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EDITORIAL : Cost Effective Surgery In Developing Countries

Cost effectiveness in Surgery, for that matter in all treatment modalities, is the result obtained in terms of benefit achieved as weighed against the cost incurred on the treatment. Modern evaluating systems, diagnostic procedures, equipment and technology are very expensive, though necessary for treatment. Detailed laboratory tests, X-ray, CT Scan and MRI are essential tools for a surgeon though being expensive and scarcely available, which only a few can afford. Even in the developed countries, with high per capita income and plentiful resources, cost of surgery is still an important consideration. In a developing country like Pakistan, with very low per capita income, the surgeon and patient have to consider seriously the costs involved in surgical treatment. Cost effectiveness is of utmost importance for a common man who has ultimately to pay for most of his treatment. Thus surgery in poorer countries is always considered in terms of cost effectiveness. The factors being considered to cut costs are day-care surgery, minimal diagnostic evaluation, minimum hospital stay, low cost medicines and simpler operative procedures. Other important considerations are public sector facilities, subsidisation by various agencies, charities, government and others.

Surgeons have to evaluate and make decision for proper surgery which is cost-effective, keeping in view the requirements of diagnostic evaluation and effective medications. Other alternative to achieve reduced cost in surgery could be to stick to old orthodox procedures with minimum use of advancements made in diagnostic evaluation, medication and technology or send the patients to quacks and faith healers, which of course is never acceptable to a surgeon. Therefore, surgeons are often forced to cut corners or not operate at all, sometimes compromising standards against their better judgement. But if surgery has to be upto the required standard, taking advantage of recent advances and developments, it must be supplemented through financial support and funds, which must be made freely available for surgery to be made cost effective.

ABDUL AZIZ

LETTER TO EDITOR

Dear Friends,

I can only tell you that I am so proud of your official Journal of ICS. It has a very international flavor and I shall be very honored to contribute to it and I will do that in the very near Future.

Yours Sincerely

Prof. Rafaat Kamel,
Prof. of Surgery,
Ain-Shams University, Cario, Egypt,
World President,
International College of Surgeons.

A COMPARATIVE STUDY OF MORBIDITY IN LAPAROSCOPIC AND OPEN (CONVENTIONAL) CHOLECYSTECTOMY

FAISAL G. BHOPAL, MUHAMMAD ASLAM RAI, MUHAMMED IQBAL,

ABSTRACT:
A prospective study of 300 patients was carried out at Rawalpindi General Hospital to compare the morbidity of laparoscopic and open cholecystectomy. 150 patients underwent laparoscopic cholecystectomy while the rest had conventional cholecystectomy. Patients of all ages were included, 33% had single stone, 67% had multiple stones and Mucoceles were present in 5% of the cases. Conversion rate of laparoscopic to open cholecystectomy was 2%. Mean operating time for laparoscopic was 74 minutes (30-175 minutes) and 61 minutes (35-90 minutes) for open cholecystectomy. Average post-operative stay in hospital was 1.17 days for laparoscopic and 4.1 days for open cholecystectomy. Wound infection occurred in 2% of laparoscopic and 6% of open cholectectomies. 94% of patients required single dose of parenteral analgesia, while 6% required a second dose and 5% of the patients required more doses of parental analgesia.

KEY WORDS: Laparoscopy, Cholecystectomy.

INTRODUCTION:

Gall bladder disease constitutes a major share of patients undergoing abdominal surgery. The disease is increasing in incidence with our changing dietary habits and increased longevity, as given enough time many silent stones make themselves heard and felt. The introduction and routine use of sonography has made the diagnosis of gall bladder disease more simple and definite. In terms of effective management of the disease, negligible mortality and morbidity, the best available method for great majority of patients with cholelithiasis and cholecystitis is cholecystectomy. Although the overall operative mortality rate is less than 0.1% but it increases upto 10% if elderly patients are operated for complications caused by gall stones[1]. The rate of complications following cholecystectomy is low, however most patients still experience difficulty because of post-operative ileus, pain, discomfort, disability and long convalescence.

Laparoscopic cholecystectomy is a comparatively new technique. It significantly decreases the length of hospital stay, post-operative pain, discomfort, medications, and extends economic benefit to the patient, employer, community and health care system. Several articles now suggest that laparoscopic cholecystectomy should be the treatment of choice for majority of patients with gall bladder disease[2]. Attempts have been made to compare laparoscopic with conventional cholecystectomy in a randomized prospective trial but have failed because of the immense popularity of laparoscopic cholecystectomy[3]. Nevertheless reports suggest that morbidity, particularly bile duct injury, may be greater using this technique than previously experienced[4]. Hence the urgent need at this stage to establish factually correct assessment of sequelae, complications and benefits of laparoscopic cholecystectomy.

PURPOSE OF STUDY:

The purpose of this study is to compare the morbidity of laparoscopic with open (conventional) cholecystectomy, so that patients with gall bladder disease should benefit from this newly developed technique.

PATIENTS AND METHODS:

The study included patients from Rawalpindi General Hospital and from private clinic of the authors. It was carried out on 300 patients from January 1993 to June 1996. 150 patients underwent open (conventional) cholecystectomy and all these operations were performed in the RGH. The second group of 150 patients of comparable parameters underwent laparoscopic cholecystectomy, out

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of which 105 were conducted in hospital and 45 at private clinic. A Proforma was made and information was recorded for each case.

The patients' age ranged from 22 to 70 years, mean age was 45 years. Female to Male ratio was 7:1, 88% patients were females and 12% were males. Flatulence dyspepsia was present in 67% cases. 80% of the patients gave history of repeated attacks of pain in the right hypochondrium lasting for couple of hours and relieved by medication. Duration between onset of symptoms and operation ranged between 6 months to 8 years. 86% of the patients presented as elective admissions through outpatient department while 14% were admitted with acute cholecystitis through emergency with right upper quadrant pain and localized tenderness. 24 patients were febrile with temperature of up to 100°F. 38 patients were hypertensive (16 from laparoscopic group and 22 from conventional group), 9% patients were diabetic (18 of laparoscopic group and 9 of conventional group), and 8% patients had previous abdominal operations (12 patients from each group).

All patients presenting for treatment of symptomatic gall bladder disease underwent routine history, physical examination, laboratory testing and ultrasonographic evaluation of gall bladder and common bile duct. An informed consent was obtained from all patients, nature of the procedure and potential for conversion of the laparoscopic approach to an open cholecystectomy was explained. Patients unfit for GA, cholecysto-enteric fistula, doubt about gall bladder malignancy, ductal calculi, pancreatitis, pregnancy or surgery through upper abdominal scar were taken as contraindications of laparoscopic group.

Out of 300 patients, 42 had acute cholecystitis, out of which18 had laparoscopic and 24 had open cholecystectomy, after they were treated with analgesic, antibiotics, and I/V fluids for 72 hours. One dose at time of induction of anaesthesia followed by one or two more doses postoperatively were given in all the cases. Open cholecystectomy was performed by subcostal incision and laparoscopic cholecystectomy by four-puncture technique.

RESULTS:

Ultrasonography demonstrated cholecystolithiasis in all patients. 30% of the patients had single stone while 67% had multiple calculi. Gall bladder wall thickening, pericholecystic fluid and positive Murphy's sign was present in all patients of acute cholecystitis. Liver function tests like serum bilirubin, ALT, AST, and alkaline phosphatase were normal in all cases. Haemoglobin ranged from 10-14gms/dl. Total leukocyte count was within normal range in 91% while in 9% patients who had acute cholecystitis total leukocyte count was raised. 10% patients (24 from laparoscopic group and 6 from conventional group) were Hepatitis B surface antigen positive, although there was no previous history of jaundice in all patients. Except 24 who had diabetes, urine examination was normal.

In 79% cases (117 from lap chole group and 120 from conventional group) there were moderate to severe adhesions, while in 21% of the cases no adhesions were found. Gall bladder was shrunken in 22% cases, was normal in size in 12%, moderately distended in 41% and markedly distended in 25% cases. Mucocele of gall bladder was present in 5% cases (laparosopic group=6, conventional=9). Three out of 150 cases attempted for laparoscopic cholecystectomy had to be converted to conventional open cholecystectomy (due to dense adhesions at Calot's triangle in one, duodenal perforation in the second and common bile duct injury in the third case) with an overall conversion rate of 2%. Bile leak occurred in one patient in laparoscopic group due to slip of clip on the cystic duct.

Average operative duration for laparoscopic cholecystectomy group was 74 minutes (range 30-175 minutes). 2% required 30 minutes, 48% required 31-90 minutes, while 20% were completed in 90-120 minutes, one patient required 175 minutes. For the conventionally operated group the average operative time from incision to dressing was 61 minutes (range 35-90 minutes). 76% required 31-60 minutes and 24% were completed in 61-90 minutes. As regards the post-operative hospital stay, 84% (126 patients) from laparoscopic group were discharged within 24 hours. Of the remaining laparoscopic patients, 15 patients (10%) were discharged within 48 hours and 9 patients (6%) within 72 hours . Average postoperative stay was 1.17 days with no re-admission. From the open cholecystectomy group one patient (0.67%) was discharged within 24 hours, 24 (16%) within 72 hours, 60 (40%) within 96 hours, and 65 patients (43.33%) within 120 hours. Average post-operative stay was 4.1 days.

Post-operative vomiting requiring parenteral antiemetic 12 hours after surgery occurred in 21patients (14%) from laparoscopically operated and 81 patients (54%) from open group. From laparoscopic group 117 patients (78%) required one litre of fluid and 33 (22%) required 2 litres of fluid post-operatively before commencing oral feeding. The average fluid requirement was 1.22L. From the open group 10% (15) patients required 2L of fluid, 74% (111) patients required 3-4L and 16% (24) required more than 4L of fluid. The average requirement for fluid was 3.4L post-operatively, almost 3 times that of laparoscopic group. 94% (141) patients of laparoscopic group required a single dose post-operatively and 6% (9)patients required two shots of parenteral analgesic. From open

group 6% (9)patients required two doses, 30%(45)patients required three and remaining 64%(96) patients were given four or more shots of parenteral analgesic.

Three patients (2%) from the laparoscopic group and 9 patients (6%) from open group developed minor wound infections which were managed by simple antiseptic dressings.

One patient from the laparoscopic group presented with pain in right hypochondrium two weeks after successful laparoscopic cholecystectomy. On abdominal ultrasound there was a stone, 1cm diameter, in lower common bile duct. This patient was referred for ERCP and sphincterotomy. One patient from open group had a reactionary haemorrhage requiring blood transfusion. No blood transfusion was needed in laparoscopic group.

Post-operative fever up to 100°F occurred in 3 patients from laparoscopic group and 12 patients from open group. Spontaneous recovery occurred in all patients. 34% of the patients from open group were feeling discomfort/pain in scar even after two weeks. No such complaints were noted in laparoscopic group. All the patients from laparoscopically operated group, having negligible scarring, were satisfied from cosmetic point of view. In comparison, conventionally operated patients had longer scars. Two patients from laparoscopic group developed port hernia, while in conventional group hernia formation occurred in one patient with follow-up of 2 to 5 years.

On histopathology acute cholecystitis was confirmed in 14% of patients, (19 patients from laparoscopic and 24 patients from open group). 86% patients from laparoscopic group and 84% patients from open group, on histopathology, had chronic cholecystitis. Two patient from laparoscopic group turned to be having adenocarcinoma of gall bladder.

Overall morbidity was 6% for laparoscopically operated patients and 32% for the conventionally operated patients.No mortality occurred in either group.

DISCUSSION

Shortly after Langenbach performed the first successful cholecystectomy in 1828, this procedure became the treatment of choice for symptomatic cholelithiasis. During the last 100 years only few advances were made in the actual approach and conduct of cholecystectomy. Data from New York Hospital/Cornell Medical Center showed that mortality rate for elective cholecystectomy in a large series of patients was 0.2%. It is against this safety that all other innovations in the treatment of Cholelithiasis must be compared[5].

Laparoscopic cholecystectomy has caught the imagination of the surgical community and in the course of last few years we have moved from a position of skepticism to the point where the instrument makers are unable to keep pace with demand. Enthusiasm for laparoscopic cholecystectomy has grown rapidly, as recent reports have detailed the ease, efficacy and safety of this procedure[4].

In this series of 150 patients operated laparoscopically, there has been no mortality and morbidity was lower as compared to open method. We conclude that todate there is no reason to suspect that laparoscopic cholecystectomy will that not prove a safe and standard procedure.

Morbidity of elective open cholecystectomy is estimated to be about 3% to 5%[6]. In our series of 150 patients in open cholecystectomy group, there was 1.27% significant morbidity. In comparison, our data shows 3.33% rate of significant complications for laparoscopic cholecystectomy group. This is comparable to 4% major complication rate described by Bruce[5].

As with traditional open cholecystectomy, bile duct injury is the most feared complication related to the new procedure[7]. The injury rate is associated with the learning curve. Mayers and fellow members of Southern Surgeon Club reported that the rate of bile duct injury was 2.2% during a surgeon's first 13 laparoscopic cholecystectomies, but it dropped to 0.1% in subsequent cases. However the overall incidence of bile duct injury is 0-2% in published series[9]. In our series we had only one bile duct injury in laparoscopic cholecystectomy[10]. Gouman concluded that acute cholecystitis and a limited laparoscopic experience are contributing factors in aetiology of bile duct injury in laparoscopic cholecystectomy. Davidoff[11] reported mechanism of laparoscopic billiary injury in which 8 injuries were of classic type, i.e. misidentification of the common duct for the cystic duct, resection of part of the common and hepatic ducts and associated right hepatic arterial injury. Another injury was similar, clip ligation of the distal common duct with proximal ligation and division of the cystic duct, resulting in biliary obstruction and leakage. These complications arose from excessive use of cautery or laser in the region of the common duct, resulting in biliary stricture. However it is of utmost importance that bile duct injuries should be recognized at the time of surgery and repaired accordingly. Following unrecognized major duct transection, there may be diffuse abdominal pain, anorexia and abdominal distension that precedes the onset of jaundice in the early postoperative period[12]. In such patients ERCP is the investigation of choice. Another group of patients may present later with progressive obstructive jaundice, resulting from benign stricture of bile duct possibly by excessive dissection of ducts, compromising the blood supply[13] or from the

injudicious or excessive application of an energy source around the duct[12]. Bile leakage has been reported after laparoscopic cholecystectomy. Biliary leakage is defined as a clinically significant biliary fistula in the absence of major biliary injury i.e. with an intact extrahepatic billiary system[14]. This may be due to injury to the segmental or lobar system that does not communicate with the identified ducts. It may be obstructed or fistulized[14]. This may be due to failure of clips used to secure the cystic duct[15]. A third reported source of bile leak following laparoscopic cholecystectomy is from the accessory ducts of luschka[16].

The incidence of biloma formation after laparoscopic cholecystectomy is significantly higher than after open cholecystectomy[17]. Brady suggested that post-laparoscopic cholecystectomy biloma should initially be drained percutaneously. Endoscopic retrograde cholangiography (ERC) should then be used to identify the source of the leak, but sphincterotomy and/or stent placement may be best reserved for those whose leaks do not resolve after 10 days of free drainage. Surgery is recommended only for major biliary injury and for leaks that remain unresolved after sphincterotomy and/or stenting. We met with an accessory bile duct entering into gall bladder in one patient operated laparoscopically. It was clipped successfully. There was one post-operative bile leak due to slipping of clip on cystic duct.

Diagnostic laparoscopy has small but well documented incidence of visceral injury estimated at 0.3-2%[18]. Inevitably such injuries have occurred in laparoscopic cholecystectomies. Bowel injuries during laparoscopy has been widely reported[19] with approximately half being caused by trocars or Veress, needle insertion and remainder during dissection of abdominal or gall bladder adhesion. When recognized during the procedure, these injuries have generally been repaired by laparotomy without serious adverse effects. We had one duodenal injury in laparoscopic cholecystectomy group. Eden reported a duodenal injury during laparoscopic cholecystectomy performed by laser dissection[20].

Major vascular injuries do occur but fortunately rarely with a rate of 0.05% reported by Deziel[21], of which 3 were fatal in laparoscopic cholecystectomy.

In this study laparoscopic cholecystectomy was completed successfully in 147 patients out of 150 attempted, with a success rate of 98%, which is better than the series of Schirmer and others[22], who had a success rate of 91.5%, and is comparable to that of Bailey and others[23], who reported 95% success rate. The conversion rate of 2% in this series is better in comparison to 6.9% in the study of Graves, Baillinger and Anderson[24].

Increased operative duration is a potential criticism of laparoscopic cholecystectomy. Our data clearly shows that there is a minor difference between laparoscopic cholecystectomy and open cholecystectomy, which on average is 74 minutes with a range of 30-175 minutes. This is better than the average operative time of 104 minutes by Soper[25] and a 99 minutes average operative time in series by Graves[24] and is comparable to that of 90 minutes by Malik A and Khan[26]. In comparison our series of open cholecystectomies showed an average operative time of 61 minutes with a range of 35-90 minutes. This slightly longer duration of surgery in laparoscopic group is tolerable with the advantage of reduced post-operative pain, absence of prolonged ileus and patient leaving the hospital on the following day without major abdominal scar.

Laparoscopic cholecystectomy significantly reduces post-operative hospital stay. In our series 84% patients were discharged from the hospital within 24 hours of surgery and all patients within 72 hours. Mean post-operative hospital stay for laparoscopic group was 1.17 days. This is comparable with mean hospital stay of 1.3 days described by Bailey[23]. And this is almost equal to the mean post-operative hospital stay of 1.2 days in the prospective analysis by the Southern Surgeon's Club[8]. In series of Reddick[27] patients were discharged the same day. In comparison there was an average post-operative hospital stay of 4.1 days for an open cholecystectomy in this study. This is better than comparative study of Udwadia which gave a ratio of 3.6:13 days[28].

No patient from laparoscopic group needed blood transfusion. Blood transfusion rate was 5% in the series of laparoscopic cholecystectomies by Cushieri[29]. One patient from open group had a reactionary haemorrhage and went into shock post-operatively. He needed blood transfusion with an overall rate of 0.67%. Laparoscopic cholecystectomy group had a shorter period of post-operative ileus in comparison to conventional cholecystectomy. This is reflected by need of parenteral antiemetic and I/V fluids in post-operative stay. In this series 14% of patients from laparoscopic group required parenteral antiemetic in comparison to 54% for the conventional group, even 12 hours after surgery. Laparoscopic group needed a lesser amount of I/V fluids in comparison to open group with a ratio of 1.2-3.4L. The early return of bowel motility with early return of oral feeding is a further evidence of minor abdominal trauma after laparoscopic technique.

In this series 94% of the patients from laparoscopic group required a single shot of parenteral analgesic post-operatively, while 94% from open group required three or more shots of parenteral analgesic. This is comparable to the

study of Galaser[30], in which average number of days of post-operative pain was 2.7 days for open cholecystectomy and 1.13 days for laparoscopic cholecystectomy.

Scar problems, discomfort and pain requiring medication was common in conventionally operated than in laparoscopic group, i.e. 34% vs 6% even 15 days after surgery.

Incidence of respiratory tract infection was higher in open group than that of laparoscopic group. 16% of patients from open group had significant chest infection in comparison to 0% in laparoscopic group. This may be due to decreased depth of respiration due to pain and relatively late mobilization in conventional group. Frazee[31] concluded that laparoscopic cholecystectomy offers improved pulmonary functions compared to open technique.

Unsuspected stone was present in one (0.67) patient from laparoscopic group. This figure is certainly significantly lower than the incidence of unsuspected stone in common bile duct of 7% after cholecystectomy mentioned by Philip G[32]. It does not justify the routine use of cholangiography, thus prolonging the mean operative time. This conclusion is similar to that made by Niebaur H[33]. Pre- and post-operative ultrasound is of great value in revealing common bile duct stones.

Our major morbidity of 2% for laparoscopic approach is comparable with the other reports of <5% major morbidity[34]. Morbidity of open cholecystectomies thought to be about 3%-5%[6]. In our series major morbidity was 0.67% for open technique. A patient had reactionary haemorrhage, went into shock and blood was transfused to combat the shock. About the total minor morbidity for laparoscopically operated patients, it was 6%, 2% patients had post-operative fever up to 100°F, 2% patients had minor wound infection. This settled down without any major intervention. Two patients had port hernia and one patient had a residual stone in common bile duct.

In comparison, conventionally operated patients had 31% minor morbidity. Significant difference was respiratory tract infection, which occurred in 16% of cases, significantly higher than the laparoscopically operated patients. 8% of the patients had fever up to 100°F and 6% had minor wound infection. The overall morbidity statistically is significantly high for the open group.

CONCLUSION:

Laparoscopic cholecystectomy is feasible in majority of patients presenting with symptomatic gallstone[3]. In comparison with open cholecystectomy, laparoscopic cholecystectomy is safe with less post-operative morbidity, cost effective, with faster patient recovery, and has less post-operative pain, earlier return to diet, earlier full mobilization, short hospital stay, negligible scar which is cosmetically more acceptable and earlier return to work.

Laparoscopic cholecystectomy is certainly superior to open cholecystectomy and should be available to all patients requiring elective cholecystectomy.

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AN EVALUATION OF HAEMATURIA

MUHAMMAD RAFIQUE, ABDUR RAUF, SYED HAMID ALI SHAH,
M. HANIF ARIF, M. AFZAL SHEIKH.

ABSTRACT:
Three hundred consecutive patients, irrespective of age and sex, presenting with macroscopic haematuria, were evaluated at Nishtar Hospital Multan from June 1976 to July 98. Aetiology of haematuria were calculi (51.3%), malignancies (35.6%), infections (5%), benign prostatic hyperplasia (5%) and miscellaneous (3%). In patients under 40 years of age urinary tract calculi (74.6%) were the predominant cause, while in patients above 40, bladder carcinoma (55%) was the most frequent cause of haematuria. Ultrasonography (USG) and intravenous urography (IVU) picked up 95% of bladder carcinomas while all were confirmed on cystoscopy. We recommend that all patients above 40 years of age presenting with macroscopic haematuria should have cystoscopy, even if USG and IVU are normal, to diagnose bladder carcinoma which is a predominant cause of haematuria in this age group.

KEY WORDS: Macroscopic Haematuria-Aetiology.

INTRODUCTION

Aetiology of haematuria varies geographically; it varies not only in different countries but also in different parts of the same country[1,2]. Haematuria may be microscopic or macroscopic. The causes are vast, ranging from benign to malignant[2]. Purpose of our study was to look into the different aetiological factors responsible for haematruia in patients attending Nishtar Hospital, Multan and to compare our results with similar studies.

PATIENTS AND METHODS

A total of 300 consecutive patients irrespective of age and sex, presenting with macroscopic haematuria of any severity to the Department of Urology Nishtar Hospital, Multam from June 1996 to July 1998 were included in the study. Patients who had macroscopic haematuria following any kind of surgical intervention were excluded from the study.

In addition to detailed history and examination, all patients had complete urine examination and microscopy of urinary sediment to confirm the presence of erythrocytes in urine. Urine culture and sensitivity, complete blood examination, renal function tests, ultrasonography of abdomen and renal tract (USG) and X-Ray KUB were carried out in all patients. Intravenous urography (IVU) was done in patients with normal renal functions. Other investigations like urinary sediment for Ziehl-Nelson staining and culture for acid fast bacilli (AFB). Prostate specific antigen (PSA), radio-isotope bone scan, CT scan, fine needle aspiration cytology and biopsy were carried out, as indicated. Cystourethroscopy was done in all patients above 40 years of age and in younger patients with suspected lesions. Endoscopic biopsies of the lesions were taken for histopathological examination as required.

RESULTS

There were 227 male and 73 female patients (male female ratio 3:1). Table I shows the age distribution and Table II the various aetiological factors responsible for haematuria in our study.

TABLE I AGE DISTRIBUTION OF PATIENTS IN OUR STUDY

Age	No.
0-10 Years	18
11-20 Years	28
21-30 Years	45
31-40 Years	47
41-50 Years	65
51-60 Years	39
61-70 Years	41
Over 70Years	17

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TABLE II AETIOLOGY OF HAEMATURIA (N=300)

Renal tract calculi. N=154 (51.3%).	Renal Stone	99
	Ureteric stones	29
	Vesical stones	26
Urological malignancies. N=107 (35.6%).		
	Renal Carcinoma	12
	Bladder carcinoma	86
	Prostate carcinoma	9
Urinary tract infection. N=15 (5%).	Acute UTI	6
	Chronic cystitis	2
	Acute prostatitis	1
	Prostatic abscess	1
	Renal tract TB	4
	Renal hydatid cyst	1
Benign prostatic hyperplasia. N=15 (5%).		15
Miscellaneous N=9 (3%).	Blunt renal trauma	4
	Firearm injury	1
	Vesical F.B.	1
	P.U.J. obstruction	1
	Thrombocytopenia	2

In our study aetiology of haematuria urinary tract calculi was 51.3%, malignancies 35.6%, urinary tract infections 5%, benign prostatic hyperplasia 5% and miscellaneous (including renal trauma, urethrovesical foreign body and bleeding disorders etc) 3%.

There were 99 patients with renal calculi (male to female ratio 2.5:1). Location of the stones were left 53, right 31 and bilateral in 15 patients. Twentynine patients had ureteric calculi, 17 on the right and 12 on the left side and 26 patients had vesical calculi. In renal tract the site, size and number of calculi bear no relation to the severity of haematuria, which was either mild or moderate. USG and IVU picked up 98% and 95% of the renal respectively. In 29 patients with ureteric calculi, USG confirmed the size and site of stone in only 3(10.3%) patients although it was suggestive of pelvis collecting system dilatation on the corresponding side in 22(75%). USG was normal in 4(13.7%) with ureteric calculi. IVU confirmed the presence, site and size of ureteric calculi in all cases. Eleven patients had renal tumours. One patient had squamous cell carcinoma while all others were renal cell carcinomas. USG picked up all tumours and also confirmed the presence of inferior vena cava invasion in 2 patients and liver metastases in one. All patients were of Robsons stage II disease or above . IVU was suggestive of renal tumours in 10(91%) patients while there was non-visualization of the contrast media in one patient and tumour could not be seen. Bladder carcinoma was responsible for haematuria in 86 patients. One (1.16%) was proven to have invasive squamous cell carcinoma and two (2.32%) had invasive adenocarcinoma. 83 (96.5%) had transitional cell carcinoma (T.C.C.). T.C.C. was papillary and superficial in 41(49.3%) and solid and invasive in 42 (50.6%) patients. 13 had unilateral and 8 had bilateral ureteric obstructive uropathy. Two patients had para-aortic lymphadenopathy and liver metastases. Average age of patients with bladder carcinoma was 69 years (age ranged 20-85 years) and male to female ratio was 3:1. U.S.G and IVU confirmed the presence of growth in bladder in 95.35% and 96.25% patients respectively while all were seen cystoscopically and proven on histopathological examination.

Nine patients had prostatic carcinoma. Average age was 71 years (age range 65-68 years). All patients had advanced carcinoma, 4 patients had bilateral ureteric obstruction with renal impairment.

Urinary tract infections (U.T.I.) of variable aetiology were responsible for haematuria in 15(5%) patients. Causes included acute U.T.I, chronic cystitis, renal tract tuberculosis, acute prostatitis, prostatic abscess and renal hydatid cyst. 15(5%) patients had haematuria secondary to benign prostatic hyperplasia. Blunt renal trauma, urethrovesical foreign body, bleeding disorders, pelviureteric junction obstruction were responsible for haematuria in 9(3%) patients. At the end of the study patients were divided into two groups. Groups (A)- patients under 40 years of age and Group (B)- patients above 40 years of age to compare the relative frequencies of various aetiologies in these two groups (Table III).

TABLE III AETIOLOGY OF HAEMATURIA IN PATIENTS UNDER AND ABOVE 40 YEARS OF AGE

	Group (A) Patients under 40	Group (B) Patients above 40
Renal tract calculi	103 (74.6%)	51 (31.4%)
Urological malignancies	17 (12.3%)	90 (55.5%)
Urinary tract infections	9 (6.5%)	6 (3.76%)
Benign prostatic hyperplasia	Nil	15 (9.2%)
Miscellaneous	9 (6.5%)	Nil

In group (A), renal tract calculi were predominant (74.6%) cause of haematuria followed in frequency by bladder and renal carcinoma 12.3%, various UTI's 6.5% and miscellaneous condition 6.5%.

In group (B), renal tract malignancy (mostly bladder carcinoma) was the most frequent cause of haematuria (55.5%) followed by urinary tract calculi 31.4%, benign prostatic hyperplasia 9.2% and U.T.I 3.75%. Table IV compares the aetiology of haematuria in Multan with aetiology in some other parts of the world.

TABLE IV AETIOLOGY OF HAEMATURIA IN DIFFERENT COUNTRIES.

	Sultana et al (UK) N=233	Sharif & Hassan (Sudan) N=450	Present study N=300
Urinary Calculi	15 (6.4%)	222 (4.9.3%)	154 (51.3%)
Bladder Carcinoma	53 (22.7%)	47 (10.4%)	86 (28.6%)
Renal Parenchymal tumours	7 (3%)	11 (2.4%)	12 (4. %)
Isolated upper tract tumours	3(1.2%)	Nil	Nil
Prostate Carcinoma	3 (1.2%)	Nil	9 (3%)

DISCUSSION

Aetiology of haematuria varies geographically[1,2]. In studies conducted in Sudan[3] and UK[4], the most common causes of haemturia were either renal tract malignancy or renal tract calculi. Sharif & Hassan[3] reported that in 450 patients evaluated for haematuria in Khartoum, Sudan, renal tract calculi and renal tract malignancies were the causes of haematuria in 222(42.3%) and 58(12.8%) patients respectively 47(10%) patients had bladder carcinoma and 20 of these patients had squamous cell carcinoma in association with Bilharziasis and all were under 40 years of age. Sultana et al[4] reported from Dundee, U.K, that in 233 patients with frank haematuria, renal tract malignancy and renal tract calculi responsible for haematuria in 66(28.3%) and 15(6.4%) patients respectively. Paul[5] reported from Edinburgh, that 6% of the patients with microscopic and 15% of patients presenting with macroscopic haematuria had transitional cell carcinomata.

Multan is situated in the stone belt area, with high prevalence of renal stone disease[6]. In our study 154(51.3%) patients presenting with haematuria had urinary tract calculi. 128(83%) patients had upper renal tract calculi and 26(17%) had vesical calculi. Stone size, site and number had no relationship to the severity of haematuria which was anyway mild to moderate.

In studies done by Sharif & Hassan in Sudan[3] and Sultana in UK[4], renal carcinoma was responsible for haematuria in 2.4% and 3% of patients respectively while renal carcinoma responsible for haematuria accounted for 12(4%) cases of haematuria in our patients. Renal tumours that are discovered incidentally tend to be smaller in size and of lower grade malignancy than those presenting with macroscopic haematuria[4]. All our renal tumours were Robson's stage II disease or above at the time of presentation.

Prostate cancer was responsible for haematuria in 3(1.2%) in the UK and it accounted for haematuria in 9(3%) patients in our study. All patients had advanced disease (TNM stage T3 or T4) at the time of diagnosis. Bladder carcinoma is generally a disease of middle aged and elderly although it can occur at any age, even in children[7]. Bladder carcinoma is three times more common among men than in women[8]. In our study the average age of patients with bladder carcinoma was 69 years. 72 (83.7%) patients were above and 14 (16.2%) below 40 yeas of age at the time of presentation.

Histological varieties of bladder carcinoma vary geographically[7]. Squamous cell carcinoma accounts for only 1% of bladder carcinoma in England[9] and 3 to 7% in the U.S.A.[9] but more than 75% in Egypt[10]. Bladder adenocarinoma accounts for less than 2% of all bladder carcinomas[7].

In our study 83 (96.5%) patients had transitional cell carcinoma. One (1.16%) had invasive squamous cell carcinoma and 2(2.32%) had invasive adenocarcinoma. 70% transitional cell carcinoma were superficial, 25% invasive and 5% flat carcinoma in situ. Superficial carcinoma generally have good prognosis compared with invasive carcinoma[12]. In our study transitional cell carcinoma was superficial in 41(49.4%_ and invasive in 42(50.6%) patients. This study shows that transitional cell carcinoma is a more aggressive disease with much poorer prognosis in this part of the world. Our study has also shown that overall renal calculi are the most common cause of haematuria but in patients above 40, urological malignancies particularly bladder carcinoma is the predominant cause of haematuria. IVU and USG picked up 95% of bladder carcinomas while all were confirmed on cystoscopy.

We recommend that all patients above 40 years of age presenting with macroscopic haematuria should have cystoscopy even if USG and IVU are normal so that bladder carcinoma is diagnosed and treated early with better expected prognosis.

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STUDY OF LIVER ABSCESSES

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ABSTRACT:
A prospective study of sixty-eight (68) cases of Liver abscess, (52 pyogenic and 16 amoebic) is presented. This study of two years duration (from August 1995 to August 1997). Eighteen cases presented with peritonites and four with empyema thoracis. The major diagnostic tools were ultrasound and CT scan. Medical treatment with percutaneous ultrasound guided aspiration was successful in 20 cases with small abscesses. Majority of the patients however, presented with complications. In the later phase of pathological process, the needle eluded the debris, slough and necrotic tissue and therefore, surgical drainage through laparotomy was adopted. Common and important complications were pleural effusion, wound infection and biliary leakage. Six patients died due to different causes. We had an overall mortality of 15.7%.

KEY WORDS: Liver Abscess

INTRODUCTION

Liver abscess has been recognized since ancient times. Its prognosis was related to the type of collection in the abscess[1]. An understanding of a etiology, bacteriology, diagnosis and treatment is a recent event of the 19th century. In early 19th century, Bright suggested that amoebae may be responsible for the formation of liver abscess.

Fits and Dieulafoy emphasized the importance of bacterial source in the abdomen as cause of the disease[1]. Historically the hallmark of treatment for pyogenic liver abscess is open drainage based on the classical work of Ochsner[1]. They emphasized that an open extra serous drainage reduced the mortality from 100% to 33%. Subsequent development of broad spectrum antibiotics pointed towards more liberal use of transperitoneal drainage as primary form of treatment. Now due to better diagnostic and therapeutic approach, secondary liver abscess following appendicitis is rare, as cited by Ochsner and his associates[1].

Biliary tract infection is the major cause of pyogenic liver abscess. During the last two decades the availability of ultrasound and CT Scan has revolutionized the management of liver abscess disease, as abscess is easily diagnosed and localized. Aspiration under ultrasound control and through laparoscopy is also getting more common. However, the mortality and morbidity has not as yet impressively reduced. Average hospital stay is prolonged with aspiration and laparoscopic drainage, because of the ineffective drainage and spillage of pus into the subdiaphragmatic and other peritoneal spaces. An average mortality rate of 11-30% still exists with these relatively non invasive procedures[5].

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PATIENTS, METHODS AND RESULTS

Sixtyeight patients were admitted in surgical C Unit, Lady Reading Hospital, Peshawar, from emergency medical units and surgical outdoor department. The medical referrals included patients who developed resistance to medical therapy and failed to resolve after aspiration under ultrasound control. Fiftytwo cases had pyogenic liver abscess and sixteen had amoebic liver abscess. Majority of the pyogenic abscess (61.7%) were cryptogenic. Secondary abscesses were 38.4% and biliary disease was found in 30% cases. Similarly, appendicular and liver diseases were found in 2% cases. Four cases were reported after trauma and laceration of liver and the abscess were due to secondary infection in the haematoma.

Most of the patients had pain in the right hypochondrium, unexplained fever and hepatomegaly (Table I).

TABLE I	PRESENTATION OF LIVER ABSCESS (N=68)	
Symptoms	No. of patients	Percentage
Pain RHC, Hepatomegaly	14	79.4
Pain epigastrium	08	11.76
Pain Whole abdomen	24	35.29
Fever and malaise	46	82.35
Loss of appetite	50	73.52
Dysentery	04	5.88
Respiratory symptoms	24	35.29
Jaundice	18	26.47
Signs of Peritonitis	18	26.47

RHC (right hypochondrium)

Average age of patients with pyogenic liver abscess was 34 years and in amoebic liver abscess was 38 years. (Table II & III). Ages of patients varied from 16 to 60 years. Male / female ratio was 4 : 1 in pyogenic and 3 : 1 in amoebic liver abscess.

TABLE II	AGE AND SEX DISTRIBUTION IN PYOGENIC LIVER ABSCESS (N=52)					
Age	Male	%	Female	%	Total	%
0-10 Yrs	04	7.69	04	7.69	08	15.38
11-20 Yrs	06	11.53	--	--	06	11.53
21-40 Yrs	16	30.76	02	3.84	18	34.61
41-50 Yrs	12	23.00	02	3.84	14	26.92
51-60 Yrs	04	7.69	02	3.84	06	11.53
Total	42	80.76	10	19.23	52	-

(Average age in years = 34.3 years).

TABLE III	AGE AND SEX DISTRIBUTION IN AMOEBIC LIVER ABSCESS (N=16)					
Age	Male	%	Female	%	Total	%
10-20 Yrs	04	25	-	-	04	25
21-40 Yrs	06	37.5	-	-	06	37.5
51-50 Yrs	-	-	04	25	04	25
51-60 Yrs	02	12.5	-	-	02	12.5
Total	12	75%	04	25%	16	-

(Average age in years = 38 years).

Majority (60 patients) of liver abscess were 10 cm or more in size on ultrasonography. Out of these fifty-two (76.4%) had right lobe abscesses and 8 (11.71%) had left lobe abscess (Table IV).

TABLE IV	ANATOMICAL DISTRIBUTION OF LIVER ABSCESS (N=68)	
Results	Male	Percentage
Single	60	88.23
Multiple	08	11.76
Right lobe	52	76.47
Left lobe	08	11.76
Both lobes	08	11.76

Investigations included liver functions tests, total lecuocyte count and stool examination. Chest X- rays showed elevated diaphgram in twenty patients (38%), associated pleural effusion in 16 patients (30-7%). Serological tests were positive in 12 (75%) of the 16 amoebic liver abscess patients.

Scraping of the wall of abscess showed chronic inflammation in all cases and trophozoites with inflammation in only four cases of amoebic liver abscess. At operation, majority of the cases were advanced liver and eighteen of these cases ruptured into the peritoneal cavity causing localized or generalized peritonitis.

Forty-eight cases underwent laparotomy and the others improved on ultrasound guided aspirations and medical treatment. Drug treatment consisted of metronidazole 500mg 8 hourly and a Cephalosporin 500mg 6 hourly, intravenously for five days, then orally. We had six deaths, which included four due to septicaemia. One had multiple organ failure, one had diabetes mellitus with cerebral thrombosis. Average hospital stay was twelve days. Three and six months, followup showed complete resolution in forty two patients.

DISCUSSION

Liver abscess is a significant health problem in tropical countries. However, the distribution of pyogenic and amoebic abscess are different in different countries. Pyogenic liver abscess are relatively important because if they are left untreated they carry 100% mortality due to bacteria invading the portal vein, common bile duct and by direct spread to adjacent viscera[3]. E. Coli is the most common organism of the biliary tree whereas anaerobes are present in portal vein and staphylococcus in the traumatic cases of liver abscesses[4]. Cryptogenic abcess is found mostly in diabetic patients[2]. Infestion from gastrointestinal tract was the most common causative factor known in the past, but recently biliary tree is most incriminated[5].

Late presentations of liver abscess are due to the fact that the signs and symptoms are not typical and many a times they present as PUO and this presentation has been mentioned in literature[6]. Many patients present with pleural symptoms and these cases have been found to have extension of liver abscess into the pleural cavity through the diaphragm[7].

In our ward we have treated more pyogenic abscess than amoebic abscess, whereas it has been reported that amoebic liver abscess is more prevalent in India and Pakistan[8].

Actinomycosis was not seen as a cause in any of the cases of liver abscess[9]. We did not include infected Hydatid cysts in this series; similarly we did not have any case of amoebiasis cutis as mentioned in literature[9]. Ultrasonography was the main investigation and sensitivity of ultrasound is reported to be correct in 90-95% of cases[10]. Oschner and Debakey treated seventyseven patients with laparotomy and drainage and they decreased the mortality to 6%. Liver abscesses were treated surgically till mid-eighties. Mortality has now decreased to 3.15% in different centres[11]. In all cases of ruptured liver abscess with localized or generalized peritonities, surgery is the treatment of choice. Few patients were treated by percutaneous aspiration and medical treatment in our series as described in literature[12]. Open surgical drainage is the main stay of treatment of Liver Abscess where the abscess is advanced and present with complications.

In places like NWFP, where people are uneducated and with low socio-economic status, they frequently present with advanced complications and laparotomy and drainage gave good results.

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SIGNIFICANCE OF ULTRA SONOGRAPHIC"PSEUDO-KIDNEY SIGN" IN COLONIC MASSES.

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ABSTRACT:

A prospective study was carried out to assess the value of Ultrasonographic "Pseudo Kidney Sign" in diagnosis of colonic masses at Jinnah Post Graduate Medical Centre and Karachi Adventist Hospital over a period of 24 months. Fifty-eight patients were identified with pseudokidney sign who presented with abdominal pain abdominal mass constipation melena and intestinal obstruction. In longitudinal and transverse sections of the bowel, the characteristic sonographic kidney like appearance found, is called "Pseudokidney Sign" This pattern consistent of a bright echogenic center surrounded by a hypoechoic halo, corresponding, respectively to the lumen and to the thickened walls of colon which is the actual mass[1]. This study suggests that ultrasonography is a useful imaging technique for the diagnosis of colonic masses. Our study showed 100% sensitivity and 96% specificity.

KEY WORDS: Ultrasound Pseudo Kidney sign – colonic masses.

INTRODUCTION

Colonic masses have traditionally been diagnosed on barium studies and colonoscopy. More recently Ultrasonography has been found to be quick, noninvasive and well tolerated initial diagnostic procedure for evaluating colonic masses.

The colon is a segment of gastro-intestinal tract, most frequently affected by tumor[2]. The treatment and prognosis of patients depend upon the extent of bowel involvement, the presence or absence of spread to lymph nodes or more distant sites and its location in the colon to some extent. These details are easily determined on ultrasonographic examination, making it helpful in the early diagnosis and prognosis of colonic masses.

In this study, we report our experience with abdominal ultrasonography in the diagnosis of colonic masses, by identifying a typical kidney like appearance of a mass called "Pseudo-Kidney Sign" of the pathological large bowel segment.

MATERIALS AND METHODS

A prospective study was carried out at Jinnah Post Graduate Medical Center and Karachi Adventist Hospital between January 96 and December 1998. All patients first underwent ultrasound of whole abdomen and those having an abdominal mass, producing psuedokidney sign, who had surgery were included in the study. Those who were not fit for surgery or had other associated problems were excluded. Patients had other investigations like double contrast barium enema (DCBE), proctosigmoidoscopy, colonoscopy and surgery which confirmed the diagnosis.

A total of fifty-eight patients, 35 males and 23 females , were included in the study. Age ranged from 9 months to 75 years (mean 35 years). Patients presented with complaints of: abdominal pain (58), abdominal mass (48), constipation (30), melena (27) and intestinal obstruction (17).

Ultrasound was performed with 3.5 and 5.0 MHZ. linear and convex transducers (Shimadzu and Tosbee). Except 12 patients, all were fasted for at least 6 hours and took 6 tablets of bisacodyl sulfur. (Dulcolax) overnight. At the time of scan, all had partially filled urinary bladder. The whole abdomen was scanned systematically and finally colon was identified by its anatomical position and haustral pattern filled with air echoes. An intestinal wall < 5mm was considered normal and > 5 mm was considered pathological[3].

Average time taken for ultrasound (U/S) examination was 35 minutes. U/S findings were compared with DCBE, proctosigmoidoscopy, colonoscopy, operative findings and histopathology.

RESULTS

In all 58 patients colonic masses were identified on U/S

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showing "Pseudo-Kidney Sign". Walls were thickened from 6.0 mm to 21 mm (Mean thickness13.5 mm) and echogenic lumen was seen from 2.0-mm upto 1.2 cm (average 0.7 cm).

In longitudinal section more typical pseudo-kidney like appearance was seen, whereas in transverse section the mass appears rounded like a "doughnut". Masses were seen in all areas from terminal ileum and caecum upto rectum. Apart from wall thickness, length of involved segment was also mentioned. In 13 cases enlarged mesenteric nodes and infiltration through serosa and fixity with surrounding structure were also picked. Para-aortic nodes were involved in 11 cases. No metastasis seen in liver (Patients with metastasis in liver / inoperable cases were not included in the study).

Ultrasound findings were compared with DCBE in 48 patients. Patients with rectal masses and acute obstruction did not have DCBE and results in these cases were compared with proctosigmoidoscopy and operative findings. Seven patients also had CT scan and findings were compared with CT scan also (Table I on page 18).

Histopathology showed adenocardinoma in 41, tuberculosis in 8, lymphoma in 2, diverticulitis in 2 and intussusception in one. The results of histopathology are shown in Table II.

It was found that sensitivity for detecting colonic masses where wall thickness was > 6.0 mm was 100%. Specificity for its exact location in colon was also 96% because in two cases masses of caecum and proximal part of ascending colon were not clearly differentiated but extent of colonic involvement measured by U/S was more accurate then by DCBE when compared with operative findings and gross pathology report. All 48 patients out of 58 patients who had DCBE after U/S diagnosis of pseudokidney sign were 100 % positive for mass, 8 patient of rectal mass did not had DCBE were diagnosed on Proctosigmoidscopy and single contrast barium enema. Two patients who underwent emergency laparotomy, findings were compared with operation notes.

Images of U/S and DCBE are show in Figures I, II, and III.

DISCUSSION

Ultrasonography is commonly used as the primary screening procedure in evaluation of patients with abdominal complaints. In evaluation of diseases of colon, U/S is generally considered supplementary to contrast studies and colonoscopy. Table I clearly shows the advantages of U/S over other methods of investigations. It is also obvious that U/S has a potential role in colonic masses and in near future it will improve further.

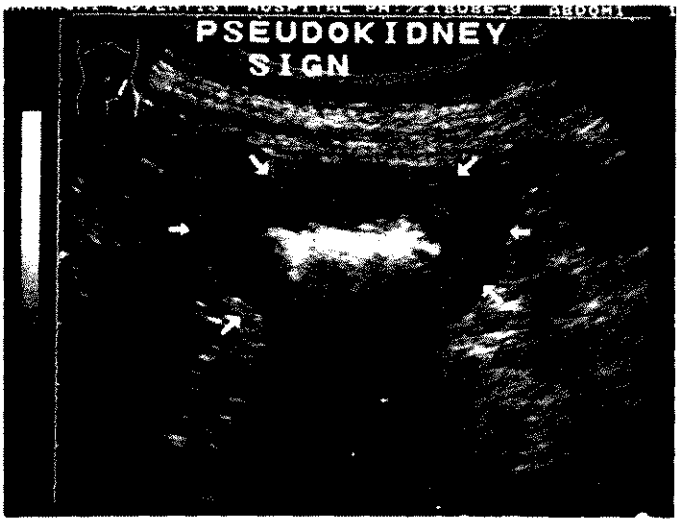

Fig I: Adenocarcinoma in sigmoid colon
U/S scan of abdomen show mass in LIF producing — Pseudokidney sign Infiltration of mass in walls of sigmoid colon appear hypoechoic (Black). Trapped gas in lumen appear echogenic (White)

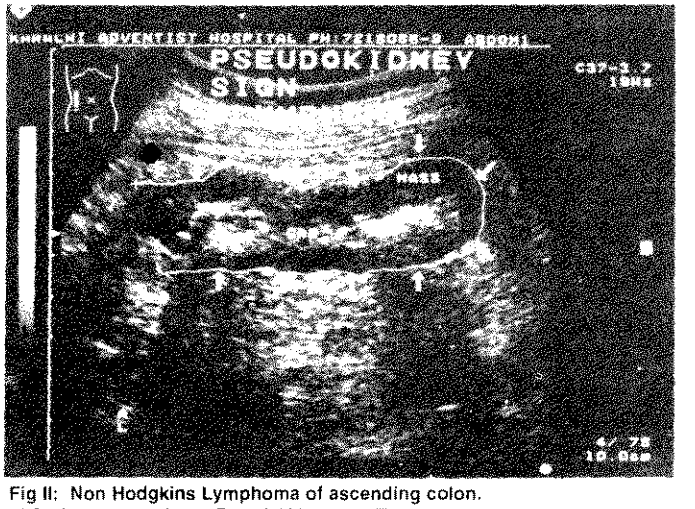

Fig II: Non Hodgkins Lymphoma of ascending colon.
U/S of abdomen shows Pseudokidny sign. Twelve centimeters long segment of ascending colon shows 6 - 8 mm thickening of walls due to lymphomatous infiltration appear hypoechoic (Black). Trapped gas in lumen appear echogenic (White)

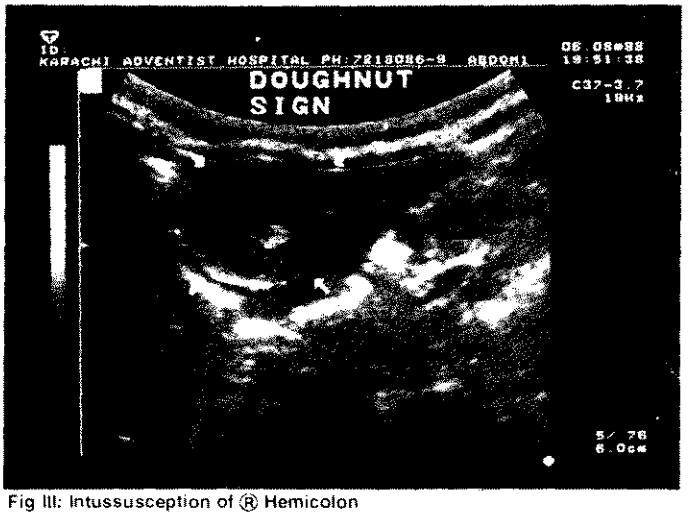

Fig III: Intussusception of ® Hemicolon
Case of Intussusception showing a pseudokidney sign "Doughnut sign" in ® hemicolon

The presence of "pseudo kidney sign" signifies an intestinal mass, which may arise from any part of GIT from lower end of esophagus upto rectum, but colonic masses can be differentiated from non-colonic masses on the bases of location and morphological characteristic of colon. The finding of "pseudo kidney sign" in colon is non-specific and seen in conditions like[4] Carcinoma, tuberculosis, lymphoma, diverticulitis, intussusception, ulcerative colitis, crohn's disease, ischemic colitis, infectious colitis, intestinal amyloidosis trauma, colonic perforation by aenia saginata.

Colonic Carcinoma is the most common cause of a colonic mass. On histopathology these are usually adenocarcinomas and lesions show very well defined wall thickening and give a true pseudo-kidney sign in longitudinal section.

Abdominal tuberculosis is very common in Pakistan and mostly involves terminal ileum with caecum, mesenteric and paraaortic lymphnodes with ascites. This triad helps in diagnosis of abdominal tuberculosis. Pseudo-kidney sign produced in tuberculosis is relatively atypical when compared with adenocardinoma and further workup is required to differentiate tuberculous lesion from other causes of colonic masses.

Non-Hodgkin's lymphoma also shows an atypical sign but differentiation is not difficult because it usually involves long segments and when involving mucosa, it produce very echogenic and thick mucosa called Mucosa Associated Lymphoid Tumor (M.A.L.T)[6].

Diverticulitis in our study involved sigmoid, colon and in the first case it was associated with malignancy. In the second case a sigmoid mass with enlarged nodes in sigmoid mesentery was suspected, but it turned out as diverticulitis with abscess in sigmoid mesentery.

Intussusception is a common cause of acute abdomen in infants. Reported ultrasound sensitivity for diagnosis of intussusception is 98.5 to 100%[7]. Crescent shaped structure in doughnut sign of intussusception is actually a part of mesentery. Intussusception with collection in subserosal space needs open surgery because ultrasound guided reduction is mostly unsuccessful.

The best part of our study was that out of 58 patients there were 10 patients who presented only with abdominal pain and there was no palpable mass. On routine abdominal ultrasound a mass was suspected in ileocaecal region in 4 patients turned out as intestinal tuberculosis. From rest of six patients, 3 had mass in ascending, 1 in transverse and 2 in sigmoid colon. On Histopathology all 6 had adenocarcinoma. In four out of six patients lymphnodes were negative for metastasis. There was no recurrence or any other complaint till June 1998. Keeping this in mind, one should scan the colon where other abdominal organs are normal to detect this deadly disease at an early stage.

Hydro-sonography is another method for detection of smaller colonic lesions like polyps as small as 5mm but that needs filling of colon with water or hartmann solution[8].

CONCLUSION

Ultrasound should be considered as primary investigation when suspecting colonic pathology, because it gives positive information of mass and extra luminal structure[10]. Secondly, if other abdominal structures are normal on U/S, then colon should be scanned.

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TABLE I ADVANTAGES AND LIMITATIONS OF U/S OVER OTHER METHODS FOR DIAGNOSIS OF "COLONIC MASSES"

Ultra Sonography	Double Contrast BA Enema	Colonoscpoy
PREPARATION:		
U/S can be performed without preparation	Preparation is necessary.	preparation is necessary
TIME: 35 minutes	02 Hours.	35 minutes
SEDATION:		
No sedation required.	No sedation required	Sedation required hence after effects present.
INVASION:		
Non invasive, simple procedure without any side effects, easily tolerable for all age groups from 1st day of birth.	An invasive procedure embarrassing for patient and quite painful.	Invasive procedure not easily tolerable.
RADIATION:		
No exposure to radiation.	Exposure to radiation.	No exposure to radiation
COST: Economical	Double the cost of U/S	Fourtimes the cost of U/S
CONTRAINDICATION:		
No contraindication	Certain contraindication.	Certain Contraindication.
PORTABILITY:		
Can be done even in I.C.U.	Not possible	possible
DETAILS OF LESION:		
It is a positive study of the mass. The whole of colon can be examined and details of lesion can be obtained like length and thickness of the mass and narrowing of lumen	It is a negative study by visualizing an area of filling defect on that basis it is assumed that some pathology or mass is present.	It is a positive study the site of lesion and mucosal details can be obtained but usually cannot go beyond the mass in larger masses.
EXTRA LUMINAL DETAILS:		
U/S can demonstrate extra luminal abnormalities like adhesions, abscesses, enlarged lymph nodes and metastasis etc.	Extra luminal details not available.	Extra luminal details available.
BIOPSY:		
U/S guided FNA/18G Trucut Biopsy can be performed in every patient.	Biopsy not possible.	This is the main advantage that Biopsy can be taken Smaller lesion detected.
LIMITATION:		
Operator dependent but not in qualified and experienced hands.	Also operator dependent but surgeon have experience in interpretation of Ba. Enema so they feel confident	Also operator dependent but not in qualified and experienced hands.
New study only few references are available.	>50 years at credit.	>15 years at credit.
Smaller lesions cannot be picked up on routine U/S needs Hydrosonography	Smaller lesions can be diagnosed even very small polyps	Smaller lesion can be diagnosed
Partial stricture can be missed or overlooked.	In experienced hands it should not be missed and this is the one definite advantage of Ba. Enema	Can be missed or over looked.
BIOPSY		
Trucut biopsy with 18G needle possible'.	.Not possible.	Possible.

TABLE II HISTOPAHTOLOGY FINDINGS

Site	Patients	Adenocarcinoma	Lymphoma	Intussusception	TB	Driverticulitis
Terminal Ileum	8				*	
Caecum	3	*	*		*	
Ascending colon	10	*	*			
Transverse colon	10	*		*		
Descending colon	5	*				
Sigmoid colon	14	*				*
Rectum	8	*				

SOFT TISSUE STABILIZATION PROCEDURES FOR TRAUMATIC ANTERIOR RECURRENT DISLOCATION OF SHOULDER JOINT

ANISUDDIN BHATTI, GHULAM MEHBOOB, M. AKTHAR RAJA.

ABSTRACT:
Eighteen patients with traumatic, anterior recurrent dislocation of shoulder joint were treated with soft tissue stabilization procedures. The study was carried out to evaluate the effects of soft tissue stabilization procedure in young adults on their professional as well as sports activities and daily routine. Modified Bristow procedure was used in fifteen and Putti-Platt procedure in three cases. The mean age of patients was 28.61 years, range 19- 42 years. Mean followup period was 23.38, range 14 - 36 months. Excellent results were achieved in 12 patients (66.66%), Good in 3 (16.66%) and Fair in 3 patients (16.16%). Two (11.11%) patients developed complications, one had musculocutaneous nerve injury, another had displacement of screw, however both behaved fair on long-term-followup. None of these patients had redislocation or subluxation of shoulder. The results with Bristow procedure were comparatively better, with minimum limitation of external rotation than Putti-Platt procedure. We found no significant limitation in daily routine and sports activities. The Bristow procedure was technically simple, easy and effective for young adults.

KEY WORDS: Shoulder Joint Dislocation, Recurrent, Stabilization, Coracoid transfer.

INTRODUCTION

Shoulder joint dislocation accounts for 50% of all dislocations in the body, majority of which are anterior shoulder dislocations; 96% of anterior dislocations are traumatic and only 4% are habitual or nontraumatic in origin[1,2]. Recurrent dislocation of shoulder (RDS) usually follows both traumatic and nontraumatic primary dislocations. The incidence of recurrence in initial traumatic dislocation is 50-60%, whereas, in nontraumatic group it is 85-90%, which is specially true in children and adolescents[1,2]. RDS has been reported in 90% patients under the age of 20 years, in 60% between 20-40 years and in 10% in over 40 years[2]. Majority (70-80%) of RDS occurs within two years of initial dislocation, whereas, 20-30% occur after 5 years7,8. Despite slight increase in the rate of RDS among group of patients who had no immobilization for initial dislocation, the consensus by majority of investigators is "No relationship" whether or not the shoulder was immobilized or with long duration (6 weeks or more) of immobilization". All these reports advocate optimum duration (3 weeks) of immobilization for acute dislocation of shoulder. Similarly, none of the investigators report relationship of RDS with handedness of patient[8,9]. It is the force of injury and nature of damage at the initial dislocation which have significant impact on incidence and prognosis of RDS. Rowe[5] indicates "lower incidence of recurrence in patients with greater initial injury". Similarly Rowe, Ryf[7] and Hovelius[8] report better prognosis with less chances (3-7%) of RDS when initial dislocation is associated with fracture of greater tuberosity. Incidence of RDS has been reported higher (82%) when initial dislocation is associated with fracture of glenoid rim, avulsion of labrum, detachment-tear of periosteum and capsule from anterior surface of scapular neck (Bankart's lesion); and 52% when initial dislocation is associated with humeral head defects (Hill-Sach's lesion)[5,6,8]. The fractures of Coracoid process and dislocation of acromio clavicular joints associated with initial dislocation do not affect significantly the incidence of RDS. Recently, Jerosch[10] reports neurological mechanism for RDS. He suggests "loss of feedback mechanism to control the stabilizing shoulder musculature". His study based on histologic investigation of human cadaveric shoulder suggests pres-

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ence of mechano receptors positioned directly beneath the synovial membrane and close to the humeral site of insertion of the gleno humeral ligaments, which are of particular importance in the light of the high incidence of RDS and concomitant Bankart's lesion. He concludes that "these mechano receptor may control the stabilizing shoulder musculature, on this premise, rupture or detachment of these ligaments will lead to a loss of a feed back mechanism"[10].

Since no single deficiency is responsible for every RDS, no single operative procedure can be applied for every patient. Surgeons must try to carefully search for and identify these deficiencies and shall confirm the origin of dislocation whether traumatic or non-traumatic and plan surgical procedure accordingly. More than 150 operations and many modifications have been devised to treat traumatic/and atraumatic RDS but no single best procedure has been recommended. Successful results can be achieved with adequate exposure, accurate surgical technique, repair and reconstruction of pathological lesions. Freeman[1] has suggested following criteria for surgical procedures to be ideal in results:-

- Low recurrence rate.
- Low complication rate.
- Low re-operation rate.
- Does not harm (arthritis).
- Maintains motion.
- Applicable in most cases.
- Allows observation of joint.
- Corrects the pathological condition.
- Not too difficult.

Obviously no one operation fulfills all these criteria in every case. The commonly practised operations for traumatic RDS are:

- Bankart's operation.
- Putti-Platt procedure.
- Staple Capsuloraphy of Dutoit and Roux.
- Arthroscopic repair and reconstruction of Bankart's lesion.
- Arthroscopic laser assisted capsular shrinkage.
- Modified Bristow procedure.
- Magnuson-Stacks operation.
- Derotational osteotomies to increase retroversion angle of humeral head[14].

All these procedures, except Putti-Platt procedure (imbrication of capsule and subscapularis), Magnuson stack procedure (advancing the capsule and subscapularis tendon to lateral lip of bicipital groove of humerus) and Bristow procedure (Transferring coracoid to neck of scapula) need technical expertise, special equipment and experience.

All the soft tissue stabilization procedures aim to limit external rotation and provide substantial barrier against redislocation. The Magnuson Stacks and Putti-Platt procedures are reasonably simple with good success rate, nearly equal to that of Bristow's procedure. However, they often result in significant and permanent restriction of external rotation of shoulder which are the true limitations to be used as routine procedure. However, with large Hill Sach's lesion, Magnuson Stack procedure is often recommended. We chose modified Bristow procedure for majority of our young adult patients with or without Hill Sach's lesion or Bankart's lesion, as it is simple, easy and effective and does not require special instruments and assistance and its results are better than any other soft tissue stabilization procedure for young active adults.

PATIENTS AND METHODS

This prospective study was carried out in the Department of Orthopaedic Surgery, Jinnah Postgraduate Medical Centre, Karachi. Twenty patients with traumatic anterior, chronic, recurrent dislocation of shoulder joint treated during the last five years were included in the study. Evaluation of eighteen patients is represented here as two were lost to followup 6 months after surgery. Criteria for inclusion of patients in the study were; Frank anterior dislocation of shoulder of traumatic origin needing technical assistance to reduce initial dislocation. They must at least, may have documentary proof (radiograph) and had RDS for more than 5 times a year, causing significant disability and embrassment and have positive apprehension test for dislocation (Table-I).

Patients with shoulder instability, secondary to primary subluxation of non-traumatic origin, multi-directional instability, habitual dislocation, non-traumatic dislocation in epileptic individuals and followup of less than 6 months duration were excluded from the study. For each shoulder conventional AP Xray and AP Xray with humeral head in internal rotation of 50-80 degree were obtained. Such internal rotation could be achieved by the arm resting on front of trunk, elbow flexed and arm adducted. In some cases radiologist used fluoroscope before taking Xrays to detect humeral head defects and glenoid rim fractures. Bristow procedure was used in 15 patients. Shoulder joints was exposed through Deltopectoral approach with straight incision, coracoid process with short head of biceps and coracobrachialis were detatched after predrilling a hole through it for screw fixation. The coracoid process with attached muscle were passed through a slit made in subscapularis muscle fibers separated in two halves. The coracoid was then fixed to roughened anterior glenoid neck near its rim by a malleolar screw with washer. Putti-Platt procedure was used in 3 shoulders.

TABLE-I PATIENT'S DATA

Age in Years	Occupation	Nature of Injury	Duration Since Initial Dislocation Year	Number of Dislocations Per Year	Duration of Immobilization	Pre-operative radiological findings
27	Housewife	RTA	8	20	2 Week	WNL**
22	Housewife	FALL	4	10	4 Week	WNL
28	Housewife	FALL	3	11	Nil	WNL
29	Labourer	FALL	3	5	NIL	WNL
21	F. Worker	FALL	2	7	3 Week	WNL
28	Farmer	RTA	5	15	Nil	WNL
30	Office Work	RTA	3	6	5 Week	WNL
36	Labourer	FALL	2 1/2	7	3 Week	WNL
38	Labourer	FALL	3	8	3 Week	WNL
19	Student	RTA	1 1/2	12	4 Week	WNL
21	Student	RTA	3	8	3 Weeks	WNL
23	Office Work	FALL	2	9	Nil	WNL
28	Dock Labour	FALL	7	6	Nil	HS LESION***
21	Truck Driver	RTA	4	10	Nil	WNL
42	Dock Labour	FALL	15	15	Nil	WNL
30	Office Work	FALL	4	7	4 Week	WNL
34	Farmer	FALL	3	8	3 Week	HS LESION
40	Labourer	RTA	10	10	Niil	Niil

* AT THE TIME OF INITIAL DISLOCATION
** WNL = WITHIN NORMAL LIMITS
*** HSL = HILL SACH'S LESION

Through similar deltopectoral approach, without osteotomising coracoid process subscapularis muscle was cut vertically 2.5 cm. away from bicipital groove, glenoid capsule was cut in the same line. Joint cavity inspected, imbrication (double bracing) of capsule and subscapularis were performed, wound closed in layers with drain. Putti-Platt procedure was used during initial phase of study and was not used again as results with Bristow were better and it was less mutilating for shoulder musculature. The shoulder was immobilized in cuff and collar sling and body bandage. Patient was instructed to wear vest (under cloth) with operated arm underneath to avoid external rotation and abduction of shoulder and extension of elbow for 3-4 weeks. Pendular movements were allowed after four weeks and patient advised to use cuff and collar for 6 weeks. Gradually increasing abduction external rotation, elbow extension and circumduction movements were allowed after 6-8 weeks with advice to avoid weight lifting and refrain from sports activities for 3-4 months. Post-operative radiographic evaluation was done on the second day sixth week, third month and sixth month before full sports activities and manual labour was allowed. Rowe's Assessment Scale (Table-II). was used to evaluate functional results in this study. Rowe (1956) used this scale for evaluation of Bankart's operations but is now being widely used for all surgical procedure for anterior unstability[5,8].

TABLE-II EVALUATION OF FUNCTIONAL RESULTS ROWE'SASSESSMENT SCALE FOR RDS

POOR	MARKED LIMITATION[a] IN ALL MOTIONS, LIMITED IN MANY ACTIVITIES AND ALL SPORTS. PATIENT NOT SATISFIED.
FAIR:	50% LIMITATION IN EXTERNAL ROTATION 30% LIMITATION OF EVALUATION LIMITED IN CERTAIN OVERHEAD WORK AND SPORTS PATIENT SATISFIED.
GOOD:	35% LIMITATION IN SHOULDER MOTION MODERATE LIMITATION[b] IN SPORTS USEFUL SHOULDER FOR WORK PATIENT SATISFIED.
EXCELLENT:	ESSENTIALLY NORMAL MOTION VERY SLIGHT LIMITATION IN SPORTS NO LIMITATION IN WORK PATIENT VERY SATISFIED

(a) Marked limitation means little practical use of shoulder and a great deal of protection and loss of motion and strength.
(b) Moderate limitation means not trusting the arm in an overhead position.

J.BONE JOINT SURG, 1956, 38-A: 922.

Assessments were carried out on every six months' fol-

lowup. Average followup period was 23.38 month, range 14-36 months (Table-III).

TABLE-III POST-OPERATIVE FUNCTIONAL EVALUATION COMPLICATIONS

Operative	Complication Procedure	Rowe's Scale	Duration of Followup
Bristow	Nil	Excellent	24Months
Bristow	Nil	Excellent	26 Months
Bristow	Musculocutaneous Nerve Injury	Fair	30 Months
Bristow	Nil	Excellent	36 Months
Bristow	Nil	Excellent	32 Months
Bristow	Wound Infection	Good	21 Months
Bristow	Nil	Excellent	14 Months
Bristow	Screw Displacement	Fair	26 Months
Bristow	Nil	Excellent	20 Months
Bristow	Nil	Excellent	19 Months
Bristow	Nil	Excellent	18 Months
Bristow	Nil	Excellent	16 Months
Bristow	Wound Infection	Excellent	17 Months
Bristow	Nil	Excellent	24 Months
Bristow	Nil	Excellent	24 Months
Putti-Platt	Nil	Good	26 Months
Putti-Platt	Nil	Fair	30 Months
Putti-Platt	Nil	Good	18 Months

RESULTS

Eighteen patients with traumatic, recurrent dislocation of shoulder joint were treated with soft tissue stabilization procedures. The patient's mean age was 28.61, range 19 to 42 years. There were female all others were males. All the patients had frank dislocations of shoulders following fall on outstretched hands during sports activity, slipped on ground or road traffic accident. Hill Sach's lesion was seen in three on pre-operative X-ray. Two had Bankart's lesion which could not be repaired. All patients had unilateral dislocations, one patient developed other side dislocation of shoulder during RTA. One year after Bristow procedure on left shoulder, till last following (20 month) he is able to drive car but has given up job of truck driver. Initial dislocation in 8 patients were managed by quacks, who used daily massage and bandaging, without immobilization. Nine patients had closed reduction at hospital and were immobilized for 2-3 weeks, whereas, one patient reduced shoulder himself on his way to the hospital. All the patients had recurrent dislocations within 6-15 months of initial dislocation and had RDS more than five times a year and (Table-II). After operation twelve (66.66%) patients had excellent results (all with Bristow procedure), 3 (16.66%) patients had fair results (1 with Putti-Platt and 2 with Bristow) (Table-III). All patients were back to routine work using affected limb effectively and resumed their usual sports activities within 6-9 months. None of our patients was a professional athlete but some of them used to play regularly. All the patients are enjoying stable shoulders and none has reported instability or significant limitations of external rotation. Two (11.11%) patients had complications, one had screw displacement at 3rd month which was removed at 18 months and another patient (lady) had musculocutaneous nerve injury noticed pre-operatively by weakness. Both these patients behaved well on longterm followup. Three patients had superficial wound infection that healed in time.

DISCUSSION

Latarjet and Helfet were the pioneers of Bristow operation. They transferred coracoid process through subscapularis to anterior scapular neck for treating anterior instability of shoulder. Later in 1964 Mead used screw to fix the coracoid bone block to anterior glenoid rim. The Bristow procedure gained popularity for treating athlete's unstable shoulders after detailed reports by May VR14 Lombardo[3], Movelins[8], Freeman[1], Lombardo[3] has described detailed mechanical basis of this procedure which shows that transferred muscles provide strong dynamic buttress across the antero-inferior aspect of shoulder, even though the transferred coracoid bone block may or may not provide a bone buttress to anterior glenoid rim. The new dynamic sling of transferred short head of biceps and coracobrachialis muscle hold the lower half of subscapularis in position and do not allow it to slip superiorly over the humeral head, when the arm is abducted and externally rotated to vulnerable position and thereby prevent redislocation[1,3,4]. The loss of external rotation of shoulder has been reported from 11-12.6 degrees, which has been the only limitation of this procedure performed on dominant shoulder of professional athletes. Many of these young active patients return to participate in sports, however some may not be able to return to high performance level of overhead activities, especially throwing. We achieved 83.32% excellent to good results with no redislocation or failure. Our results were in accordance with published literature where the failure rate with Bristow procedure is reported as 2-4%[5,7,8] though our 2 patients (11.11%) developed complication but none of them had redislocation. The effectiveness of Bristow procedure increases when corocoid bone block is fixed to near but not over the anterior glenoid rim[1]. Hovelius[9] suggested the following criteria to achieve good results:

- Coracoid process fixed less than 5 mm medial to glenoid rim.
- Coracoid positioned inferior to the transverse equator of the glenoid.
- Bony union between the coracoid and scapula.
- Fixation screw purchase the posterior cortex.
- Screw does not penetrate the articular surface.

Recently Philajamaki[15] reported use of Bio-degradable Poly-L-Lactide expansion plug, which is inert and has advantage of avoiding complications which have necessitated the removal of metallic screw. Disadvantages of Bristow procedure are: inability to repair capsulalebral lesions leading to some failures, decreased internal rota-

tion power due to shortness of subscapularis, injury to musculocutaneous nerve, axillary artery and its branches, which can be averted with careful dissection and of course the mild limitation of external rotation which has been reported by Osmond, Clark and Adam as "key to success of this operation and price paid willingly for stability and full confidence in the shoulder"[16].

Even though we omitted the presence of Hill Sach's lesion in two cases and could not repair the Bankart's lesion in three shoulders, the results were successful (83.32%) in all our cases without redislocation. Two patients who had musculocutaneous injury and another with displacement of screw behaved fair and did not report any recurrence of instability. They were well engaged in their routine work without any significant complaint during the three years followup.

The modified Bristow procedure is routinely indicated in frequent repeated dislocations of shoulder. Whereas for patients with infrequent recurrence (occurring once in a seasonal year or so)[10] surgical treatment may not be needed in as they often show definite improvement on resistance exercise programs for deltoid and rotator muscles. This procedure has often been indicated in combination with other procedures, usually stapling/repair of bankart's lesion and in patients with poor quality anterior capsular mechanism[1,12]. The procedure is better accomplished after skeletal maturity of coracoid process and glenoid, which is completed after 15 years of age. Therefore it is unwise/ not recommended for youths under 15 year age. Similarly it is not recommended for nontraumatic group of RDS and as isolated procedure for large Hill Sach's lesion, in such cases, derotational osteotomy and Magnuson-Stack procedures respectively, have better prognosis. We found Bristow procedure easy, simple and very effective with minimum stiffness and complications. The stability provided by this procedure is remarkable, which allows patients to resume their activities without fear of redislocation.

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INFANTILE HYPERTROPHIC PYLORIC STENOSIS: A CLINICAL AUDIT

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ABSTRACT:
Infantile hypertrophic pyloric stenosis (IHPS) can be diagnosed clinically in majority of cases. In one year period from January to December 1997, eighteen patients (15 male, 3 female) with IHPS were managed at National Institute of Child Health,(NICH) Karachi. Their ages ranged from 17 days to 12 weeks and duration of symptoms varied from 1 to 8 weeks (Mean = 3.2 ± 1.7 week). The symptoms started as early as 7 days and as late as 6 weeks age (Mean = 3.2 ± 1.5 week). Swelling in epigastrium, visible peristalsis and projectile vomiting following feed were observed in all subjects. Pyloric tumor was palpable in sixteen patients. Surgery was performed after correction of fluid and electrolyte imbalance. There was no negative exploration. Duodenal perforation occurred in one patient. One patient died on third post-operative day due to undetermined cause. Duration of post-operative stay in hospital was 24 hours in three, 48 hours in five and 72 hours in eight patients. The patient who had duodenal perforation was discharged on the fifth post-operative day (Mean = 2.4 ± 1.0 day).

In conclusion IHPS is a clinical diagnosis that depends upon proper history and meticulous examination. Ultrasound should be reserved for doubtful cases.

KEY WORDS: Infantile hypertrophic pyloric stenosis, Vomiting.

INTRODUCTION:

Infantile hypertrophic pyloric stenosis (IHPS) is the most common surgical cause of non bilious vomiting in neonatal period. The incidence of IHPS is about 3 /1000 live births[1]. Multifactorial inheritance is suspected. Beardsley in 1788 reported one of the first cases of congenital pyloric stenosis in USA. The classical clinical description of the condition was reported by Hirschspurng in 1887[2]. Ramstedt described the classical operative procedure in 1911 which is still the most popular one[3]. In this study we present our experience of this condition with special reference to clinical diagnosis and role of any complementary diagnostic modality which has increased tremendously in recent studies[4].

PATIENTS AND METHODS:

Medical records of all patients who were operated in the department of Paediatric Surgery, NICH, Karachi between January and December 1997 were reviewed. Data included sex, age at onset of symptoms, duration of symptoms, age at time of admission, diagnostic method, time from admission until operation, surgical finding, intra and post operative complications and post operative hospital stay. The management protocol included detailed history and meticulous clinical examination. If pyloric tumour could be palpated, no more investigations for diagnosis were done. Routine biochemical investigations (blood complete picture, serum electrolytes and urea) were performed in all the cases. All patients were put on intravenous fluid and stomach wash-outs. Once patients were rehydrated, surgery was performed. Post operatively all patients were kept nil per oral for at least 18-24 hours. Oral fluids were then gradually started. Following establishment of satisfactory oral intake, patients were discharged and followed in outdoor. Statistical analysis was performed on EPI Info-6 programme.

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RESULTS:

During one year period 18 patients with IHPS were managed at NICH. Male predominance was seen in this series, male to female ratio being 5:1. Age at presentation ranged from 17 days to 12 weeks. Duration of symptoms varied from 1 to 8 weeks. The symptoms started as early as 7 days and as late as 6 weeks of age (Table I).

TABLE I PRESENTATION OF PATIENTS WITH IHPS

Clinical Features	Range (Week)	Mean (Week)	Standard Deviation (Week)
Age at Presentation	2.3-12	6.35	±2.31
Age at onset of symptoms	1-6	3.2	±1.5
Duration of symptoms	1-8	3.2	±1.7

Weight at presentation varied between 2.0 - 4.0 kg, (mean weight was 3.05 kg.) Classical clinical presentation viz. swelling in epigastrium, visible peristalsis and projectile vomiting following feed were observed in all patients. Pyloric tumor was palpable in sixteen patients. In one patient, who was 17 days of age, tumour could not be palpated. Ultrasound was advised by us in one patient which picked the tumor. In three patients ultrasound was advised by physicians though tumour was palpable, which confirmed the diagnosis. In two cases tumour was picked but sonologist also advised barium meal for confirmation. In one patient, although tumour was not palpable, even then we did not perform any investigation as vomiting and visible peristalsis gave strong suspicion of the condition. All patients underwent surgery after correction of fluid and electrolyte imbalance. There was no negative exploration. Duodenal perforation occurred in one patient. One patient died on the third post operative day due to undetermined cause. Duration of post operative stay was 24 hours in three, 48 hours in five and 72 hours in eight patients. The patient who had duodenal perforation was discharged on the fifth post operative day. Mean hospital stay was 2.4 ± 1.0 days.

DISCUSSION:

IHPS is a clinical diagnosis. Although age at onset of symptoms varies, symptoms remain constant and always start with vomiting. Intelligent mothers notice it earlier, but it is the attending physician who most of the time ignores this important observation and does not perform proper examination, resulting in delay in diagnosis.

Ultrasonography was first used for the diagnosis of IHPS in 1977[5]. Its use increased over a period of time and at present has became the most common modality for its detection, especially in early days. In advanced centres and in some institutes it has superseded the clinical examination. Ultrasound is simple, safe and inexpensive modality, but it should be kept in mind that it is very much dependent on person who performs it. In full term infants with pyloric tumor, length of pyloric canal > 17 mm, diameter < 1.5 mm and wall thicker than 4 mm. Another measurement is pyloric muscle index (estimated volume divided by body weight) to establish that pylorus is hypertrophied[6,7].

The diagnosis is usually clinical especially if done by a surgeon. No other diagnostic modality is required in most of the cases. Ultrasound is usually requested by primary physicians who are not experienced in diagnosing this condition, rather than surgeons. Abdominal ultrasound is a useful adjunct in establishing diagnosis of IHPS but it should not be made the only modality for diagnosis. Its use should be limited to those cases in which diagnosis is difficult to establish, especially in patients who presents with early vomiting. Smooth muscle hypertrophy takes time to develop and it is possible that at an early stage tumor may not be palpable.

In our study most of the patients presented late with dehydration and electrolyte imbalance. Few studies suggest that the concentration of serum chloride and bicarbonate are correlated with duration of symptoms and a value of serum chloride < 90 mEq/L and metabolic alkalosis (serum bicarbonate > 28mEq/L) are considered to be significant[8]. These findings were not observed in our cases as most of the patients received treatment elsewhere before being referred to us.

Pyloromyotomy is a simple procedure in expert hands and is usually completed within twenty minutes. The longer the duration of symptomatology, the more firm was the olive. Perforation occurred in only one case that was closed. With advances in technology, laparoscopy is finding its place in the management of IHPS with comparable results. The first laparoscopic pyloromyotomy was performed in 1990. Many difficulties occurred with this method including longer duration of operative procedure, perforation, inadequate myotomy, omental extrusion, wound infection etc. In addition illumination during the procedure was not sufficient and perforation was difficult to identify. Better cosmetic result and less hospital stay with cost effectiveness have been claimed and it is gaining popularity nowadays[9,10]. We do not have such facility with us as yet.

Post operative stay in our study is quite prolonged as compared with other studies. Nowadays more stress is placed on cost effectiveness and many protocols have been devised[11]. Early start of feeding is associated with increased incidence of vomiting. As most of our patients belonged to lower socio-economic group and resided at a great distance from the hospital, we did not discharge them early. First feed was usually given 18-24 hours after surgery and then gradual increase in quantity was made. Once satisfactory feeding was established the patients were discharged.

In conclusion, IHPS is a clinical diagnosis. In many recent studies art of palpating pyloric tumor is found declining and more stress is placed on investigations which also

increases the cost of treatment[12,13]. Judicial use of diagnostic modality should be stressed on.

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SEXUAL ABUSE IN CHILDREN.

MUHAMMAD ASLAM MEMON

ABSTRACT:
Out of 483 victims of sexual assault during years 1996 and 1997 reported at police surgeon's office in Karachi, 155 (32.09%) were females of less than 16 years of age. Type of sexual assault was vaginal penetration in 146 (30.22%), anal intercourse in 4 (0.82%), oral intercourse in 3 (0.62%) and 2 cases (0.41%) had indecent genital fondling. Of assault perpetrators' 105 (21.75%) were unknown, 25 (5.17%) were neighbours, 15 (3.10%) were family acquaintances and 10 (2.07%) were relatives.

KEY WORDS: Child Abuse, Child Labour, Failure to Thrive.

INTRODUCTION

Child abuse and neglect is the least discussed social and clinical problem in Pakistan, though it constitutes a public health problem of significant magnitude.

In the Western world Tardieu[1] was the first one to write about child abuse but it was Caffey who drew attention to the problem in the late forties[2]. Kempee & co-workers in the early sixties fostered a marked increase in the recognition of real needs and problems of child abuse[3]. Subsequent passage of legislation mandating reporting of suspected cases of child abuse has further improved the rate and accuracy of reporting.

Statistics of USA in 1982 (Courtesy of American Human Society) underlines the extent of the problem. 929,310 reports (substantiated & unsubstantiated) were filed involving 14 millions children. Only 24 states reported deaths resulting from abuse, so statistics on mortality were incomplete but those states recorded a total of 484 deaths[4]. Reports of all types of child abuse increased by 50%, from 30/1000 children to 45/1000 between 1985-1992[5]. In 1991, the national child abuse and neglect data system indicated that 24% of 838,232 reports were for physical abuse and 15% were for sexual abuse[6].

Child maltreatment encompasses a spectrum of abusive actions or acts of commission and lack of actions or acts of omissions that results in morbidity and death. Acts of omissions and commission before birth may also have adverse effects on baby[7]. It is also possible to identify families who are at high risk of maltreatment and other major adverse outcomes resulting from poor parenting as early as post partum period[8].

Four major forms of abuse has been delineated, physical abuse, sexual abuse, emotional abuse and physical neglect.

Often child may be victim of more than one form. Physical abuse may be narrowly defined as "Intentional injury to the child by caretaker" but a broad definition would include short and long term emotional consequences that may be more debilitating than the physical abuse. Sexual abuse is involving a child in any act that is intended for sexual gratification of adult. The emotional abuse includes intentional verbal or behavioural acts that results in adverse emotional consequences. Physical neglect and other acts of omissions may result into failure to thrive, develop and learn. Lack of provision of nutrition, schooling, adequate clothing and protection from environmental hazards are included in this category.

Looking into our society, our children seems to be victims of abuse of highest level. Physical abuse by parent and inhuman beating by teachers in the schools, lack of schooling for female children and involvement of small children in physical labour are all forms of child abuse that are seen daily in our routine life. Child labour is the most common form of child abuse in Pakistan. It is estimated that about 145 millions children of the world, most of them belonging to third world countries have been condemned to work under harsh conditions of abuse and exploitation. It is estimated that a minimum of 8 million children in Pakistan are employed as labourers in various industries and majority of them are below 14 years[9]. A survey conducted in Peshawar revealed that the most commonly encountered form of child abuse was child labour 96.5%, whereas physical abuse was seen in 2% and physical neglect in 1% of cases. Majority of those involved in labour were paid less than 600/= Rupees per month[10]. Informal survey of young college students revealed that 15% have had some form of sexual encounter in childhood. 80% of respondent knew some friends or relatives who had been sexually abused in childhood[11].

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CHILD SEXUAL ABUSE INCLUDES

- Exposure by pornographic photography to indecent acts by others whether in their actual presence or on films.
- Contacts indecent fondling of child. masturbation of adult by child. intercrural intercourse.
- Penetration : Oral, Anal, Vaginal[12].

PATIENTS AND METHODS

Female children less than 16 years of age brought to the police surgeons office at Karachi with history of sexual abuse from January 1996 to December 1997 were included in this study (Table I). The accurate history of the incident and thorough clinical examinations were carried out by lady- medicolegal officers. Necessary relevant investigations like vaginal swabs were taken.

RESULTS

Total 483 victims of sexual assault were brought during the period. Of these 155 were less than 16 years of age (32.08%), 10 (2%) were less than 10 years and 145 (30%) were between 10 to 16 years of age. The most common age group victimized was 14 to 15 years. Mean age of victim was 13 + 2. All had marks of violence around genital area. All had hymenal tears with bleeding and bruises except in 9. Of those 9 victims, 2 had genital fondling only 3 were subjected to oral intercourse and 4 had anal intercourse. (Table II). Perpetrators of Sexual Assault are given in Table III.

TABLE I — AGE DISTRIBUTION

Age in Years	No	Percentage
5 to 7 years	4	0.82%
8 to 10 years	6	1.24%
10 to 16 years	145	30.02%
Total	**155**	**32.08%**

TABLE II — TYPE OF ASSAULT

Type	No	Percentage
Veginal Penetration	146	30.02
Genital Fondling	2	00.42
Anal Intercourse	4	00.82
Oral Intercourse	3	00.62
Total	**155**	**32.08**

TABLE III — PERPETRATOR OF SEXUAL ASSAULT

Perpetrator	No	Percentage
Unknown	105	21.65
Neighbour	25	5.20
Family acquaintence	15	3.05
Relative	10	2.08
Total	**155**	**31.98**

DISCUSSION

How many children are suffering and from which form of abuse is not known. There is not only physical trauma involved in sexual abuse but emotional disturbances associated with the incident itself and continued later on by remarks and comments by acquaintances and treatments meted out by law officials to the victims and family has profound impact on the whole life to come.

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ANATOMICAL VARIATION IN POSITION OF GREATER PALATINE FORAMEN IN ADULT HUMAN SKULL

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ABSTRACT:
Ninety-Five adult human skulls with full eruption of third molar teeth were examined to ascertain the location of greater palatine foramen. The location of foramen from the posterior border of nard palate was quite consistent, being 0.35 cm. The usually accepted description, as opposite the upper second molar, was observed 13.1 % of the foramina. The most common position of the foramen was found to be on medial or opposite the third maxillary molar, the next most common being between the second and third maxillary molars. The direction of opening of the foramen into the oral cavity was inferior in an anteromedial direction in 58.5% of skulls. In 38.5% of the skulls the opening was in an anterolateral direction. A bilaterally symmetric bony projection extending from the posterior margin of the foramen was observed in 24.6 % of the skulls. The palatal vault was U shaped in all the instances, its height varying from flat to 0.3-0.8cm.

KEY WORDS: Greater Palatine Foramen, Anatomical Variation.

INTRODUCTION

Blocking the maxillary division of the trigeminal nerve or its branches for local anaesthesia is a common practice in maxillofacial surgery. The route utilised in the oral cavity is through the greater palatine foramen to enter the palatine canal which contains the palatine nerve and vessels. The published descriptions of the position of this foramen in the human skull have not been consistent. Most current text books locate the foramen only in a general way eg. near the lateral palatal border (Williams[1]), in the posterolateral border (Garden[2]), medial to the last molar (Moore[3]) or opposite the last molar (Romanes[4]). Text books on anaesthesia are somewhat more specific in relating the position of greater palatine foramen to molar teeth. Accordingly, this is stated to be opposite the second molar (Selden[5]), opposite the third molar, or any where between the second and third molars.

In view of the limited anthropometric studies and descrepancies between standard anatomy texts, this study was undertaken to define the position of greater palatine foramen relative to maxillary molars in various human skulls. The study also examined the variability in the direction of opening foramen into the oral cavity and presence of a bony projection extending from the posterior margin of the foramen.

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MATERIAL AND METHODS

The study was conducted on 95 unsexed adult human skulls available in the Department of Anatomy, Sindh Medical College, over a period of five years. Skulls taken for this study were normal and had full complement of teeth with fully erupted third molars.

Unequivocal and well defined points were selected for evaluation.

The following measurements and observations were made:-

- Location of the foramen in relation to maxillary molar teeth.
- Distance from the middle of greater palatine foramen to the sagittal plane.
- Distance from the middle of greater palatine foramen to the pasterior border of hard palate.
- Direction of opening of the foramen on to palate.
- Presence of a bony projection.
- Shape of palatal vault.

OBSERVATIONS:

Observations concerning the relative positions of greater palative foramen to maxillary teeth are presented in the Table-I. In majority of the cases (64.7%) the greater palatine foramina were medial or opposite to third maxillary molar,13% of foramina were opposite the second molar.

TABLE I VARIATION IN LOCATION OF GREATER PALATINE FORAMEN IN RELATION TO MAXILLARY MOLARS IN ADULT HUMAN SKULLS

Group	Opp^{2nd}	B/W $^{2nd \& 3rd}$	Medial	Opp^{3rd}
Right	11	39	40	09
Left	16	36	38	08
Total	27	75	78	17
Percentage	13.07	38.48	40	8.46

The statistical significance of variation in the frequencies of locations of foramina in relation to maxillary molar teeth was assessed by X^2 analysis. No significant relationships were detected ($P > 0.05$) for all the skulls. The mean from sagitatal plane to the greater palatine foramen on the right side was 1.54 ± 0.021 cm of the 95 foramina 46.1% were exactly 1.52cm from the sagitatal plane. On left the foramen had a mean distance of 1.54 ± 0.021 cm of the 95 foramina, 46.2% were 1.56 cm from the sagitatal.

The distance from the posterior border of the hard palate to the greater palatine foramen was fairly consistent. The mean of the right was 0.37 ± 0.115cm. The mean distance on the left was 0.37 ± 0.138cm.

DISCUSSION

In this study the location of the foramen was more variable than is implied by authors of Anatomy texts. According to Salvkin[7], the greater palatine foramen is located 1-3mm distal to third maxillary molar in adult skull. Westmoreland & Blanton[6] observed only 6% foramina distal to third molar. In the present study 3.6% foramina were distal to third maxillary molar and 64% were located medial or opposite to third molar. These observations support the findings of Westmoreland & Blanton[6]. In the present study, which was conducted on the adult crania, the molar foramen positional relationship was the same bilaterally. In infants and children the relative location of the greater palatine foramen moves posteriorly as the next posterior tooth erupts (Salvkin[7]).

Based an the mean measurements, the foramen was locatéd 1.54 cm from the sagittal plane on both the sides. According to Westmoreland & Blanton[6] the distance from sagittal plane to the greater foramen had a mean of 1.48cm on right and 1.5cm on the left. The distance from the posterior border of the hard palate to the foramen was fairly consistent. In the present material it was 0.37cm. Westmoreland and Blantors[6] found a mean distance of 0.19cm from the posterior border of the hard palate.

Variability in locations of the foramen may be due to sutural growth occuring between the maxillary and palatine bone. Anteroposterior dimension of the palate increases with the eruption of the posterior teeth.

The opening of the foramen was directed inferiorly in an anteromedial direction in 91.4% of skulls. This observation may explain the occasional difficulty encountered while attempting to insert the point of needle into the greater palatine, foramen and pterygo-palatine canal. According to Salvkin[7] the frequency of anatomical obstruction to the needle increases with age. Westmoreland and Blanton reported that the opening of foramen was directed inferiorly (vertically) from hard palate in 82% of skulls.

A bony projection along the posterior margin of the foramen was observed in 24.6% of the skulls. It is formed by raised posterior margin of the foramen although is has no apparent clinical significance. At times, it may be helpful in providing anatomical obstruction to the needle and preventing clinical hazards associated with the infection. The bony projection was observed in 16% of skulls by Westmoreland and Blanton.

All the skulls in present study were characterised by a U shaped palatal vault. The height of the U varied from flat to 0.3 to 0.8 cm. A similar finding was obtained by Westmoreland and Blanton.

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CLINICAL TRIAL WITH TANAKAN (GINGKO BILOBA EXTRACT) IN THE TREATMENT OF PERIPHERAL ARTERIAL INSUFFICIENCY IN DIABETIC SUBJECTS- A 12 WEEKS TRIAL.

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ABSTRACT:
In an open non comparative trial, efficacy and safety of Tanakan (Gingko Biloba Extract) 40 mg. three times daily orally was assessed in diabetic patients with complaints and clinical evidence of peripheral arterial insufficiency of variable duration. At the end of 12 weeks, the improvement was not only statistically significant but more impressive on clinical grounds.

KEY WORDS: Drug trial, Gingko Biloba Extract, Tanakan, Peripheral arterial insufficiency.

INTRODUCTION

Diabetes mellitus is increasing world-wide. Better treatment options, beneficial to prolonging the life of the diabetics, have also resulted in frequent observation of a number of long term complications, one of which is arteriopathy. The arteriosclerosis obliterans of a diabetic do not differ anatomically or pathologically from a non diabetic. But it occurs more frequently and at an earlier stage. Trophic disorders of the epidermis also provide evidence of microangiopathy. Diabetes mellitus is frequently accompanied by accentuated atherosclerosis, which in itself can cause diffuse narrowing in many vessels. The main symptom of peripheral arterial disease is pain especially in the legs which is due to inadequate supply of nutrients to muscles and skin secondary to luminal narrowing. Pain may occur with exercise as claudication or be present at rest as severe ischemia.

Diabetes mellitus of long duration is frequently complicated by arteriopathy of lower limbs and accelerated atherogenesis is commonly the underlying factor. An increased prevalence of occlusive arterial disease is also seen in individuals with hypertension, hypercholesterolemia and cigarette smokers[1]. Involvement of distal vasculature is common in elderly and in patients with diabetes mellitus. The most common symptom is intermittent claudication which is defined as pain, ache, cramp, numbness or sense of fatigue in muscles; it occurs during exercise but is relieved with rest. With severe disease rest pain may develop. Patients may also complain of pain or a feeling of cold or numbness in the foot and toes. Frequently these symptoms occur at night when the legs are in a dependant position[3].

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PURPOSE OF STUDY

This clinical study was undertaken to determine the effectiveness of Tanakan (Egb 761) in peripheral arterial insufficiency of lower limbs in a selected number of non-insulin dependant diabetics who complained of symptoms suggestive of arteriopathy of lower limbs.

PATIENTS AND METHODS

Fifteen patients were selected from Medical OPD and Diabetic Clinic, Civil Hospital Karachi and admitted in Medical Unit III initially for 2-3 weeks and followed up in the OPD for 12 weeks.

Detail listing and clinical examination were done. Criteria of efficacy were assessed on clinical grounds:

- Pain on exercise and at rest was assessed on a visual analogue scale.
- Local temperature was assessed clinically according to subjective feeling by the patient of coldness in the extremities as well as by palpation.
- Trophic disorders were objectively assessed on physical examination and change noted at fixed intervals.
- Peripheral pulses assessed as per physical examination and change noted at fixed intervals.
- Walking distance covered in meters on level ground.
- Consumption of analgesic drugs was noted, baseline and at fixed intervals. Allowance was made for the patients to continue with their choice of analgesic.

Duration of their diabetes ranged from 5-16 years (Mean 10.5 years). Sex ratio; males: 9, females: 6. Age range 42 -65 years (Mean 53.5 years). Of 15 NIDDM patients: 7(46.6%), were hypertensive, 7(46.6%), had evidence of hyperlipidemia, 5(33.3%), had evidence of ischemic heart disease and 7(46.6%), were smokers. All the 15(100%) patients complained of pain in the legs, unilateral or bilateral brought on by walking or exercise and relieved by rest (intermittent claudication). Duration of pain ranged from 2 months to 2 years, four (26.6%) also complained of numbness of feet and / or toes; six (40%) complained of early fatigueability of muscles; seven (46.6%) complained of night pain; five (33.3%) complained of rest pain indicative of severe ischemia and five (33.3%) had evidence of trophic disturbance in the form of ulcers – 3(33.3%), 1 (6%) impending gangrene of small toe, and 1 (6.0%) had an amputated 3rd toe earlier. Table I shows status of peripheral pulses.

TABLE I PERIPHERAL PULSES OF LOWER LIMB:

	Palpable		Not Palpable	
	+	PERCENT	-	PERCENT
Femoral	+	100%	-	0%
Popliteal	5	33.3%	1	6%
Posterior	8	53.3%	4	26.6%
Dorsalis Pedis	3	20%	12	80%

Patients were started on Tablet Tanakan 40 mg. three times daily orally and observations made before starting the drug and then at 4, 8 and 12 weeks of therapy.

RESULTS

Out of fifteen patients, only 13 completed the study as one was lost to follow up after 8 weeks and one died due to myocardial infarction after 6 weeks.

- Pain as assessed by visual analogue scale decreased significantly on exercise as well as rest. However, one patient did not have any improvement and one responded only minimally.
- As regards local temperature, feeling of coldness decreased in majority of the patients and was appreciated on physical examination.
- Trophic disturbances showed marked improvement with healing of superficial ulcers and prevention of imminent gangrene in one patient.
- Peripheral pulses showed improvement in three patients. However, no change was noted in rest of the 8 patients on gross physical examination of pulses.
- Walking distances on level ground improved significantly in 8 patients, three showed small but consistent improvement and two patients did not show any increment in their walking parameters.
- Consumption of analgesics gradually decreased over the period of 12 weeks in 11 patients, whereas two patients continued to take increasing amounts of analgesics.

These signs were slightly unequal on both sides. Additional lower limb signs included:

Decreased skin temperature	14 (93.3%) patients
Pallor on leg raising	12 (80.0%) patients
Rubor on dependency	12 (80.0%) patients
Smooth shiny skin	07 (46.6%) patients
Thickened nails	06 (40.0%) patients
Hair loss	03 (20.0%) patients
Muscle atrophy	04 (26.6%) patients
Cyanosis	02 (13.3%) patients
Peripheral oedema	07 (46.6%) patients
Ulcers of varying severity	07 (46.6%) patients
Impending gangrene	01 (06.0%) patients
Amputation third toe	01 (06.0%) patients
Loss of vibration sense	02(13.3%) patients
Evidence of glove and stocking sensory loss	03 (20.0%) patients

DISCUSSION

Physical findings include decreased or absent pulses distal to the obstruction, muscle atrophy, hair loss, thickened nails, smooth shiny skin, reduced skin temperature, pallor or cyanosis and finally ulcers or gangrene. Severe ischemia may also result in peripheral oedema. Chronic severe arterial insufficiency may also result in dependant rubor and elevation pallor[4]. Bruits may be present. The acutely ischemic limb will manifest the five 'Ps': pulselessness, pain, pallor, paraesthesia and paralysis.

The management of this problem has been difficult and even unsatisfactory. Therapeutic options include supportive measures, pharmacologic treatments, non operative interventions and surgery. Supportive measures include meticulous care of feet and treatment of associated factors that contribute to the development of atherosclerosis. These include cessation of smoking, control of blood pressure, treatment of hypercholeterolaemia and regular exercise to encourage the development of collaterals. Update pharmacologic intervention include alpha adrenergic blocking drugs, calcium channel blockers, papaverine and other vasodilators which have not found to be effective in patients with occlusive arterial disease. Efficacy of pntoxifylline, a substituted xanthine derivative has not been confirmed in all the clinical trials. Aspirin, ticlopidine, heparin and warfarin have not been shown to be effective in chronic arterial occlusive disease. Streptokinase, urokinase or recombinant tissue plasminogen activator may be very useful in thrombotic but not in chronic arterial occlusion.

Tanakan, which is an extract of Ginkgo biloba, is a well

defined and complex product prepared from green leaves of Ginkgo biloba[2]. It has a wide range of pharmacological actions including vasoregulating activity, free radical scavenger, antiplatelet aggregation and enhancement of basal energetic metabolism and therefore indicated in cerebral ageing and ischemia (memory disturbance, intellectual deterioration and sequelae of stroke and cranial trauma), neurosensory disturbances, such as vertigo, tinnitus, retinal ischemia, senile macular degeneration, diabetic retinopathy and peripheral arterial insufficiency specially arteriopathy of lower limb.

According to this study, satisfactory results were obtained after 3 months of regular drug therapy both from the standpoint of improvement in pain and from that of increased walking distance covered by the majority of patients. Results were also encouraging regarding trophic disorders as well as marked decrement noted in the consumption of analgesics by the patients and the improvements appear to be consistent. The drug has an excellent safety profile with a minimum of side effects. This makes Tanakan an excellent choice and alternative to the usual treatment options available at present for peripheral arterial insufficiency.

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AN INNOVATIVE WAY OF SUPRAPUBIC CATHETERIZATION: SAVING THE COST

Innovation

BASHARAT ALI KHAN

ABSTRACT:
A new method of percutaneous suprapubic catheterization using a wide bore needle and a six FR feeding tube is described. This technique is equally effective both in children and adults and is inexpensive.

KEY WORDS: Suprapubic Catheterization, Technique.

INTRODUCTION

Suprapubic catheterization (SC) is a useful alternative to urethral catheterization and is commonly performed in surgical practice. The usual indications for SC include inability to catheterize transurethrally, as a first choice in some patients with acute retention of urine and in patients requiring long term suprapubic urinary diversion. Various techniques are currently in vogue and a number of different instruments are utilized for the purpose. In this article a new technique is described which has been found to be safe, useful and inexpensive. It can be employed both in adults and children, where indicated.

TECHNIQUE

An 8Fr wide bore needle used in disposable suprapubic catheter set is taken and its hub removed. This needle can be sterilized and reused. Under local anaesthesia position and depth of distended bladder is confirmed by aspiration. The needle is inserted along the same path till clear urine starts flowing through it. A 6Fr or 7Fr feeding tube in passed through the needle into the urinary bladder and its outer end is cut. The needle is then pulled out, leaving the tube in the bladder. The tube is anchored to the skin with a silk stitch and passed through a small hole made into the side of a urine bag inlet tubing and sealed with sticking plaster.

DISCUSSION

Suprapubic catheterization of urinary bladder is a time tested useful procedure in selected patients. Currently various purpose-made imported suprapubic catheter kits are available. The cost is around five to six hundred rupees. Majority of our patients are poor and find it difficult to purchase commercially available suprapubic catheters. The technique described costs only fifteen rupees and its judicious use can be of great help in day to day surgical practice. The advantages of this technique include the ease and simplicity of insertion and low cost. The disadvantage is that the tube inserted should to be of a smaller calibre and could get blocked with clot, debris and encrustations. The author has used this procedure successfully in children requiring urinary diversion after urethroplasty for hypospadias. It has also been found to be equally effective in adults requiring temporary percutaneous suprapubic urinary diversion.

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GASLESS LAPAROSCOPIC TECHNIQUES.

Commentary

SHAHID MASOOD.

Laparoscopic Surgery has marked effects upon human physiology. Apart from anaesthetic effects. Mahor alteration in CVP, cardiac output, cardic rhythm, mesenteric blood flow, arterial Pac°2 arterial pH and hormonal responses have been identified. Most of these effects are due to artificially created capnoperitoneum

Laparoscopic cholecystectomy performed at intra peritonial pressure 15mm Hg (the insufflation pressure most commonly used) was found to produce a reduction in cardiac output of as much as 30%. Many of these changes are due to the reverse trendlenberg position often used during laparoscopic cholecystectomy; however a significant proportion is due to the capnoperitoneum itself. Capnoperitoneum causes perturbation of cardiac and respiratory functions by various mechanisms, such as direct pressure of insuffated gas on pelvic blood vessels, and IVC resulting in pooling of blood in the legs.

The commonly port-site recurrence following laparoscpic surgery of malignancy, particularly colonic tumours has been considerable. The tumor implantation occured due to the effect of positive pressure of C02, forcing tumor cells along port sites.

Additionally there are physiological effects of raised PaCo2 and decreased arterial pH resulting from absorption of carbon dioxide from peritoneal cavity.

There are two alternatives to standard capnoperitoneum:-

1. ENTIRELY GASLESS LAPAROSCOPIC SURGERY

In this a U shaped retractor and / or subcutaneous wires are used to lift the skin and subcutaneous tissues, (Most widely used is the laprolift system by Medisystems. All systems provide tenting of abdominal wall to perform laparoscopic surgery.

Advantages:-

Avoidance of physiological effects of capnoperitoneum, risk of gas embolism and problems of gas leak are many advantages. It also has the ability circumvent port site recurrence in malignant colonic resectional surgery to and the use conventional instruments during laparoscopic surgery.

Disadvantage:-

However the main disadvantage is that overall exposure is inferior to that obtained with capnoperitoenum.

2. HYBIRD SYSTEMS

Using low pressure (6-8mm Hg) capnoperitoneum together with an abdominal wall lifting device provides the advantages of both systems. Using a sling or T-bar retractor is introduced via a laparoscopic cannula to retract the abdominal wall.

In performing laparoscopic cholecystectomy a capnoperitoneum at pressure of 15mm Hg was found to be associated with a 25% reduction instrokr volume and 30% decrease in cardiac output while such changes are not seen at a caonoperitoneum of 7mm Hg. This composite system enables laparoscopic surgery to be carried out at a low intra-abdominal pressure.

Gasless laparoscopy and hybird systems of low-pressure capnoperitoneum with mechanical augmentation are novel developments in Minimal access therapy and are highly recommended for high risk patients. Gasless laparoscopic surgery has been used for laparoscopic cholecytectomy, colonic resections, traumas, hernia repair, appendectomy and gynaecological surgery.

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LYMPHANGIOMA FACE: A RARE ENTITY

A CASE REPORT

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ABSTRACT:
A case of isolated lymphatic cyst on face of 6 months old child is being presented. Surgical excision of this unilocular cyst without any delay is advocated for better cosmetic results.

KEY WORDS: Lymphangioma, Cystic, Unilocular

INTRODUCTION

Lymphangioma is a benign growth of lymphatic system usually noted at birth[1-4]. Whether these are congenital malformations, hamartomas or true neoplasms is still controversial[2]. In about 90 - 95% of cases neck is involved[6]. The involvement of face by a unilocular lymphangioma is very rare. Incidence of this anomaly has been estimated to range from 1:25,000 to 1:59,000 of all hospital admissions. Maxillary and parotid region lymphangioma are amongst the rare sites mentioned in literature[7]. In this report we present our experience of one such lesion.

CASE REPORT

A six months old male infant presented with swelling on the right side of face since birth. Swelling gradually increased to about 8 x 12 cm size. It was not associated with any symptoms. Examination revealed bluish tinge of the skin with cystic non-tender and partially mobile swelling occupying right side of forehead, parotid and maxillary areas. Facial nerve was intact. Ultrasound revealed a unilocular cyst containing fluid. Patient was operated through a semilunar incision, facial flaps were raised. The unilocular cyst impinging on bone containing dark brown fluid was excised in toto (Fig. I).

Histopathology report was that of lymphangioma. Operation resulted in a fine scar (Fig. II) and no complication.

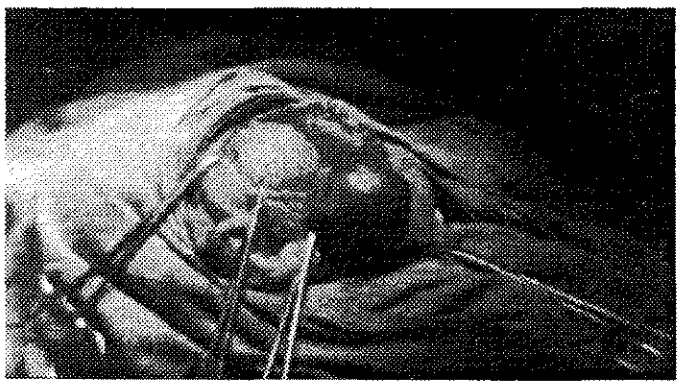

Figure I The cystic lesion lying below the zygomatic bone

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Figure II Postoperative result showing fine scar

DISCUSSION

Numerous theories have been proposed regarding the origin of lymphangiomas. Lymphangiomas are classified on histological basis. The classification of Wegner (1877) is still popular and it divides lymphangiomas into simple, cavernous and cystic types[1,2]. These lymphangiomas may be unilocular or multilocular with communicating cysts[3]. Most of these lesions are present at birth or appear in early days of life[4]. The number of cases reported from under developed countries is more than developed countries[5]. Ultrasonography is helpful in diagnosis even in antenatal period. Early surgical excision is the treatment of choice which gives good cosmetic results as well[6]. Recurrence is usually unknown[7].

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