approximately 33 percent in 2000. In United Kingdom,[5] episiotomy rates range from 26 to 67%. Frequency of episiotomy in primigravida at Jinnah Postgraduate Medical Center was 62% before the trial was started. Hartman[6] study recommend episiotomy rate below 15% in vaginal birth. According to the recommendations of American College of Obstetricians and Gynecologists (ACOG), published in April 2006,[7] prophylactic use of episiotomy should be restricted. Katherine Hartmann and colleagues[8] have published a new systematic review about effects of routine episiotomy on women.Virtually all episiotomies in these trials were mediolateral[9,10] except one[11] in which median episiotomy was used. Another study carried out in Ireland[12] suggests that primigravida patients have a reasonable chance (21% in this study) of retaining an intact perineum if episiotomy is carried out only when considered to be essential. Moreover, if primigravida patients do sustain a second degree tear (25% in this study) they will fare no worse in terms of postpartum pain then if they had undergone episiotomy and their perineal wound will heal just as well. In our study 36.6% had intact perineum and 36% just had first degree lacerations. The weight of babies in group A was more than group B by 0.2 kg.

A clean cut wound is easy to repair than a ragged one but it predisposes to a higher risk of third and fourth[13] degree perineal tears. In our study, we found that although ragged tears were a bit difficult to stitch but there were no third or fourth degree perineal tears. A study conducted in Lahore also showed[14] severe perineal trauma in primigravida delivering with or with out episiotomy but para urethral trauma was more common in the episiotomy group. Another study, in Lahore, shows that incidence[15] of fourth degree perineal laceration was 0.4% without episiotomy but increased to 1% with the use of episiotomy. Blood loss was significantly reduced in women without episiotomy which is an added advantage to our already anaemic population.[16]

Due to low socioeconomic conditions and illiteracy, infection rate is quite high in sub-continent. Postpartum complications were studied in India.[17] Sepsis was most common cause and infected episiotomies made 28% of the total while we had 3.1% infected episiotomies. Our infection rate was low because all women were delivered in hospital while home deliveries were also included and only complicated cases were taken in Indian study. Women who did not receive episiotomy were significantly more likely to be completely symptom-free. Dyspareunia and pelvic pain were significantly more common in women who had episiotomy. Our study showed 3 % dyspareunia in women with episiotomy and 0.9 % in no episiotomy group at two months. Another group in UK has done a primary analysis[18] with 3 months of follow-up and a secondary analysis after 3 years[19] in the same study population. The proportion of women with resumption of intercourse by 3 months, current dyspareunia at 3 months, or any dyspareunia within the 3 months of follow up did not differ significantly by group. By the third year of follow up, the likelihood of "ever suffering painful intercourse" remained comparable across groups.

Klein showed that women in the restrictive group resumed intercourse an average of 1 week earlier that those in the liberal group.[10] A meta-estimate[20,21] from the combined cohorts suggests that women with episiotomy are 54 percent more likely to have pain with intercourse. Sartore[22] showed that painful first postpartum intercourse is common and severe in episiotomy group (7.9%) than in no episiotomy group (3.4%).

The effects of delivery on urinary and fecal incontinence had been studied[23,24] in women by many researchers but urinary retention and constipation are not a widely studied. In a study the incidence[25] of urinary retention postpartum was 0.7% , which is comparable to results in our study group. Due to pain in stitches 13.2 % patients were constipated which was relieved by diet modification and analgesics.

CONCLUSIONS:

The study revealed a significant reduction in terms of perineal injury, blood loss, material and time taken to suture the tears during delivery in patients with restricted use of episiotomy. In addition there was a significant reduction of constipation and dyspareunia during puerperium. Currently, the evidence suggests that the putative benefits of episiotomy do not outweigh its harms. Indeed, routine use is harmful to the degree that it creates a surgical incision with sequel of greater extent than many women might have experienced, had episiotomy not been performed. Thus the use of episiotomy should only be considered whenever only absolutely indicated.

REFERENCES:

1. Ould F. A treatise of midwifery, London: J Buckland, 1741: 145-6.
2. Low LK, Seng JS, Murtland TL. Clinician-specific episiotomy rates: Impact on perineal outcomes. J Midwifery Womens Health 2000; 45: 87 - 93.
3. Weber AM, Meyn L. Episiotomy use in the United States, 1979-1997. Obstet Gynecol 2002; 100:1177-82.
4. Popovic JR. 1999 National Hospital Discharge Survey: Annual summary with detailed diagnosis and procedure data. Vital Health Stat 2001; 13:1 - 206.
5. National Childbirth Trust Report. Episiotomy and the perineum 2001.
6. Hartman K, Viswanathan M, Palmieri R, Gertlehner G, Thorp J, Lohr KN. Outcomes of routine episiotomy: a systemic review. JAMA 2005; 293:2141-148.
7. Guidelines of American College of Obstetrics and Gynecologists, 2006.
8. Vishwanathan M, Hartmann K, Palmieri R. The use of episiotomy in obstetrical care: A systematic review. Summary, Evident Report / Technology Assessment: Number 112: AHRQ Publication Number 05-E009-1, 2005.
9. Grant A, Sleep J, Ashurst H, et al. Dyspareunia associated with the use of glycerol-impregnated catgut to repair perineal trauma. Report of a 3 year follow-up study. Br J Obstet Gynaecol 1989; 96: 741 - 3.
10. Klein MC, Gauthier RJ, Jorgensen SH, et al. Does episiotomy prevent perineal trauma and pelvic floor relaxation? Online J Curr Clin Trials 1992; 10.
11. Coats PM, Chan KK, Wilkins M, et al. A comparison between midline and mediolateral episiotomies. Br J Obstet Gynaecol 1980; 87:408-12.
12. Harrison RF, Brennan M, North PM, Reed JV,

Wickham EA. Is routine episiotomy necessary? Br Med J 1984; I288: 1971-75.

13. Doyle PM, Jahanson R, Geetha T, et al. A prospective randomized controlled trial of perineal repair after childbirth, comparing interrupted chromic catgut to subcuticular prolene for skin closure. Br J Obstet Gynaecol 1993; 100: 93 - 4.

14. Shamam SA,Malik M, Iqbal J,Faruqi NJ.Routine episiotomy versus selective episiotomy in primigravidae. Ann King Edward Med Coll. 2004;10:482-4

15. Mehrunnisa. Effect of episiotomy on perineal lacerations in spontaneous vertex deliveries. Ann King Edward Med Coll. 2005;11:442-5.

16. National Nutritional Survey, Pakistan.2001-2002.

17. Chhabra S, Shivkumar PV, Bhalla R. Quality of postpartum care. J.Obstet Gynecol India.2006:142-5

18. Sleep J, Grant A. West Berkshire perineal management trial: three year follow-up. Br Med J (Clin Res Ed) 1984; 289:587-90.

14. Sleep J, Grant A. West Berkshire perineal management trial: Three year follow up. Br Med J (Clin Res Ed) 1987; 295:749-51

19. Rockner G, Henningsson A, Wahlberg V, et al. Evaluation of episiotomy and spontaneous tears of perineum during childbirth. Scand J Caring Sci 1988; 2:19-24.

20. Larsson PG, Platz-Christensen JJ, Bergman B, et al. Advantage or disadvantage of episiotomy compared with spontaneous perineal laceration. Gynecol Obstet Invest 1991;31:213-6.

22. Sartore A, De Seta F, Maso G, et al. The effects of mediolateral episiotomy on pelvic floor function after vaginal delivery. Obstet Gynecol 2004; 103:669-73.

23. Viktrup L, Lose G. The risk of stress incontinence 5 years after first delivery. Am J Obstet Gynecol 2001;185:82-7.

24. Eason E, Labrecque M, Marcoux S, et al. Anal incontinence after childbirth. CMAJ 2002;166:326-30

25. . Glavind K, Bjork J. Incidence and treatment of urinary retention postpartum. Int Urogynecol

.....★.....

COMPARISON OF RATE OF DIFFERENT ORGANS INJURY IN BLUNT ABDOMINAL TRAUMA

ASHAR AHMAD KHAN, MIAN USMAN FAROOQ, ABDUL RASHID, MUHAMMAD ZEESHAN AZHAR

ABSTRACT

Objectives *This study was conducted to find out the pattern of blunt abdominal trauma and rate of various organ injuries.*

Study design *Observational study.*

Place & Duration of study *The study was conducted in emergency department of tertiary care referral teaching hospital, Nishtar Hospital Multan, Pakistan, from 01-07-2005 to 31-12-2005.*

Patients And Methods *The number of patients were 50. The age range was between 13-50years. All had history of blunt abdominal trauma. Patients having chronic associated illnesses were excluded from the study. Transit time was defined as total interval between time of injury and arrival to emergency department. Grading of injury related to liver, spleen, kidney and pancreas was done. Primary as well as secondary survey of the patients was done with resuscitation and follow up according to ATLS protocol.*

Results *Males were 41(82%). Twenty (40%) subjects belonged to 21-30 years. Road traffic accident was the most common 24(48%) cause of injury followed by fall from height in 12(24%) subjects. Abdominal pain was presenting complaint in 36(72%) patients followed by absent bowel sounds in 32(64%). Intestine was injured in 11(22%) patients followed by spleen in 10(20%). Diagnostic peritoneal lavage was performed in 19 patients. All the patients underwent surgery but in 8(16%) patients laparotomy was negative. Seven (14%) patients died. Chest infection was most common post-operative complication found in 12(24%) patients followed by wound infection in 8(16%).*

Conclusion *Road traffic accident was the most common cause of injury. Intestine was the most commonly affected organ. The rate of postoperative infection and morbidity was high.*

KEY WORDS:- *Blunt abdominal trauma, Surgery, Investigations.*

INTRODUCTION:

Injury is a major cause of death and disability around the world.[1,2] The leading causes of blunt injury includes fall from height, fall of heavy objects, road traffic accidents, sports injuries, industrial accidents and animal kick. Injuries occur to persons of all ages and both genders, though young males are more prone and their loss of productivity at work is immense.[2,3,4] The majority of abdominal injuries are due to blunt trauma.[5] The evidence of this is trivial (bruise etc.) but due to the extremes of

Correspondence:
Dr. Ashar Ahmad Khan
General Surgeon
Nishtar Hospital Multan.

acceleration, deceleration, rotational or shearing forces applied (particularly at sites where viscera are tethered to the abdominal wall by peritoneal reflections, like the duodeno-jejunal or the ileocaecal junctions etc.), the damage to the intra-abdominal structures could be multiple and considerable.[6] This is especially so in patients wearing seat belts. These injuries may then sometimes go unnoticed and lead to major morbidities.[3]

After blunt trauma, sometimes patients present with acute compartment syndrome in which decompressive laparotomy improves the situation.[7] Many patients present in the hospital with no external injury but they have internal visceral injury.[8] Early diagnosis and treatment is of utmost importance as delay results in increased rate of mortality and morbidity. Physical examination and laboratory tests provide guidance for the diagnosis, yet they are not always reliable. [9] Some patients present weeks or months after blunt trauma with some complications i.e. delayed splenic rupture[10], hepatic cyst[11], biliary stricture[12], renal artery pseudo aneurysm [13], and small bowel stenosis.[14] To avoid the pitfalls of delayed or missed diagnosis, clinician should have a strong clinical knowledge and used this for speedy diagnosis and treatment. [15]

Liver, spleen and kidney are the commonest organs involved in blunt abdominal trauma and the incidence of hollow viscous injury increases with increasing number of solid organs involved.[16] The objective of this study was to determine the frequency of various visceral injuries, following blunt abdominal trauma with reference to their severity, diagnosis investigations and post-operative complications.

PATIENTS AND METHODS:

The study was conducted at Nishtar Hospital Multan. Fifty patients with blunt abdominal trauma presented in emergency department from 01-07-2005 to 31-12-2005. The study included the patients who were between 13-50years of age. Data was collected on a proforma after informed consent. Patients having multiple injuries other than the abdomen, past history of bleeding disorders, systemic diseases like diabetes mellitus, respiratory failure, hepatic failure, ischemic heart disease, endocrine disorders and addicts were excluded from the study. The study is deficient in given surgical treatment and etiology of post-operative complications.

The relation of mortality/morbidity with transit time and organ damaged was mentioned. Transit time was defined as total interval between time of injury and arrival to emergency department. All the patients underwent a quick primary survey to evaluate the general condition. Special attention was given to acute management by maintaining airway, breathing and circulation. Antibiotics as well as tetanus toxoid were given to all subjects. Initially routine investigations were performed i.e. complete blood picture, serum electrolytes, blood grouping and cross matching, and urine for gross as well as microscopic examination.

Secondary survey included complete head to toe examination with special attention to abdominal, urethral, and rectal examination. After hemodynamic stabilization, x-ray abdomen, chest and other injured areas were done while some selected cases got ultrasonography (FAST), contrast radiography as well as computed tomography as this facility was only available in morning time.

Diagnostic peritoneal lavage was performed in suspected cases. Lavage fluid was analysed by gross and microscopic examination. The criteria for positive result depended upon any of the following:
Aspiration of more than 10ml of frank blood or evidence of food, bile or gut contents.

Red blood cells (RBCs) count more than 100000/mm^3.
White blood cells (WBCs) count more than 500/mm^3.

Laparotomy was performed in all cases due to one or more than one reasons i.e. continuous intra-abdominal haemorrhage, peritonism, intra-peritoneal bladder injury/frank haematuria, positive peritoneal lavage and ruptured diaphragm with displaced viscera.

Negative laparotomy was defined as nonproductive abdominal exploration in which operative findings did not necessitate any surgical procedure and no morbidity would have been expected if laparotomy was not performed. Follow up was carried out to record the mortality and morbidity. Simple and double classification Chi-squared test was applied to different variables. $P \leq 0.05$ was considered statistically significant.

RESULTS:

Fifty subjects were chosen for study. Among these 41(82%) were males significantly high than females *(p=0.0008)*, and 21-30 years made the prominent group among the subjects - 20(40%) *(p=0.02)*. Road traffic accidents were the most prominent cause of injury in 24 (48%) patients followed by fall from height in 12 (24%) *($p=8.58 \times 10^{-6}$)* (Table 1, 2). Most of the subjects-13 (26%) presented to emergency department 13-18 hours after the incidence of injury followed by 19-24 hours in 10 (20%) subjects (Table 3).

Abdominal pain was observed as presenting complaint in 36 (72%) patients followed by absent bowel sounds in 32 (64%), abdominal tenderness in 27 (54%), guarding in 18 (32%), vomiting in 15 (30%), hypovolemia in 13 (26%), abdominal distention in 12 (24%), haematuria in 8 (16%),

TABLE-I DEMOGRAPHY (N=50)

Sex		Age groups in years			
Male	Female	13-20	21-30	31-40	41-50
41(82%)	9(18%)	12(24%)	20(40%)	14(28%)	4(8%)

TABLE-II ETIOLOGICAL FACTORS

Causes	n	%
Road traffic accident	24	48
Fall from height	12	24
Direct blow	6	12
Animal kick	4	8
Fall of heavy object	4	8
Total	50	100

TABLE-III TRANSIT TIME

Hours	n	%
≤ 6	8	16
7-12	8	16
13-18	13	26
19-24	10	20
>24	9	18
Total	50	100

TABLE-IV MORBIDITY PROFILE (N=12/50)

Complications*	n	%(n=50)
Chest infection	12	24
Wound infection	8	16
Intra-abdominal abscess	3	6
Transfusion reaction	3	6
Jaundice	3	6
Acute renal failure	2	4
Intestinal fistula	1	2
Burst abdomen	1	2
Ileostomy diarrhoea	1	2

*Multiple complications were seen in subjects

rebound tenderness in 7 (34%) and pelvic fracture in 6 (12%).

Mostly patients were diagnosed after initial assessment and investigations in 36 (72%) patients. Diagnostic peritoneal lavage was performed in 19 patients with 27 minutes average time without any complication which was positive in all subjects who were operated. In 17 cases results were true positive while in 2 cases peritoneal lavage was false positive. Ultrasonography was performed in 5, retrograde cystogram in 3, intravenous urogram in 8 and computed tomography was done in 1 case.

All patients were undergone laparotomy, 42 (84%) subjects had therapeutic while 8 (16%) had negative laparotomy. Intestine was injured in 11 (22%) patients with jejunum in 5, ileum in 3 and large intestine in 3 subjects, followed by spleen in 10 (20%) patients. Liver was found to be damaged in 8 (16%) patients while renal injuries were found in 6 (12%) subjects. Retroperitoneal haematoma was found in 6 (12%) patients, 3 in flanks, 2 in pelvis and 1 in midline. Regarding urinary bladder injury 4 (8%) had intraperitoneal while 2 (4%) had extra-peritoneal injury. All the mesenteric tears 3(6%) were seen in small intestine. Greater omentum was damaged in 3 (6%) subjects without any devascularization. Anterior wall tear was seen in all gastric injuries - 2 (4%). Two (4%) subjects also had pancreatic injury. On the other hand diaphragmatic, urethral and blood vessels injuries were found in one subject each. Multiple organ injuries were significantly high - 34 (68%) subjects than single organ injuries in 16 (32%) subjects *(0.05>p>0.01)*.

Only 7(14%) patients died, 3 due to hemorrhagic shock (2 due to liver and one had splenic injury), 3 septicemic shock (all arrived in the hospital > 24 hours after injury and had gut injury with fecal peritonitis) and one due to multiple organ failure (pancreatic injury which lead to prolonged hypotension and multiple organ failure). Chest infection was the most common post-operative complication in 12 (24%) patients followed by wound infection in 8(16%) (0.01>p>0.001). Table 4

DISCUSSION:

Blunt abdominal trauma is frequently seen in surgical practice and my have fatal outcome. Road traffic accident was reported as major cause (48%) of blunt abdominal trauma in this study and was same as 48% in UK series reported by saad-u-khan[19] but different from other studies i.e. 67% in France[20], 30% in USA[21] and 81.8% in Belgium [22]. We found that next common cause was fall from height affecting 24% of total victims, which was close to 18.8% in Belgium.[22] Kite flying was also a cause of blunt abdominal trauma.

Males were involved more (82%) as compared to the females (18%) in blunt abdominal trauma with a male to female ratio 5.4:1. It was close to 5.1:1 in Lahore[23] and 5:1 in France[20], but there was a big difference of this study and results of studies of UK[19], Belgium [22] and USA [21].

Predisposition of males was due to their more travelling and their strenuous job. This study also favoured that the incidence of blunt abdominal trauma was more in younger age group i.e. 40% in 21-30 years old as mentioned by Ball21, Gupta [8] and Saeed[19]. The average age of subjects was 28 years.

In our study, mean transfer time was 18 hours, because subjects came from remote areas. Lack of proper transportation and bad road conditions resulted in slow access to hospital. Only 16% came within 6 hours of injury but Ahmed [23] showed that 75% patients came within first 6 hours. Correct clinical diagnosis with the help of routine investigations was possible in 72% of patients as compared to 89.9% in Lahore[23]. Diagnostic peritoneal lavage was done in 19 (38%) patients with true positive in 17 cases and remaining false positive. The mean sensitivity was 89.5% while 93% in study from Canada [24] and 91% in Australia.[25] Ultrasonography could be used in 5 patients and all correctly diagnosed as having haemoperitoneum.

Intestine was found most frequent injured organ (22%) while it was 24.2% by Hussain [26]. Duodenal injury usually represents approximately 2% to 20% of patients with blunt abdominal injury while no duodenal injury was found in our study.[27] Our findings were also comparable with the ratio of small to large intestine of 2:1 in France[20], 1.9:1 in Australia [25]. Mortality rate 27.3% in this study was quite high as compared to France (8.3%) [20], and Australia 5.9%[25]. The high mortality rate was due to late arrival (after 24 hours of injury) to hospital with fecal peritonitis. These patients died of septicemia.

Spleen was second most common organ (20%) involved in blunt trauma which was close to 19% in UK[19], but higher than that of Hussain (9%).[26] Splenorrhaphy was performed in one and splenectomy in 9 (90%). Two patients died after splenectomy due to refractory hemorrhagic shock. Immediate post-splenectomy mortality was 20% markedly higher than 10.7% reported by Liu.[28] Certain complications occurred after splenectomy viz intra-abdominal abscess in one (10%), chest infection in two and in one case (10%) wound infection occurred. This morbidity was higher as compared to 7.2% intra-abdominal abscess, 5.15% respiratory problems and 3.09% wound infection reported by Liu.[28]

Liver injuries were found in 16% of patients as compared to 22.7% reported by Hussain [26] and 16% by Khan.[19] Most of the subjects with hepatic injuries i.e. 62.5% survived and two patients having liver injuries died of hemorrhage shock. According to many studies and autopsy reports, liver and spleen were the most commonly injured organs in blunt abdominal trauma. Since intestinal injuries were not immediately fatal and patients usually made to attend the hospital where as splenic and hepatic injuries were many times fatal before they reached the hospital. This explains the higher incidence of intestinal injuries in this region.

Two patients (4%) had gastric injuries which were treated successively. One case was complicated by wound infections and intra-abdominal abscess. Gall bladder and diaphragmatic injuries were not common like other studies. Kidneys were injured in 12% patients. This figure was same as that of 12% renal injury in UK.[19] Pancreatic injury was found in 2 (4%) while it was 9% in UK[19]. Mortality rate was 50% which was high than 28.6% reported by Usman.[30]

Overall mortality was 14% which may be compared with the studies of Hussain[26], 11% by Gupta[8], 20% by Khan[19] and Ball[21]. Cause of death was hemorrhagic shock in 3 cases (42.8%), septicemia in 3(42.8%), and multiple organ failure in one case (14.2%). Twenty four percent patients of this study suffered from chest infections which were higher than 5.15% in Taiwan[28] while overall morbidity rate was 24%.

REFERENCE:

1- Van AB, Rode H. Evisceration through multiple abdominal wall defects following blunt abdominal injury. Pediatr Emerg Care 2003; 19: 353-4.

2- Casey RG, Ryan J, Gillen P. Late presentation of small bowel obstruction following blunt abdominal trauma. Ir J Med Sci 2002; 171: 218-9.

3- Hughes TM, Elton C, Hitos K, Perez JV, McDougall PA. Intraabdominal gastrointestinal tract injuries following blunt trauma: the experience of an Australian trauma centre. Injury 2002; 33:617-26.

4- Kluger Y, Soffer D, Vicken N, Pamoukian D. Blunt abdominal trauma secondary to misuse of standard cleaning equipment: a preventive occupational hazard. Injury 1997; 8: 553-62

5- Kudera JS, Aanning HL. Damage control for blunt hepatic trauma: case presentation and historical review. S D J Med 2004; 57:449-53.

6- Harris BM, Kuczkowski KM. Diagnostic dilemma: hepatic rupture due to HELLP syndrome vs. trauma. Arch Gynecol Obstet 2005; 272:176-8.

7- Bendahan J, Coetzce CJ, Mecller R. Abdominal compartment syndrome. J Trauma 1995; 38:152-3.

8- Gupta S, Talwar S, Sharma RK, Gupta P. Blunt abdominal trauma; a study of 63 cases. Indian J Med Sci 1996;50:272-6.

9- Richards JR, Knopf NA, Wang L, McGahan JP. Blunt

abdominal trauma in children: evaluation with emergency US. Radiology 2002; 222:749-754.

10- Nam R, Carr MM, Jamiscon CG. Delayed rupture of the spleen and streptokinase therapy. Can J Surg 1996; 39:151-4.

11- Chuang JH, Huang SC. Post traumatic hepatic cyst as unusual sequela of liver injury in the era of imaging. J Pediatr Surg 1996;31:272-4.

12- Yoon KH, Ha HK, Kim MH, Seo DW. Billiary stricture caused by blunt abdominal trauma; Clinical and radiological features in five patients. Radiology 1998;207:737-41.

13- Jebara VA, El-Rassi I, Achouh PE. Renal artery pseudo-aneurysm after blunt abdominal trauma. J Vasc Surg 1998;27:362-5.

14- Chan SC, Chen HY, Lec CM. Small bowel stenosis from blunt abdominal trauma. Int J Clin Pract 1997; 51:404-5.

15- Boulanger BR, Mclellan BA. Blunt abdominal trauma. Emerg Med Clin North Am 1996; 14:151-71.

16- Cywes S, Bass DH, Rode H, Millar AJ. Blunt liver trauma in children. Injury 1991; 22: 310-4.

17- Khan S, Alpar EK. Abdominal solid injuries in multitrauma patients, Incidence and etiology; A retrospective analysis of 111 cases. J Surg 1997; 13-14:44-7.

18- Kunin N, Letoquar JP, La-Gamma A. Intestinal mesenteric lesion of closed abdominal trauma. J Chir Paris 1994;131:129-34.

19- Ball SK, Croley GG. Blunt abdominal trauma: A review of 637 patients. J Miss State Med Assoc 1996;37:465-8.

20- Ceelon W, Hesse U, Dc-Heptinne B. Small bowel perforation following blunt abdominal trauma. Acta Chir Belg 1995; 95:187-9.

21- Ahmad I. Abdominal Trauma; A prospective study. Pak J Surg 1992; 8:37-42.

22- Catre MG. Diagnostic peritoneal lavage versus abdominal computed tomography in blunt abdominal trauma. Can J Surg 1995;38:117-22.

23- Munns J, Richardson M. A review of intestinal injury from blunt abdominal trauma. Aust N Z J Surg 1995;65:857-60.

24- Hussain R, Rathore AH, Zulfiqar R. Hepatic injuries due to blunt abdominal trauma. Specialist 1991; 7:15-17.

25- Celik A, Altinli E, Onur E, Sumer A, Koksal N. Isolated duodenal rupture due to blunt abdominal trauma. Indian J Crit Care Med 2006;10:44-6

26- Liu PP, Chou FF, Sheen-Chen SM. Complications of splenectomy for splenic injury. Chang keng I Hsuch 1994; 17:125-30.

27- Babar SMA. Residents corner injury and spleen: to remove it or not to remove it. Pak J Surg 1992; 8:11-7.

28- Abaidullah U. Pancreatic trauma; Experience of a trainee surgeon. The Professional 1998; 5:462-8.

EXPERIENCE OF OCTREOTIDE IN THE MANAGEMENT OF POST OPERATIVE ENTEROCUTANEOUS FISTULAE

FOAD ALI MOOSA, MOHAMMAD SOHAIL CHOUDHRY, FAZAL WAHAB KHAN, MONTASIR JUNAID,

NAHEED SULTAN

ABSTRACT

Objectives *To evaluate the effectiveness of octreotide in the management of postoperative gastrointestinal (GI) fistulae.*

Study design *Interventional study.*

Place & Duration of study *This study was carried out at Surgical Unit-2, Civil Hospital, Karachi, from July 2002 to December 2006.*

Patients And Methods *A total number of 26 patients who presented with gastrointestinal fistulas after surgeries for trauma, firearm injury, abdominal tuberculosis, and typhoid perforation were included whereas, patients with GI malignancy, history of radiation and distal obstruction were excluded from the study. All were patients initially were managed conservatively. We divided 26 patients into two equal groups; 13/26 patients were on TPN alone, and 13/26 were on TPN and octreotide.*

Results *The male: female ratio was 1.6:1. Mean age of the patients was 33.9± 2.5 years having a range of 12-60 years. Six (24%) patients underwent repeat surgery in an average 02 weeks post-operatively due to failure of conservative management and the remaining 20 (76%) were continued on conservative management for a period of 3-9 weeks, and success in regards of early closure time (within 06 weeks) was observed in cases kept on TPN plus octreotide (83.3%).*

Conclusion *Results were markedly improved with combination of TPN and octreotide in high lying fistulas as compared to TPN alone.*

KEY WORDS:- *Enterocutaneous fistula, Octreotide, Total parenteral nutrition.*

INTRODUCTION:

Postoperative enterocutaneous fistulae are a dreaded complication of gastrointestinal surgery, with a reported incidence of up to 27%.[1] Primary fistulae occur due to a disease in the intestinal wall e.g. tuberculosis, Crohn's disease, malignancy. Secondary fistulae can arise due to injury to normal gut e.g. surgical resection. Postoperative fistulae are a result of anastomotic breakdown, sepsis, and unrecognized injury of intestinal wall. Due to fistulation, there can be peritonitis, multiple organ failure and discharge of enteric fluid from abdominal wound. The morbidity and mortality are very high.[5]

Correspondence:
Dr. Foad Ali Moosa
Department of General Surgery Unit I,
Civil Hospital and Dow University of Health Sciences,
Karachi, Pakistan.
Email: famoosa@yahoo.com

Factors impeding spontaneous fistula closure include sepsis, malnutrition, Crohn's disease, radiation, malignancy, foreign material, total discontinuity between bowel ends distal obstruction, abscess formation and mucocutaneous discontinuity. Effects and associated problems of GI fistula are; fluid and electrolyte loss, malnutrition, sepsis, respiratory insufficiency, skin excoriation and erosion, gastrointestinal hemorrhage etc. Types of fistula are high lying, high output, low lying and low output. Investigations include daily electrolytes on a regular basis, fistulogram, ultrasonography, and contrast studies.

Criteria in treatment include defining origin of fistula tract by fistulography, ruling out distal obstruction, evaluation of nutritional status and starting TPN, applying stoma bag and stoma adhesive for skin care and achieving fluid and electrolyte balance. Surgery is limited to those who are toxic with signs of peritonitis, failure of conservative treatment, major leaks from anastomotic site. The patients are usually managed by conservative treatment inclusive of TPN and octreotide, a synthetic analogue of somatostatin, which decreases gut motility and secretions, thus reducing fistula output and the time for closure. It has advantage over somatostatin of having longer half-life.[4,5] Purpose of this study was to evaluate the effectiveness of octreotide in management of postoperative GI fistulae.

PATIENTS & METHODS:

This study was carried out at Surgical Unit-2, Civil Hospital Karachi, from July 2002 to December 2006. A total number of 26 patients who developed postoperative enterocutaneous fistula were included. It was a clinical trial. Patients who presented with gastrointestinal fistulas after surgeries for trauma, firearm injury, abdominal tuberculosis, and typhoid perforation both high and low lying were included. Patients with GI malignancy, history of radiation and distal obstruction were excluded. All patients were initially managed conservatively. All the patients were equally segregated into two groups; 13/26 patients were on TPN alone, and 13/26 were on TPN and octreotide.

RESULTS:

Out of 26 patients, sixteen were males and 10 females. The male female ratio was 1.6:1. The mean age of the patients was 33.9± 2.5 years with a range of 12-60yrs. Most of the patients were in 31-40 years age group. Patients with abdominal tuberculosis were 08 (30.8%), with firearm injury 07 (26.9%), followed by typhoid perforation in 06 (23.0%) cases. Five patients sustained either penetrating or blunt trauma. Fourteen (53.8%) patients developed fistula due to sepsis and the other causes are mentioned in table I.

Ileum was the major site for the development of enterocutaneous fistula, in 12 (46.2%) patients, duodenum in 6 and jejunum and colon in 4 each. Six (24%) patients underwent repeat surgery in an average 02 weeks post-operatively due to failure of conservative management. Initially, out of 6 patients, five were managed on TPN alone and one patient was on TPN plus octreotide. The remaining 20 (76%) patients were continued on conservative management for a period of 3-9 weeks (table II).

Twenty-two out of twenty-six patients were of high output variety (greater than 500 ml/day), whereas 04 were of low output variety (less than 500 ml/day). Success with regard

TABLE-I CAUSES OF FISTULA FORMATION

Causes of fistula formation	Male	Female	No of cases/26	Percentage (%)
Sepsis	08	0 6	14	53.8
Anastomotic breakdown	06	04	10	38.4
Unrecognized injuries	02	0	02	07.7

TABLE-II PATIENTS SUBJECTED TO REPEAT SURGERY AFTER FAILURE OF CONSERVATIVE TREATMENT

S. No.	Initial Surgery Performed for:	Cause of Fistula	Sex	Age	Treatment
1.	Blunt Trauma	Missed Injury	Male	20	TPN + Octreotide
2.	Ileal Perforation	Sepsis	Female	60	TPN
3.	Firearm Injury	Anastomotic Breakdown	Male	30	TPN
4.	Tuberculosis Intestine	Anastomotic leakage with EC fistula	Female	40	TPN
5.	Tuberculosis Intestine	Anastomotic Breakdown	Male	30	TPN
6.	Firearm injury	Anastomotic Breakdown	Male	35	TPN

to early closure time (within 06 weeks) was observed in cases kept on TPN plus octreotide (83.3%) in comparison to TPN alone (16.7%) as shown in table III.

TABLE-III HEALING PERIOD OF FISTULA IN 26 PATIENTS ON CONSERVATIVE TREATMENT

Time period	Percentage (%)	Type of treatment	No. of cases/20
3-6 weeks	60.0	TPN + Octreotide (High output)	09
		TPN + Octreotide (Low output)	01
		TPN alone (low output)	02
			12
7-9 weeks	40.0	TPN alone (high output)	06
		TPN + Octreotide (high output)	01
		TPN + Octreotide (low output)	01
			08

DISCUSSION:

Gastrointestinal fistulae present a considerable surgical challenge. Since the 1970's, the mainstay of fistula treatment has been intravenous nutrition to stabilize the patient and induce gastrointestinal tract rest, and antibiotics to control infection. The introduction of total parenteral nutrition (TPN) has reduced the mortality and increases closure rates of fistulae to approximately 60%.[4] More recently, the pharmacological agents' somatostatin-14 and its analogue octreotide have been used in addition to intravenous nutrition, due to their inhibitory effects on gastrointestinal secretions.[4] Postoperative enterocutaneous fistula has a high morbidity and a significant mortality. Sepsis in the peritoneal cavity is the major cause of mortality. Conservative treatment has a good outcome for these fistulae. The use of octreotide is highly recommended as it definitely converts high output fistulas to low output fistulas.[8]

Success with regards of early closure time (within 06 weeks) was observed in our study in cases kept on TPN plus octreotide (83.3%) in comparison to TPN alone (16.7%). In an uncontrolled study by Nuboila et al,[2] 27 patients were treated with octreotide (300 μg / 24 hours) and fistula output and time for closure assessed. Fistula output decreased by an average of 55% and fistula closure occurred in 21 out of 27 patients (77.7%), after a mean of 5.8 days. In a local study by Memon AS et al, twenty-one patients of enterocutaneous fistulae were started on conservative treatment with spontaneous closure occurring in 15 (71.4%) patients. The mortality rate in this series was 7.5%. All the deaths occurred following surgery.[8] In an another study by Jamil et al, octreotide 300 microgram / day was given subcutaneously in three divided doses and the fistula closure time and hospital stay were marginally decreased.[9]

Farthing et al,[3] are of the opinion that before starting treatment with somatostatin, the efficacy be measured by fistula output on nutritional support alone, followed by an assessment period on octreotide (300 μg / 24 hours) to ensure that the output is reduced. Once this has been confirmed, it would seem reasonable to continue with combination therapy that is TPN plus octreotide until fistula closes. Most of the reported series have now seen better results with octreotide plus TPN from the start. Dorta G suggested that fistula closure rates under conservative medical treatment vary between 24 and 78%.[7] Draus JM et al monitored the effect of octreotide in 24 patients. In 8 patients, fistula output declined, in 16 patients octreotide was of no benefit.[10]

CONCLUSIONS:

Results were markedly improved on conservative management with combination of TPN and octreotide in high output fistulas as compared to TPN alone. It is concluded that octreotide with TPN significantly reduces morbidity by reducing fistula output (especially in high output fistulas), the need for replacement of fluid and electrolytes and improves wound care.

REFERENCES

1. Leandros E, Antonakis PT, Albanopoulos K, et al. Somatostatin versus octreotide in the treatment of patients with gastrointestinal and pancreatic fistulas. Can J Gastroenterol. 2004; 18: 303-6.
2. Nubiola P, Badia JM, Martinez RF, et al. Treatment of 27 postoperative, enterocutanoeus fistulae with the long half life somatostatin analogue SMS 201-995. Ann Surg 1989; 210: 56-8.
3. Farthing MJG. The role of somatostatin analogue (octreotide) in enterocutaneous and pancreatic fistulae. Gut 1994 supplement 3; 55-510.
4. Hesse U, Ysebaert D, de Hemptinne B. Role of somatostatin-14 and its analogue in the management of gastrointestinal fistulae: clinical data. Gut 2001; 49: 11-21
5. Prinz RA, Pickleman J, et al. Treatment of pancreatic cutaneous fistula with somatostatin analogue. N Eng J Med 1983; 309: 1556-61
6. Gonzalez-Pinto I, Gonzalez EM. Optimising the treatment of upper gastrointestinal fistulae. Gut 2001; 49:22-31.
7. Dorta G. Role of octreotide and somatostatin in the treatment of intestinal fistulae. Digestion 1999; 60:53-6.

8. Memon AS, Siddiqui FG. Causes and management of postoperative enterocutaneous

Fistulas. J Coll Physicians Surg Pak. 2004 ; 14:25-8 .

9 Jamil M, Ahmed U, Sobia H. Role of somatostatin analogues in the management of enterocutaneous fistulae. J Coll Physicians Surg Pak. 2004 ; 14:237-40.

10 Draus JM Jr, Huss SA, Harty NJ, et al. Enterocutaneous fistula: are treatments improving? Surgery 2006; 140:570-6.

A STUDY OF PATTERN OF CHOLESTEATOMA

SYED MOSADDAQUE IQBAL, SURESH KUMAR, AUSAF AHMED KHAN

ABSTRACT

Objectives *To determine the incidence of cholesteatoma in various ages, sex and socio-economic groups in a hospital based setup.*

Study design *Descriptive study.*

Place & Duration of study *From January 2003 to November 2005 in two private sector teaching hospitals.*

Patients And Methods *Fifty five patients of chronic suppurative otitis media with cholestetoma were included in this study. Detailed history and thorough clinical examination including examination of ear under the microscope done and findings recorded. Apart from routine investigations, culture and sensitivity of aural pus, pure tone audiogram and radiograph of both the mastoids done in all cases. Complicated cases also under went CT scan. All patients were subjected to exploration of mastoid under general anaesthesia ending in radical or modified radical mastoidectomy according to the extent of disease. The material obtained during surgery was sent for histopathology.*

Results *Out of 55 cases of chronic suppurative otitis media with cholesteatoms, 39 were males and 16 females. Twenty five of them were up to 20 years of age and 27 were between 21 to 35 years. Only 03 were between 36-40 years. Six had attic, 8 total while 41 were having posterio superior marginal perforation. Forty seven were from poor, 3 from middle and 5 from upper social class. Hearing loss was mild in 8 cases (10-30 db), moderate in 26 (30-50db) and severe (50-80) in 19 patients. Two had profound deafness (> 80 db).*

Conclusion *The incidence of having chronic suppurative otitis media with cholesteatoma is higher in young males of poor socio-economic groups.*

KEY WORDS:- *CSOM , Cholestetoma, Poor socio-economic groups.*

INTRODUCTION:

Chronic suppurative otitis media (CSOM) is a middle ear disease. Its incidence appears to depend to some extent on race and socioeconomic factors. It is, for example significantly more common in the innut (Eskimos) and American Indians, the indigenous population of Alaska, Australian Aboriginal children and Black South Africans.[1] Chronic suppurative otitis media is long standing purulent infection of middle ear cleft, associated with ear discharge and variable degree of hearing loss. It tends to be persist and often produce irreversible local destruction of middle ear cleft mucosa and underlying bone. This leads to intracranial and extra cranial complications.[2] There are two conventional group of chronic suppurative otitis media, namely tubo-tympanic or safe type with central perforation and attico-antral or unsafe, characterized by attic or marginal perforation.[3] Cholesteatoma is almost always present in attico antral type and involved the attic (epitympanum) and mastoid antrum.[4]

Cholesteatoma is a cystic structure lined by keratinized

Correspondence:
Dr. Syed Mosaddaque Iqbal
Department of ENT and Head & Neck Surgery
Fatima Hospital, Baqai Medical University
Karachi.

type of stratified squamous epithelium resting on fibrous stroma of variable thickness and may contain some element of original mucous lining,[5] or an abnormal collection of variable and desquamated squamous epithelium in the middle ear or mastoid air spaces.[6] It is not a genuine tumor but has a remarkable proliferative activity, which causes serious destruction of mastoid bone.[7] Cholesteatoma are histologically benign, though biologically invasive lesion that arise from the migration of squamous epithelium of the ear. Acquired cholestetoma usually arise in an antigenically active environment, a chronically and / or recurrently inflamed middle ear, in contrast the congenital cholestetoma occur in a uninflammed environment.[8] The cholesteatoma is more aggressive in children than in adults and it affects boys more often than girls.[9]

Chronic suppurative otitis media is a disease of poverty. Traditionally, the so-called attico- antral disease has been seen in the developing world. Its hallmark being the genesis of cholestetoma; which proved life threatening in the pre-antibiotic and often in the modern era.[10] Manny theories have been put forward to explain the genesis of cholestetoma, which in fact, is the skin in wrong place. Congenital inclusion dermoids, primary acquired cholesteatoma and secondary acquired cholestetoma are various terms in use to explain its origin. Squamous metaplasia of middle ear epithelium, invasion of skin of deep meatus through a marginal perforation, has all been discussed to explain the phenomenon. Intermittent eustachian tube obstruction may create negative intra-tympanic pressure and retraction pocket.[11] The propensity of cholestetoma to erode and spread locally is unremarkable. It is generally considered that activation of osteoclast is the main cause of erosion.[12] The mechanisms of bone destruction are either due to pressure exerted by expansion of cholesteatoma, or to a chemical process which might be responsible for lytic effect on the bone. Still other investigators believe that, Interlukin- I has been found in cholesteatoma by immuno-peroxidase and immunofluresence method which can directly activate osteoclast by producing osteoclast-activating factor.[13] Thus cholesteatoma does spread in and across the middle ear cleft with potential to lead to both intra cranial and extra cranial complications.[14]

The petrosal cholesteatoma 'denotes the presence of cholestetoma with in the petrous- temporal bone, medial to the otic capsule, and encompasses both congenital and acquired cases.[15] Before the advent of antibiotics the incidence of serious complications and cholesteatoma were high in patients with chronic suppurative otitis media.[16] Since 1950 either modified radical mastoidectomy or radical mastoidectomy was performed to manage aural cholestetoma.[17] This study was undertaken to describe the pattern of cholesteatoma in our set up.

PATIENTS & METHODS:

Patients of chronic suppurative otitis media with cholesteatoma were included in this study. Inclusion criteria were patients of CSOM with scanty, purulent and foul smelling discharge with attic, marginal or total perforation along with increased deafness and cholesteatoma. Exclusion criteria were those cases of CSOM having copious mucopurulent and odourless discharge with dry central or sub total perforation along with minimal hearing loss. Detailed history and clinical findings of all patients were recorded on predesigned performa. Each patient underwent detailed examination of ear, nose and throat, including examination of ear under the microscope. General physical examination was also done in all access. Apart from routine investigations, culture and sensitivity of aural pus, pure tone audiogram and radiograph of both the mastoids done. Complicated cases also under went CT scan. All patients were subjected to exploration of mastoid under general anaesthesia ending in radical or modified radical mastoidectomy according to the extent of disease. The material obtained during surgery was sent for histopathology.

RESULTS:

Fifty five patients of chronic suppurative otitis media with cholesteatoma were included in this study .It was very clearly evident that cholesteatoma found more commonly in the younger age group. Twenty five patients (45.4 %) were up to 20 years of age, twenty seven patients (49.9 %) were between 21 to 35 years. Only three patients (05.4 %) were between 36-40. Out of 55 patients 39 (70.9 %) were males and 6 (29.0 %) females. Forty seven patients (85.4 %) were from poor socio-economic class, three (05.4 %) belonged to middle class and only five patients (09.0 %) were from upper class. In this study forty one had (74.5 %) posterior superior marginal perforation, six had (10.9%) attic while eight (14.5 %) of them had total perforation.

As far as hearing impairment is concerned 05 patients (09.0 %) had a hearing loss of 10 to 30 db. Table I shows details of hearing loss.

TABLE-I DEGREE OF HEARING LOSS

Hearing Loss	No of Patients	Percentage
10-30 DB	05	09.0 %
31-50 DB	34	61.8 %
51-80 DB	14	25.4 %
> 80 DB	02	03.6 %
Total	55	100 %

DISCUSSION:

Chronic suppurative otitis media is a chronic discharge from the ear in the presence of a perforation in the tympanic membrane.[18] CSOM remained a prime infection of middle ear and mastoid cavity, in our region.[9] The word cholesteatoma was used for the first time by the German anatomist Johannes Mueller in 1838, *cole* mean cholesterol, *esteado-* fat, and *oma-* tumour i.e. a tumour which has fatty tissue and cholesterol.[20] Finding of cholesteatoma is a hallmark in labeling chronic suppurative otitis media as attico-antral or dangerous type and erosion of bone is an established pathological characteristic of cholesteatoma.[21]The cholesteatoma may vary in size from a small sac to limited to attic or posterior tympanum to widespread disease involving the entire mastoid bowl. The etiopathogenesis of cholestetoma remains as dubious as the disease itself. Its theories of causation include a multitude of hypothesis, including the racial predisposition.[22] In two racial groups of Pakistan, Makranis' and Mongoloid races of the northern territories like Baltistan, Gilgit, Hunza and Chitral etc, cholesteatoma is either absent or minimally found.[10]

In our study it was found that most of the patients having cholesteatoma were young i.e.25 (45.4 %) out of 55 were below 20 years of age. The lower socio-economic class has a higher incidence of CSOM due to the poor general health, malnutrition and over-crowding, so the chances of having cholesteatoma are more in lower -economic class. In this study 47 (85.4 %) were from lower socio-economic class.

CONCLUSIONS:

Chronic suppurative otitis media of attico antral type with cholesteatoma, is a disease of poor communities due to lack of awareness, inadequate primary health care facilities, multi drug resistant organisms. The disease was at an advanced stage when patient presented to an ENT clinic.

REFERENCES

1. Mills RP. Management of chronic suppurative otitis media in Booth JB, Brown S Otolaryngology. Sixth edition., Butterworth. Great Britain 1997; 1-10.
2. Aslam MA, Ahmed Z, Azim R. Microbiology and drug sensitivity patterns of chronic suppurative otitis media. J Coll Physicians Surg Pakistan 2004;14: 459-61.
3. Memon MA, Thaheem K, Marfani MS. Frequency and complications of cholesteatoma in patients with chronic suppurative otitis media. Pak J Otolaryngol 2005; 21:48-9.
4. Wright T, Ludman H. Introduction to middle ear and mastoid disease. Disease of the ear, sixth edition, Arnold, London 1998; 332-33.
5. Friedmann I. Pathology of acute and chronic infection of middle ear cleft. Annals Otol 1971; 80: 390-96.
6. Mckennan KX. Cholestetoma recognition and management. Am Fam Physician 1991;43:2091-6.
7. Uehida N, Ito S, Hirano M. Localization of proliferating cell nuclear antigen in aural cholesteatoma. Kurume Med J 1993;40: 225-8.
8. Frankle S, Berson S, Godwin T, Han JC, Parister SC. Differences in dendritic cells in congenital and acquired cholesteatoma. Laryngoscope.1993; 103: 1214-7.
9. Amjad M, Abbas N. Incidence of cholestetoma in various age, sex and socioeconomic groups. Annals 1998; 4 65-6.
10. Alam J, Zaidi SH, Iqbal A. Hassan MS, Siddiqi I, Ahmed R et al. Is cholesteatoma on the decline. Pak J Otolaryngol 1999; 15:2-3.
11. Bunne M, Falk B, Magnuson B, Hallustrom S. Variability of eustachian tube function: comparison of ears with retraction disease and normal middle. Laryngoscope 2000; 110: 1389-95.
12. Choufani G, Ghannoni R, Decaestecker C, Delbrouk K. Detection of macrophage migration inhibitory factor in human cholestetoma. Laryngoscope 2000; 0111:1656-62.
13. Griffith H, Raza A, Hyes M. Cholesteatoma an unusual presentation. J Laryngol Otol 2000; 114: 957-58.
14. Horn KL. Intracranial extension of acquired cholestetoma. Laryngoscope 2000; 110: 761-72.
15. Sheehan P, Walsh RM. Supra labyrinthine approach to petrosal cholestetoma. J Laryngol Otol 2003; 117:558-60.
16. Pal MB, Khan N. Incidence of complications in temporal bone due to cholesteatoma. Pak Post Grad Med J 1999; 10:109-11.
17. Sym MJS, Luxford WM. Management of cholestetoma: Status of the canal wall. Laryngoscope 2003;113:443-48.
18. Dacosta SS, Paparella MM. Temporal bone histopathology in chronically infected ear with intact and perforated membrane Laryngoscope 1992; 102: 1229-36.
19. Udepurwalla I H, Iqbal K, Saqlain G, Jailisi M. Pathological profile in CSOM. J Pak Med Assoc 1998;4: 234-7.

20. Cruz OL, Costa SS. Otologia Clinica e Cirurgica. Ed. Revinter; 1999.

21. Bretiau P, Jorgensen MB, Sorenses CH, Dabelsteen E. Bone resorption in human cholestetoma. Ann Otol 1982; 91: 131-5.

22. Kobayashi T, Yaginuma Y, Takahashi Y, Takasaka T. Incidence of sniff related cholesteatomas. Acta, Otolaryngol Stockh 1996;116: 74-6.

ACUTE APPENDICITIS IN CHILDREN

SIKANDAR ALI MUGHAL, SIRAJUDDIN SOOMRO

ABSTRACT

Objectives *To analyze the various presentations, operations and complications of acute appendicitis in children.*

Study design *Descriptive study*

Place & Duration of study *Department of Paediatric surgery Chandka medical college hospital Larkana, from January 2003 to December 2004.*

Patients And Methods *Patients who presented with signs and symptoms of acute appendicitis and under gone surgery were included in the study. Those cases of appendicitis that were managed conservatively were excluded from the study.*

Results *A total of 30 patients were operated during the study period. Twenty three patients were male and 7 female. The age of the patients ranged between 6 to 14 years. Twenty patients presented with classical signs and symptoms of appendicitis, 5 with mass right iliac fossa, 2 with appendicular abscess and 3 with signs and symptoms of peritonitis. Twenty eight (93.33%) patients underwent appendicectomy while drainage of abscess performed in 2(6.66%) cases. Fifteen (17.8%) were simple acute appendictis and 13(43.33%) found complicated. Five (17.8%) patients developed wound infection and one (3.6%) developed adhesive intestinal obstruction. Average postoperative hospital stay was 3 days.*

Conclusion *Appendicitis is the common surgical emergency in children. Diagnosis is mainly clinical. Wound infection is a common complication.*

KEY WORDS:- *Appendicitis, Complications, Wound infection,*

INTRODUCTION

Acute appendicitis is the most common surgical condition of the abdomen and should be included in the differential diagnosis for every patient presenting with acute abdominal pain.[1,2] About 250,000 appendicectomies are performed in the US annually[3]. Appendicitis has a male to female ratio of 3:2 and is most common in the teens and twenties. The lifetime risk for appendicitis is 8.6% for males and 6.7% for females[4].

Correspondence:
Dr. Sikandar Ali Mughal
Department Of Paediatric Surgery
Chandka Medical College, Larkana.
alexmughal@hotmail.com

The complications of appendicitis include appendicular perforation, appendicular mass, appendicular abscess, gangrene of appendix with perforation resulting in peritonitis, portal pyemia leading to liver abscess and intestinal obstruction. Once appendicitis has resulted in complication, the morbidity increases and in some cases it may even prove fatal.[1]

PATIENTS & METHODS

A two year study from 1-1-2003 to 31-12-2004 was conducted at the department of Paediatric Surgery Chandka Medical College Hospital Larkana to document various presentations, operations and complications of acute appendicitis. All patients who presented with signs and symptoms of acute appendicitis and operated were

included in the study. Those cases of acute appendicitis that were managed conservatively were excluded. Blood CP done in all the patients. Ultrasound done in few cases.

RESULTS

A total of 30 patients who presented and operated for acute appendicitis were included in the study. Twenty three (76.7%) were male and 07 (23.3%) were female. Twenty (66.7%) patients were between the age of 6 to 10years while our 10 (33.3%) were between the ages of 10 to 14 years. Pain abdomen was the main symptom in all the 30 patients. Twenty (66.7%) patients presented with classical signs and symptoms of appendicitis i-e shifting pain abdomen, vomiting and fever. Five (16.7%) presented with mass in right iliac fossa, 2 (6.6%) with appendicular abscess and 3 (10%) presented with signs of peritonitis. All patients had leucocytosis in CBC. Ultra sound abdomen was performed in 20cases, the findings include swollen appendix and distended bowel loops.

All the patients were stabilized pre operatively with i/v fluids, i/v antibiotics (triple regimen) and analgesics. All patients underwent surgery. Appendicectomy performed in 28 (93.33%) patients while incision and tube drainage in 2 (6.66%) cases of appendicular abscess. At operation 15 (50%) patients found to have simple inflamed appendix and 13 (43.33%) had complicated appendicitis out of these 10 appendices found perforated, 5 gangrenous, pus around the appendix found in 5 appendices, 4 appendices found to contain fecolith and 5 appendices found adherent. Peritoneal cavity washed with normal saline and drain kept in complicated cases while in simple cases peritoneal lavage and drain omitted. In all cases wound closed in layers.

Post operatively 5(17.8%) patients developed wound infection and 1 (3.6%) developed adhesive intestinal obstruction six months later that was managed conservatively. There was no mortality in the series. The hospital stay ranged from 3 to 10 days with an average of 3 days in simple appendicitis and 7 days for complicated cases.

DISCUSSION

Acute appendicitis is a clinical entity which needs surgical treatment in shortest possible time after the attack, if ignored it may get complicated and increase the morbidity and may prove fatal.[5] During the study period, 30 cases of acute appendicitis were operated. The age of majority of our cases - 20(66.7%) ranged between 6 and 10 years, the international literature is supportive for this younger age group.[6] The studies confirms the sex ratio of 2:1(male: female) but in our study the male to female ratio is quite wider in favor of male sex 4:1.

The history of migratory pain is hallmark of simple or complicated appendicitis[8], which was present in 20(66.7%) of our patients. Pain involves whole abdomen when there is perforation leading to peritonitis.[8] This was true in this study also. According to an other study[9], there is wide range of clinical presentation in children with acute appendicitis from mild inflammation of the appendix to ruptured appendix, with diffuse peritonitis or localized abscess as was in our patients

Much has been discussed concerning the lab findings of the appendicitis. In all of our cases TLC and neutrophil count found elevated, this picture is in accordance to that coated in literature.[10] Ultra sound examination of abdomen is not recommended in simple acute appendicitis until and unless complications are suspected eg perforation of appendix, appendicular mass or appendicular abscess.[11] In 20 of our cases ultrasound was performed, the findings were swollen appendix, distended bowel loops, complex mass and ascitic fluid.

Open Appendicectomy has been the standard treatment for decades with excellent results for more than a century since its introduction by McBurney in 1894.[9,12] Appendicectomy was performed in 28(93.33%) cases through right transverse lower quadrant incision and 2(6.66%) patients were managed by incision and tube drainage of appendicular abscess under direct vision and the drain was kept. At operation we found 15(50%) simple appendicitis and 13(43.33%) complicated appendices. In literature the rate of perforated and gangrenous appendicitis coated is from 16-57%.[8,11] Post operative wound infection is the most common complication of appendicitis and the rate of wound infection ranges from 5-50%.[13] Five (16.66%) of our patients developed wound infection that is on the lower side of the rate reported in the literature. The other reported post operative complications include adhesive post operative intestinal obstruction and intra abdominal abscess formation, rate of such complications is around 5%.[14] One (3.33%) of our patients developed postoperative intestinal obstruction six months after appendicectomy that responded to conservative management. None of the patients developed intra abdominal abscess. There was no mortality in the current series.

REFERENCES

1. Anderson DK, Parry LR, Appendicitis, in Pediatric Surgery.O'Neill JA, Rowe M.I, Grosofeld JL, Fonkajsrud EW, Coran AG. 5th ed, London Mosby-Year book 1998:1369-379.
2. Maxwell JM, Regland JJ. Appendicitis. Improvement in diagnosis and management. Am Surg 1991; 57: 282-85.
3. Mulholland MW. Approach to the patient with acute

abdomen. Yamada T, Alpers DIT, O Wyang C, Laine L, Powel DIT. Text book of Gastroenterology, 3rd ed: Philadelphia: Lippencott Williams and Walkins, 1999: 1:826-40.

4. Addis DG. The epidemiology of appendicitis and appendicectomy in the United States. Am J Epidemiol 1990,132:910.
5. Gilmore OJA, Jones D, Yang Q. Appendicitis and mimicking conditions. Lancet 1975; II: 421-24.
6. Schwartz SI. Appendix: acute appendicitis. In: Schwartz SI, Shires GT, Spencer FC eds. Principles of surgery, 6th ed: New York: Mc Graw- Hill, Inc. 1994: 1308-16.
7. Ronan O, Connel P. The vermiform appendix: acute appendicitis. In: Russell RCG, Williams NS, Bulstrode CJ eds. Bailey and Love's short practice of surgery, 23rd ed: London: Arnold, 2000:1077-81.
8. Lee SL, Ho HS. Acute appendicitis: is there a difference between children and adults? Am Surg. 2006; 5: 409-13.
9. Blakely ML, Spurbeck W, Lakshman S, Lobe TE. Current status of laparoscopic appendectomy in children. Curr Opin Pediatr. 1998; 315-17.
10. Pearl RH. Pediatric appendectomy. J Pediatr Surg 1995; 173.
11. Kirshan S. Small bowel and appendix: Appendix. In: Crabtree TD. General Surgery- Board Review series: London: Lippincott-Williams and Wilkins, 2000: 195-96.
12. McBurney C. The incision made in the abdominal wall in cases of appendicitis, with description of a new method of operating. Ann Surg 1894; 20: 38.
13. Curran TJ, Meunchow SK. The treatment of complicated appendicitis in children using peritoneal drainage: results from a public hospital. J Pediatr Surg 1993; 404.
14. Karp MP. The avoidable excesses in the management of perforated appendicitis in children. J Pediatr Surg 1986; 508.

.....☆.....

COMPARATIVE STUDY OF MANAGEMENT OF PERITONSILLAR ABSCESS BY NEEDLE ASPIRATION VERSUS INCISION AND DRAINAGE

TARIQ RAFI, M. UMAR FAROOQ, HABIB-UR-REHMAN SHEIKH

ABSTRACT

Objectives *To compare the results of aspiration versus incision and drainage of quinsy.*

Study design *Comparative study.*

Patients And Methods *A total of 50 patients were selected in the department of ENT Head & Neck Surgery, Jinnah Postgraduate Medical Centre, Karachi who came mostly in emergency with pain, and trismus. Twenty five of these patients were treated by incision and drainage and 25 patients by needle aspiration and both were put on antibiotics according to the pus culture and sensitivity report.*

Results *Forty seven patients were male and 3 females. The disease was unilateral in all. The age ranged from 22 years to 43 years with mean age of 27 years. The majority of the patients had complaint of initial sore throat which gradually progressed in a few days with high grade fever, severe odynophagia, dysphagia and trismus to the extent that drooling occurred. Average time taken for the symptoms to reach the peak from onset was 4 days. The 36% of the patients had DNS with nasal obstruction and 42% had a history of post nasal dripping. The hospital stay in patients with needle aspiration ranged from 1-6 days with an average of 3 days. Majority of these patients had to come back for incision and drainage (20 cases), which required further admission and increased the average hospital stay, thus the recovery period was from 6 to 16 days. In comparison the hospital stay with incision and drainage varied from 3 to 7 days and there was no recurrence.*

Conclusion *Incision and drainage is superior to needle aspiration in patients with quinsy.*

KEY WORDS:- *Quinsy, Treatment, Recurrence*

INTRODUCTION

Peritonsillar abscess or quinsy is one of the most common infection of the pharynx and probably the most distressing. It arises from the crypta magna of the tonsil at the upper pole and extends within the space between the capsule of the tonsil and the superior constrictor muscle. Initially the area is red and swollen with features of cellulites. If not properly treated at this stage, the pus forms and abscess then extends into the potential space between the tonsillar upper pole and superior constrictor muscle and further into the soft palate and rarely may reach the parapharyngeal space. Quinsy is a disease of otherwise healthy young adults with no recent history of sore throat. Quinsy is usually unilateral but in less than 5% of cases can be bilateral.[1]

The disease develop through different phases initially

Correspondence:
Dr. Tariq Rafi,
ENT Department,
Jinnah Postgraduate Medical Centre,
Karachi.

there is cellulitis with swelling and oedema of the upper pole of tonsil, soft palate pushing the tonsil medially and downwards. The patient has severe pain and trismus with inability to open the mouth and swallow resulting in drooling of saliva. The cellulitis may extend externally and cause the neck to become red tender and swollen. The pus culture shows mixed aerobic and anaerobic infection. The cellulitis if not adequately treated at this stage may from an abscess which changes the color from red to pale and feel from firm to soft and fluctuant and pain subsides. There is also cervical lymphadenopathy.

The treatment initially during cellulitis is with analgesics, antibiotics, and if the pus has formed, then drainage. This study compares the efficacy of removing pus by wide bore needle and with antibiotic cover and that of incision and drainage under local anaesthesia.

PATIENTS & METHODS:

The study period is of three years duration from 01.01.2002 to 31.12.2005. The study period is of three years duration from 01.01.2002 to 31.12.2005. Fifty patients of peritonsillar abscess above 10 years of age were selected and randomly divided into 2 groups of 25 each. Patients having any other associated illness causing immune deficiency were excluded. In group-A abscess was drained by wide bore needle. In the group-B patients abscess was drained by incision and drainage. The recurrence rate was noted to ascertain the efficacy of two techniques.

RESULTS

The two groups of 25 patients each were made. Forty seven patients were male and 3 females. The disease was unilateral in all. The age ranged from 22 years to 43 years with mean age of 27 years. All the patients were otherwise healthy and young with no immune compromising disease. Thirty five patients had a history of previous repeated sore throat but that improved over the years. All the patients had first attack of quinsy and there was no familial predisposition. The majority of the patients had complaint of initial sore throat which gradually progressed in a few days with high grade fever, severe odynophagia, dysphagia and trismus to the extent that drooling occurred. Average time taken for the symptoms to reach the peak from onset was 4 days. The fever was not very high grade and on an average stayed between 101° to 102°F.

On examination the upper pole of the tonsil was red, congested oedematous, extending to the soft palate with tonsil pushed medially and forward and uvula pushed to opposite side. The jugulodigastric lymph node was palpable and tender in 40% of cases. The referred otalgia was present in 73% of patients and 16% had history of ear infection on the ipsilateral side. The 36% of the patients had DNS with nasal obstruction and 42% had a history of post nasal dripping. All patients were admitted and those who had not developed full abscess were put on injection lincomycin and pain killers. Those who failed to recover and developed abscess were then drained.

The hospital stay in patients with needle aspiration ranged from 1-6 days with an average of 3 days under antibiotic cover. Ten patients stayed for 2 days, 2 patients for 1 day, 9 stayed for 4 days and 4 stayed for 6 days, but majority of these patients were treated with needle aspiration had to come back for incision and drainage (20 cases), which required further admission and increased the average hospital stay, thus the recovery period was from 6 to 16 days. In comparison the hospital stay with incision and drainage varied from 3 to 7 days, with 18 patients stayed for 3 days, 2 patients for 2 days, 3 for 5 days and 2 patients for 7 days. The period of recovery with incision and drainage was 3-10 days.

DISCUSSION:

Peritonsillar abscess is a disease affecting the oral cavity and oropharynx which is extremely painful and without any apparent cause. The disease affects usually otherwise young healthy adults who have history of tonsillitis in some cases. The disease usually affects subjects between 20 to 40 years of age, but in literature is seen in infants and older people.[2,3] In almost all cases the disease is unilateral. All these patients were inducted after they fulfilled the inclusion criteria majority of them had no history of tonsillitis only a few had previous attack.[4] There is no seasonal variation and it is more common in males[5,6] and some studies have also suggested it to be more common in winter and springs,[7,8] but our study has shown no such preponderance. This may be due to small sample size.

In our study none of the patients had previous history of quinsy but in literature the repeat attack of quinsy is not uncommon.[6,9] The pus was sent for culture and sensitivity and the most common organism was Grams positive b haemolytic streptococci as seen in other studies.[10,11] The most common anaerobic organism reported in literature is Fusobacter. The commonest antibiotic used in our study was lincomycin as it is efficient against both aerobes and anaerobes. The patient's abscess was drained with a spray of local anaesthesia. Stinger et al[12] and Jousimies[13] did a similar study and showed that both the procedures used had same results in terms of hospital stay, recovery period and recurrence with no appreciable difference. Wolf et al suggested equal results with both the techniques but our study indicated that the incision and drainage had a shorter hospital stay, early recovery and no recurrence rate with significant p-value. Needle aspiration can still be used for confirming the diagnosis, aspiration of abscess and culture and sensitivity to select

an appropriate antibiotic. The needle aspiration is not only associated with the risk of recurrence but also grave complications as spread of the abscess to the parapharyngeal space or mediastinum.

Keeping in view the above data it is recommended that an incision and drainage be done under local anaesthesia with appropriate antibiotics followed by tonsillectomy 6 weeks later to prevent recurrence as studied by Herbid.[8] To conclude our study suggest that incision and drainage under cover of antibiotic followed by tonsillectomy at later date remains the best management for peritonsillar abscess as compared to needle aspiration which has poor recovery rate with high recurrence.

REFERENCES

1. Triedman NR, Mitchell RB. Peritonsillar abscess in early childhood presentation and management. Arch Otolaryngol Head Neck Surg 1997; 123:630-2.
2. Irani BS, Hirsch M. Infection of the neck spaces. A present day complication. J Laryngol Otol 1992;106:455-6.
3. Weniz BL, Shikowitz MJ. Necrotizing fasciitis as a lethal complication of peritonsillar abscess. Laryngoscope 1984; 94: 1576.
4. Nielsen TR, Clenxent F. Mediastinitis a rare complication of peritonsillar abscess. J Laryngol Otol 1996; 110:175-6.
5. Bonding P. Tonsillectomy. J Laryngol. Otol 1973; 87:1171-82.
6. Evanchen WM. Peritonsillar abscess repeated needle aspiration versus incision and drainage. Ann Otol Laryngol 1994; 103: 554-7.
7. Beeton AG, Evens NG. Quinsy tonsillectomy a further report. J Laryngol Otol 1970; 84: 443-8.
8. Herbild O, Bunding P. Peritonsillar abscess, recurrence rate and treatment. Arch Otol 1981; 101: 285-6.
9. Senechter GL, Sly DE. Changing face of treatment of peritonsillar abscess. Laryngoscope 1985; 92: 657-9.
10. Snow DG, Campbell JB. The microbiology of peritonsillar sepsis. J Laryngol Otol 1991; 105: 553-5.
11. Litmon RS, Hawsmen SA. A retrospective study of peritonsillar abscess. Ear Nose Throat J 1987; 66:53-5.
12. Stringer SP, Schaafer SD. A randomized trial for out patient management. peritonsillar abscess. Arch Otolaryngol Head Neck Surg 1988; 114:296-8.
13. Jousimies-Somar H, Savolainon S. Bacteriological findings in peritonsillar abscess in young adults. Clin infect Dis 1993; 16: 5292-8.

.....★.....

SURGICAL PATHOLOGIES: SIGNIFICANT CAUSE OF CHRONIC RENAL FAILURE IN CHILDREN

SAIFULLAH JAMRO, ABDUL SALAM KALHORO, ZULFIQAR MANGI,

ABSTRACT

Objectives *To find out clinical presentation of chronic renal failure (CRF) in children especially in relation to its etiology with emphasis on surgical causes.*

Study design *Descriptive study.*

Place & Duration of study *The study was conducted at Children Hospital Chandka Medical College (CMC) Larkana from January 2001 to December 2005.*

Patients And Methods *The criteria for inclusion into the study was a sustained elevation of serum creatinine for more than three months, glomerular filtration rate (GFR) <30% for > three months and / or small contracted kidneys. Detailed clinical profile recorded and relevant investigation done.*

Results *Seventy eight confirmed cases of CRF were included in the study, 51 males and 37 Females. 90% of cases presented after 3 years of age. Common clinical presentation was anemia (93.5%), growth retardation (74.3%), urinary complaints (65.3%) and hypertension (53.8%). Most common primary causes leading to CRF were reflux nephropathy (24.5%), posterior urethral valves (23%), glomerulonephritis (15.4%) and urolithiasis (14%).*

Conclusion *Early diagnosis and management of the cause may prevent and / or delay the progress to end stage renal disease (ESRD).*

KEY WORDS:- *CRF, Early detection, Screening, ESRD.*

INTRODUCTION:-

Chronic renal failure is the stage of the progressive loss of renal function with glomerular filtration rate less than 30%. Metabolic disorders that occur at this level of renal function reflect an adaptation to the loss of renal function.[1] Exact prevalence and incidence of CRF in children of Pakistan is unknown but European data suggests a prevalence of between 25 and 50 children per million child population.[2] The European Dialysis Transplant Association (EDTA) register of children under 15 years of age accepted for renal replacement therapy each year suggests that incidence is increasing from 4.6 per million child population in 1971 to 7-8 per million child population per annum in 1991.[3] The proportion of treated children below age of 6 year has risen from 14% to 21% over the past decade, with a third of these being under the age of 2 years at the start of treatment.[4]

CRF has special significance in children because prevalence of preventable causes is much higher. The common causes of CRF are congenital anomalies[5] like

Correspondence:
Dr. Saifullah Jamro
Chandka Medical College Children Hospital,
Larkana.
saifullahjamro@yahoo.com

vesicoureteric reflux, pelvi-uretric junction obstruction and posterior uretheral valves.[5,6] Glomerulonephritis[7] and urolithiasis are also important conditions.[8] Many of these causes are treatable and the development of CRF can be prevented or delayed if these cases are diagnosed early and managed properly.[5,8]

The goal of management of CRF in children is not only to avoid death but fulfill the physiological and emotional needs to provide the best possible quality of life. This can be achieved by early and appropriate treatment of reversible. Appropriate conservative management of CRF may help to achieve normal growth and development beside treating complications like anaemia and renal osteodystrophy at early stages.[7,15] Estimating prognosis and rate of progression to end stage renal disease helps to plan for renal replacement therapy (dialysis and / or transplant).[9-12]

This study was planned to determine clinical presentation of chronic renal failure in children especially in relation to its etiology with emphasis on surgical causes. This may facilitate in earlier diagnosis and management of CRF.

PATIENTS & METHODS:

This is a descriptive study of patients attending children hospital, Chandka Medical College Larkana from January 2001 to December 2005. Seventy eight confirmed cases were included in the study on the basis of glomerular filtration rate of less than 30% for more than 3 months and / or small contracted kidneys (< 3rd centile kidney length for height of patients).

Detailed history and thorough examination was done. In all cases blood CP, urine D/R, blood urea, serum creatinine, electrolytes, calcium, phosphate, Alkaline phosphate, x-ray wrist joint and ultrasound abdomen done. CRF was defined as GFR below 50ml/min/1.73m as estimated by Schwartz formula. GFR was determined by the Schwartz formula on nomogram with plasma creatinine and height.[13,14] Other specific tests like voiding cystourethrogram, intravenous urography, renal scan (DTPA and DMSA)[15] serum compliment level, ANA, anti double stranded DNA and renal biopsy were done where indicated to confirm the underlying cause.

RESULTS:

Total of 78 cases of CRF were included in the study. 90% of patients presented after 3 year of age with overall male to female ratio of 1.8:1 as shown in table I. Most common clinical presentation were anaemia, growth retardation and urinary complaints like dysuria, increased frequency of urine, dribbling of urine and weak urinary stream as shown in (table II). Most common causes of CRF were reflux nephropathy, obstructive uropathy (posterior urethral valves), glomerulonephritis and urolithiasis (table III).

TABLE-I AGE AND SEX DISTRIBUTION (N=78)

AGE	MALE	FEMALE	TOTAL	PERCENTAGE
1-3 year	7	1	8	10.3%
4-6 year	12	8	20	25.7%
7-9 year	18	11	29	37.1%
10-12 year	14	7	21	26.9%

TABLE-II CLINICAL PRESENTATION (N=78)

PRESENTATION	TOTAL NO. OF PATIENTS	PERCENTAGE
Anaemia	73	93.5
Growth retardation	58	74.3%
Complaints related to urinary tract	51	65.3%
Nausea / Vomiting	47	60.2%
Hypertension / CCF	42	53.8%
Coma	18	23.0%
Renal osteodystrophy	14	17.9%
Recurrent fever	13	16.6%
Breathlessness	11	14.1%
Convulsion	7	8.9%

TABLE-III PRIMARY RENAL DISEASE LEADING TO CRF (N=78)

S.No:	PRIMARY DISEASE	PRESENT STUDY (78)	INDIA (132)	U.K (195)
1.	Reflux nephropathy (Pyelonephritis)	19 (24.5%)	28 (21%)	39 (20%)
2.	Posterior Urethral Valves	18 (23.0%)	16 (12%)	13 (7%)
3.	Glomerulonephritis	12 (15.4%)	41 (31%)	35 (17%)
4.	Urolithiasis	11 (14%)	15 (11%)	----------
5.	Juvenile nephronopthisis	6 (7.7%)	3 (2.3%)	5 (7.7%)
6.	Congenital dysplasia and cystic disease	4 (5%)	21 (16%)	37 (18%)
7.	Prune-Belly syndrome	3 (2.7%)	----------	1 (0.51%)
8.	Congenital nephrotic syndrome	2(2.5%)	----------	5 (2.9%)
9.	Haemolytic uremic syndrome	1 (1.3%)	----------	6 (3%)
10.	Alport's syndrome	1 (1.3%)	5 (3.7%)	7 (0.51%)
11.	Renal cortical necrosis	1 (1.3%)	----------	1 (0.51%)
12.	SLE	1 (1.3%)	----------	1 (0.51%)

DISCUSSION:

CRF is less common but very important condition as the dialysis and renal transplant are very expensive and limited facilities are available in Pakistan. The common causes leading to CRF in our study were congenital anomalies, but 64% of the patients presented late. Overall male to female ratio was 1.8:1 this may be due to some causes like posterior uretheral valves, Alport's syndrome, prune-belly syndrome which are diseases of males. Anaemia is invariable feature of CRF [15] and was present

in 93.5% of our patients. Our patients had more growth retardation (74.3%) as compared to 50% in Belts and Margrath study[16] this may be due to late presentation and more prevalence of malnutrition in our population. Hypertension with or without cardiac failure was found in 42 (53.8%) patients which is similar to Schorer study figure of 49%.[17]

CRF was classified as moderate if the clearance was between 25-50 ml /min/1.73m² and severe between 10-25ml/min/1.73m². GFR below 10ml/min/1.73m² was defined as end stage renal disease (ESRD). The most common primary cause leading to CRF was reflux nephropathy (24.5%) which is similar to Indian (20%) and U.K (21%) studies and it is nearly equal to the reports from other parts of world. We had more cases of posterior uretheral valves (23%) as compared to Indian (7%) and U.K (12%) this may be due to more referral to us. Incidence of glomerulonephritis as a cause of CRF is similar to UK (13%) and indian (17%) studies. Urolithiasis was similar to Indian study [17] but there was no case found in UK study. Ahmad et al,[18] Hafiz et al[19] and Gulati[20] reported congenital structural anomalies as the most common cause of CRF.

It is very interesting to note that most of our patients presented late (64% after age of 6 years) and in 60% of patients cause of CRF were reflux nephropathy, PUV and urolithiasis. Early diagnosis and management of these conditions can prevent CRF and / or delay the progress to end stage renal disease.

REFERENCES

1. Chantler C, Holiday M. Progressive loss of renal function, Pediatr Nephrol. 2nd edition Collin NVW Baltimore, USA 1987:773-98.
2. Report of working party: The provision of services in United Kingdom for children and adolescents with renal disease. British Association for Paediatric Nephrol 1995.
3. Broyer M, Donckerwolke C. The paediatric registry of the European Dialysis and Transplant Association 20 years experience: Paediatr Nephrol 1983;7:758-68.
4. Rizzoni G, Ehrich JHH, Brunner FP. Combined report on regular dialysis and transplant in children in Europe. Nephrology Dialysis and transplantation supplement 1989;4:31-40.
5. William DG. The cause of chronic renal failure. Med In 1991; 4:3563-5
6. Fogo A, Kon V. Pathophysiology of progressive renal disease. In: Holliday MA, Barrat TM, Avner ED, editors. Paediatric Nephrology. Philadelphia: Williams and Wilkins 1994.: 1228-40.
7. Mehls O. Renal osteodystrophy in children: etiology and clinical aspects. In: fine RN, Gruskin AB, editors. End stage Renal Disease in Children, Philadelphia: W.B. Saunders; 1984: 227-50.
8. Noel LH. Renal pathology and ultra structural findings in Alport's syndrome. Ren Fail 2000; 22: 751-28.
9. Chantler C, Carter J.R and Brwick M. et al. Ten year experience with chronic hemodialysis and renal transplantation in children. Arch Dis Child. 1980;55:435-45.
10. Srivastava RN. Epidemiology of renal disease in India: Paediatr: Nephrol 2nd : ed: Eds: Collin NVW and Baltimore USA. 1987:354-85.
11. Kher V. End-stage renal disease in developing countries. Kidney International 2002; 62: 350-62.
12. Phadke K, Ballal S, Venkatesh K, Sundar S. Pediatric renal transplantation. Indian experience. Indian Pediatr 1998; 35: 231-35.
13. Morris MC, Allanbay CW, Toselant P et al. Evaluation of height / plasma creatnine formula in the measurement of glomerular filtration rate Arch Dis Child. 1981;58:611.
14. Schwartz GJ, Haycock GB, Edelmann CM, Sptizer A. .A simple measurement of glomerular filtration rate in children derived from body length and plasma creatinine. Paediatrics 1976; 58: 259-63.
15. Nawarro N, Alonso A, Avilla JM. Anaemia of CRF: Treatment with CRF. Child Nephrol Urol 1991;11:146-51.
16. Betts PR, Margreth G. Growth pattern and dietary intake of children with chronic renal insufficiency. Br. Med. J. 1974:2:189-97.
17. Scharrenk, Illmer H. Cardiovascular complication in CRF. Pediatr. Nephrol 2nd : ed. Eds: Collin. N. V. Baltimore USA 1987: 773-98.
18. Ahmad TM, Waheed I. Epidemiology and outcome of CRF in children presented at 10th National Annual Paediatric Conference, Bhurban; Pakistan 2001 April 20-22.
19. Hafiz F, Yaqoob M, Bano I, Maqbool S. Chronic renal failure in children. J Coll Physicians Surg Pakistan 2002; 12: 154-6.
20. Gulati S, Mittal S, Sherma RK, Gupta A. Etiology and outcome of chronic renal failure in Indian children. Pediatr Nephrol 1999; 13: 594-6.

SAFETY AND EFFECTIVENESS OF ENDOSCOPIC SINUS SURGERY IN THE MANAGEMENT OF NASAL POLYPS

SAMEER QURESHI, SOHAIL TIRMIZI, TARIQ RAFI

ABSTRACT

Objectives *The objective of this study was to asses the safety and effectiveness of functional endoscopic sinus surgery (FESS) in surgical management of nasal polyp.*

Study design *Interventional study.*

Place & Duration of study *This study was conducted in the ENT department of Jinnah Postgraduate Medical center over the period of 2 years from January 2004 to December 2006.*

Patients And Methods *Fifty patients of different age and sex having nasal polyp with symptoms were selected from O.P.D. The patients having neoplastic polyp or nasal obstruction due to allergic rhinitis or polyp involving orbit or brain with suspected fungal allergic reaction were excluded. Patients with other chronic illnesses or those that could not be followed were also excluded. Patients were operated by functional sinus surgery method. The duration of surgery and hospital stay were noted. Follow up on weekly basis was done in the first month then at 3 and 6month interval for symptomatic improvement and any complication.*

Results *A total of 50 patients were operated. There were 35 (70%) males and 15 (30%) females. The average age of the patients was 27+_ 4.91 years (range: 8 to 35 years). Ethmoid polyp was present in 40 (80%) patients and antrochoanal poly in 10 (20%). Average operation time was 1.78±0.38 hours and average hospital stay was 2.48+-.51 days. Complications occurred in 4 patients. Three (6%) had synechia, excessive crusting, orbital fat extrusion and epistaxis. Major complication occurred in 1(2%) patient where exposure of dura occurred, but with no CSF leak. At 3 month postoperative follow up 4 (8%) patients developed nasal polyp which increased to 6 (12%) at six months.*

Conclusion *The concept of functional endoscopic sinus surgery offers individualized surgery according to the patient's disease, and routine radical surgical procedures can be avoided with good functional results.*

KEY WORDS:- *FESS, Nasal polyp, Complications, Recurrence.*

INTRODUCTION:

The word "polyp" which is originally Greek has undergone Latinization and means (poly-pous) many footed. Nasal polyps are defined as pearly white, painless, prolapsed pedunculated parts of the nasal mucosa[1]. They are unique in their position and composition. Large body of literature can be found on this benign growths for centuries, from ancient times. Polyp as an entity was recognized through the era of Hippocrates (BC 460-370). He devised a unique method of removing the polyps by passing a string through the nose into the nasopharynx. To this string, a

Correspondence:
Dr. Sameer Qureshi
Department of ENT
Jinnah Postgraduate Medical Center
Karachi.

sponge was attached and then it was pulled out through the nose removing the polyps before it.[1] Since then, we have come a long way where mechanized power tools such as microdebriders are used to clear polyps under direct vision.

The endoscope has revolutionized the diagnosis and treatment of diseases of the nose and paranasal sinuses. It has enabled us to detect and diagnose many conditions that would hitherto go unnoticed and therefore untreated with speculum examination. Whilst operating, we have the advantage of good illumination and clear vision with minimally invasive surgery. Functional endoscopic sinus surgery aims at maintaining physiological function and anatomical structure. The extent of the operation is adapted according to each case. It is focused on the ostiomeatal complex in the middle meatus and the ethmoid cells. The term FESS is used to draw attention to the potential for re-establishing sinus drainage and mucosal recovery. With FESS, it is possible to achieve consistently good results, provided the surgery is done accurately and with care. Most of the reported complications are minor. Major complications require an immediate aggressive medico-surgical treatment to minimize the sequel.[2] Chronic sinusitis not responding to medical treatment and nasal polyposis are two classical indications for performing endoscopic sinus surgery. In this study we report our experience of this approach at JPMC.

Patients & Methods: This trial was conducted on the patients with bilateral nasal obstruction. All patients were selected from outpatient clinic of ENT department at Jinnah Postgraduate Medical Centre, Karachi between January 2004 to December 2006. Fifty patients of either sex were enrolled. All patients had complaint of nasal obstruction or any other associated symptoms due to nasal polyp. The patients with neoplastic polyp or nasal obstruction due to any other cause i.e. allergic rhinitis and polyp involving the orbit or brain, or having fungal allergic reaction were excluded. Patients who were unfit for surgery due to uncontrolled diabetes or hypertension were also excluded.

The data for the study was collected through a performa. Detailed history related to nasal obstruction like degree of obstruction related to time, day or seasons were recorded. History of nasal secretion, postnasal drip, anosmia, sneezing and watering of eye were noted. Pre-operative detailed ENT examination and at least coronal view of paranasal sinus were advised. CT scan before FESS was mandatory to identify the patient's ethmoid anatomy and its relationship to the skull base and orbit. CT scan also allowed to detect the extent of the disease and any underlying anatomic abnormalities that may predispose a patient to sinusitis.

RESULTS:

A total of 50 patients were analyzed. There were 35 (70%) males and 15 (30%) females with 2.3:1 male to female ratio. The average age of the patients was 27+- 4.91 (range from 18 to 35) years. Ethmoid polyp was present in 40 (80%) patients and antrochoanal poly in 10 (20%). Average operation time was 1.78+-0.38 hours and average hospital stay was 2.48+-.51 days (Table I). Complications were observed in 4 patients. Three (6%) developed synechia, excessive crusting, orbital fat extrusion and epistaxis. Major complication occurred in 1(2%) patient where exposure of dura occurred, but with no CSF leak.

TABLE-I OPERATIVE TIME & HOSPITAL STAY

No of Patients	Operative Time in Hrs	Hospital Stay in Days
7 patients	1.45 hrs	2.85 days
10 patients	1.50 hrs	2.35 days
13 patients	2.00 hrs	2.60 days
20 patients	2.20 hrs	2.15 days

Follow-up questionnaire was answered by all patients. None of the patients had any sign of recurrence till one month postoperative visit. At 3 month postoperative follow up 4 (8%) patient developed nasal polyp. After six months, recurrence of nasal polyp found in 6 (12%) patients.

DISCUSSION:

It has long been recognized that nasal obstruction can contribute to persistent infection in the paranasal sinuses. However, it has been convincingly shown by Messerklinger and others that a diseased ostiomeatal complex plays a vital role in the pathogenesis and persistence of nasal polyps.[3,4] The focal point of the ostiomeatal complex is the anterior ethomoidal air cells. The patients admitted in our ward with nasal polypi were about 5 percent of the total ENT patients admitted during the study period. In our study male to female ratio was 2.3:1 and in western studies the ratio of 2:1 or 3:1 is reported. Most frequent age group affected was between 8 to 35 years (average 27+_4.91 years). The high incidence of nasal polypi had been reported in rural population. We also found high incidence in rural population as 45% of our patients belonged to low socioeconomic group, 50% belonged to middle class and 5% to high socioeconomic group.

In our study all patients were having nasal obstruction, 70% had rhinorrhea, 80% with post nasal drip, 70% anosmia and 30% with facial pain. In study of Drake Lee et al all the patients had nasal blockage, 75% had hyposomia and sneezing. Rhinorrhea was present in

60%, post nasal drip in 65% and facial pain in 30%. The average operation time was 1.78+_0.38 hour, that depend upon expertise and surgical instruments like provision of microdebrider etc.

Average hospital stay was significantly low as compared to conventional surgical procedure. In our practice we encountered with following complications, synechia and later excessive crusting occurred in one patient, orbital fat extrusion occurred in one patient and bleeding after removal of pack. The major complications like dura exposure occurred in one patient. Sun[5] had no complication in his study. Dalziek[6] encountered major complications in 0-1.5% and minor complications in 1.1-20.8%. No recurrence in our study was seen in first month but in third month 4 patients came with signs of recurrence and at month 6 the number increased to six. The patients with recurrence were those who had more severe symptoms and who did not take treatment properly for their nasal allergy.

FESS is a new standard of care, but it can neither be expected nor represented to effect a cure.[7,8] A limitation of the surgery is that it is not an 'excisional' surgery. In the absence of the ability to 'excise' the sinuses, healing must take place. Often, healing may not occur as desired or expected, resulting in the need for a secondary extension and /or revision procedure, which is usually minor. A more radical surgical approach is rarely, if ever, needed. In a study[9] 18% of patients required subsequent surgical procedures. The study also validates the concept that patients in whom the cavity can be normalized following surgery are unlikely to require further surgery.

REFERENCES

1. Drake Lee AB. Nasal polyps. In: Mackay IS bull TR, eds. Scott Brown's otolaryngology. 5th edition, volume 4. London; butterworths 1987; 142-53.
2. Wigand ME, Hosemann W. Endoscopic surgery of the paranasal sinuses and anterior skull base. 2nd Edition, 1990; 4.
3. Portekeno GM. Prevalence of polyps, rhinosinustitis among the population. Vestn Otorhinol Laryngol 1989; 1:52-4.
4. Stammberger H. Functional endoscopic sinus surgery: the Messerklinger technique. Philadelphia: Decker, 1991:283.
5. Sun H, Tan G, Xiao J. Endoscopic sinus surgery, clinical aspect with 69 cases. Zhonghua Er Bi Yan Hou Ke Za Zhi. 1996; 31:18-9
6. Dalziek, Stein K, Round A, Garside R, Royale P. Endoscopic sinus surgery for the excision of nasal polyp: A systematic review of safety and effectiveness. Am J Rhinol. 2006 ; 20: 506-19
7. Darlind P, Petersen CG. Results of functional endoscopic sinus surgery. Ugeskr Laeger. 2006 ;168: 1034-7.
8. Haque MR, Hossain MM, Kundu SC et al. A study of functional endoscopic sinus surgery technique. Mymensingh Med J. 2004;13: 39-42.
9. Stammberger H. Functional endoscopic sinus surgery: the Messerklinger technique. Philadelphia: Decker, 1991:283.

LOCAL INFILTRATION OF STEROID ALONG WITH MANIPULATION OF COCCYX AS A TREATMENT OF COCCYDYNIA.

BUSHRA SHIRAZI, M. SHAHID SHAMIM, NADEEM BALOCH.

ABSTRACT

Objectives *To evaluate the efficacy of manipulation of coccyx along with local infiltration of steroid in the treatment of coccydynia.*

Design *Interventional study.*

Place & Duration of study *Department of surgery, Ziauddin Hospital Karachi and December 2000 and December 2004.*

Patients And Methods *All patients having coccydynia who did not improve between three to six months of conservative treatment were included in this study. They were treated with manipulation of coccyx under sedation along with local infiltration of steroid. Parameters taken into account were bio-data, cause of coccydynia, duration of pain and indication for treatment. Follow up of the patients was performed at one year.*

Results *Out of the 25 patients who underwent treatment 19 had excellent results, 4 had good and 2 had fair outcomes at one year follow up. Superficial infection was noted in one patient, which was managed conservatively.*

Conclusion *We recommend manipulation along with local infiltration of steroid in all patients of coccydynia who had failure of conservative treatment. It is less invasive, carried out under sedation and managed as a daycare*

KEY WORDS:- *Coccydynia, Steroid, Treatment.*

INTRODUCTION:

The term coccygodynia (ie, coccydynia) has been defined as pain in and around the region of the coccyx. It was described as early as the 1600s, but the term actually was first used by Simpson in 1859. The term coccyx comes from the Greek term kokkoux for cuckoo, as it resembles the shape of a cuckoo's beak. Coccydynia is a painful and discomforting condition for patients. It usually manifests itself clinically with pain at the "tip of tail bone", specially when sitting on hard surface. It tends to get worsened gradually and becomes a constant source of distress. This condition is quite rare and accounts for less than 1% of all back pain conditions.[1] It is often related to trauma, childbirth or may even occur without any identifiable cause. The treatment strategies have been diverse and no data has authenticated a particular treatment of choice or protocol.

The initial treatment for coccydynia is conservative with moist heat and analgesics. Local injection of corticosteroids into the area has been reported to benefit

Correspondence:
Dr. M. Shahid Shamim
Department of Surgery
Dow University of Health Sciences
Karachi.

patients who do not respond to conservative treatment.[1,2]

In our study the we hypothesize that manipulation of coccyx for disruption of fibrous bands due to chronic inflammation followed by local infiltration of steroid is the treatment of choice in patients that have had failure of conservative approach.

PATIENTS & METHODS

Patients presenting in the out patients with complaints of pain in the sacral region were examined along with a detailed history. A diagnosis of coccydynia was made on the basis of history, examination and x-rays of lumbo-sacral spine in antero-posterior and lateral views. Diagnostic information that was looked for in clinical examination was palpatory evidence of luxation or spicule at the tip of coccyx, with the familiar pain produced by pressure on the structure.

Initially, conservative treatment was prescribed in all patients and after a failed trial of conservative therapy that comprised of analgesia, physiotherapy and soft cushion seat for at least a period of 3 months, manipulation of the coccyx under sedation along with local infiltration of steroid was carried out. During the follow-up the parameters that were taken into account were most likely cause for coccydynia, duration of pain and indication for treatment. Results were classified from excellent to fair. Where "excellent" comprised of no need for analgesia, no pain on sitting for long durations (more than 4hours), "good" was as above but duration of sitting was between 2-4 hours and "fair" was less than 2 hours. Follow up of the patient was further done to document treatment failure, which was defined as need for analgesics and/or painless sitting duration of less than 2 hours. Minimum follow-up time for our patients was one year (range 12 months to 30 months).

RESULTS

A total number of 60 patients were diagnosed as having Coccydynia during the study period. Thirty-five of these patients recovered on conservative treatment. Remaining 25 underwent manipulation of coccyx under sedation along with local infiltration of steroids. Out of these 25 studied patients, 20 were females and five males. Their age ranged between 20 and 45 years. Twenty-two of them gave a history of trauma in the past, two developed the complaints after childbirth and in one the exact etiology was unidentifiable. Duration of complaint was for a minimum of 3 months to 1 year. Out of the 25 patients included in our study, 19 had excellent results, 4 good and 2 fair outcomes at one year follow up. Superficial infection at the site of injection was found in one patient, which managed conservatively. None of the patients had recurrence during the follow-up period.

DISCUSSION

A diverse presentation of coccydynia is seen in clinical practice. Starting from low backache, chronic pelvic pain, dyspareunia to proctalgia. The relationship between trauma and coccydynia has been long known.[3] However, recent studies have proven that injuries sustained before one month of onset of pain, be the trauma was of child birth or any other has no role on the precipitation of coccydynia.[4] Pain during or after sitting is the primary complaint of coccydynia. This acute pain from sitting to standing has been studied by Maigne[5] who found that all of the patients he tested had a coccyx that was partially dislocated or moved abnormally when the patient sat down. Other workers also observed posterior luxation and hypermobility as the pathophysiology of coccydynia. Anterior subluxation was seen rarely (5.3%).[6]

Treatment for this ailment has varied from simple medical management of analgesia, physiotherapy, manipulation, steroid infiltration to coccygectomy. Several authors have reported excellent or good results in cases that were treated by coccygectomy.[7] These studies were retrospective and patient selection criteria were ill defined. In 1996, Maigne et al.[8] established that patients with luxation or hypermobility were better responders to a local intra discal corticosteroid injection than patients with normal coccyx. He found that two months after the injection, 50% of the patients with luxation or hypermobility improved or healed, whereas only 27% of the patients with normal coccyx improved. The difference was significant (Chi square = 4.53, p = 0.033). In case of relapse, a second injection may be performed. If the result is better after this second injection (a longer relief), the prognosis is considered good.

In our study we reinforce the application of steroid injection along with manipulation. Wray et al,[7] who added manipulation to injection treatment produced a 25% increase in the rate of satisfactory results, further supports this in an open study. Manipulations consist in mobilizations of the coccyx joint and stretching of the coccyx (and of the attached muscles) with the rectal finger. Maigne described this latter maneuver in 1961.[9] Similar treatment strategies were also proposed by others recently.[10] The results in our study that were short of excellent appeared to be related to obesity. BMI was not documented as part of our study, nevertheless, obesity was observed as a confounding factor. It has also been observed that obesity is a risk factor for coccydynia in the general population for posterior subluxation and trauma.[4,11] In our series also majority of variations in outcome appeared to be in obese patients.

In conclusion if a patient is diagnosed to have coccydynia and has had failure to conservative treatment, we recommend manipulation of coccyx and intradiscal

steroid injection as this is less invasive, has good results, carried out as day care procedure under sedation, carries minimal procedure related morbidity, instant recovery and is economical.

REFERENCES

1. Fogel GR, Cunningham PY, Esses SI. Coccygodynia: evaluation and management. J Am Acad Orthop Surg 2004; 12:49-54
2. Wald A. Functional anorectal and pelvic pain. Digestive Diseases. Gastro Clinics of North Am. 2001 30: 243-51
3. Sugar O. Coccyx. The bone named for a bird. Spine 1995;20:379-8
4. Karalezli K, Iltar S, Irgit K, Karalezli N, Karakoc Y, Aydogan N. Coccygectomy in the treatment of coccygodynia. Acta Orthop Belg 2004;70;583-85.
5. Maigne JY, Doursounian L, Chatellier G. Causes and mechanism of common coccydynia; Spine 2000; 25:3072-79.
6. Maigne JY, Guedoj S, Straus C. Idiopathic coccygodynia. Lateral roentgenogram in sitting position and coccygeal discography, Spine 1994;19:930-34
7. Wray CC, Easom S, Hoskinson J. Coccydynia: aetiology and treatment: J Bone Joint Surg Br [England] 1991;73-B:335-38
8. Maigne JY. Tamalet B. Standardized radiological protocol for study of common coccydynia. Characteristic of the lesion observed in the sitting position. Clinical element differentiating luxation, hypermobility and normal mobility. Spine 1996; 21:2588-93
9. Maigne R. Les Manipulation vertebrales. 3rd ed. Paris: Expansion Scientifique Fracaise 1961;180.
10. De Andres J, Chaves S. Coccygodynia: a proposal for an algorithm for treatment. J Pain 2003; 4:257-66.
11. Maigne JY, Lagauche D, Doursounian L. Instability of coccyx in coccydynia. J Bone Joint Surg. 2000; 82-B:1038-41.

PERINEAL ECTOPIC TESTIS: A SITE TO LOOK FOR

NAIMA ZAMIR, AHMED SHARIF, M AQIL SOOMRO, SOOFIA AHMED, JAMSHED AKHTAR

ABSTRACT

A twelve year old boy presented with empty left hemi-scrotum with a swelling in the perineum just left to the midline. Medical advice was sought at the age of 5 years. Diagnosis of perineal ectopic testis was made. Surgery advised but due to poor counseling parents did not bring the child till he became 12 years of age. Through left inguinal incision the ectopic testis was re-routed to left hemi-scrotum without any difficulty. Testis was of good size. Post operative recovery was uneventful.

KEY WORDS:- *Ectopic testis, Cryptorchidism, Perineum.*

INTRODUCTION:

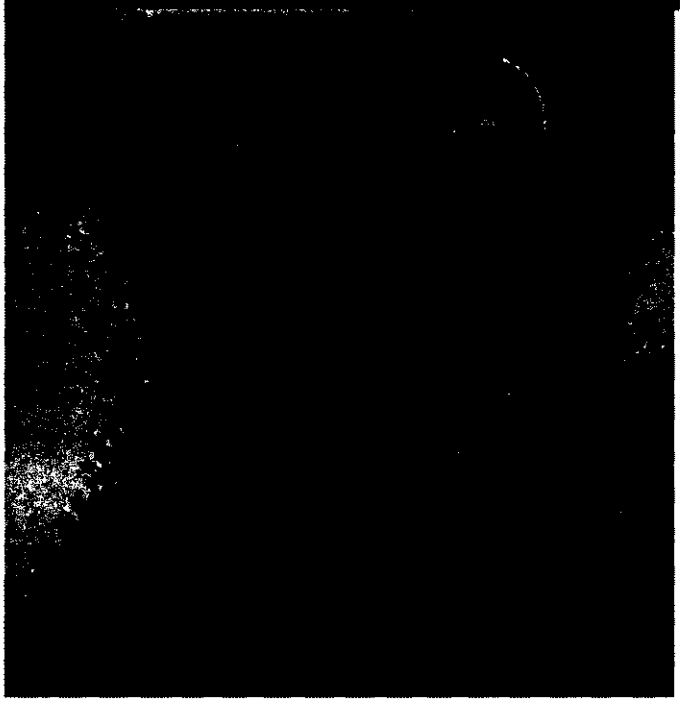
Perineal ectopic testis is a rare form of mal-descent, where testis is located between the penoscrotal raphe and the genitofemoral fold.[1] The reported incidence is < 1% of all cases of undescended testes.[2] Diagnosis is mostly clinical. An empty scrotum with an ipsilateral palpable perineal soft mass is suggestive of perineal ectopic testis. Trauma, torsion, malignancy, and infection of the testis are the complications associated with this anomaly. Early surgery is therefore indicated. We are reporting a case of perineal ectopic testis received in our unit.

CASE REPORT:

Our patient, a 12 year old boy, presented with swelling in the perineum left of midline with empty ipsilateral hemiscrotum. The anomaly was noted by parents but medical advice was not taken till the age of 5 years. Examination at that time showed left sided empty scrotum and a soft mass in the perineal region of same side. Diagnosis of left ectopic testis made and surgery scheduled. The patient was found unfit for general anaesthesia at that time and surgery was deferred. Since then patient never turned up till recently when he developed pain in the perineal region (Fig. I). After necessary investigations patient was explored. An inguinal approach was made. Testis gently delivered into inguinal wound following blunt and sharp dissection. Testis found to be of normal size and fixed into dartos pouch in the ipsilateral hemiscrotum with no difficulty (Fig. II). Post operative recovery was uneventful.

Correspondence:
Dr. Naima Zamir
Department of Paediatric Surgery: Unit B
National Institute of Child Health
Rafiquee Shaheed Road
Karachi. 75510.
naimazamir@yahoo.com

FIG. I PERINEAL ECTOPIC LOCATION OF TESTIS.



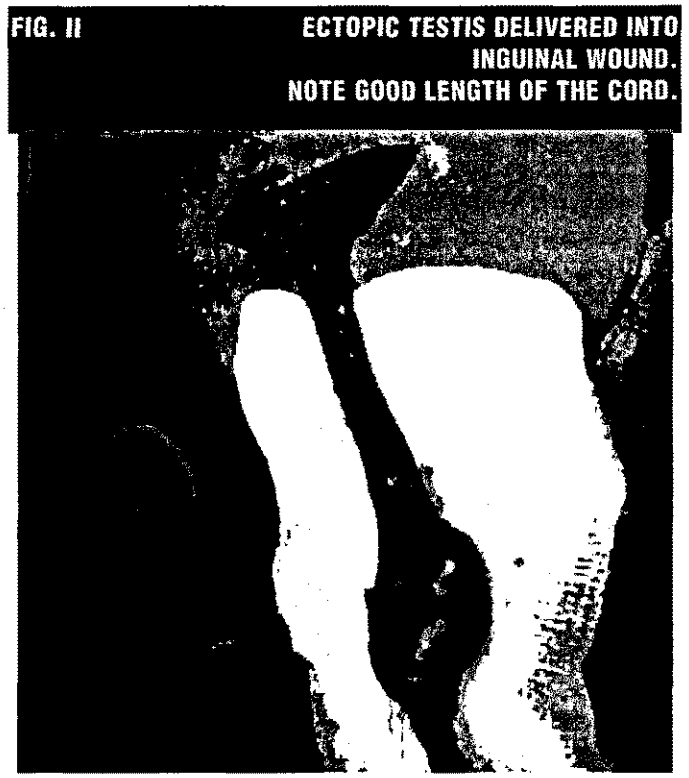


FIG. II ECTOPIC TESTIS DELIVERED INTO INGUINAL WOUND. NOTE GOOD LENGTH OF THE CORD.

DISCUSSION:

Testicles develop in and descent from abdomen to scrotum, pass through a complex multi-stage procedure starting from 7th to 8th week of gestation to 35th week. Migration is thought to be under the influence of androgenic hormones and certain mechanical factors. This event is very important to keep their temperature at lower level, essential for normal spermatogenesis.[3] Any disturbance in this process leads to maldescent that could either be arrest in normal pathway (true undescended testis), or taking an abnormal course to descent but never reach the scrotum, called as an ectopic testis. There are studies which suggest that undescended or ectopic testes are the variant of single congenital condition.[4] The cause of ectopia is not known but it is thought to be due to abnormal position of genito-femoral nerve which leads to abnormal migration of gubernaculum and thus takes testis to abnormal position.[5] Ectopic testis can be found, at femoral canal, suprapubic region, perineum, or in contralateral hemiscrotum.[6] Location at superficial inguinal pouch is controversial and is more appropriately grouped in undescended variant.[7]

Ectopic testis lies superficially above the muscle, hence easily palpable and is of normal size. They have better prognosis than undescended one. The ectopic locations of testis are associated with a number of complications like trauma, malignancy, torsion, infection, and infertility in case of bilateral disease. Perineum is a rare site of mal descended testis. In literature approximately 175 cases have been reported, and comprise < 1% of all cases of undecended testis. An empty scrotum with a soft perineal mass on ipsilateral site is very suggestive of perineal testis.[1] There are reported cases of antenatal diagnosis of ectopic testis at 38week on ultrasound confirmed in postnatal period by clinical examination.[2] Testis out side of scrotum can not develop functionally normal as they required a temperature 1-2 ° C lower than the body temperature with adequate blood supply. Although it can develop in to normal size but poor in function.

Abnormal location of testis also effect on the psychological profile of patient. As in our patient who was very shy of discussing his abnormality. His parent did not take his problem seriously and brought the child at an older age. Awareness of such conditions is very important for the parents so that they should not hide their children's congenital anomalies and consult medical experts at an early age. This will helps in early diagnosis and treatment which thus prevents complications[8] as well as the development of psychological disturbance in children.

Ectopic testis should be operated before the age of 6 month even if it not associated with inguinal hernia.[9] The functional outcome of ectopic testis, is difficult to define but found to be similar to other forms of mal-descended testis. Perineal ectopic testes are usually explored through standard inguinal approach. Gubernaculum usually found fixed to perineum.[10] Testes are placed in ipsilateral hemiscrotum easily. Perineal approach also been used by some surgeons.

REFERENCES

1. Jlidi S, Echaieb A, Ghorbel S, Khemakhem R, Ben Khalifa S, Chaouachi B. Perineal ectopic testis: report of four paediatric cases. Prog Urol. 2004;14:532-3.
2. Mazneikova V, Markov D. Antenatal ultrasound diagnosis of perineal ectopic testis. Eur J Ultrasound. 2001;13:31-3.
3. Hutchison JC, Snyder HM, Zuñiga ZV, Zderic SA, Schultz DJ, Canning DA, Huff DS. Ectopic and undescended testes: 2 variants of a single congenital anomaly? J Urol 2000;163:961-3.
4. Ectopic Testis. In: Paediatric Surgery Updates: 2005;24:8.
5. Hutson JM. Undescended Testis, Torsion, and Varicocele. In: Pediatric surgery.6th ed. 2006; 1193-14.
6. Shamsuddin S, Mirza TH, Khan N, Ibrahim I, Imtiaz T. Transverse testicular ectopia. J Ayub Med Coll Abbottabad 2007;19:1.
7. Garat JM, Crisponi H, Apostolo C, Etcheverry R. Perineal ectopic testis: J Urol 1985;91:469-72.

8. Mantovani F, Cazzaniga A, Mastromarino G, olombo F, Austoni E. Early diagnosis and correct treatment of cryptorhidism. Arch Ital Urol Nefrol Androl.1991;63:403-8.

9. Celayir AC, Sander S, Elicevik M. Timing of surgery in perineal ectopic testes: analysis of 16 cases. Pediatr Surg Int 2001;17:167-8.

10. Nounla J, Trobs RB, Rolle U. Perineal ectopic testis: a rare cause of empty scrotum. Uol Int 2001;67:246-8.

.....★.....

LAPAROSCOPIC CHOLECYSTECTOMY IN SITUS INVERSUS TOTALIS: A UNIQUE EXPERIENCE.

MUKHTAR MEHBOOB, SYED MOHAMMAD SALEEM, MOHAMMAD ASHRAF ACHACKZAI,

ABDUL QAYYUM

ABSTRACT

Situs inversus is a rare condition. To diagnose as well as to operate upon any pathology in such patient is a unique experience. A fifty years old female, who was diagnosed as a case of 'situs inversus totalis' was having symptomatic gall stones. In this patient a well planned laparoscopic cholecystectomy was performed and the patient made an uneventful recovery.

KEY WORDS:- *Situs inversus, Cholelithiasis, Laparoscopic.*

INTRODUCTION:

In 1600, Fabricius first reported the case of situs inversus in humans. Marco Severnino recognized the dextrocardia in 1643. More than a century later, Mathew Baillie described the mirror image reversal of the thoracic and abdominal organs.[1] Situs inversus occurs once in approximately 20,000 live births and has an autosomal recessive inheritance.[2] People with situs inversus have 3-5% chance of any type of functional heart disease, while 25% have underlying condition like primary ciliary dyskinesia. It is also known as Kartagener's syndrome.[3,4] The frequency of cholelithiasis in patients with situs inversus is similar to that in general population.[5]

We are presenting a patient having situs inversus totalis with symptomatic cholelithiasis, who was successfully treated by laparoscopic cholecystectomy.

CASE REPORT:

A fifty years old female presented to the outpatient department with one year history of epigastric and right hypochondrial pain and inability to digest the food. She had nauseating feeling. She had no history of fever, jaundice or hospitalization. On examination there was no pyrexia or jaundice. She had tenderness in the epigastric region and right hypochondrium, while rest of the examination was normal. On chest examination apex beat was on the right fifth intercostal space in the midclavicular line.

The laboratory investigations revealed that her white cell count, liver function tests and amylase levels were with in normal limits. Ultrasonography of the abdomen showed situs inversus of all abdominal viscera. The liver was located on the left side, had normal echo texture and showed no evidence of intrahepatic biliary dilatation. Gall bladder was located on the left side containing multiple calculi. Common bile duct was normal. The spleen was visualized in the right upper quadrant with calcified spots. Chest x-ray showed heart on right side and stomach gas bubble also on right side. An electrocardiography showed right axis deviation, while echocardiography confirmed the diagnosis of dextrocardia with normal left ventricular function. All these findings confirmed the diagnosis of situs inversus with gall bladder stones.

A laparoscopic cholecystectomy was planned. During surgery, the surgeon and the camera assistant were standing on the right side of the patient and the first assistant on the left side. General anaesthesia was induced, after preliminary preparation pneumoperitoneum was created to a pressure of 14 mm of Hg using a Verees needle through an umbilical incision and camera was

Correspondence:
Dr. Mukhtar Mehboob
H. No: 5-11-84(777)
Gulshan-e-Patel, Quarry Road
Quetta.
E. mail: mehboob87300@yahoo.com

introduced (port 1). A 5 mm port was placed just below to the left costal cartilage in the anterior axillary line and grasper was introduced to catch the fundus of the gall bladder (port 2). A 10 mm port was inserted 4 cm below xiphoid 1 cm right to the mid line (port 3) and another 5mm port was inserted 4 cm below left costal cartilage in left mid clavicular line (port 4). We used port 3 for grasping neck of the gall bladder, while port 4 used for dissection. After dissection a standard laparoscopic cholecystectomy was performed. Specimen on histopathology revealed chronic cholecystitis and cholelithiasis. The whole procedure was uneventful and the patient recovered smoothly.

DISCUSSION:

A review of the literature revealed that situs inversus is not a contraindication of laparoscopic surgery. Twenty seven cases of laparoscopic intervention in the presence of situs inversus have been reported. Those laparoscopic procedures included basic procedures such as diagnostic exploration and cholecystectomies as well as advance procedures such as gastrectomy and gastric bypass.[6,7]

Different varieties of situs inversus are described, that include situs inversus with dextrocardia, situs inversus with levocardia, situs solitus with dextrocardia, situs inversus totalis and situs ambiguous. Sometimes situs inversus described as right isomerism or 'asplenia syndrome' and left isomerism or 'polyspenia syndrome'. Cholelithiasis with situs inversus totalis is a rare condition.[8] Our patient is diagnosed as a case situs inversus totalis with cholelithiasis.

It has been observed that in 30% of patients suffering from acute cholecystitis with situs inversus pain was felt in the epigastrium alone and in 10% the pain was localized to the right upper quadrant. The proposed explanation for this is that central nervous system may not share in the general transposition.[9] In a case report presented by Mc Kay D et al, patient presented with epigastric pain and had no definite left upper quadrant pain.[1] In our patient pain was in the epigastric region and right hypochondrium.

In this modern era of technology where minimal access surgery is flourishing, situs inversus is not a contraindication for laparoscopic surgery. However, the procedure is more difficult and potentially hazardous due to mirror image anatomy (particularly the transposition of biliary duct) causing difficulties in orientation.[10] Laparoscopic cholecystectomy can be safely and effectively applied in the setting of situs inversus, although attention must be paid to the details of left right reversal.[11] In our patient of situs inversus totalis we had performed the laparoscopic cholecystectomy easily and safely.

REFERENCES

1. Mc Kay D, Blake G. Laparoscopic cholecystectomy in situs inversus totalis: a case repot. B M C Surg 2005; 5:5.
2. Nursal TZ, Baykal A, Iret D, Aran O. Laparoscopic cholecystectomy in a patient with situs inversus totalis. J Laparo Endosc Adv Surg Tech 2001; 11: 239-41.
3. Claire A. Left, right and wrong. New Scientist 2000; 2243: 40-5.
4. JancherT, Milzman D, Clement M. Situs inversus emergency evaluation of atypical presentation. Am J Emerg Med 2000;18: 349-50.
5. Wood GO, Blalock A. Situs inversus totalis and diseases of the biliary tract. Arch Surg 1940; 40: 885-96.
6. Kobus C, Targarona EM, Bendahan GE, Alonso V, Balague C, Vela S, et al. Laparoscopic surgery in situs inversus: a literature review and a report of laparoscopic sigmoidectomy for diverticulitis in situs inversus. Langenbacks Arch Surg 2004; 389: 396-9.
7. Shah AY, Patel BC, Panchal BA. Laparoscopic cholecystectomy in patient with situs inversus. J Min Access Surg 2006; 2: 27-28.
8. Honda M, Takesue F, Yasuda M, Inutsuka S, Nozoe T, Korenaga D. Laparoscopic cholecystectomy for cholecystolithiasis in a case with situs inversus totalis. Digestive Endosc 2002; 14: 171.
9. Rao PG, Katariya RN, Sood S, Rao PLNG. Situs inversus totalis with calculous cholecystitis and mucinous cystadenoma of ovaries. J R Coll Surg Edinb 1996; 41: 183-84.
10. Polychronidis A, Karayiannakis A, Botaitis S, Perente S, Simopoulos C. Laparoscopic cholecystectomy in a patient with situs inversus totalis and previous abdominal surgery. Surg Endosc 2002; 16:1110.
11. Demetriades H, Botrios D, Dervenis C, Evagelon J, Agelopoulos S, Dadoukis J. Laparoscopic cholecystectomy in two patients with symptomatic cholelithiasis and situs inversus totalis. Digestive Surg 1999; 16: 519-21.