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

Published by: Prof.Abdul Aziz for Prof.F.U.Baqai, Baqai Postgraduate Medical Institute, IIIC, 1/12, Nazimabad, Karachi
Address for correspondence:
Prof. Abdul Aziz, Executive Editor JSP
C/o Treasurer,
College of Physicians and Surgeons Pakistan,
7th Central Street, DHA, Karachi-75500
Subscription rates: Per copy-in Pakistan Rs.100/= in SAARC countries U.S. $20, in other countries U.S.$30, Annual- in Pakistan Rs.300/= in SARRC countries US $ 60, in other countries U.S.$90.
Layout by : Aleemuddin Siddiqui and Madad Ali Channa

VOL. 7 NO. 3 (JULY - SEPTEMBER 2002) **QUARTERLY**

JSP JOURNAL OF SURGERY PAKISTAN
INTERNATIONAL

EDITORIAL

Safety First	Asadullah Khan	1

ARTICLES

Modified Duhamel Procedure for Hirschsprung's Disease	Muhammad Riaz Ul Haq	2
Virtual Gastroscopy	Amer I. Bhatti	6
Is it a Diabetic Hand?	Tariq Mahmood Rehan	12
Uterine rupture in labour	Nazli Hossain	17
Malaria infection in children	Jalal Uddin Akbar	20
Cervical Lymphadenopathy	Faisal Ghani Siddiqui	23
Tuberculosis of the breast	Asma Hanif	26
Bosworth method for Unstable Fractures of distal clavicle	Saqib Amin	29
Pattern of Malignancies	Ishtiaq Ahmed Chaudhary	31
Acute Abdomen in Malaria	S. Sagheer Hussain Shah	38
Management of Pilonidal Sinus	A. Samad Khan	41
Clinical presentation of liver abscesses	Muhammad Mushtaq	43
Early experience of first 100 cases of Laparoscopy	Atta Hussain Soomro	47
Prevalence of Bacterascites	M. Azhar Chaudhry	50

CASE REPORTS

Horse hair and tetanus	Aurangzeb Khan	52
Intussusception of Vermiform appendix	Aurangzeb Khan	54

EDITORIAL:

SAFETY FIRST

Although the adage 'Safety First' applies to almost everything we do in life, yet its relevance in the practice of surgery is specially crucial. With the modern innovations of hightech equipment and skills with better understanding of the human body and its functions we treat and operate on advanced diseases and perform extremely complicated and at time fancy operations and procedures. We are often so engrossed in these newer procedures, that it is possible, that our vision of safety is blurred and we are liable to commit mistakes, if we are not careful at each step of the procedure it is very likely that this oversight may be detrimental to the health and safety of the patients and ourselves as well especially when we do very complex work the safety margin is narrow.

Safety so important and logical that for example even with the best possible operation that anyone can do, the patient may not survive in comparison to the one who does. The worst operation with good results because safety determinants in the first instant were not clear. And one must be aware that there is a long list of options between these two extremes in every procedure or operation we perform. We should not forget, the golden rules of safety; it is far better to measure twice and cut only once. Each of our decision must be guided by the "Logic of safety" even when we are ready to take extreme risks.

The other aspects of safety is prevention. It is not only prevention of the spread of diseases or measures to minimize accidents, but it is equally important to anticipate and prevent complications and their effects on the quality of life of the person being treated. It is also imperative to be aware of the results of the end product of what we do. In case we can not confidently predict the final outcome of a procedure then it is essential to err towards safety rather than to take expensive and at time fatal risks.

That is why having realized the importance of safety the modern concepts and effort in teaching, training and practicing medical sciences is towards 'competencies' the main objective being to make "safe doctors".

These doctors should not only be safe for the ailing community but also for themselves and their families one must be trained is such a way that the whole through process is tuned toward safety first for everyone. A safe surgeon is the one who knows clearly when to stop when not to take chances or risks wherever safety is compromised.

ASADULLAH KHAN

MODIFIED DUHAMEL PROCEDURE FOR HIRSCHSPRUNG'S DISEASE: AN ANALYSIS OF 24 CASES

MUHAMMAD RIAZ UL HAQ, SARFRAZ AHMED, MAZHAR RAFI, ZAFAR IQBAL ,

MUHAMMAD AFZAL, MUHAMMAD AFZAL SHEIKH

ABSTRACT:

A Prospective analytic study of 24 case of Hirschsprung's disease (H.D) was conduct over a period of two years first January 2000 to December 2001 in the Department of Paediatric Surgery, Mayo Hosptial, Lahore, to evaluate the outcome of the patients after modified Duhamel pull through procedure.

The results showed that Modified Duhamel procedure with the help of Mechanical stapling device had minimum complications with no mortality and were consistent with other studies showing that Modified Duhamel procedure is quite safe for Hirschsprung's Disease

KEY WORDS: *Duhamel. Modified Duhamel. Hirschsprung's Disease. Complications. Mechanical stapling device.*

INTRODUCTION

Over the past 50 years there has been a wide variety of techniques ranging from Swanson's, first described in 1948,[1] to the Perineal one stage pull through procedures, described by Langer et al in 1999,[2] to treat Hirchprung's Disease (H.D). Bernard Duhamel first described his operation for H.D in 1956.[3] The operative principles of his technique included minimal pelvic dissection, wide anastomosis with the ganglionated colon. He excluded rectum and used retro rectal approach to pull through the intestine, through the anal opening by division of the internal anal sphincter and preserving the anterior wall of the rectum with its nerve supply.[4]

There has been numerous modifications of the Duhamel procedure: elimination of the common wall of the rectal pouch "Spur" and the influence of a stool filled non eliminating blind rectal pouch with an aganglionated rectal wall. Martin and Altemier described careful clamp placement to completely eliminate the rectal pouch.[5] With application of mechanical stapling device for the colorectal anastomosis and division of the common rectal wall have further facilitated the procedure as reported by Ikeda.[6]

From Jan.2000 to Dec 2001, 98 cases of H.D. were diagnosed in our department. Modified Duhamel with the help of mechanical stapling device was the procedure of choice in 24 cases. The aim of the study was to see the results of modified Duhamel procedure and to compare the results with the international results. Gastrointestinal auto stapler (GIA) was used as it is used through out the world in intestinal surgery.

MATERIALS AND METHODS

Ninety Eight patients of H.D. were dealt in the Department of Paediatric Surgery, Mayo Hospital, Lahore from January 2000 to December 2001. All of them were diagnosed by full thickness rectal biopsy, barium enema was also done in most of the cases; earlier diagnosed cases who came during these years were also included . After initial colostomy definitive procedure was done in 34 cases. Modified Duhamel was our procedure of choice in 24 cases and in 4 Soave's procedure was done initially. Mechanical cleansing of the gut was done with dietary modifications from solid to liquid feeds and then clear fluids and saline washings for 48 hours. Oral antibiotics were also given for the same period. We performed

Correspondence:
Dr. Muhammad Riaz ul Haq, Senior Registrar
Department of Paediatric Surgery
Mayo Hospital, Lahore.

modified Duhamel procedure by completely eliminating the rectal spur with the help of GIA stapling device. Colostomy was eliminated at the time of procedure.

Patients were followed for early and late complication i.e. episodes of enterocolitis, stooling habits including continence, frequency and need for laxatives or other medication.

Follow up informations were obtained from out patient visits. We defined continence between bowel movements as " clean ". We defined an epidsode of enterocolitis as explosive diarrhea or abdominal distension requiring hospitalization for hydration and antibiotics.

RESULTS

Age range at the time of procedure was from 9 months to 10 years. (Table- I.) 18 of 24 patients were boys and 6 girls. One patient had trisomy 21.

TABLE-I AGE AT THE TIME OF SURGERY

Age in years	No. of Patients	%
<1	3	12.5
1-2	8	33.3
2-3	8	33.3
>3	5	20.8

Level of aganglionosis was decided on Barium enema and clinically at the time of definitive procedure. Level of aganglionosis was rectosigmoid in 18, descending colon in 2 and transverse colon in 4 (Table-II).

TABLE-II AREA OF AGANGLIONOSIS

AREA	NO.	%
Rectosigmoid	18	75
Decending colon	2	8.3
Transverse colon	4	16.7

One of our patient developed wound infection. Daily dressing was done and the patient was sent home on the 12th post operative day. Later on the same patient landed with adhesive obstruction. Adhenolysis was done through laparotomy. Three patient landed with perianal excoriation with complaint of occasional night soiling. They were also admitted with enterocolitis on two different occasions; but recovered on conservative management. Local barrier cream and some dietary modifications were advised (Table-III). No of stools each day at the time of discharge is shown in table-IV.

Stool evacuation, soiling, incontinence and abdominal distension were looked for in the follow up which was for

TABLE-III

	No. of Patients	%
Wound infection and Obstruction	1	4.2
Failure of stapling gun	1	4.2
Perianal Excoriation and Enterocolitis	3	12.3
Bleeding	Nil	-
anastomotic Leakage	Nil	-

TABLE-IV NO OF STOOLS AT THE TIME OF DISCHARGE

No. of Stools/Day	No. of Patients	%
1-3	12	50
3-5	5	20.8
5-7	3	12.5
>7	4	16.6

a period of 6-12 months. Only 2 of our patients deficated 3-5 time / week; they needed occasional stool softner, three of our patients complained of occasional distension with no other complaint. Five of our patients had occasional soiling at night; one of them was mentally retarded. In one patient soiling was only during the attacks of enterocolitis. In one transverse colon and in the other two ascending colons are pulled down. None of our patients was incontinent (Table V).

TABLE-V FOLLOW UP RESULTS

		No. of Patients	%
A.	Stool Evacuation		
	once a day or more	22	91.6
	3-5/W	03	08.3
	<3/W	Nil	-
B.	Abdominal Distention		
	Never	21	87.5
	Occasional	03	12.5
	Continous	Nil	-
C.	Soiling		
	Never	19	79.1
	Occasional during night	5	20.8
	Continous	Nil	-
D.	Enterocolitis		
	Never	21	87.5
	Occasional	3	12.5
	Continous	Nil	-

Three (12.5%) of our 24 patients developed enterocolitis

but none of our patient developed anastomotic stricture, leakage or anal bleeding.

Figure-I: Use of GIA stapler in modified duhamel procedure

DISCUSSION

Duhamel operation is widely used for the treatment of H.D. Recently technical modifications using stapled instruments have been introduced.[7] The procedure includes the use of a formal upper and lower anastomosis and division of the spur by a GIA stapling device.[8]

The original technique Duhamel in 1956 as proposed by using two Kocher's Clamps and majority of the modifications with various spur crushing instrument are no longer in use . At present surgeons generally use stapler for the colorectal anastomosis.[9]

We dealt with 98 patients of H.D. During 2000 - 2001. Modified Duhamel procedure was performed in 24 patients. Area of aganglionosis extended to the recto sigmoid region in 18, decending colon in 2 and transverse colon in 4. Yanchar NL, and Soucy P performed Modified Duhamel procedure in 31 patients. Aganglionosis extended to the rectosigmoid region in 75% , proximal to the splenic flexure in 11% and total colon in 6.5%.[10] Involvement of rectosigmoid region is exactly the same in both the studies.

Yanagihara J et al, performed modified Duhamel procedure in 36 patients with the GIA stapler his results are very similar to our series. Six (16.6%) of there patients developed enterocolitis while anastomotic leakage or stricture were not observed in any.[11] Fortura RS et al , also observed enterocolitis in 5 (19%) of their 27 patients were operated for H.D. with modified Duhamel procedure.[12]

In our series of 24 patients, none of them was incontinent and mild constipation was complained by only 2 (8.3%). Hung WT. Operated on 46 cases of H.D. during 1980 to 1990. He described good fecal control and continence, no enlargement of the remaining colon, no anastomotic leakage or infection. Occasional night soiling was present in 5 (20.8%). In 3 of them extended resection of gut was done.[13] Children with extended resection have good control during day time but occasionally had some leakage of liquid stool during sleep and due to frequent attacks of enterocolitis.

Modified Duhamel procedure for H.D. with the help of stapling device is a safe and easy procedure with minimum morbidity and no mortality. Complications like mild enterocolitis, mild constipation or soiling can be dealt conservatively. Same conclusion was drawn by Matioli G. et al.[14] Mechanical staplers in children are safe and effective in low rectal anastomosis, sparing operative time and reducing the risk of anastomotic dehisence in Modified Duhamel Procedure.

REFERENCES

1. Swenson O, Bill A H: Resection of rectum and rectosigmoid with preservation of the sphincter for benign spastic lesion producing megacolon. An experimental study. Surgery 1948, 24:212-220.
2. Langer JC, Minkes RK, Mazzioti MV, et al; Transanal one-Stage Soave procedure for infants with Hirschsprung's disease .J. Pediatr Surg 1999, 34: 148-151.
3. Duhamel B: Une nouvelle operation pour le megacolon congenital : l' abaissement retrorectal et trans-anal due colon, et son application possible au treatment de quelques dutres malformations. Press Med 1956, 64:2249.
4. Duhamel B: Retrorectal and transanal pull through procedure for the treatment of H.D. Dis colon rectum 1964, 7; 455.
5. Martin LW, Altemeier WA: Clinical experience with a new operation (Modified Duhamel Procedure) for Hirschsprung's Disease, Ann Surg 1962; 156:678.
6. Ikeda K: New Techniques in the surgical treatment of Hirschsprung's Disease, Surgery 1967, 61:503.
7. Vilarino Mosquera, Cano Novillo I, Parise Methol J. Our experience with the treatment of congenital megacolon using mechnical sutures. Cir pediatr 1990 Apr; 3 (2) : 67-69
8. Canty TG. Modified Duhamel Procedure for treatment of H.D. in infancy and childhood: Review of 41 consective cases. J. Pediatr Surg 1982 Dec:17(6): 773-778.
9. Vrsansky P, Bourdelat D, Pages R; Principle modification of the Duhamel procedure in the treatment of H.D. An analysis based on results of an international retrospective study of 2430 patients. Pediatr Surg Int 1998; 13 (2-3): 125-132.

10. Yanchar NL, Soucy P. Long term out come after Hirschsprung's Disease. Patients perspectives. J Pediatr Surg 1999; 34 (7): 1152-1160.

11. Yanagihara J, Iwai N. Tokiwa K, Deguchi E, Shimotake T: Results of a Modified Duhamel Operation for H.D. using the GIA stapler. Eur J Pediatr Surg 1997 Apr; 7 (2): 77-79.

12. Fortuna RS, Weber TR, Tracy TF Jr, Silen ML, Cradock TV. Critical Analysis of the operative treatment of H.D. Arch Surg 1996 May; 131 (5) : 520- 524.

13. Hung WT. Treatment of H.D. With a modified Duhamel Martin Operation. J. Pediatr Surg 1991 Jul; 26 (7) 849-852.

14. Mattioli G, Buffa P, Martinelli M, Ivani G, Gasonni V: All mechanical low rectal anastomosis in Children J Pediatr Surg 1998 Mar; 33 (3): 503-6

SOCIETY OF SURGEONS OF BANGLADESH TO HOLD INTERNATIONAL SURGICAL CONGRESS & SSSC MEETING ON DECEMBER 20-23, 2002.

The 8th International Surgical Congress and SSSC meeting of the Society of Surgeons of Bangladesh is scheduled to be held in Dhaka from 20th to 23rd December 2002. The congress secretariat of the Society of Surgeons, Bangladesh has arranged a comprehensive scientific programme for the forthcoming international scientific event. The congress is expected to be attended by a large number of delegates from all over the world.

There will be instructional courses, symposia, CME programmes, plenary sessions, free paper sessions, video and poster presentations etc. The organizers have invited scientific papers and presentations from interested persons before October 31, 2002. For details the congress secretariat may be contacted at:

Secretary General
Society of Surgeons, Bangladesh
GPO Box 3763, Dhaka. Bangladesh.
Ph: 8315172, 8617806 and E-mail mhtuhin@bol-online.com

VIRTUAL GASTROSCOPY: AN INNOVATIVE METHOD OF EVALUATION OF THE STOMACH

AMER I. BHATTI, RASHID AHMED

ABSTRACT:
To compare the diagnostic accuracy of 3-D virtual endoscopy with that of conventional endoscopy in patients who had symptoms of upper gastrointestinal disorders was carried out in Twenty five patients, 15 were male and 10 female, their age range was 20-69 years. All the patients underwent thin section helical CT of the upper abdomen without oral or intravenous contrast. Patients were given oral effervescent agents to obtain optimal distension. All the patients were fasted for at-least 6-8 hours prior to the examination and were administered intravenous Hyoscine-N-Butylbromide (Buscopan®-Boehringer Ingelheim GmbH, Germany) just prior to the CT examination to reduce patient discomfort and obtain proper gut distension. The axial CT images obtained were downloaded to a workstation equipped with software for surface shaded rendering technique to achieve interactive 3-D virtual "fly-through" examinations of the stomach. The results were compared with the findings of conventional endoscopy and correlated with surgical and pathological outcome where possible.
Neoplastic lesions and polyps of the stomach were detected with ease on virtual gastroscopy and the information of virtual examination compared well with that of conventional gastroscopy. Axial CT images provided additional information not available on conventional gastroscopy. Virtual gastroscopy was able to detect pedunculated polyps with ease although broad based polyps were not visualized. The disadvantage common to the virtual examination was the inability to detect mucosal and flat lesions. Virtual endoscopy has to undergo multicenter trials on patient populations that are at the risk of developing gastrointestinal disorders. Technical advancements in computer software programs may improve the performance of virtual endoscopy but it still cannot be used as a replacement for conventional endoscopy.

KEY WORDS: Virtual gestroscopy, Helical CT Scan, Innovention

INTRODUCTION

CT has become an important method of imaging and evaluating lesions of the stomach, especially gastric tumors.[6,7] The endoluminal view of the stomach on the three dimensional images can accurately predict the location and extent of the lesions. This is supplemented by the ability to view the structures in close proximity of the stomach with the help of the axial CT images.

Correspondence:
Dr. Amer I. Bhatti, Senior Registrar
Department of Radiology and Imaging,
Ziauddin Medical University Hospital,
North Nazimabad, Karachi.

Virtual endoscopy implies the visualization of internal surfaces of hollow viscera. This technique is feasible and novel method of examination of the upper and lower gastrointestinal tract because of the fact that it is non-invasive and employs the use of a helical CT scanner. One of the newer applications of helical CT is its ability to reconstruct overlapping images and generate two and three-dimensional images from contiguous cross sectional images known as helical data sets. This is known as a post processing technique and virtual endoscopy is one of the most recent innovations within the spectrum of this technique. The 3-D images are obtained when volume data from a helical CT scan is

reconstructed by using specialized computer software packages and workstations.[1] Although the term virtual endoscopy is non-specific and literally can be thought of as a technique that displays the interior of tubular lumena, its application in the context of helical CT scanning indicates that this procedure allows internal examination of hollow viscera similar to that provided by diagnostic clinical endoscopy. This technique has found use in the visualization of the interior of trachea and bronchi, vascular structures, especially the cerebral vessels to detect the neck of aneurysmal dilatations, the coronary arteries and the urinary tract. The most remarkable results have been seen in the examination of the gastrointestinal tract especially the stomach colon and rectum.[2]

MATERIALS AND METHOD

Virtual gastroscopy was performed on 25 patients (15 male and 10 female, age range was 20 to 69 years with a 44.16 + 13.07. (mean + S.D). All the patients were fasted 6-8 hours before the examination and were advised to stop smoking at least 24 hours prior to the examination. They were administered an effervescent agent just before the examination was to commence. At least three to four teaspoons of the effervescent powder was given with two to three sips of water. Patients were positioned supine in the gantry and a scanogram was obtained from the xiphoid down to the umbilicus. Further planning was done after evaluating the distension of the stomach on the scanogram and if required more effervescent agent was administered to produce adequate gastric distension.

The CT scans of all the patients were performed on a Toshiba Xpress XG Helical CT scanner. Axial images obtained, included the length and breadth of the stomach. Images were acquired with 5 millimeter collimation, 5mm/s table speed (pitch of 1), 110 mA, 120kVp and a 512 x 512 matrix. Axial CT images were reconstructed at 2 millimeter intervals with a 3 millimeter slice overlap. The images were then downloaded to an independent SUN™ "Ultrasparc" workstation equipped with "Toshiba Virtual Flythrough®" software where interpolation and segmentation of the raw data was performed. All the virtual examinations were compared with fibreoptic endoscopies performed on the same patients. At the time of evaluation of virtual examinations the axial CT images were also evaluated.

TABLE-I VIRTUAL GASTROSCOPY PATIENT DATA AND SYMPTOMS

Number of Patients: 25 (15 Male, 10 Female)
Age Range: 22-69 years (mean ± S.D.) 44.16 ± 13.07.

Clinical Symptoms at the time of Examination		95% Confidence Interval
Intermittent epigastric pain, Dyspepsia.	9 (36.0%) Patients.	18.7 - 57.38
Hematemesis, anorexia And weight loss.	9 (36.0%) Patients.	18.7 - 57.38
Nausea, right upper Quadrant pain, fever.	1 (4.0%) Patient.	0 – 18.0
Painless upper abdominal mass, Vomiting and dysphagia. (history of psychiatric illness)	1 (4.0%) Patient.	0 – 18.0
Upper abdominal pain and Projectile vomiting.	1 (4.0%) Patient.	0 – 18.0
Retrosternal and epigastric Pain	1 (4.0%)Patients.	0 – 18.0
Epigastric fullness, Vomiting.	1 (4.0%) Patient.	0 – 18.0
Generalized abdominal Pain.	2 (8.0%) Patients.	1.3 – 23.9

$p < 0.001$. Chi – square = 31.06

TABLE-II TABULATED RESULTS OF VIRTUAL GASTROSCOPY

Disease	n	Virtual Gastroscopy 0	1	2	3	4	5	6	p value
Ulcers and Erosions	8	5	-	-	3	-	-	-	p>0.61
Carcinoma	11	2	-	5	2	5	1	-	p>0.17
Lymphoma	1	1	-	-	-	1	-	-	N.S
Bezoar	1	-	-	1	-	-	-	-	N.S
Gastric Outlet Obstruction	1	1	-	-	-	-	-	-	N.S
Polyp	2	1	-	-	1	-	-	-	N.S
Leiomyoma	1	-	-	-	1	-	-	-	N.S

0 = Target not found on virtual gastroscopy.
1 = Target found but information insufficient for diagnosis.
2 = Target found but information is inferior to that obtained from conventional gastroscopy.
3 = Information is similar to that obtained by conventional gastroscopy.
4 = Additional information obtained from axial CT images.
5 = Incomplete virtual gastroscopy.
6 = Incomplete conventional gastroscopy.
N.S = Not significant

Figure-I: Virtual gastroscopy of a patient [Case number G13 (SK)] showing marked irregularity and distortion of the gastric antrum consistent with a gastric carcinoma.

Figure-II: Fbreoptic endoscopy of the same patient showing a lobulated growth representing carcinoma in the antral region of the stomach. The blood seen in the lower left hand corner of the picture is from a biopsy bite that had been taken. [Case number G13 (SK)]

Figure-V: Fibreoptic endoscopy shows a pedunculated polyp in the same patient [Case number G19 (SB)] along the fundus of the stomach.

Figure-III: Axial CT image of [Case number G13 (SK)]showing a soft tissue mas in the region of the antrum and pylorus. This represented a gastric carcinoma.

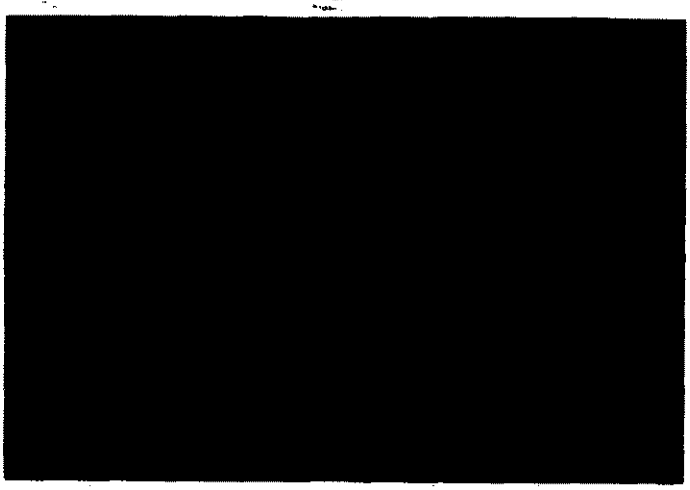


Figure-VI: A large smooth surfaced mass is seen occupying nearly the whole of the gastric lumen. The lesion and the normal gastric mucosa seen along the top right corner of the image show the same color configurations [Case number G20 (MB)]. This represented a gastric bezoar.

Figure-IV: A polyp seen arising from the fundus of the stomach. The pedicle of this polyp could not be seen on the virtual examination due to minimal fluid within the stomach. [Case number G19 (SB)]

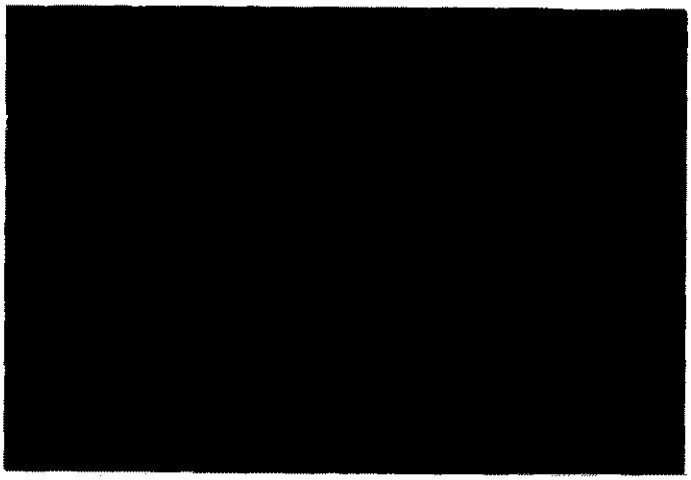


Figure-VII: A scanogram of [Case number G20 (MB)] showing a dilated stomach with a large well defined mass within it representing a gastric bezoar.

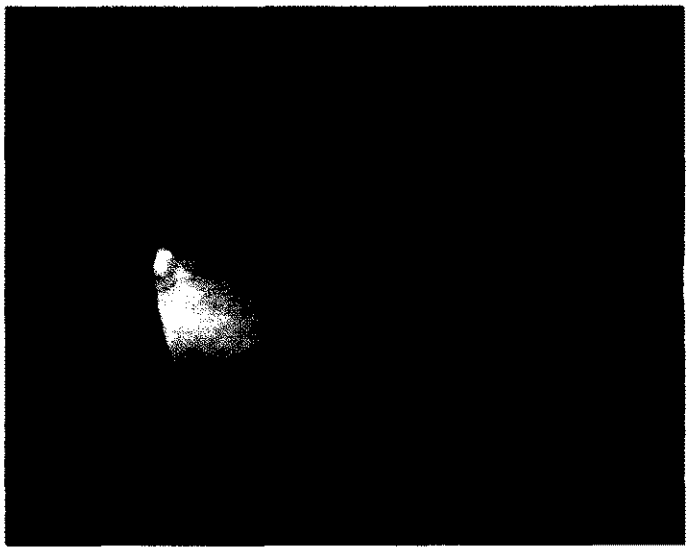


Figure-VIII: Fibreoptic image of a black mass within the gastric lumen representing a gastric bezoar. [Case number G20 (MB)]

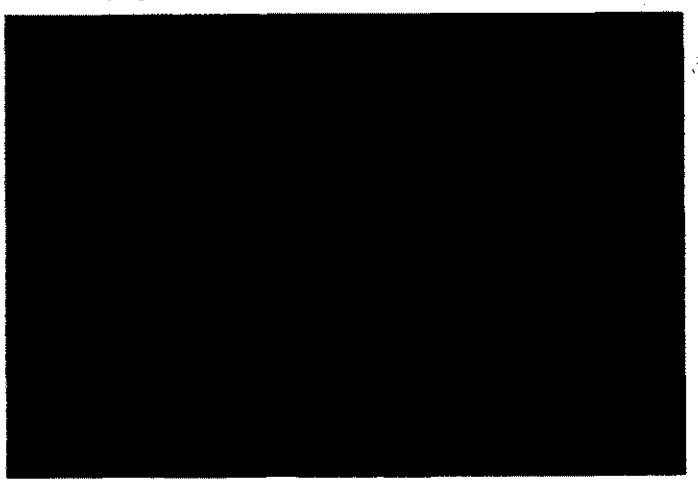


Figure-IX: Virtual gastroscopy showing a well marginated mass arising from the posterior wall of the stomach. No significant abnormality is noted of the surrounding gastric rugal folds. This was a case of a gastric leomyoma. [Case number G23 (BA)]

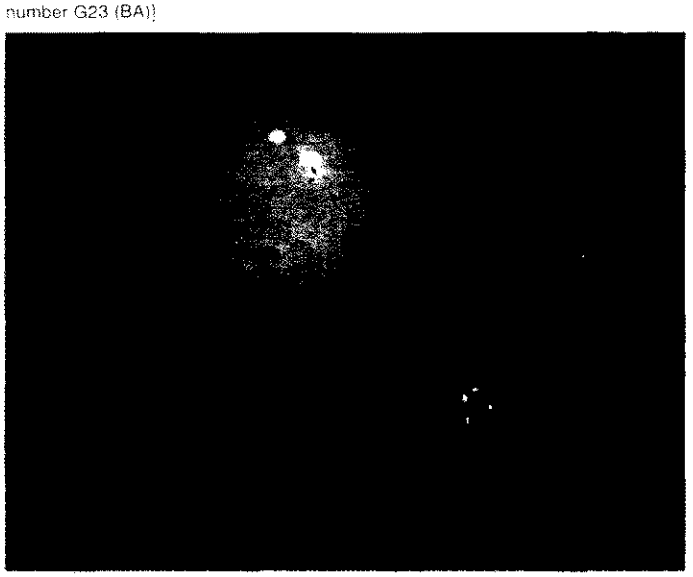


Figure-X: Fibreoptic examination of [Case number G12 (BA)] showing a well marginated submucosal lesion along the posterior wall of the stomach. No mucosal ulceration is noted. This was a gastric leomyoma.

RESULTS AND DISCUSSION

Results are shown in table I and II and figures. In our study virtual gastroscopy successfully located gastric lesions, such as gastric carcinomas and benign growths with relative ease. The appearances of the lesions on virtual gastroscopy correlated well with the appearances on fibreoptic endoscopy. Ogata I. et al in their study concluded that late or advanced stage gastric carcinoma and gastric lymphoma showed imaging characteristics that were recognizable on virtual gastroscopy and the appearances to a large extent did not differ from those seen on fibreoptic endoscopy. They also stated that the recognition of early gastric carcinoma on the basis of gastric fold convergence or depression of the mucosal folds could also be made with moderate certainty, although such lesions could not be seen by the axial source images alone, a combination of axial CT images and the endoluminal images were required to exactly localize such lesions. However, the information obtained from both the axial CT images and that of virtual gastroscopy were still considered inferior to that of fibreoptic endoscopy in the evaluation of early gastric carcinoma primarily because of the inability to detect mucosal changes.[8] The axial CT images delineated gastric wall thickening in the region of the involved portion of the stomach, the endoluminal views of virtual gastroscopy were able to show abnormalities in the normal gastric contours as seen from the inside. Both the axial CT images and the endoluminal images can be used to provide accurate information about the tumor mass. Lee D. H. and Ko Y. T. were able to detect advanced gastric carcinoma and to classify it according to Borrman's classification system.[9] However, in our study most of the lesions were in the advanced stage, so the question of differentiating between early and advanced gastric carcinoma did not arise. Also, since it was nearly impossible to visualize ulcerating lesions on both the axial CT images and the endoluminal views it would have been unfair to remark on the staging of the tumor, even though good correlation existed between the virtual images and the fibreoptic findings.

On the 3-D endoluminal views, the abnormal contoural changes did not show any of the mucosal changes that were seen in certain neoplastic and inflammatory lesions on fibreoptic gastroscopy. Springer P. et al and Ogata I. et al in their studies have also concluded that it was difficult to detect small and flat lesions, especially those affecting the mucosal surface.[5,10]

Springer P. et al in their study have found that although there was good correlation between virtual gastroscopy and fibreoptic gastroscopy findings in the evaluation of gastric lesions, due to certain difficulties associated with the reconstruction algorithm, the image quality and information obtained from virtual gastroscopy was inferior

to that of fibreoptic gastroscopy and therefore a good comparison between the two could not be made.[10] This was reflected in our inability to evaluate gastric erosions and a solitary gastric ulcer in our study as well as the smoothing of the contours of the lesions, due to the reconstruction algorithm in use. Similarly mucosal ulcerations of neoplastic lesions could not be evaluated on virtual gastroscopy. In this situation the axial CT images also could not provide any additional information, apart from the bowel wall thickening seen in patients with neoplastic lesions. In patients with erosions and gastric ulcers the wall of the stomach appeared normal and no subtle change was noted.

Ogata I. et al in their study concluded that mucosal changes associated with gastric pathology were difficult to assess on virtual gastroscopy when using the surface rendering technique with surface shaded display (SSD), which is the same three dimensional program used in our study. This technique uses the contrast difference between air and soft tissue interfaces of the inflated stomach, making edges of the normal and abnormal structures become quite distinct, but according to them the use of SSD can at the same time result in information loss .[8]

The above explanation pertaining to the inability to determine mucosal changes can also be relevant to the appearances of the lesion seen. In the patient with gastric bezoar, the lesion appeared as a well-marginated smooth surfaced mass occupying nearly the whole of the lumen of the stomach. The stomach was distended but gastric wall abnormality or contoural changes were not seen. The lesion on virtual gastroscopy had shown no irregularities on the surface. The color appearances of the lesions were the same as that seen in the normal gastric mucosa, while fibreoptic examination of this lesion had shown the mass to be nearly black in color with a slightly irregular surface. This designation of similar coloring of normal and abnormal structures appears to be an inherent part of the reconstruction algorithm being used and needs to be re-evaluated if differentiation between subtle abnormalities and normal structures is to be made. The axial CT images showed the mass to have slightly irregular margins but the presence or absence of hair on its surface still could not be commented on. The diagnosis of this lesion on virtual gastroscopy was only possible after the history of the patient had been evaluated.

We were unable to detect the presence of a solitary broad based polyp along the anterior wall of the stomach in one patient. On the other hand we were able to clearly visualize the presence of a pedunculated polyp along the cardia of the stomach in an other patient. The results of the study conducted by Ogata I. et al have also shown that virtual gastroscopy can obtain enough information to provide evidence of the presence of pedunculated polyps within the stomach. On the other hand detection of smoothly elevated adenomas is difficult.[8,9] The information obtained from our patient with leomyoma also gave a similar appearance as was seen on the fibreoptic examination.

The findings of submucosal tumors on virtual gastroscopy has been well documented by Lee D.H. and Ogata I. et al. Their findings were conclusive enough to suggest that virtual 3-D gastroscopy had imaging characteristics that gave an information content which was similar to that of fibreoptic gastroscopy.[8,9,11]

Virtual gastroscopy has shown a lot of promise in the evaluation of neoplastic lesions of the stomach, but it still has certain drawbacks that need to be resolved before this modality can be utilized commercially. Comprehensive clinical trials are required to ascertain the role of virtual gastroscopy. The cost effectiveness of this modality becomes a major issue since the expenditure incurred on personnel training, tube requirements, disk storage capacities and reconstruction software packages far outweigh the reimbursement acquired from charging the patients, especially when conventional endoscopy is at present less expensive.
In our society where health care facilities for the low-income groups are limited and no health insurance is available, virtual endoscopy is not likely to be readily accepted as a diagnostic tool because of its cost and lack of free availability.

REFERENCES

1. Silverman PM. Introduction to Principles and Clinical Practice of Helical (Spiral) CT Protocols. In: Helical (Spiral) Computed Tomography; A Practical Approach to Clinical Protocols. Philadelphia: Lippincott-Raven; 1998: 1-9.
2. Lorensen WE, Jolesz FA, Kikinis R. The Exploration of Cross-sectional Data with a Virtual Endoscope. In: Satava RM, Morgan K, Seiburg HB et al, eds. Interactive Technology and the New Paradigm for Health Care: Medicine meets Virtual Reality, III Proceedings. Amsterdam, Holland: IOS Press; 1995; 221-230.
3. Robb RA. Virtual (Computed Tomography) Endoscopy: Development and Evaluation Using the Visible Human Data Sets. Oct 1996; Presented: Visible Human Project Conference. National Library of Medicine, National Institutes of Health, Bethesda, Maryland.
4. Scheltinga van JT. Technical Background. In: Virtual endoscopy and Related 3_D Techniques. Rogalla P, Scheltinga van JT, Hamm B, eds. Berlin, Germany. Springer-Verlag, 2001: 1-16.
5. Vining DJ, Gelfand DW, Bechtold RE, Scharling ES, Grishaw EK, Shifrin RY. Technical Feasibility of Colon Imaging with Helical CT and Virtual Reality. AJR Am J Roentgenol 1994; 162(Suppl): 104.

6. Balthazar EJ, Siegel SE, Megibow AJ, Scholes J, Gordan R. CT in Patients with Schirrous Carcinoma of the GI tract: Imaging Findings and Value for Tumor Detection and Staging. AJR Am J Roentgenol 1995; 165: 839-845.
7. Fishman EK, Urban BA, Hruban RH. CT of the Stomach: Spectrum of Disease. Radiographics 1996; 16: 1035-1054.
8. Ogata I, Komohara Y, Yamashita Y, Mitsuzaki K, Takahashi M, Ogawa M. CT Evaluation of Gastric Lesions with Three-Dimensional Display and Interactive Virtual Endoscopy: Comparison with Conventional Barium Study and Endoscopy. AJR Am J Roentgenol 1999; 172: 1263-1270.
9. Lee DH, Ko YT. Advanced Gastric Carcinoma: The Role of Three-Dimensional and Axial Imaging by Spiral CT. Abdom Imaging 1999. Mar-Apr; 24(2): 111-6. Abstract.
10. Springer P, Dessl A, Giacomuzzi SM, Buchberger W, St¨oger A, Oberwalder M, Jashke W. Virtual Computed Tomography Gastroscopy: A New Technique. Endoscopy Sep 1997; 29(7): 632- 634.
11. Lee DH. Three-Dimensional Imaging of the Stomach by Spiral CT. J Comput Assist Tomogr Jan-Feb 1998; 22(1): 52-58.

IS IT A DIABETIC HAND?

TARIQ MAHMOOD REHAN, MANZOOR AHMAD GILL, MANSOOR AQIL,

QAZI MASROOR ALI, ANJUM SUHAIL

ABSTRACT:

This is a prospective study conducted in the department of surgery from 1-04-1999 to 31-01-2002 at BVH Bahawalpur. All the diabetic patients of both types (IDDM or NIDDM) of any age or sex, suffering from infection of hand or Foot were included in the study.
A total of 36 diabetic patients had hand infection (Group A) as compared to 207 patients with Diabetic Foot (Group B). Average age of the patients in Group A was 39.6 years which was quite younger as compare to 57.5 years in Group B.
Pain was the dominant presenting complaint (100%) in Group A patients. All these patients were manual workers (Tailors, Carpenters, Farmers, Blacksmiths, Embroidery workers or Housewives) and had minor trauma to their digits during work; which they had neglected for few days or received first aid treatment from a family member or quack. In Hand Group, no patient was in Grade 0, I, or III.
During the course of treatment, all the patients (100%) of Hand Group required amputation of one or more digits of the dominant hand including amputation of the thumb in 22 patients. No patient required amputation of the whole hand or forearm.
The involvement of thumb or index finger alone or along with other digits in almost all the patients of Hand Group, reflects their common use, in manual work and their more susceptibility to repeated minor trauma.
The loss of thumbs in 22 patients reflected high morbidity in terms of loss of hand function though thumb reconstruction is a valid option.
Morbidity in terms of hospital stay was quite less in Hand Group but it was 100% in terms of loss of crafted digits. Mortality in Hand Group patients was nil in contrast to 9(4.3%) in the Foot Group.
Infection of the hand in Diabetics can be named as DIABETIC HAND without any ambiguity. This can lead to opening up of new era of research for better management of this entity in terms of DIABETIC HAND CLINICS. Surgical management of infection in diabetics should be early, aggressive and specialized to avoid poor outcome in the form of loss of vital craft hand.

Key Words: Diabetic hand, Diabetic complications, Hand infection.

INTRODUCTION

Diabetes Mellitus is a very common medical condition and its importance is increasing due to its increasing prevalence(2%/year),morbidity and mortality.[1] Diabetic Foot is a known complication of diabetes mellitus(20%).[1,2,4] It is usually the result of diabetic neuropathy and/or vasculopathy combined with trauma and infection.[3] Diabetic Hand is a recognized entity and is usually named as Tropical Diabetic Hand. More over Diabetic Hand Syndrome is the term used collectively for

Correspondence:
Dr. Tariq Mahmood Rehan
Assistant Prof. of Surgery,
37-B, Medical Colony, Bahawalpur.

collagen diseases of the skin and soft tissues of the hand in diabetics.[14,15,16] We observed similar pattern of pathological lesions in hand.

PURPOSE OF STUDY

Purpose of our study was to evaluate hand infections in Diabetic patients. Look for its pattern and compare it with the Diabetic foot.

PATIENTS AND MATERIALS

This is a prospective study conducted in the department of surgery from 1-04-1999 to 31-01-2002 at BVH Bahawalpur. All the diabetic patients of both types (IDDM or NIDDM) of any age or sex, suffering from infections of hands and Feet were included in the study. The patient suffering from hand infection were grouped as A and patients suffering from Diabetic Foot were grouped as B for comparison. Criteria for diagnosing DM used in the study was random plasma glucose level of >200 /dl or fasting glucose plasma level of > 140 /dl.

Each patient was examined and a detailed history was taken. Clinical examination in terms of regional examination of both the involved hands was performed with special reference to signs of neuropathy and vasculopathy.

Patients with classical "Diabetic Hand Syndrome" (Stiff hand, Trigger Finger, Ichthyosis and Limited joint mobility)[14,15,16] were excluded from the study.
Systemic signs of fever, tachycardia, and tachypnoea were also recorded.

Pathological lesions of the hand with special reference to infection of the hand were graded as in "Diabetic Foot",[4,5] as follows:

1) Grade o	High risk hand but no ulcer.
2) Grade I	Skin deep ulcer.
3) Grade II	Deep ulcers with infection and cellulitis up to bone.
4) Grade III	Osteomylitis with ulcer.
5) Grade IV	Localized gangrene of the digit.
6) Grade V	Gangrene of the entire hand.

Each patient was investigated routinely for Blood, Urine, sugar, Urea, creatinine and X-ray of the involved hand.

Depending upon the clinical conditions of the patient and clinical grading of the infection following treatment was carried out:
A) Resuscitation of the patient if required (correction of fluids and electrolytes)[7,9] along with general measures for systemic symptoms (pyrexia, pain) and control of hyperglycaemia. Systemic antibiotics in cases of grade II/III/IV/V diabetic hand or in any grade if systemic symptoms of infection were present.
B) Local management of diabetic hand was done again according to the guideline provided for that of Diabetic Foot under general anaesthesia or ketamine.[8]

Grade I/II	Wound debridement and antiseptic dressing.
Grade III/IV:	Incision along the entire area of erythema and induration to combat deep seated infection. Multiple Wound debridements were done in each patient followed or preceded to amputation of Part or one or more digits which is closed by secondary closure.
Grade V:	Amputation of the hand or forearm.

All the clinical data, investigations, treatment and results of treatment were recorded and tabulated for comparison with those of Diabetic foot for final conclusion of the study.

RESULTS

In this prospective study conducted from 1-04-1999 to 31-01-2002, a total of 36 diabetic patients presented with hand infection (Group A) in comparison to 207 patients of Diabetic Foot (Group B). Average age of the patients in Group A was 39.6 years which was quite younger as compare to average age of 57.5 years in Group B. Thus majority of the patients in Group A were suffering from IDDM. In Group A male to female ratio was 7: 2(dominantly males) and in Group B male to female ratio was 12.6 : 8.6.

Pain was the dominant presenting complaint in Group A. Average time lag between development of the disease and seeking of medical advice was 11.34 days. All these patients were manual workers Tailors, Carpenters, Farmers, Blacksmiths, Embroidery workers or Housewives. All the patients had minor trauma to the digits during their work which they neglected for few days or received first aid treatment from a family member or a quack. 12 patients were unaware of Diabetes, Mellitus. Other 24 patients were known diabetics, but were not receiving properly supervised treatment.

In Group A, no patient was in Grade 0, Grade I, or Grade III which might be due to penetrating trauma. Similarly no patient showed any sign of neuropathy or vasculopathy in comparison to more then half (106 or 51.20%) of the Patients in Group B; who were in Grade 0. More over there were no signs of Osteomylitis (Grade III) or gangrene of hand (Grade V) in Group A patients. In contrast to it 26(12.56%) patients presented with Grade III and 7 (3.38%) patients with Grade V Diabetic Foot.

During the course of treatment, all the patients (100%) in Group A (Fig.1, 2, and 3) required amputation of one or more digits of the dominant hand including amputation of

thumb in 22 patients. But no patient of this group required amputation of hand, forearm, or arm. However in Group B patients, majority of the patients (114 or 55.07%) were treated without any loss of toe, foot or leg. In 19 (9.17%) patients of Group B amputation of one or more than one toe was required, 68(32.85%) required amputation of the fore foot or foot (Symes) and 27(13.04%) patients ended up in below or above knee amputations.

Hospital stay of the patients was short in Group A patients, 16 (44.44%) patients stayed up to 1 week,13(36.11%) up to 2 weeks and only 7 (19.44%) stayed up to 3 weeks or more. In Group B majority of the (125 or 60.38%) stayed in the hospital up to 3 weeks or more, only 34(16.42%) up to a week and 48(23.18%) up to 2 weeks.

Morbidity in terms of hospital stay was quite less in Group A but it was 100% in terms of loss of crafted digits. Mortality in Group A patients was nil in contrast to 9(4.3%) in Group B.

DISCUSSION

In Hand Group average age was less (39.6 years) in comparison to that of 57.5 years for Diabetic Foot. and it showed that this problem is more common in IDDM.[12] It also reflect the preponderance of the disease during the active working life of a person.

More over all these patients were manual workers and predominantly males (77.77%) as compared to Diabetic Foot (58.45%) males were almost equal to females. Loss of crafted digits not only effect the patient but also all his dependents due to loss of earning hand.

They all received minor trauma during working and they initially improperly treated their minor hand injuries. Thus this neglect on their part or ignorance led to disastrous infection of the hand. Whereas in Diabetic Foot, the neglect is usually the result of neuropathy or repeated minor trauma due to ill fitted shoes, chiropody or fissures (cracks).[1,2,3] This negligence on their part, most of the time, resulted in a disastrous outcome in terms of loss of crafted hand and loss of work which can be prevented if this condition is recognized and proper precautionary measures are taken in time.

The involvement of thumb or index finger alone or along with other digits in almost all the patients of Hand Group, reflects their common use in manual work or their more susceptibility to repeated minor trauma. (Fig.I)

One should try to save as much of the thumb as possible especially to save the metatarsophalyngeal joint to serve as a stump for thumb reconstruction to cut short the morbidity.(Fig.I)

In Hand Group excruciating pain was the main symptom (100%) in comparison to Diabetic Foot 70% patients had no pain due to neuropathy.

Surprisingly all the patients (100%) of Hand Group had Grade III/IV involvement of hands (Fig.1 and Fig.2) which were treated by amputation of one or more digits.

Figure-I: This patient was previously treated by a qualified practitioner and showed the ineffective surgical intervention. suurgical incision should be extended to entire length of erythema with opening up the deeper tissue spaces. This patient ultimately required the amputation of thumb & little finger.

No patient required amputation of hand or forearm in Hand Group (Fig.2) in comparison to Diabetic Foot where 68(32.85%) patients required amputation of foot and 27(13.04%) below or above Knee amputations. This may be due to different bacterial spectrum in the two groups or due to different immunities in the two groups. Infection in Group A was mixed. Gram negative required aggressive antibiotic therapy[12] (Fig.II). More over infection of hand in Diabetics on renal dialysis is very severe and required early aggressive treatment in the form of amputation of the forearm or upper limb.[11,12,13] Luckily we did not come across any such patient in this study.

In other terms one can say that severity of infection in Hand Group is comparable to that of Diabetic Foot (Fig.II).

TABLE-I **COMPARATIVE CLINICAL AND TREATMENT RESULTS OF DIABETIC FOOT (GROUP B) AND DIABETIC HAND (GROUP A)**

		Diabetic Foot (Group B)				Diabetic Hand (Group A)			
		No. of Cases			%	No. of Cases			%
		M	F	Total		M	F	Total	
INFECTION	Grade O	59	47	106	51.20%	0	0	0	0
	Grade I	13	8	21	10.14%	0	0	0	0
	Grade II	12	6	18	8.69%	12	3	15	41.6%
	Grade III	14	12	26	12.56%	0	0	0	0
	Grade IV	18	11	29	14.0%	16	5	21	58.33%
	Grade V	5	2	7	3.38%	0	0	0	0
	Total Cases	**207 (M=121, F=86)**				**36 (M=28, F=8)**			
HOSPITAL STAY	I week	34			16.42%	16			44.44%
	2 weeks	48			23.18%	13			36.11%
	3 or > 3 weeks	125			60.38%	7			19.44%
AMPUTATION	a) Toes/Digits	19			9.17%	36			100%
	b)Foot/Hand	68			32.85%	0			O
	c)BK or above Knee/Arm/forearm	27			13.04%	0			0
MORTALITY		9			4.3%	Nil			0
AVERAGE AGE		**57.5 years**				**39.6 years**			

Figure-II: Aggressive wound debridement is the main stay of the surgical approach in the Diabetic Hand. Surprisingly no hand or forearm amputation is required even in this patient.

It is also highlighted by the fact that mortality in Diabetic Foot was 4.3% (9 patients) and was zero in Hand Group. However infection of hand in Tanzanian people invariably proved to be fatal.[11]

The morbidity in terms of prolonged hospital stay(>3 weeks) in Diabetic Foot patients was higher(60.38%) as compare to 19.44% of Hand Group patients and this may be due to more severe infection and lesser immunity due to relative older patients(average age 57.5 years) in this group. Thus one can conclude that early and effective treatment of infection in Hand Group will prove more fruitful and one may save the vital crafted hand of the patient.

There was a tendency to heal successfully (Fig.III) if early and proper surgical intervention is done. This also means that surgical incision should be aggressive and extended to the area of erythema and induration because infection is invariably more extensive than suspected before and during the initial surgery (Fig.1). More over there is no role of local wound care or antibiotics alone, thorough surgical decompression is the main stay of the treatment.[11,12,13]

Figure-III: Morbidity in terms of loss of crafted fingers and hand function is high but diabetic hand wouunds heal early and successfully.

REFERENCES

1: Andrew JM Boulton. The Diabetic Foot .Surgery 1996;32:37-39.

2: Bakker K,Schaper N,eds.The Diabetic Foot:Proceeding of the Second International Meeting on the Diabetic Foot.Diabetic Med.1995;12:suppl 3.

3: Boulton AJM,Peripheral Neuropathy and the Diabetic Foot.The Foot1992;2:67-72.

4: Boulton AJM,Connor H, Cavangh PR..The Foot in Diabetese.Chichester:John Wiley,1994.

5: EdmondsME,BhundellMP,Morris HE,etall. Improved Survival of the Diabetic Foot:The Role of a Special Foot Clinic.QJ Med.1986;232:763-71.

6: Ailen Sced, Nicholas JH,Davies.Perioperative Management : Diabetes .Surgery 1999;45: 106-109.

7: Eldrigde AJ, Sear JW,. Perioperative Management of Diabetic Patients.Anaesthesia 1996;51:45-51.

8: Milaskiewiez RM, HallGM.Diabetese and Anaesthesia.The past decade.Br.J.Anaesth.1992;68:198-206.

9: Nicholson G. Metabolic Hypercatabolism: Causes and Consequences. Surgery 1998; 16:1-20

10: Gill GV; Famuyiwa OO; Rolfe M; Archibald LK. Serious hand sepsis and diabetes mellitus: specific tropical syndrome with western counterparts.Diabet Med,1998;15(10):858-62.

11: Archibald LK; Gill GV; Abbas Z. Fatal hand sepsis in Tanzanian diabetic patients. Diabet.Med 1997; 14(7): 607-10.

12: Gunther SF; Gunther SB.Diabetic Hand Infections.Hand Clin.1998;14(4):647-56.

13: Pinzur MS; Bednar M; Weaver F; Williams A. Hand Infection in the Diabetic patient. J Hand Surg.1997; 22(1): 133-4

14: Blyth MJ;RossDJ.Diabetes and trigger finger.J Hand Surg 1996;21(2):244-5

15: Yosipovitch G;Hodak E;Vardi P et all.The prevalence of cutaneous manifestation in IDDM patients and their association with diabetes risk factors and microvascular complications.Diabetes care.1998;21(4):506-9.

16: A Huntley.Diabetic Hand Syndrome first described for IDDM child skin thickening and joints.Dermatology online journal 1995;1(2)

UTERINE RUPTURE IN LABOUR

NAZLI HOSSAIN, NARGIS SOOMRO

ABSTRACT:
A retrospective analysis of women, identified clinically with uterine rupture, in labour, was carried out at the Department of Obstetrics and Gynaecology unit 2 Civil Hospital Karachi between December 2000 to December 2001. The objective of the study was to identify the risk factors for uterine rupture in labor, to report maternal and fetal outcome and to identify preventive measures. There were 24 cases of uterine rupture. Of these, 4 were incomplete. The risk of uterine rupture was increased in grand multipara, women with previous caesarean section scars and those who had injudicious use of uterine stimulants. Lower uterine segment anteriorly was the commonest site of rupture. Vesico vaginal fistula, a serious morbidity was observed in 12.5%. There was one maternal death and 20.(83%) fetal losses.

Key Words: Rupture uterus, multi parity, caesarean section

INTRODUCTION

The term uterine rupture in our study was defined as any disruption of uterine wall associated with maternal symptoms, fetal heart rate abnormalities or clinical signs of impending rupture Uterine Rupture carries high maternal and fetal morbidity and mortality. The incidence of uterine rupture varies among institutions. The etiology of uterine rupture has also changed, with VAC (vaginal delivery after caesarean section) as one of the commonest etiological factor. Other causes include uterine stimulation, instrumental deliveries, morbidly adherent placenta and uterine over distension. These may result in uterine rupture during labour. Surgery on the uterus involving myometrium viz myomectomy, previous repair of rupture uterus or congenital anamolies like pregnancy in rudimentary horn of the uterus may also result in uterine rupture in earlier gestation.

Rupture uterus has been classically divided into complete and incomplete depending on whether the peritoneum is intact or not. In complete uterine rupture, the fetus is extruded into the peritoneal cavity and is associated with serious maternal injuries. Injudicious use of oxytocin may not be important in developed countries but certainly is an important cause in developing countries. The use of uterotonic agents by birth attendants without monitoring facilities has been observed as one of the common cause of uterine rupture in the developing world. Apart from oxytocin , other agents like prostaglandin preparations used for induction of labor also increase the risk. Multiparity is one of the factors strongly attributed to uterine rupture in developing countries. The risk of cephalopelvic disproportion also increases with increasing parity. This retrospective analysis has shown 24 cases of uterine rupture over a period of twelve months, a figure which is considerably high. But this reflects that changing attitudes in child birth have yet to make an impact in this part of the world.

PATIENTS AND METHODS

We performed a retrospective analysis of uterine rupture from Dec. 2000 to December 2001, over a period of twelve months at the department of Obstetrics and Gynaecology unit 2 Civil Hospital, Karachi. This is a teaching hospital, where around 4,000 deliveries are conducted annually. The work load is divided among three units, with each unit conducting emergency admissions on bi weekly basis. Twenty four cases of uterine rupture were identified in the above unit. These cases were referred from peripheral hospitals. Medical records were

Correspondence:
Dr. Nazli Hossain
A-251, Block 'N', St# 11, North Nazimabad, Karachi 74700

collected including age, parity, previous operations on uterus like caesarean section or curettage, oxytocin augmentation, maternal symptoms, fetal outcome, procedure carried out viz hysterectomy or repair of uterus and serious maternal injuries.

RESULTS

The patients in the study group were referred from peripheral hospitals. The total number of deliveries conducted in the unit during the study period were 1400. Table-I shows the obstetric features of women in the study population and reveals that increasing age at the time of delivery is a risk factor for uterine rupture. It also shows that 37% of women were above the age of 35 years revealing that parity is an important risk factor in developing countries, 58% of women were grandmultipara, having more than five children. The incidence of uterine rupture in women with previous caesarean section scar was 20%.

Table-II shows the clinical features observed in the study group. The most common was hypovolemic shock observed in 41% of patients, followed by loss of fetal movements in 33% of patients and vaginal bleeding in 30% of patients.

Table-III shows the etiological factors for uterine rupture revealing that the injudicious use of oxytocin was the main etiological factor observed in 33% of patients. These were the patients who gave the history of use of oxytocin either in infusion , or intramuscularly in repeated doses. This was followed by malpresentation in 20% of patients. Table-IV shows the site of uterine rupture and surgical management carried out. Anterior uterine wall in the lower uterine segment was the most common site of rupture observed in 66% of patients. Rupture of posterior uterine wall was observed in only 2 cases, and in both it was midline rupture. Repair of the uterus was the most common procedure carried out, followed by hysterectomy. Table-V shows the maternal morbidity associated with uterine rupture. There were three patients who were readmitted with continous dribbling of urine and were identified as cases of fistula. The table also shows one maternal death. This patient was referred to the unit after instrumental delivery with massive postpartum hemorrhage. Obstetric hysterectomy was done, but she continued to bleed and expired. The fetal loss in the above series was 20 out of 24 cases. The four live babies were of patients with incomplete uterine rupture.

DISCUSSION

Uterine rupture is an important cause of maternal mortality. In the developed world like USA, it is responsible for 5 % of maternal deaths.[1] Causes of death include hemorrhagic shock, sepsis, renal failure and disseminated intravascular coagulation. Scarring of

TABLE-I OBSTETRIC HISTORY OF WOMEN WITH UTERINE RUPTURE

MATERNAL AGE IN YEARS		
25---29	4	(16%)
30----35	11	(45%)
> 35	9	(37%)
PARITY		
0	1	(4%)
2 - 4	9	(37%)
>5	14	(58%)
History of caesarean delivery and curettage Previous caesarean section	5	(20%)
Previous curettage	1	(4%)

TABLE-II MATERNAL CLINICAL FEATURES

Hypovolemic shock	10	(41.6%)
Loss of fetal movements	8	(33%)
Vaginal bleeding	7	(30%)
Palpable fetal parts	6	(25%)
Scar tenderness	3	(12.5%)

TABLE-III ETIOLOGICAL FACTORS FOR UTERINE RUPTURE

Use of oxytocin	8	(33%)
Malpresentation	5	(20%)
Previous scar	4	(16%)
Adherent placenta	2	(16%)
Cephalopelvic disproportion	2	(16%)

TABLE-IV SURGICAL THERAPY AND SITE OF RUPTURE

SITE OF UTERINE RUPTURE		
Anterior	16	(66%)
Midline	1	(2%)
Right lateral	1	(2%)
Left lateral	4	(8%)
Posterior Midline	2	(8.3%)
SURGICAL MANAGEMENT		
Repair	21	(79%)
Hysterectomy	4	(21%)

TABLE-V POST OPERATIVE COMPLICATIONS

Paralytic ileus	6	(25%)
Pyrexia	6	(25%)
Vesicovaginal fistula	3	(12.5%)
Expired	1	

uterus or prior surgical procedures on uterus are common causes in the developed world, but this does not hold true for developing countries. The international figure calculated for the etiology varies between 0.2% to 1%.[2] Women undergoing classic Caesarean section ·, where incision enters the body of uterus are at increased risk. In these cases rupture occurs prior to term, before the onset of labour. Rupture of uterus can be defined on anatomical, clinical and etiological grounds. Generally the diagnosis is made on the clinical sign and symptoms. Early recognition of clinical features can prevent serious maternal and fetal morbidity. One of the early clinical features is the change in fetal heart rate pattern. The non-reassuring fetal heart rate is seen in 78% of cases.[3] In the above study the diagnosis of uterine rupture was made on clinical grounds which included sign and symptoms of hypovolemia, scar tenderness,loss of fetal movements, cessation of uterine contractions and vaginal bleeding. Hypovolemia was observed in majority of the patients.

Rupture of uterus during labour may lead to the classic description of something tearing away, followed by vaginal bleeding. As all the patients were referred, fetal heart rate tracings were not available.

The site of uterine rupture was anterior, lower uterine segment in majority of the cases. This can be attributed to relatively avascular segment, a concept which is not clearly defined.[4] when the site is anterior lower segment, bladder injury must be ruled out. In serious maternal injury, urinary fistula, was observed in 3 cases. In the developing world, obstructed labour is the most common cause of urinary tract fistula. Likewise, VAC may be the main cause of uterine rupture in developed world, but multiparity, use of oxytocin, delivery outside hospital by "birth attendants" and unrecognized malpresentation are common causes of uterine rupture in our set-up. Grand multiparity increases the risk of rupture by 20 times.[5] The neo-natal mortality and morbidity is also high. In the above study fetal loss was seen in 20 cases. Apart from it, morbidity, specifically neurological damage in surviving infants is also high.[1] Uterine rupture is a life threatening condition. The etiological agents are different, our problem is rupture of unscarred uterus. Improving health delivery system, antenatal care, limiting family size, delivery in hospital are the main issues for the developing world.

REFERENCES

1. O.W.Stephanie Yap, Eleanore S Kim, Russel K Laros. Maternal and neonatal outcomes after uterine rupture in labour. Am J Obstet Gynecol 2001 ; 184 : 241—6.
2. Emily F Hamilton, Emmanuel Bujold, Helen McNamara, Robert W.Platt. Dystocia

   among women with symptomatic uterine rupture. Am J Obstet Gynecol 2001; 184: 301—5.
3. Ayres A W. Characteristics of fetal heart rate tracings prior to uterine rupture. Int J

   Gynecol Obstet ; 74(3) : 235—40.
4. Zaideh SM, ElJallad MF, Sunna EL. Obstetric uterine rupture a four year clinical

   analysis. Gynecologic and Obstetric investigation ; 1999 48(3) 176—8.
5. Leung A S, Leung E K, Paul R H. Uterine rupture after previous caesarean delivery maternal and fetal consequences. Am J Obstet Gynecol 1993 ; 169 : 945—50.

MALARIA IN CHILDREN AT A CHILDREN HOSPITAL

JALAL UDDIN AKBAR

ABSTRACT:
Malaria is the most common parasitic infestation of the humen and has been a major health problem in our country. A prospective study was conducted at Children hospital Baqai Medical University, with the objective of identifying the different presentations of malaria in children in our setting, i.e. mainly the immigrant Afghan population. The study was carried out on a sample of 100 children who were positive for malaria with the parasite in their blood films. The male to female ratio was 2.12:1, seventy eight percent children were Afghan immigrants. Fever, anemia and splenomegaly were seen in more than 80% of the Cases. There was high incidence of falciparum as compare to Vivax(65% vs 35%). Gastrointestinal symptoms were more in falciparum whereas generalized bodyache, cough and hepato-splenomegaly were the main features of vivax infection.Twenty cases of cerebral malaria were identified all were due to falciparum.

Key words:- Malaria in children, in Afghan immigrants, Presentation of Malaria.

INTRODUCTION

Malaria is one of the most ancient diseases that still survive in today's world and is a major cause of morbidity and mortality in the tropical and sub-tropical areas.[1] It is the commonest parasitic infestation in the community and is responsible for very high morbidity and mortality in children. It threatens over 2400 million people or about 40% of the worlds population; is responsible for 300 – 500 million cases every year and 280 million people are parasite carriers with 1.5 – 2.7 million deaths per year. In Africa alone 1 out of every 5 children die of malaria before the age of 5; and malaria kills one child every 5 seconds.[2] Pakistan being a tropical agricultural country with a well-developed irrigation system, its annual floods in the rivers and the monsoon season, make it suitable for malaria transmission.[3] Malarial infestation in children manifest with a wide variety of clinical presentations and complications. This study was designed to see the different presentations of malaria in this region and in those who have migrate here.

Correspondence:
Dr. Jalal Ud Din Akbar
Assistant Prof.of Paediatrics,
Baqai Medical University,
Karachi.

MATERIALS AND METHODS

This is a prospective study conducted at children hospital Baqai Medical University, over a period of one year from 1st JAN. to 31st DEC. 2001. It is 100 beded hospital and receives a large number of patients from the surrounding villages and is a major referral unit for "Afghan Refugees" who have either recently migrated or are living here for decades.

Children of both the sexes under the age of 12, who came to the hospital with fever and asexual form of the parasite in their blood films were included in the study.

After taking consent from the guardians a detailed history and clinical examination were performed and recorded on a Performa. Samples for peripheral blood smears, both thick and thin films, were taken to study the parasite's morphology. Complete blood, and platelet count, L.F.T, P.T, A.P.T.T, urine analysis, stool analysis, serum electrolytes, urea creatinine and x-ray chest were carried out.

RESULTS

During the study period 100 cases of malaria were studied; 20 were cerebral malaria and the remaining 80

TABLE-I [N-100]

Symptoms and signs	Total case frequency [N-100]	P. Falciparum [N-65]	P. Vivax [N-35]
Fever	100 (100%)	65(100%)	35(100%)
Vomiting	63 (63%)	45 (69.2%)	18 (51.4%)
Diarrhea	42 (42%)	32 (49.2%)	10 (28.5%)
Abdominal Pain	13 (13%)	09 (13.8%)	04 (11.4%)
Abd. Distention	05 (5%)	04 (6.1%)	01 (2.8%)
Generalized weakness	80 (80%)	48 (73.8%)	32 (91.4%)
GIT Bleeding	2 (2%)	2 (3%)	0 (O%)
Dry Cough	76 (76%)	48 (73.8%)	28 (80%)
Respiratory Distress	13 (13%)	13 (20%)	0 (0%)
Anemia	93 (93%)	60 (92.3%)	33 (94.2)
Dehydration	52 (52%)	40 (61.5%)	12 (34.2%)
Enlarged Spleen	65 (65%)	33 (50.7%)	32 (91.4%)
Enlarged Liver	20 (20%)	10 (15.3%)	10 (28.5%)
Red urine	02 (2%)	02 (3%)	0 (0%)

had various other clinical presentations. Out of the 100 positive cases 65 were plasmodium falciparum and 35 plasmodium vivax.

Age distribution of the 100 cases was such that 63 children were under 5 years of age, 22 were 5 – 10 years of age and 15 were above 10 years of age. Fever was present in all the cases ranging from one to 60 days; symptoms are shown in table I.

Three most important presentations of malaria i.e. fever, anemia and splenomegally were seen in the study. Gastrointestinal symptoms like vomiting, diarrhoea and abdominal pain were more common in Falciparum infection then in Vivax. Generalized bodyache, weakness, cough and hepato-splenomegaly were more common in vivax infestations.

CNS manifestations were seen in 20 cases, all were P. Falciparum positive, the main findings were hypertonia, fits, up going planters and brisk reflexes. A few cases presented with hypotonia, neck stiffness and focal fits. (Table II)

TABLE-II SIGN AND SYMPTOMS FOR CEREBRAL MALARIA

Unconsciousness/altered consciousness	20 (100%)
Fits	17 (85%)
Generalized	14 (82.3%)
Localized	03 (17.7%)
Neck rigidity	02 (10%)
Babinski's sign positive	18 (90%)
Hypertonia	16 (80%)
Hypotonia	04 (20%)

DISCUSSION

The two species of plasmodium responsible for malaria in this region were P. Falciparum and P.Vivax. The incidence of falciparum was higher as compared to vivax. The finding is consistent with WHO report[1] indicating continuous rise in the incidence of falciparum from 50% in 1988 to 74% in 1989 and 77% in 1990.

Age and sex were not a major factor in the malaria infection.[4] In this study male predominance, i.e. 68% to female 32%, was observed.

The three cardinal features of malaria anemia, fever, and splenomegaly were seen in more then 80% of cases. Fever was seen in 100% of the cases with a highly variable duration and pattern, i.e. ranging from one to 60 days. The typical pattern of cold, hot and sweating stages of malaria[5] was not seen in this study. The presence of fever of more then 5 days duration in an area where malaria is common is a strong indication to search for malarial parasite and even treat empirically the child with anti-malarial drugs.

Anemia, one of the most serious problems of malaria was seen in more then 90% of the cases. This is consistent with the study of Ritter et. al 1993.[6] Lower values of hemoglobin were not only because of malaria but other contributing factors like iron deficiency, worm infestation and poor nutritional status also had a very strong influence on the hemoglobin level of the children.

Splenomegaly was noted in 65% cases Malcum 1993[7] reported splenomegaly in every third child with malaria. Thus varying degree of enlarged spleen, with fever and/or anemia is a very strong clinical indicator of malaria.

Gastrointestinal symptoms were more common in P. Falciparum than in P. Vivax; the typical presentation of falciparum Cholenic, Dysenteric, Bilious and remittent forms as described by Malneus et al in 1989[8] were not found in our study.

In twenty cases of cerebral malaria all had fever with varying levels of consciousness, ranging from disorientation to deep coma. This picture is consistent with the findings of Dass in 1992.[9] Cerebral malaria must be considered in all the patients with fever and impaired consciousness, who may have been exposed to it. Altered state of consciousness, fits, hypertonia and exaggerated reflexes with extensor planters were found in more then 80% of the cases. The clinical pictures of cerebral malaria and meningitis in children closely resemble each other and are extremely difficult to differentiate, clinically. However the signs of meningial irritation as seen in meningitis is not a common feature of cerebral malaria.[10] Our study also support the findings of Wright Petal[10] where only two cases of cerebral malaria had neck stiffness with normal lumber puncture. The only test that definitely excludes meningitis is Lumber Puncture, this was done in all the cases of cerebral malaria, and showed clear appearance, slightly increased pressure and absent polymorphs with normal sugar and protein.

REFERENCE:

1. World Health Organization, WHO bulletin 1992:Vol 70 Pg. 802 – 803.
2. W.H.O. Fact Sheet No. 94 1998.
3. Shah M.A. and Ahmed Z. 1996, Malaria trends in general practice in Karachi, Pakistan JCPSP 5(1): 62 – 64
4. Marshal H. Clinical malariology stable and unstable malaria 1986 Pg. 6-7
5. Kwait Kowski-d, TNF- inducing malaria toxins, A wolf in sheep's clothing; An-Trop- Med. Parasit 1993 DEC. 87(#) 6/3-6
6. Ritter et. al. Risk factors for malaria in young children in rural Malavi. AM-J-MED-HYG 1994 Aug. 51(2) 170 –4
7. Malcom Molyneux, Ray Fox, Diagnosis and treatment of malaria in Briton. British Med-Journal 1993 306: 1175 – 6
8. Molyneux ME et al. Reduced hepatic blood flow and intestinal mal-absorption as seen in falciparum malaria. Am-J-Trop-Med-Hyg 1989-27 Pg. 1069 – 1072.
9. Das DS. Satpathy-RN, Satpathy- PV. Increase risk of hypoglycemia in children with sever falciparum malaria. Indian-J-Med-Res 1992 Mar. 95: 78 –83
10. Wright-PW, Avery WK, Ardill-WD. Initial clinical assessment of the comatose patient with cerebral malaria Vs meningitis. Pediatric- Infect- DIS-J-1993 12(1). 37 –4

CERVICAL LYMPHADENOPATHY

FAISAL GHANI SIDDIQUI, QAMAR AHMED

ABSTRACT:
This was a prospective study conducted at Surgical Unit-II, Liaquat Medical College Hospital (LMCH), Hyderabad / Jamshoro over a period of one and a half year, from April 1996 to September 1997 on patients with cervical lymphadenopathy. It included 85 patients with cervical lymphadenopathy. The patients were subjected to a detailed history and physical examination. After relevant investigations biopsies were carried out. The information was obtained on a performa and results were complied. Of the 85 patients, 45 (52.9%) were males and 40 (47.1%) females. The peak incidence was seen between 1-20 years of age. The commonest pathology found in the cervical lymph nodes was tuberculosis (46%) followed by nonspecific reactive hyperplasia (NSRH) (19%), metastatic carcinoma (16%), Hodgkin's lymphoma (8%), acute lymphadenitis (6%) and Non-Hodgkin's lymphoma (5%).
We conclude that tuberculosis is the most common cause of cervical lymphadenopathy and carcinoma is less as compared to the western figures. It is advised that any treatment for cervical lymphadenopathy should be preceded by histological proof.

Key words:- Cervical lymphadenopathy TB lymphadenitis.

INTRODUCTION

There are about 800 lymphnodes in the body, of which more than 300 lie in the neck. Tuberculosis is very common world over and cervical lymph nodes are among the major sites of non-pulmonary tuberculosis.[1,2,3] This disease is a cause of significant morbidity and mortality in Africa and Asia.[4] The most common presentation of mycobacterial infection encountered in otolaryngological practice is cervical lymphadenitis.[5] Because of their strategic location these lymph nodes are not only involved in the acute and chronic inflammatory conditions but also act as a common site of metastases from primaries in the head and neck region. They are also seat of metastases from remote sites like lungs, stomach, pancreas and testis. In addition to this, the primary tumours of the lymphoid tissue i.e. Hodgkin and Non-Hodgkin's lymphomas also show a predilection for these lymph nodes.

Because of the prevalence of tuberculosis lymphadenitis more and more patients with enlarged lymph nodes are being treated empirically for tuberculosis simply on the basis of suspicion creating not only drug resistance in the general population but also cause delay in the diagnosis of malignancy.[6] Likewise, patients are being subjected to biopsies of these lymph nodes without any investigation protocol to isolate a primary tumour with devastating results.

The aim of this study was to find out the pattern of diseases involving cervical lymph nodes, their distribution in different age groups and to assess the nature of specific clinical features associated with these diseases.

PATIENTS AND METHODS

This study included 85 patients who presented with cervical lymphadenopathy at the Liaquat Medical College Hospital (LMCH), Hyderabad / Jamshoro over a period of one and a half year, from April 1996 to September 1997. All the patients were subjected to a detailed clinical history and a thorough physical examination, including examination of the head and neck, chest and abdomen. Indirect laryngoscopy (IDL) was carried out in all the patients by a senior consultant. Patients with evident primaries malignancy in the head and neck were excluded from the study. Tuberculin test was done in forty

Correspondence:
Dr. Faisal Ghani Siddiqui
Assistant Prof. Dept. of Surgery,
Liaquat University of Medical and Health Sciences, Jamshoro.

patients. Ultrasound abdomen for liver, spleen and abdominal lymph nodes were done in thirty-eight patients. Fine needle aspiration cytology (FNAC), though a valuable investigation was deliberately skipped due to the non-availability of an expert cytologist. Finally all the patients were subjected to biopsies which included incisional biopsies (50 cases) and excisional biopsies (35 cases). The paraffin sections were examined and reported by two senior pathologists at the Department of Pathology, LMCH. Finally data was compiled and results were drawn.

RESULTS

A total of 85 patients with cervical lymphadenopathy were included in this study. There were 45 (52.9%) males and 40 (47.1%) females. The age distribution of patients is shown in Figure 1, the peak incidence being between 1-20 years.

The most common pathology found in the cervical lymph nodes was tuberculosis followed by nonspecific reactive hyperplasia (NSRH), metastatic carcinoma, Hodgkin's lymphoma, acute lymphadenitis and Non-Hodgkin's lymphoma (Table I). The morphological pattern of malignancies is shown in Table II.

TABLE-I HISTOLOGICAL DIAGNOSIS (N=85)

Diagnosis	Male	Female	Total
Tuberculosis	16	23	39 (46%)
Metastatic carcinoma	8	6	14(16%)
Hodgkin's lymphoma	5	2	7(8%)
Non-Hodgkin's lymphoma	3	1	4(5%)
Non-specific reactive hyperplasia	10	6	16(19%)
Acute lymphadenitis	3	2	5(6%)
Total	45	42	85

TABLE-II MORPHOLOGICAL TYPES OF CERVICAL LYMPH NODE MALIGNANCIES (N-25)

Types of cancer	Number	%
Metastatic carcinoma		
Squamous cell carcinoma	11	79
Adenocarcinoma	2	14
Papillary carcinoma thyroid	1	7
Hodgkin's lymphoma		
Mixed cellular	3	43
Lymphocyte predominant	2	29
Lymphocyte depleted	1	14
Nodular sclerosis	1	14
Non-Hodgkin's lymphoma		
Small cleaved cell	2	50
Diffuse lymphoblast	1	25
Follicular mixed type	1	25

Fever (77.6%) was the commonest presenting symptom in these patients followed by anorexia (51.7%) and respiratory symptoms like cough, dyspnoea and haemoptysis (35.3%). Splenomegaly was found in four patients with tuberculosis and two patients with TB lymphadenitis. Hepatomegaly was present in three patients of TB lymphadenitis, two patients of lymphoma and three patients with metastatic carcinomas. Forty (47.6 %) patients had other groups of lymph nodes enlarged along with the cervical lymph nodes. Jugulo-omohyoid lymph node was the most commonly involved lymph node (41.2%) followed by jugulo-digastric (35.3%), supraclavicular (11.8%), submental (9.4%), postauricular (3.52%) and preauricular (2.3%).

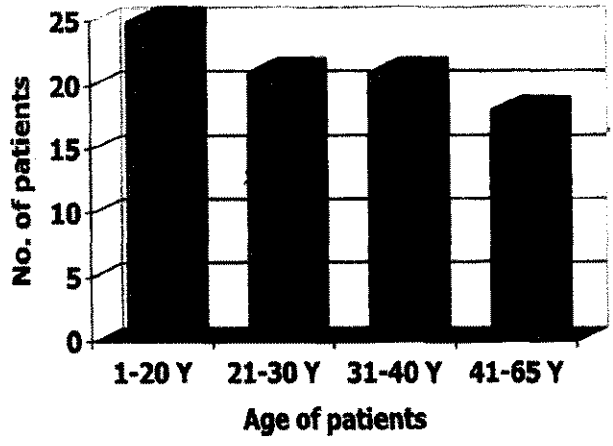


Figure-I: Age wise distribution of patients

DISCUSSION

The commonest cause of cervical lymphadenopathy in this series was Tuberculosis (46%). The greatest frequency was seen between 1 and 20 years age group. The incidence of TB lymphadenitis was somewhat lower as compared to other local studies which have reported the incidence ranging from 54% to 74%.[7,8,9] Hooper[9] however has reported an incidence of 16%, which is very low as compared to our study. TB lymphadenitis accounted for 28% of cases in a study carried out by Al-Sohaibani.[11] These observations give credibility to the fact that tuberculosis is more rampant in the developing countries, like Pakistan, as compared to the developed countries.

Twenty nine percent patients in our series presented with either primary or metastatic malignant conditions. The metastatic cancers outnumbered the primary tumours with an incidence of 16 % while the incidence of Hodgkin's and Non-Hodgkin's lymphoma was found to be 8 % and 5% respectively. Independent studies conducted by Khairy and Ahmed, Al-Sohaibani and by Hooper show a high incidence of malignant lymph nodes ranging from

42 % to 53%.[6,11,10] In contrast, many local studies show a lower incidence of malignancy in cervical lymph nodes ranging from 11.4 to 21.4 %.[9,8,7] The most common morphological pattern of metastatic cancer identified was squamous cell carcinoma (79%) while adenocarcinoma constituted 14% of cases. One patient presented with metastatic papillary cell carcinoma from an occult thyroid carcinoma. Other studies reports are more or less similar.[13,14] We found that the majority of patients with Hodgkin's lymphoma had mixed cellularity (43%) while Non-Hodgkin's lymphoma were small cleared cell type (50%). In our study, the peak age group presenting with cervical metastatic carcinoma was between 30 – 65 years whereas there was no age preponderance for primary tumours of the lymph nodes with patients belonging to all age groups.

Non-specific reactive hyperplasia (NSRH) was the third commonest condition in our series comprising of 19 % cases. Majority of the patients with NSRH were young. 14 0ut of 16 patients were under forty years. The findings correspond well with those reported by Morad NA[12] who mentions an incidence of 14.6% with peak appearance in young patients.

We conclude that tuberculosis is the most common cause of cervical lymphadenopathy. The incidence of both primary and metastatic carcinoma is less as compared to the Western figures; a fact proven by this study and supported by other studies carried out in other parts of the country. It is advised that any treatment for cervical lymphadenopathy should be preceded by histological proof. This would prevent any delay in treatment of serious malignant disorders, avoid unnecessary antituberculous treatment in patients with benign reactive lymphadenopathy and prevent delay of antituberculous treatment in tuberculous patients with atypical clinical presentations.

REFERENCE:

1 Medical Research Council; National survey of tuberculosis notifications in England and Wales 1978-1979. Report from the Medical research Council. Tuberculosis and Chest disease Unit. Br-Med-J 1980; 281: 895-8.

2 Bengman SA, Ord RA, Rothman M. J-Oral-Maxillofac-Surg 1994; 52(12): 1236-9.

3 Thabet JH, Ali F, Ibrahim BB. Incidence of Tuberculous neck masses in the central zone of Saudi Arabia. Journal of the Royal College of Surgeons of Edinburgh 1984; 29(4): 226-8

4 Sureyya S. Six years spectrum of primary tuberculosis in aerodigestive tract, head and neck. Pakistan J-Med-Sci 1994; 10(4): 327-33.

5 Gansean S, Thirlwall A, Brewis C, Grant H R, Novelli V M: J-Laryngol-Otol. 2000; 114 (8) : 649 – 51.

6 Kheiry J, Ahmed ME. Cervical lymphadenopathy in Khartoum. J- Trop-Med-Hyg 1992; 95(6): 416-9.

7 Naseer AT. Presentation of cervical lymphadenopathy to the surgeon. Pakistan J-Surg 1993; 9(4): 120-3.

8 Ijaz A. Primary lymphadenopathy-Presentation and evaluation. Specialist 1992; 8(4): 13-20.

9 Younis M. Tuberculous lymphadenitis. Specialist 1987; 47-52.

10 Hooper AA. Tuberculous peripheral lymphadenopathy. Br-J-Surg 1972; 59(6): 353-9.

11 Al-Sohaibani: Cervical lymphadenopathy in the eastern province of Saudi Arabia. East-Afr-Med-J. 1996; 73(8): 533 -7.

12 Morad N A: Tuberculous cervical lymphadenopathy: should antituberculous therapy be preceded by histological proof? Trop-Doct. 2000; 30 (1): 18 -20.

13 Ikeda Y, Kubota A, Furukawa M, Tsukuda M: Cervical lymph node metastasis from an unknown primary. Nippon-Jibiinkoka-Gakkai-Kaiho. 2000; 103(5): 524-8

14 McMohan J, Hruby G, O'Brien CJ, McNeil EB, Bagia JS, Clifford AR, Jackson MA. Neck dissection and ipsilateral radiotherapy in the management of cervical metastatic carcinoma from an unknown primary. Aust-N-Z-J-Surg.2000; 70(4): 263-8.

TUBERCULOSIS OF THE BREAST

ASMA HANIF, M. MUSHTAQ, KAMRAN MALIK, ASADULLAH KHAN

ABSTRACT:
A study was conducted to find out the frequency of breast tuberculosis and its treatment outcome, at the breast clinic of surgical unit 1 ward 3 JPMC Karachi. The study comprised of 152 patients of breast lumps between March 2000 and September 2001, out of which 35 showed positive FNAC for tuberculosis (23%). They responded very well to antituberculosis chemotherapy and the lump totally disappeared within 12 months of therapy. Hence early diagnosis, before sinuses develop is important in preventing disfigurenment.

Key words:- Breast, Tuberculosis

INTRODUCTION

The first description of breast tuberculosis was the classic account in 1829 by Sir Astley Cooper who wrote about the "Scrofulous swelling in the Bosom of young Women with cervical lymphadenopathy. It is now a rare condition in the developed countries. It is interesting to note that in the days when bovine tuberculosis was rampant, the disease very frequently affected the udders of cows, leading to contamination of milk with the bacilli resulting in tuberculosis of the abdomen, specially in children.[1] The overall incidence is less then 0.1% of all the breast lesions in developed nations and about 3-4 % in the developing countries.[2] In India the incidence of 0.63% to 4.5% has been reported.[3] Bilateral breast tuberculosis is rare, accounting for only 3% of the patients with breast tuberculosis.

Tuberculosis of the breast is an uncommon disease. When presenting as a lump it is often difficult to differentiate from cancer of the breast. Routine imaging techniques, such as mammography and ultrasonography, are of limited value. Even fine needle aspiration cytology (FNAC) cannot positively diagnose the pathology. It is a general impression that tuberculosis of breast is rare even rarer than malignancy. Now we see ever increasing number of cases of tuberculosis of breast which they present as hard lumps and are clinically difficult to differentiate from carcinoma. But with proper and timely diagnosis and appropriate treatment these lumps completely resolves. The far reaching implications of a clinical misdiagnosis has prompted us to study this group of patients so as to find out the frequency and presentation of this benign disease in our setup and to see the outcome after chemotherapy.

MATERIALS AND METHODS

This observational study was conducted at the Breast Clinic of General Surgery Ward-3, Jinnah Postgraduate Medical Center, Karachi, between 1st March 2000 to 30th September 2001.

Medical records of all the patients presenting at the breast clinic during the study period were reviewed and analyzed.

RESULTS

A total number 294 patients with brest lumps, presented at the breast clinic. Their diagnoses are shown in Table I.

Correspondence:
Dr. Asma Hanif
Postgraduate Surgical Ward 3,
JPMC, Karachi, Pakistan.

TABLE-I	[N-294]
DIAGNOSIS	NUMBER
Tuberculosis	35
Fibroadenoma	48
Ca Breast	48
Mastelgia	94
Breast Abscess	69

Age distribution of the patients with breast tuberculosis is shown in Table II

TABLE-II	[N-35]
AGE IN YEARS	NUMBER
10 – 20	8
20 – 30	14
30 – 40	8
40 – 50	2
50 – 60	
> 60	3

All patients were females, 29 were lactating and 33 were poor and only 2 were from the lower middle class. Constitutional symptoms were present in 33 and four had family history of tuberculosis.

Heamoglobin ranged for 8.4 to 15.5gm %(mean 13.1mg%), ESR was raised in 24. Xray chest suggested tuberculosis in only one case and healed in 2 cases. FNAC was positive for chronic granulomatous inflammation consisitent with tuberculosis in all the 35 cases, therefore biopsy was not necessary for diagnosis and no case was missed. Mammogram in 2 patients revealed well circumsized lumps without overlying skin involvement.

Ninteen patients had only lumps, 12 had axillary node involved. 19 patient complained of pain. One patient each had sinus, ulcer or abscess. Peaude's orange was seen in two cases

Average decrease in lump size was accessed on ultra sound on monthly basis. table III.

TABLE-III	[N-35]
MONTHS	DECREASE IN SIZE
1	2cm (+1-0.5cm).
2	3cm(+1-0.5cm).
3	1cm.
4	<1cm.
5	No Lump.

DISCUSSION:

Tuberculosis of breast is a rare disease and the overall incidence is less then 0.1% of all the breast lesions detected in developed countries and about 3 – 4% in developing countries.[5,10]

The lower incidence of breast tuberculosis may be due to the higher resistance offered by the mammary gland to the survival and multiplication of mycobacterium tuberculosis.[11]

However in our breast clinic 35 out of 294 patients had proven breast tuberculosis which reflects the increasing incidence of tuberculosis in this region. Classical description by Sir Astley Cooper who wrote "Scrofulous swelling of the bosom of young women"[12] is proved true in our series where majority of women belong to young age group. (Table I).

All the cases in our series were females. Although there are occasional case reports in litrature of tuberculosis of male breast.[13] The disease is mostly limited to females.

In our study 33 patients had constitutional symptoms of tuberculosis and ESR was raised in 24 patients (68.5%). Whereas S.R. Shinde et al reported constitutional symptoms in only 20% and raised ESR in 90% of patients.[4] A tuberculous lump in the breast can easily disguise as carcinoma and routine testing and mammography may be of limited value but FNAC has an excellent diagnostic yield.

FNAC proved to be the diagnostic test of choice in our study. All the patients were diagnosed on FNAC and open biopsy was not required in any case.

All the patients responded very well to antituberculosis chemotherapy using 4 drugs regiman for initial 4 months and then 2 drugs continued for further 8 months.

The results of this study reveals that the incidence extra pulmonary tuberculosis is quite high in our setup with good FNAC yield. Early diagnosis before sinuses develop is important in preventing disfigurement. Breast tuberculosis should be considered in the differential diagnosis in clinically suspicious breast lumps, specially in areas with higher incidence of tuberculosis.

REFERENCE:

1. K K Tan, T H Tan. Tuberculosis of the breast: Sing-Med-J. 1988; 29:271-275
2. A R Talei. Primary tuberculosis of the male breast: a case report. Irn-J-Med-Sci. 1999; 24(1,2): 74-76.
3. Manju Bala Popli. Tuberculosis of the breast; Ind-I-Radiol-Imag. 1999; 9:3: 127-132.

4. S R Shinidi, R' Y Chanda Warkar, S P.Deshmukh. Tuberculosis of the breast masquerading as acarcinoma: A study of 100 patients. World-J-Surg, 19, 279-381; 1995.

5. Hamit, H F, Ragsdale T H. mammary tuberculosis. J R. Soc.Med. 75; 764; 1982.

6. Banerjee S N, Anantha Krishnan M S, Parkash S. Tuberculosis mastitis; A continuing problem. World-J-Surg. 1987: 11; 105-9.

7. Sasin R, Verma K, Kapur BML, Daas S. Tuberculosis of the breast.Ind-J-Surg.1984; 46: 27-31.

8. Cilbert A L, McGough E C, Farrell J J.Amer-J-Surg. 1962; 103: 424-7.

9. Jo Perkins Wilson, Stanley W. Chapman. Tuberculosis mastitis. Chest 1990;98: 1505-09

10. Haagensen CD: Infections of the breast. 2nd ed. Philadelphia: Saunders, 1971:335-6.

11. Mukerjee P, George M, Maheshwari HB, Rao CP. Tuberculosis of the breast. J India Med Assoc 1974;62:410-12.

12. Wilson, T.S., MacGregor, J.W: The diagnosis and treatment of tuberculosis of the breast. Can.Med.Assoc. J.89:1118, 1963.

13. Irn J Med Sci 1999: 24(1 and 2) 0:74-76.

BOSWORTH METHOD FOR UNSTABLE FRACTURES OF DISTAL CLAVICLE

SAQIB AMIN

ABSTRACT:
Ten consecutive Neer's type II fractures of the distal clavicle were treated with open reduction and internal fixation (ORIF), using a temporary Bosworth-type screw. In all the cases fracture healed in 8 to 10 weeks and shoulder function was restored to the pre-injury level. A Bosworth-type screw fixation is a relatively easy and safe technique of ORIF of type II fractures of the Distal third of Clavicle.

KEY WORDS:

INTRODUCTION

Distal Clavicle fractures with disruption of coracoclavicular ligaments (Neer's type II), are very unstable due to the four deforming forces.[5] Most authors recommend ORIF various techniques, such as Tranacromial Krischner wire fixation,[2,5] Transference of the coracoacromial ligament[4] and Bosworth-type screw fixation.[1]

METHODS

Ten patients with fresh Neer's type II lateral clavicular fractures were treated between 1998 and 2001. Seven were males and 3 females. Average age at the time of operation was 35(14-52) years. The causes of injuries were fall from height (5), bicycling (3), and motor car accident (2).

The operations were performed under general anaesthesia with the patient in a semi-sitting posture. We exposed the acromio-clavicular joint, the fracture site and the proximal clavicle through a transverse incision. The fracture was reduced anatomically. A 3.2mm hole was drilled through the clavicle and coracoid process. A 5.5mm hole was drilled only through clavicle. An AO malleolar screw or an ACE cannulated screw with washer was placed through the drill hole and screwed in to the base of the coracoid process. The washer prevented penetration of the clavicle by the screw head. The screw was tightened until the fracture was reduced. In the case of communicated fracture, transacromial Krischner wire fixation was added.

Following operation the arm was kept in a sling for 2 weeks. Pendulum exercises started. Active flexion and abduction was carried out for 3 to 4 weeks postoperatively. The screw was removed under local anaesthesia after healing of the fracture, 8 to 10 weeks postoperatively. The patient then started more vigorous exercises.

RESULTS

Fracture healing occurred within 10 (average 8) weeks in all the cases. Shoulder function was restored to pre-injury level in all the cases. All the patients returned to their pre-

CLINICAL AND RADIOLOGICAL FINDINGS OF 10 PATIENTS TREATED IN THE STUDY

No.	Sex	Side	Age at operation	Causes of injury	Fracture healing (weeks)
1	M	R	14	bicycle	7 weeks
2	F	R	30	Fall	8 weeks
3	F	L	45	Fall	8 weeks
4	M	R	35	MVA	8 weeks
5	M	L	17	bicycle	8 weeks
6	M	R	26	MVA	8 weeks
7	M	R	55	Fall	10 weeks
8	M	L	33	Fall	8 weeks
9	M	L	20	bicycle	7 weeks
10	M	L	49	Fall	10 weeks

Correspondence:
Dr. Saqib Amin
Orthopaedic Surgeon, Alpha Medical Centre,
P.O. Box 20110, Sharjah, U.A.E.

injury levels of work and sports activities by at the most 7 to 8 months. There were no surgical complications or refractures.

Clinical and radiological findings of 10 patients treated in the study shown in the Table.

DISCUSSION

The type II fracture of the distal third of clavicle is frequently displaced due to four deforming forces. Neer reported high frequency of non-union with closed treatment because of there forces.[5] Most of the authors are of the opinion that type II clavicle fracture is an indication for operative treatment.

Neer recommended transacromial Krischner's wire fixation,[5] but Kona et al. Demonstrated that this method led to satisfactory results in only 6 out of 13 patients; there was a 32% rate of non-union.[3] Poor results obtained with transacromial Krischner's wire fixation were perhaps due to communication of the lateral fragments which could not be stabilised with Krischner's wire. Mourota et al[4] treated patients with internal fixation using coracoacromial ligament transfer; all the fractures united with excellent results.

In our study of 10 cases Bosworth-type screw fixation was done. In all the cases, full radiological healing and full return of function have been obtained. This method is relatively easy and safe. It is clear that scapular motion causes rotation and tilting at the fracture site, and this causes screw penetration of the clavicle. This complication has been minimize by using washer which prevents the penetration.

In our experience the Bosworth-type screw method is the best form of fixation of the type II fractures of distal clavicle.

REFERENCES

1. Bailmer FT, GerberC (1991) Coracoclavicular screw fixation for unstable fractures of distal clavicle: a report of five cases. Jour. Bone Joint Surgery[Br]73:291-294.
2. Eskola A. Vainniopaa S, Patiala H, Rokkanen P(1987) Outcome of operative treatment in fresh lateral clavicular fracture, Ann Chir gynaecol Scand 16:167-169.
3. Kona J. Bosse MJ, Staeheli JW, Rosseau RL(1990) Type II distal Clavicle fracture: a retrospective review of surgical treatment. Journal. Orthop trauma 4:115-105.
4. Murota K, Miyazawa H, Iizuka H, Takekawa Y (1989) Surgical treatment of distal clavicle fractures Syuzyutu 43:501-507.
5. Neer CS(1968) Fracture of distal third of the clavicle Clin Orthop 58:43-50.

PATTERN OF MALIGNANCIES AT FAUJI FOUNDATION HOSPITAL RAWALPINDI

ISHTIAQ AHMED CHAUDHARY, AQEELA BANO, SAIMA TASNEEM

ABSTRACT:
This retrospective observational study was carried out from July 2000 to June 2001 to find out the pattern of malignancy at Fauji Foundation Hospital Rawalpindi. 733 cases of malignancies were recorded with male to female ratio of 1:1.46. Majority of them were in the 5th (23.19%) and 6th (26.96%) decades of life. The commonest malignancy observed among males was Urinary Bladder Tumour (19.12%) and in females Breast Cancer (37.47%). The ten commonest malignancies among both the sexes were compared with the patterns recorded at different centers in Pakistan. Analysis of the data shows the high prevalence of breast, lung, ovarian, cervical colorectal malignancies and lymphoma in our country.
The type of data presented is of limited significance. It is important that these findings are elaborated and confirmed by more detailed studies. In this contest the importance of establishment of a tumor based registry can not be overemphasized

Key words:- Malignancies, pattern, male, female, Pakistan.

INTRODUCTION

Malignant diseases are among the top killers and responsible for high degree of morbidity and mortality all over the world. The problem is equally important in its severity and magnitude in Pakistan. It is further aggravated by lack of proper data at national level, lack of awareness and education among the general population. The incidence of cancer according to WHO is 180 cases per 1, 00,000 per year in Pakistan so every year about 2,88,000 new cancer cases would be registered in Pakistan.[1] Unfortunately, majority of the cancer cases go undetected or untreated in our country. Moreover due to the absence of population data, the incidence of a disease can not be calculated. In Pakistan, a survey on the frequency of malignant diseases was conducted by the Department of Pathology and Radiotherapy at JPMC Karachi from 1960 to 1972. PMRC had conducted a study at seven centers from April 1973 to October 1974. AFIP Rawalpindi, had also conducted a study from 1977 to 1988 regarding the pattern of malignancy in Northern Pakistan.[1,2] A recent institutional study of a similar nature from Peshawar cites that skin and lymph node are the commonest sites of malignancies in male and breast in females.[3] Fauji Foundation Hospital Rawalpindi is a 620-bed tertiary care hospital. It is a welfare organization, which provides medical care to ex-army soldiers and their families. It drains mostly Rawalpindi, Azad Kashmir, Jhelum, Gujrat, Chakwal and Attock districts and most parts of Northern Punjab.

Purpose of this study was to observe the pattern of malignancy at our institution and to identify the different risk factors and changing patterns as compared to the studies conducted at other centers in Pakistan.

MATERIALS AND METHODS

This is a retrospective study which was carried out at Fauji Foundation Hospital Rawalpindi from July 2000 to June 2001. Indoor and out door records of the patients from all the departments were reviewed and analyzed critically to avoid duplication. The records of malignancy

Correspondence:
Dr. Ishtiaq Ahmed Chaudhary
Consultant Surgeon, Fauji Foundation Hospital,
Bungalow- 14 Fauji Foundation Hospital Morgah, Rawalpindi.

cases, maintained in the computer cell, were also analyzed. Validity and accuracy was the essential components of the study. The indicator used was histopathological verification of the cases registered in the oncology department for indoor or outdoor treatment and records of the admitted cases in other departments for chemotherapy or radiotherapy. For accuracy all the data was analyzed thoroughly to avoid duplication. At the end of the study all the findings were tabulated, analyzed and compared statistically with other studies conducted at various centers in Pakistan.

RESULTS

A total of 2,83,185 patients were registered in out patient departments (OPD) of the FFH during the year July 2000 to June 2001. Majority of the patients (55.05%) who reported in the Medical and Surgical OPD's. Among them, 733 (0.25%) malignancies were recorded. Details of all the malignancies with their age and sex distribution are given in Table-I. 59.35% were females and 40.65% males (male to female ratio 1:1.46.) Majority of them were in the 5th and 6th decade of this lives 23.19% and 26.96% respectively (Table-II).

Urinary bladder tumor is the commonest malignancy (19.12%) and Carcinoma of lung is the 2nd most common (10.73%) malignancy found in males. Comparison of the ten commonest malignancies at the various centers of Pakistan, in males is shown in Table-III.

In the females Carcinoma Breast is the commonest (37.47%) followed by Ovarian malignancies (9.65%). Comparison of the ten commonest malignancies in

TABLE-I PATTERN OF MALIGNANCIES AND THEIR AGE AND SEX DISTRIBUTION AT FAUJI FOUNDATION HOSPITAL

	0-10		11-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90		Total		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Breast	-	-	-	-	-	1	1	52	2	42	2	41	2	23	-	2	-	-	05	163	168
Colo- Rect	-	-	-	-	-	-	3	4	11	9	11	14	1	3	2	1	-	-	28	31	59
Gall bladder	-	-	-	-	-	-	-	2	-	2	1	4	-	2	2	-	-	-	03	10	13
Pancreas	-	-	-	-	-	-	-	1	2	3	3	2	1	1	3	1	1	1	10	09	19
Liver	-	-	-	-	-	1	1	1	1	1	1	1	1	2	1	-	-	-	05	06	11
Esophagus	-	-	-	-	-	-	-	-	1	-	1	-	1	2	2	-	-	-	05	02	07
Stomach	-	-	-	-	-	1	1	3	4	1	6	1	4	1	-	-	-	-	15	07	22
Thyroid	-	-	-	-	-	-	-	1	-	1	1	2	2	1	-	-	-	-	03	05	08
Parotid	-	-	-	-	-	1	1	2	1	4	2	-	1	-	1	-	-	-	06	07	13
Lung	-	-	-	-	-	-	4	-	6	5	7	2	8	2	6	-	1	-	32	09	41
ENT	-	-	-	1	1	1	1	4	2	4	2	5	3	-	-	-	-	-	07	17	24
Oral cavity	-	-	-	-	-	-	-	3	3	8	3	9	1	3	1	1	-	-	08	24	32
U Bladder	-	-	-	-	-	-	2	-	4	2	9	2	14	2	26	-	2	-	57	06	63
Prostate	-	-	-	-	-	-	1	-	-	-	4	-	8	-	15	-	2	-	30	-	30
Kidney	1	1	-	-	-	-	-	-	-	-	2	1	1	1	-	-	-	-	04	03	07
Testis	-	-	2	-	-	-	2	-	4	-	2	-	-	-	1	-	-	-	11	-	11
Bone	-	-	2	2	1	-	-	-	-	2	3	2	3	2	-	-	-	-	09	08	17
Soft tissue	1	-	-	2	1	2	2	5	-	2	-	-	-	-	1	-	-	-	05	11	16
Brain	-	-	-	-	-	-	2	4	2	4	1	2	-	-	-	-	-	-	05	10	15
Ovary	-	1	-	5	-	3	-	5	-	14	-	10	-	4	-	-	-	-	-	42	42
Cervix	-	-	-	-	-	-	-	1	-	1	-	5	-	1	-	1	-	-	-	09	09
Vulva	-	-	-	-	-	-	-	-	-	1	-	2	-	3	-	-	-	-	-	06	06
Endometriu	-	-	-	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-	-	06	06
Chorio car	-	-	-	-	-	-	-	2	-	-	-	-	-	-			-	-	-	02	02
Lymphoma	1	0	2	3	0	0	1	2	2	2	3	10	3	8	2	-	-	-	14	25	39
Leukemia	4	2	3	3	0	0	0	0	4	3	2	2	-	-	-	-	-	-	13	10	23
Skin	-	-	3	1	-	-	-	2	4	6	3	5	2	3	-	1	-	-	12	18	30
TOTAL	**7**	**4**	**12**	**17**	**3**	**10**	**22**	**94**	**53**	**117**	**69**	**125**	**56**	**67**	**63**	**7**	**6**	**1**	**298**	**435**	**733**

TABLE-II AGE AND SEX DISTRIBUTION OF THE PATIENTS WITH MALAGNANCIES

AGE GROUP	MALE	FEMALE	TOTAL
0 – 10 Year	07	04	11 (1.50%)
11 – 20 YEAR	12	17	29 (3.95%)
21 – 30 YEAR	03	10	13 (1.77%)
31 – 40 YEAR	22	94	116 (15.82%)
41 – 50 YEAR	53	117	170 (23.19%)
51 – 60 YEAR	69	125	194 (26.46%)
61 – 70 YEAR	56	67	123 (16.78%)
71 – 80 YEAR	63	07	7 (9.54%)
81 – 90 YEAR	06	01	7 (0.95%)
TOTAL	**298 (40.65%)**	**425 (59.35%)**	**733**

The Armed Forces Institute of Pathology (AFIP), Rawalpindi[1] has also reported a large series of cases mainly from Northern Punjab, Azad Kashmir and Northern areas of Pakistan. Although the present data does not depict the exact frequency of malignancies, in Pakistan or this part of the country, but it my give some overview of the problem. After analyzing and comparing the data critically with the other centers it is found that there are many variations in the frequency and patterns of certain malignancies at different centers in Pakistan. In this study we compared the data from different centers representing almost all parts of Pakistan. These centers includes AFIP Rawalpindi, JPMC Karachi, IRNUM Peshawar, KEMC Lahore and Faisalabad.[2] These centers collectively cover almost whole of Pakistan.

TABLE-III COMPARASION OF THE TEN COMMONEST MALE MALIGNANCIES IN VARIOUS CENTERS OF PAKISTAN

F F H FAISAL ABAD 1986-1990	JPMC 1980-1986	AFIP 1977-1988	IRNUM 1977-1980	KEMC 1986-1990
Urinary bladder 19.12%	Prostate 13.5%	Bronchus 14.2%	Lymphnodes 9.62%	Oral cavity 21.2%	Lymph node 12.6%
Lung 10.73%	Heamopoetic 11.6%	Hypopharynx 12.9%	Leukemia 9.09%	Esophagus 21.0%	Oral cavity 7.0%
Prostate 10.06%	Lymph node 11.4%	Oral cavity 12.4%	Bronchus 7.21%	Bronchus 20.2%	Bronchus 7.2%
Colo-rectum 9.39%	Colo-rectal 7.4%	Esophagus 7.9%	Skin 6.67%	Bone and Joint 14.5%	Larynx 6.5%
Stomach 5.03%	Skin 6.4%	Heamopoetic 6.5%	Prostate 6.63%	Urinary bladder 9.4%	Urinary bladder 6.5%
Lymphoma 4.69%	Urinary bladder 5.7%	Larynx 6.0%	Colorectal 5.54%	Eye 9.3%	Skin 5.8%
Leukemia 4.36%	Soft tissue 5.4%	Liver 3.7%	Urinary bladder 4.37%	Testis 8.5%	CNS 5.6%
Skin 4.02%	Salivary gland 3.5%	Skin 3.5%	Bone 3.80%	Colo-rectal 5.2%	Heamopoetic 5.5%
Testis 3.69%	Oral cavity 2.9%	Oropharynx 3.5%	Stomach 2.76%	Liver 4.6%	Soft tissue 4.7%
Pancreas 3.35%	Liver 2.4%	Urinary bladder 3.3%	Soft tissue 2.46%	Salivary gland 4.6%	Bone and Joint 3.5%

females at various centers of Pakistan is shown in Table-IV.

DISCUSSION

The exact statistical data of malignancies in Pakistan has not been available due to poor facilities of recording the clinical information and absence of any central body for analysis of malignancies in the country. So far there is no incidence data available to date in Pakistan. The Pakistan Medical Research Council (PMRC) has made some efforts and has provided some data based on reports collected from different centers and sources in Pakistan.

After analyzing the data at FFH and comparing it with other centers; it was observed that the incidence of Urinary bladder, Lung and Gastrointestinal malignancies are quite high in males as compared to females; who had high incidence of Carcinoma Breast and Ovary.

The analysis of malignancies among males revealed that the commonest malignancy is Urinary Bladder Tumor

TABLE-IV **COMPARASION OF THE TEN COMMONEST IN FEMALE MALIGNANCIES AT VARIOUS CENTERS OF PAKISTAN**

F F H	FAISAL ABAD 1986-1990	JPMC 1980-1986	AFIP 1977-1988	IRNUM 1977-1980	KEMC 1986-1990
Breast 19.12%	Breast 23.97%	Breast 20.8%	Breast 26.60%	Breast 23.0%	Breast 23.0%
Ovary 9.65%	Ovary 8.41%	Oral cavity 14.2%	Skin 5.63%	Oral cavity 13.5%	Cervix 9.6%
Colo-rectum 7.12%	Cervix 7.9%	Cervix 10.6%	Ovary 4.83%	Cervix 7.38%	Ovary 6.9%
Lymphoma 5.74%	Gall bladder 5.95%	Esophagus 8.0%	Leukemia 4.53%	Bone and Joint 5.38%	Oral cavity 6.8%
Oral cavity 5.51%	Lymph node 5.0%	Hypopharynx 5.3%	Cervix 4.20%	Esophagus 5.2%	Lymph node 5.2%
Skin 4.13%	Soft tissue 4.95%	Haemopoetic 4.7%	Lymph nodes 3.69%	Ovary 3.7%	Skin 4.0%
ENT 3.90%	Haemopoetic 4.0%	Ovary 4.31%	Colorectal 3.45%	Eye 3.7%	Gall bladder 3.8%
Soft tissue 2.52%	Colo-rectal 3.82%	Liver 3.9%	Gall bladder 3.42%	Gall bladder 3.6%	Haemopoetic 2.6%
Gall bladder 2.29%	Oral cavity 3.57%	Oropharynx 3.1%	Thyroid 3.06%	Liver 3.9%	Soft tissue 2.43%
Cervix 2.06%	Skin 2.72%	Uterus 2.8%	Bone 2.31%	Skin 3.0%	Bone and Joint 2.40%

(19.12%) which is 5th in frequency at IRNUM, Peshawar and KEMC, Lahore, 6th most common tumor at Faisalabad and 10th at JPMC, Karachi.[2] This high incidence of Urinary Bladder Tumor at FFH is an unusual finding as compared with the other centers in Pakistan. It is more common in the 7th and 8th decades of life and the reason for this high incidence most probably is that majority of our patients are retired pensioners (from aged population). The incidence of this malignancy is also high in Iran and ranked 4th and 5th in different provinces of India.[2]

Lung cancer is the second most common malignancy (10.73%) at our center which is almost consistent with the AFIP, IRNUM, and KEMC (7.21%, 20.2%, and 7.2% respectively) as a third most common malignancy; and at JPMC it is the top ranking malignancies (14.2%). Bhurgri[3] and his colleagues also reported higher incidence (12.4%) among male in Karachi in 1995-96 with peak incidence between 6th to 8th decades of life. Majority of these cases were observed in the 5th to 7th decades of life at our centre. In females it is much less common as compared to males but the age distribution is almost the same as observed in our study. The highest incidence among males is due to cigarette smoking and occupational exposure. It accounts for approximately one third of all cancer deaths in men and over 7% of all deaths in both sexes in UK. Its incidence is predicted to rise further in the next twenty five years due to increased consumption of cigarettes especially in the developing countries.[4]

Prostate malignancies are the 3rd most common (10.06%) at FFH, at the top (13.5%) in Faisalabad and among all the other centers it is only observed at AFIP (5th – 6.63%) among the top ten malignancies. Majority of the cases were found in the 8th decade of life at our centre. There are racial, regional and religious factors responsible for the difference in the incidence and prevalence of carcinoma prostate. In some countries over the last 30 years this incidence is doubled due to changing life style, diet and certain environmental factors.[5,6] More recently, elevated risk of carcinoma prostate is observed in farmers and mechanics[7] and this could be one of the reasons of high incidence at Faisalabad and at our center which are predominantly industrial and agricultural areas.

Colorectal malignancy is the 4th most common malignancy (9.39%) observed at our centre as compared to the 4th at Faisalabad (7.4%), 6th at AFIP (5.54%) and 8th at IRNUM(5.2%), whereas it was not

found among the top ten malignancies at Kemc or JPMC. Majority of these cases were in the 5th and 6th decades of life at our center. This malignancy is more common in the Western world and is the second most common cause of death after lung cancer in UK.[8] In USA, cancer of colon remains an epidemic for both the sexes and all ethnic groups are at equal risk; 5% of the population will develop colonic cancer by the age of 75 year and another 2% will develop rectal growths.[9] This malignancy is not rare in Pakistan and other developing countries as reported by Siyal et al [10] and Ghafoor[9] in their studies. This is possibly the result of industrialization and gradual Westernization of diet.

Carcinoma Stomach is the 5th most frequent malignancy in males at our center. At other centers it is only found at AFIP (9th- 2.76%) among the first ten malignancy. World wide it is the second most common fatal malignancy and in UK annual mortality from this disease is about 7000.[11]

Lymphomas and Leukemia's are among the 6th and 7th in ranking at FFH whereas these malignancies are at the top at AFIP, KEMC and Faisalabad (2nd, 3rd). These malignancies were not found among the top ten malignancies at IRNUM. Majority of the patients belong to younger age group in our study which is compatible with findings at Faisal abad and AFIP. It is the first ranking malignancy in childhood at AFIP[1] and in Karachi.[12] Similarly, a large study of childhood malignancy in UK also revealed Leukemia as the first ranking malignancy followed by Brain tumor and Lymphomas.[13]

Skin cancer is 8th in frequency (4.02%) and at other centers it shows a variable pattern in its ranking among the ten commonest malignancies. It is 4th (6.67%) at AFIP, 5th (6.4%) Faisalabad, 6th (5.8%) KEMC and 8th (3.5%) JPMC. The incidence of skin cancer in the subcontinent is comparatively low as compared to Australia and European countries. In Australia it is estimated to be three times more common than all other types of cancers combined.[14]

Testicular tumors are 9th in frequency at FFH and among all other centers except at IRNUM (7th – 8.5%) they are not found among the top ten malignancies. Majority of our patients were in the 6th decade of life.

The present data include 425 (59.35%) females among the total malignancies found during the study period. Carcinoma Breast is the commonest malignancy found at our center (37.47%) and the same observation is reported from other centers in Pakistan. At FFH it has the highest frequency of 37.47% as compared to all other centers which is between 20.85 to 26.60%. Majority of the patients at our centre are from 4th, 5th and 6th decades of life. The same observation was made by Shahina[15] and Usmani[16] at Lahore. It is also the first ranking malignancy in Turkey and Iran and the second commonest in India and Bangladesh.[2] Its incidence varies from country to country, being highest in North America, Europe, lowest in Africa and Asia.[17]

Ovarian Malignancy is the 2nd most common (9.65%) which is consistent with Faisalabad and IRNUM. It is the 3rd most common at AFIP and KEMC, where as it is at the 7th in frequency at JPMC. Contrary to the studies conducted by PMRC at seven centers in 1974 which showed that it is 7th in frequency.[18] The ovarian cancer was reported among the five commonest malignancies in India, Iran, Turkey and Bangladesh and is a leading cause of death in many developed countries.[2] It is the 6th most common cancer in the Western countries and in Britain it is the 4th commonest cause of death from malignancies.[1]

The incidence of Colo-rectal malignancy is comparatively high (3rd, 7.12%) as compared with all other centers i.e. 7th and 8th at AFIP and Faisalabad respectively, and non among the first ten at JPMC or IRNUM. The age distribution is almost the same as noted among males with slight male predominance as observed by Ghafoor and his colleagues[9] and by Ahmad and Durrani in their different studies.[19]

Lymphoma is the 4th most common tumor recorded at FFH with almost similar frequency at other centers in Pakistan, It is 5th in frequency in Faisalabad and KEMC and 6th at JPMC and AFIP. Surprisingly at IRNUM it is not reported among the top ten malignancies. Its incidence is more common during the first and second decade and then 5th and 6th decade in both sexes. This is comparable with the AFIP, Faisalabad and Karachi[1,3,12] report. The incidence of this malignancy is less common in India and Bangladesh and higher in Turkey and Iran.[13]

Oral cavity malignancy is the 2nd most common malignancy at IRNUM and JPMC, 4th most common at KEMC and 5th most common at our center whereas at other centers its incidence is low. Similarly in males, it is among the top (21.2%) 10 at IRNUM and 3rd most common (12.4%) at JPMC Karachi. This data shows that it is less common in the central part of the country where as it is more common in Karachi and NWFP in both sexes where Tobacco in Pan and Niswar is commonly chewed.

Skin cancer being the 6th most common malignancy at our center. Its frequency had a variable pattern at different centers in Pakistan. It is the 10th most common

at Faisalabad, IRNUM and LMC[2] and 2nd commonest at AFIP.[1] Its incidence is more common during the 5th to 7th decades of life at our hospital in both the sexes. At our center, its incidence is comparatively high in females (6th commonest) as compared to males (8th commonest). Skin malignancies are more common among the white population worldwide i.e. Australia and Europe as compared to our country.[14]

Soft tissue malignancies are the 8th most common in our study and had almost the same frequency at Faisalabad (6th) and KEMC (8th) where as it was not found among the top ten malignancies at other centers. Its incidence is more common in the 4th decade in both the sexes, but its incidence is less common among males at our centre.

Gall Bladder Cancer is another common malignancy (9th) observed at our and other centers except at JPMC. Its frequency is almost the same at AFIP, IRNUM and KEMC where as its frequency is much higher 4th at Faisalabad. It is the 5th most common gastrointestinal malignancy in the world[20] and more common in the south east then west of the globe especially in the south Asian and Far Eastern countries.[1]

The incidence of Cervical cancer is comparatively low (10th, 2.06%)at our center as compared to all other centers where its incidence is quite high i.e. 2nd in frequency at KEMC and 3rd at JPMC, Faisalabad, IRNUM and 5th at AFIP. The incidence of Cervical cancer is low in Turkey, Iran and Middle East.[2] The increasing prevalence of cervical cancer in Pakistan is quite alarming and it can only be lowered by mass screening and awareness programs.

Hepatocellular Carcinoma is the commonest malignancy observed in both the sexes at other centers (7th at JPMC, 9th at IRNUM and 10th at Faisalabad and 8th at JPMC, 9th at IRNUM among females) where as it is not observed among the first ten malignancies at our center. Incidence of Hepatocellular Carcinoma has recently increased in some countries like Japan, Italy, France and Switzerland. It is not uncommon in our country as well.[21]

The pattern of tumors in our data shows some interesting features and at the same time it confirms some generally known facts like high prevalence of Breast, Bronchogenic, Ovarian Cervical colorectal malignancies, and Lymphomas in our country. Colo-rectal, Lymphoma, Skin and Pancreatic tumors are common in both sexes with almost same age distribution in our study. There is a need to educate doctors and paramedical staff and to create awareness among the public about cancer. Unfortunately, tumors of the skin, soft tissue and bones which should be so apparent remain neglected for a long period, of time. Similarly, Breast carcinoma which should be detected quite easily remains untreated for a long time in our country. Increased incidence of malignancies e.g. Bronchogenic carcinoma and its relation to smoking should be brought to the public notice through awareness programs.

REFERENCE

1. Ahmad M, Khan AH, Mansoor A. The pattern of malignant tumors in Northern Pakistan.JPMA1991;41:270-3.
2. Ahmad J, Hashmi MA, Naveed IA, Hussain A, Amin D. Spectrum of malignancies in Faisal Abad: 1986-90. Pak J Path. 1992; 3(2): 103-110.
3. Bhurgri Y, Bhurgri A, Rahim A, Bhutto K, Pinjani PK, Usman A, Hassan SH. The pattern of malignancies in Karachi (1995-1996) J Pak Med Assoc. 1999; 49(7): 157-162.
4. Yaqoob N, Ahmed W, Abbassi SM. Lung cancer a clinico- pathological study. JCPSP 2001;11(3):136-8.
5. Winkelstein WJR, ErnsterVI. Epidemiology and etiology. In: Murphy GP (ed) Prostatic cancer. Colo: PSA Publishing Co. 1979: 1-17.
6. Waxman J, Siani A. The current status of scientific research and hormonal treatment of carcinoma of prostate. Br J Cancer. 1991:64; 419-23.
7. Brownson RC, Chang JC, Davis JR, Baghby JR. Occupational risk of prostatic cancer: A cancer registry based study. J Occup Med 1988; 30:528.
8. Taylor I. Colon polyps and colon cancer. Medicine Int. 1996; 2(9): 1063-66.
9. Ghafoor A, Jan MA, Bokhari H. Clinical presentation and diagnosis of colorectal cancer. JCPSP 1998; 8(3):126-8.
10. Siyal AR, Shaikh SM, Baluch QD, Rathi SL, Chand H. A study of colorectal carcinoma. J Surg Pak 1999; 4(3): 14-16.
11. Fuiding JWL. Gastric cancer. Surgery international. 1999;48:299-302.
12. Parkin DM (ed). Cancer occurrence in developing countries. Lyon: IARC Scientific Publication No 75; 1986:163-73.
13. Stiller CA, Mckinney PA, Bunek KJ, Baily CC, Lewis IJ. Childhood cancer and ethnic groups in Britain. Br J Cancer 1991; 64:543.
14. Siddiqui NA. Pattern of skin cancer at tertiary referral hospital in Karachi. JCPSP 1998; 8(2):56-9.
15. Shahina P, Shahid MA. Prognostic factors in stage 1 Breast cancer: a prognostic study. JPMA 1997;47(4):117-18.

16. Usmani K, Khanum A, Afzal H, Ahmed N. Breast carcinoma in Pakistani women. J Enviorn Pathol Toxicol Oncol 1996; 15(2-4):251-53.

17. Ghumro AA, Khaskheli NM, Memon AA, Ansari AG, Awan MS. Clinical profile of patients with Breast cancer. JCPSP 2002;12(1):28-31.

18. Tariq N, Alam SM. A medical audit of the frequency of ovarian tumors. J Surg Pak 1998; 3(1):26-7.

19. Ahmad M, Durrani KM, Khawaja KK. Colorectal cancer: a clinicopathological study. Pak Med Reserch 1990;29(2):62-4.

20. Shamim MS, Somroo R, Nadeem K, Habib Z. Incidental carcinoma of gall bladder. JCPSP 2001;11(2):98-99.

21. Farooqi JA, Farooqi RJ. Hepatocellular carcinoma. JCPSP 2001;11(12):776-82.

ACUTE ABDOMEN IN MALARIA

S. SAGHEER HUSSAIN SHAH*, SHAFIQ-UR REHMAN

ABSTRACT:
This is a study of seven cases (11%) of acute mesenteric ischaemia presenting as acute abdomen in a cohart of 60, of blood smear proven Malaria. Their presentation, diagnosis and management were recorded. Pathophysiology of occlusion of mesenteric vessels and the uncommon presentations of gut ischaemia due to malaria are discussed. In conclusion patients with short history of high grade fever followed by abdominal pain, malaria should be considered in the differential diagnosis.

KEY WORDS: : Mesenteric occlusion, plasmodium falciparum

INTRODUCTION

Malaria is a protozoal disease transmitted by the bite of infected Anopheles mosquitoes.[1,2] It is the most important of the parasitic diseases of human with transmission in 103 countries affecting more than 1 billion people and causing between 1 to 3 million deaths each year. Although malaria has been eradicated from North America, Europe and Russia but still today it remains, as it has been for centuries, a heavy burden on tropical communities, a threat to non-endemic countries and a danger to travelers.[6,7,8]

After invading an erythrocyte, the growing parasite progressively consumes and degrades the intra-cellular proteins, principally hemoglobin.[4,5,6,10] The potentially toxic heme is Polymerized to biologically inert substance hemozoin or malaria pigment. The parasite also alters the red cell membrane by changing its transport properties, exposing cryptic surface antigens and inserting new parasite derived proteins. The red cell becomes more irregular in shape, more antigenic and less deformable. In plasmodium falciparum infestation, membrane protuberances appear on the erythrocyte's surface. These "knobs" extrude a high molecular weight, antigen variant, strain specific, adhesive protein that mediates attachment to the receptors on venules and capillary endothelium; an event termed as cytoadherence and the infested erythrocyte sticks inside the small blood vessel.

Correspondence:
Dr. S. Sagheer Hussain Shah
Ward # 3, Department of Surgery
JPMC, Rafique Shaheed Road, Karachi.

At the same time, P. Falciparum infested red cells may also adhere to uninfested red cell, to form rosettes. The process of cytoadherence and rosette formation is central to the pathogenesis of Falciparum Malaria.[4,6,7,8,13]

This study is based on the presentation of malaria as acute surgical emergency due to occlusion of the mesenteric arteries.

MATERIAL AND METHODS

A prospective trial was carried out in medical unit-1 of Civil Hospital Karachi in collobration with the department of surgery ward 3 JPMC Karachi on 60 patients, fulfilling the criteria out lined below and then referred to a general surgeon.

Inclusion criteria were: Patients of both the sexes aged between 15 to 60 years with evidence of plasmodium falciparum on blood smear.

Exclusion criteria were: pregnant and nursing mothers, patients with a strong clinical suspicion of malaria but with no malarial parasite in the peripheral blood film, patient with malarial parasites other than plasmodium falciparum, patients with history of pre existing liver or renal disease, patient with diabetes mellitus, on lipid lowering agents, valvular heart disease and dilated cardiomyopathy.

On admission each patient underwent a detail clinical evaluation and examination. Blood CP, thick and thin blood smears for malarial parasite, FBS/RBS, Lipid profiles, ECG, LFTs, and PT/APTT were carried out.

RESULTS

Seven patients (11%) five males and two females out of sixty who tested positive for Plasmodium falciparum in their peripheral blood smear, presented with high-grade intermittent fever for 48 to 72 hours associated with rigor and chills, anorexia and nausea. This was followed by abdominal pain initially colicky in the peri-umblical region; soon becoming severe and generalized along with dark loose motions.[7,8,13]

Two patients had pain after meals initially before presenting as acute abdomen, while 5 patients had history of rectal bleeding, there digital rectal examination revealed dark colored (altered) blood. One important observation was that all the above mentioned patients had not taken any serious note of the febrile illness, initially and thus by the time gastrointestinal symptoms appeared they had not taken any anti-malarial drug.[2,4,5,6] On examination they were dehydrated, toxic looking, with raised pulse (range 116/min. to 140/min.) and tender rigid abbdomen.

All the patients were resuscitated, fluid and electrolytes were balanced, hourly monitoring of pulse and blood pressure with measurement of input and out-put were carried out. They were managed with drip and suction, triple antibiotics and anti- malarial drugs.[5]

X-Ray abdomen (erect and supine) showed distended, thickened bowel with air fluid levels. All the seven patients were subjected to Doppler ultrasound, which revealed altered blood flow (100%), two patients (28%) had totally absent flow in the Superior Mesenteric arteries. Radiologically two of the patients had typical appearance of "Thumb Printing"[6,7,8,11,13] on Barium enema. Because of economic reasons only two patients with decreased flow on Doppler were subjected to angiographies, which revealed complete obstruction of Superior Mesenteric artery with decrease flow in Inferior Mesenteric Artery in these cases.

Two patients (28%) with no radiological evidence of mesenteric occlusion improved on conservative treatment within 24 hours. While five patients became more toxic with raising pulse and abdominal tenderness and were subjected to emergency laparotomy. Serosangenous fluid 500 to 1500 ml was found in the peritoneal cavity along with necrosis of small intestine of varying extent. A patient with total juejunal and ileal necrosis died in the immediate post operative period while two with resection of distal juejunum, ileum and caceum with juejenostomy recovered after prolong morbidity. In the remaining two patients resection of distal juejenum and proximal ileum with internal primary anastomosis was undertaken, one of them had anastamotic leakage. The end result being that 3 patients (42%) recovered after prolonged morbidity and only one female patient recovered uneventfully and was discharged on the 14th post-operative day, while one (14%) patient died in the immediate post- operative period.

DISCUSSION

Ascribing the gastrointestinal symptoms in these patients to falciparum malaria is a difficult proposition. However since we have excluded patients with major risk factors for atherosclerosis,[4,5,6] underlying heart disease and valvular lesions, these symptoms of intestinal ischemia can only be attributed to infestation with plasmodium falciparum.

The Rosetting of infected and uninfected red blood cells and cyto-adherence of parasitized erythrocyte to the vascular endothelium,[4,6,7,13] plays a crucial role in sequestration of parasite and obstruction of the vessels. Search through the available literature has proven this pathology in small sized vessels of brain and micro-circulation in kidney and even in heart leading to renal failure and cardiac dysfunction and arrhythmia,[10,13] but no information could be found on occlusion of medium and large size mesenteric circulation.

Acute mesenteric ischaemia comprises 0.1% of all hospital admissions in UK and the average mortality of patients with acute thrombosis is 75-80%,[13] the outcome of patients suffering from acute thrombosis is not as good as those with chronic ischaemia.[10,13] A retrospective study by Mamode found that 18% of patients with mesenteric occlusion were properly diagnosed prior to surgery or death. In this same review, 46 of 57 patients died from mesenteric ischaemia.[10]

The episode of mesenteric occlusion due to malarial parasite is of a very short duration and classical history of weight loss, postprandial pain, and fear of eating[13] is not found. Unlike these patients, with acute thrombosis those long-standing chronic ischemia have with well-developed collateral circulation. Also thrombosis of the Superior mesenteric artery (SMA) generally occurs flush with the aortic origin of the vessel resulting in an aortogram that fails to demonstrate any visualization of the SMA.[10,13] Similarly patients with embolization of the SMA or occlusion due to rosette formation will have an aortogram that demonstrates filling of the proximal SMA vessels with a sharp cutoff with no visualization of the distal vessels.[12] Because arteriography can precipitate acute ischemia, it is important to make sure that the patient is well hydrated.[10,12]

The diagnosis could be suspected by differentiating from other conditions producing peritonitis and from especially those that begin with fever first, e.g. typhoid causing ileal

perforation; whereas patients develop peritonitis during the third week of illness. While it has been observed in this study that the duration of fever was 48 to 72 hours and was associated with rigors and chills in these patients. In peritonitis secondary to perforated appendix, a careful history will reveal that pain was the first symptom to appear.

Recent advances in invasive radiology has made it possible that some patients may be good candidates for percutaneous transluminal angioplasty with stenting, as was reported by Bertran.[12]

We concluded that patients with short history of high grade fever with chills and rigor followed by severe abdominal pain, malaria should be considered in the differential diagnoses of the causes of peritonitis and peripheral blood smear should be examined for malarial parasite.

REFERENCES

1. Stanley J. Malaria. Emerg Med Clin North Am 1997;15:113
2. White NJ. The treatment of malaria. New Engl J Med 1996;535:800 - 6
3. Kulkarni AV, Kasturi L, Amin A, Mashankar V. Therapy and drug resistance in malaria. Indian J Pediatr. 2000 Jan; 67(1): 33-5.
4. McIntosh HM, Olliaro P. Artemisnin derivatives for treating uncomplicated malaria. The cochraine library (Oxford) 2001 issue 2 (37P) (41 ref 27 bib).
5. Brockman A, Price RN, Van Vugt M, Heppner DG, Walsh D, Sookto P et al. Plasmodium falciparum antimalarial drug. Susceptibility on the north-western border of Thailand during five years of extensive use of artesunate - mefloquine. Trans R Soc Trop Med Hyg. 2000 Sept-Oct; 94 (5): 537-44.
6. McIntosh HM, Olliaro P. Artemisinin derivatives for treating severe malaria. The cochrane library (Oxford) 2001 issue 2 (25p) (33 ref 34 bib).
7. Harrison text book of internal medicine 15th edition
8. Current medical diagnosis and treatment 2002
9. Oxford text book of medicine 4th edition
10. Mamode N, Pickford I, Leiberman P: Failure to improve outcome in acute mesenteric ischaemia: seven-year review. Eur J Surg 1999 Mar; 165(3): 203-8).
11. Wolf EL, Sprayregen S, Bakal CW: Radiology in intestinal ischemia. Plain film, contrast, and other imaging studies. Surg Clin North Am 1992 Feb; 72(1): 107-24
12. Bertran X, Muchart J, Planas R: Occlusion of the superior mesenteric artery in a patient with polycythemia vera: resolution with percutaneous transluminal angioplasty. Ann Hematol 1996 Feb; 72(2): 89-91.
13. Dean J Tessier, Yale D Pondas: Mesentric occlusion. eMedicine Journal, May30th 2002,vol.3,no 5. University of California Medical Center.

MANAGEMENT OF PILONIDAL SINUS

A. SAMAD KHAN, AZRA A. GHANI

ABSTRACT:
A prospective study was conducted in "Surgical A" Lady Reading Hospital, Peshawar from December 2000 to May 2001 to evaluate the results of different methods of treatment of pilonidal sinus. Twenty patients who were fit for general anaesthesia were selected for operative treatment and were included in the study. Acute infection was treated first. Twelve patients were treated by Karydaki's procedure and eight were treated by open method. The mean hospital stay was 4-5 days in Karydaki's but multiple admissions were required for open procedure patients. There was two recurrence in the open procedure. The technique of asymmetric cleft closure is the best method of treatment for the management of pilonidal sinus.

Key words:- Karydakis procedure, pilonidal sinus management.

INTRODUCTION

Pilonidal sinus disease most commonly occurs in the natal clefts. Predisposing factors include hairy skin, prolonged sitting and poor hygiene etc. It has been proposed that it can occur anywhere along the lines of fusion of ectoderm.[1] More males are affected than females; ratio being 4:1.[2] Rarely the disease can occur between the fingers, breasts[3] and umbilicus.[3] The clinical presentation varies from an acute abscess to a chronic discharging sinus. Treatment modalities are multiple. The old method is to lay open the tract and allow healing by secondary intention.[4] This method is now only used for treatment of acute abscesses. For chronic conditions, asymmetric closure of the cleft is used i.e. Bascom and Kardydakis techniques. Other methods like phenol injections and lasers for excision of sinus[5] are also used. The treatment of choice in our circumstances was asymmetric closure of the cleft i.e. Karydakis.

PURPOSE OF STUDY

The purpose of the study was to know the results of different methods of treatment of chronic pilonidal sinus.

Correspondence:
Prof. Abdus Samad Khan
Prof. of Surgery,
P.G.M.I. / L.R.H,
Peshawar.

MATERIAL AND METHODS

This study was carried out in surgical A, Lady Reading Hospital, Peshawar. The number of patients selected for the study was 20. By profession 10 were drivers, 04 tailors, 04 shopkeeper and 02 labourer. All were male and none had acute infection. Baseline investigations, that is hemoglobin, total leukocyte count, differential leukocyte count and random blood sugar, X-ray sacral region and sinogram of the tract were done in all the patients.
Out of the 20 patients, tweleve were treated by Karydakis procedure, which is deep excision of the tract and asymmetric closure. Eight patients were treated by laying open the tract and regular dressings.

RESULTS

The operation time for Karydakis was one hour and for open method twenty minutes. For Karydakis procedure, the operation was done once but as in the case of open procedure many attempts were made. The hospital stay was 4-5 days for Karydakis but open method needed multiple visits. The healing time was 10 days for Karydakis and 2-3 months for open method. The most important aspect i.e. return to activity was 02 weeks for Karydakis and about 02 months for open method.

All the patients were treated on a third generation antibiotic and painkillers, They were also encouraged to

take daily shower, to clean the local area with soap and water, regularly shave the area and to apply small dressing pads.

There were no immediate post operative complications except. Two recurrences of the sinus occurred during the follow up of patients who were treated by open method.

DISCUSSION

Pilonidal sinus disease is a problem which is more of a neusance rather than real damage to health. It is more common among hirsuites[6] and those with poor hygiene. Allen Mersh in his review articles in 1990[7] gave a comprehensive comparison among many methods of treatments clearly showing asymmetric cleft closure to be the one with the least recurrence and problems. One study had comparable result with 0% recurrence for Karydakis methods. Toulouse, in 1999[8] in 246 cases were studied and treated by difficult methods. This study also showed excision and rotation skin flaps to be the best treatment option. The recurrence rate for open method is well documented in literature[9] and we also encountered two recurrences for this method. The documented complications are bleeding, narcotizing fasciaitis,[10] leaks, delayed healing and recurrences but we did not experience any of these except two recurrences in open method.

REFERENCE

1. Da Silva JH et al Pilonidal cyst, cause and treatment. Dis-Colon- Rectum. 2000 Aug; 4B(8); 1146-56.
2. Akinci-OF; Coskun-A; Uzunkoy-A. Simple and effective surgical treatment of pilonidal sinus. Dis-Colon-Rectum 2000 May; 34(5): 701-6.
3. James H. Mc Clenathan. Umbilical bilonidal sinus. Can J Sorg 2000; 43: 225.
4. Viciano-V; Castera-JE; Medrano-J; Agnilo-J; Tooro J; Botella-Ma; Toldaro-M. Effects of dressings on healing by second intention. Eur-J-Surg. 2000 March; 166(3).
6. Patesty-JA; Zahir-KS; Dudrick-SJ; Derri-S; Tripodi-H, Nd: 1/AG laser sungery for excision of tronidal cysts. Laser-surgery-Med, 2000; 26(4).
7. Lee-HC; HO-YH; Seow-CF; Eu-KW; Nyam-D. Pilonidal disease in Singapore. Aust-N-2-J-Surg 2000 March; 70(3).
8. Allen Mersh
9. Quinidoz-PD; Chilooh-Ma surgical treatment of saerocouygeal pilonidal disease by incision of skin flaps. The touleuse experience. Eur-J. Surg 1999 Nov 165(11).
9. Zieger-K et al. Complication after surgery for pilonidal cyst. Ugerkevlaeger. 1999, Nov 1; (161) 44.
10. About-B, Ferran-F; Chaline-G. Narcotizing facilities in sacrococeygeal pilonidal sinus. Ann-Chir-Plast-Esthet. 1999 Oct; 44(5).

CLINICAL PRESENTATION OF LIVER ABSCESS

MUHAMMAD MUSHTAQ,GHULAM MUSTAFA NANDWANI,

ASADULLAH KHAN

ABSTRACT:
Liver abscesses is a common problem in developing countries especially with poor hygiene and water supply.
A retrospective study was conducted to review the records of cases of liver abscesses treated at Jinnah postgraduate medical centre Karachi from September 1996 to July 2001. The objective being to see the most common clinical presentation of liver abscess.

A total of 158 cases 136 male and 22 female were admitted and treated. The most common clinical features were fever, pain right upper abdomen and hepatomagally. Ultrasound diagnosed 96.8% of cases. 56 patients were treated with antibiotics, 79 had aspiration and 17 had exploratory laparatomy. There was no mortality in our study.

Key words:- Liver Abscess, Pyogenic Liver Abscess, PLA, Amoebic Liver Abscess, ALA

INTRODUCTION

Since Hippocrates (460 BC), liver abscess has been recognized.[1] It is still a common clinical problem in developing countries. In early 19th century Bright suggested that amoeba might contribute to the formation of hepatic abscess[2] and in 1883, Kochs described amoebae in the wall of the hepatic abscesses. Fritz[3] and Dieulafoy[4] emphasized the importance of intraabdominal source of infection in the pathogenesis of liver abscesses.

In 1938 and 1943, Ochsner and Debacky[5] presented basic treatises on hepatic abscess, respectively. In 19th century British physicians described dysentery and liver abscesses.[6] Adams and Macleod noted the common complication of liver abscess (amoebic) in invasive amoebiasis in 1977.[7] Ultrasonography has revolutionized the diagnosis and treatment of liver abscess.

Initially, ippecacuanah (emetine) was used for treatment of liver abscess and later highly effective metronidazole was used for amoebic liver abscess and is still the drug of choice.

In developing countries like Pakistan, where living conditions are poor and water supplies are heavily contaminated, liver abscesses are common and are mostly amoebic in origin.

E. Histolytica infests 10% of the world's population[8] and is the 3rd most common cause of parasitic death after malaria and schistosomiasis world wide.[9]
The key to the diagnosis is recognition of epidemiological risk factors and the common presenting clinical patterns. Lack of familiarity with the clinical features of this condition and failure to consider diagnosis are among the more important factors contributing to the morbidity and mortality of live abscess.

The most common form of extra intestinal amoebiasis is liver abscess. Worldwide there are an estimated 50 to 100 million combined cases of amoebic colitis and hepatic abscesses per year and up to 100,000 deaths, mostly in developing countries.[27] Extra-intestinal disease most commonly involves the liver, but can also affect the

Correspondence:
Dr. Muhammad Mushtaq
Senior Registrar,
Surgical Unit II, Ward 3, Jinnah Postgraduate Medical Centre,
Rafiqui Shaheed Road,Karachi, Pakistan. Postcode: 75510

lungs, pericardium, genitals, skin and brain.[27] E. Histolytica largely affects and inhabitants the tropical and subtropical regions.[9] Predisposing factors include poor sanitation, low socioeconomic status, malnutrition and concomitant diseases leading to low host resistance.[9]

The differential diagnoses of liver abscess are extensive. The diagnosis therefore, largely relies on the recognition of epidemiological risk factors, knowledge of clinical syndromes, the use of proper imaging techniques and serologic tests.[27]

Our study aims to highlight the clinical manifestations of liver abscess along-with helping tools in the diagnosis and management strategy.

MATERIALS AND METHODS

Records of the patients admitted to Jinnah Postgraduate Medical Center between 1/9/96 to 1/7/2001 with the diagnosis of liver abscess were reviewed.

The patients age, sex, history, clinical examination, laboratory results, ultrasongraphy, radiological findings and treatments were reviewed in detail. The results are analyzed and discussed.

RESULTS

A total of 158 patients with liver abscess were admitted during the period from 1/9/96 to 1/7/2001 in the Department of Surgery, Jinnah Postgraduate Medical Centre. There were 22 female and136 male patients (1: 6.18) with the mean age of 39.74 years ranging from 14 to 95 years.

Relevant clinical and laboratory features are shown in the tables I and II. Hepatomegally could not be assessed in 12 patients, however, per operatively liver size was enlarged in 11 out of 12 patients so over all incidence of hepatomegally was 81.65%. Out of 158 patients

TABLE-I CLINICAL MANIFESTATIONS (N=185)

PRESENTATION	PERCENTAGE	PATIENTS (N)
FEVER	93.04	147
PAIN RHC	93.04	147
ANOREXIA	62.03	98
NAUSEA	36.71	.58
VOMITING	47.47	75
DYSENTERY	13.92	22
TENDER HEPATOMEGALLY	81.65	129
INTERCOSTAL TENDERNESS	59.49	94
PERITONITIS	11.39	18
EMPYEMA THORACIS	1.9	3
SEPTIC SHOCK	5.06	8

141(89.2%) had amoebic liver abscess and 17(10.75%) had pyogenic liver abscess. 4 patients with pyogenic liver abscess had malignant biliary tree obstruction, 4 laparotomies for pelvic sepsis, 3 appendectomies, 1 cholecystectomy and 5 were cryptogenic.

Chest x-ray was performed in all the patients. Seventy (44.3%) showed abnormalities in the form of pleural effusion (18.84%) and elevated right hemidiaphragm (33.85%). Ultrasonograpy was done in all the patients with accuracy of 96.8%.

Only 2 patients with doubtful results had CT scan.

Co morbid conditions were present in 11 patients, 5 had diabetes mellitus, 3 had malignant biliary tree obstruction, 2 had pelvic abscess and one was grossly malnourished patient.

TABLE-II LAB RESULTS AND X-RAY FINDINGS (N=158)

RESULTS	PERCENTAGE	PATIENTS
ANEMIA	72.78	115
JAUNDICE	31.01	49
LEUCOCYTOSIS	70.25	111
RAISED ALKALINE PHOSPHATASE	56.96	90
RAISED GGT	22.78	36
RAISED LIVER ENZYMES	10.13	16
DISTURBED PT	10.13	16
ABNORMAL X-RAY	44.94	71
PLEURAL EFFUSION	17.72	28
RAISED HEMI DIAPHRAGM	32.28	51

TABLE-III RESULTS OF ULTRASONGRAPHY

SITE OF ABSCESS	PATIENTS (%)
RIGHT LOBE	121 (76.58)
LEFT LOBE	19 (12.02)
BOTH LOBES	18 (11.39)
SINGLE	112 (70.88)
MULTIPLE	35 (22.15)

Average size was 7.63 cm ranging from 0.5 cm to 18 cm. 38 were less that 7 cm.

Seventeen(10.75%) patients presented with peritonitis and underwent exploratory laprotomy for intraperitoneal rupture of liver abscess; all of them had good recovery. 2 patients (3.07%) had liver abscess ruptured into the pleural cavity. 56(35.44%) patients were treated with antibiotics alone and were cured. 79(50%) patients underwent ultrasound guided aspiration and antibiotics but 6(3.79%) of them needed repeated aspirations. No complications occurred in this group. Tube thoracostomy and antibiotics successfully managed 3 patients with amoebic empyema thorcis. 8 patients presented with septic shock and multiple organ failure. 2 expired so overall mortality was 1.26%. Survival rate was 100% in our study in uncomplicated patients while mortality figures

were 7.14% in complicated cases.

Fifty six patients were treated with antibiotics alone. All of them had small abscesses i.e. less than 8cm in size. They were started with metronidazole combined with a quinolone; later was discontinued after confirmation of diagnosis of amoebic liver abscess but continued for 4 weeks in cases of pyogenic liver abscesses. 7 patients were treated with metronidazole combined with chloroquine. The mean time of disappearance of symptoms was 3 days in these cases and mean hospital stay was 4 to 5 days in this group. All of them were successfully cured.

Seventy nine patients underwent ultrasound guided needle aspiration and 5 of them had multiple aspirations. One patient failed to respond to repeated aspirations and was subjected to open surgical drainage. In cases of multiple abscesses larger cavities were aspirated. The amount of aspirated pus ranged from 50ml to 1300ml. The typical anchovy sauce pus was present in 22 patients of this group.

Surgical drainage was carried out in 17 patients; 12 of them presented in the Accident and Emergency Dept. with peritonitis. All of them underwent exploratory laprotomy through midline incision. Peritoneal and abscess cavities were washed with copious amount of normal saline and drains were placed through separate stab wounds. Post operatively they were given metronidazole 500mg 8hrly combined with a 2nd generation cephalosporin.

Three patients presented with abscess rupturing into pleural cavity. They were treated with tube thoracostomy and antibiotics. All these patients had good recovery and there was no mortality in this group.

In our experience amoebic liver abscess is more common than pyogenic liver abscess. Tirade of fever, pain in the right upper abdomen and tender hepatomegally or intercostals tenderness should always raise a high suspicion of liver abscess. Timely aspiration combined with metronidazole is the best management and laprotomy is only needed for intraperitoneal rupture of liver abscess.

DISCUSSION

Liver abscess causes a tirade of fever, right upper quadrant pain and tender hepatomegaly. These were the most common presenting features in our study. The diagnosis was confirmed on laboratory results and imaging techniques. Ultrasonography was used to diagnose and monitor the response of therapeutic measures. Ultrasonography has the advantage of low cost, availability and lack of radiation exposure. It does not distinguish between amoebic or pyogenic liver abscess and these should be interpreted in the light of the clinical picture and laboratory results.[9]

TABLE-IV COMPARISON OF CLINICALFEATURES IN PRESENT STUDY WITH RAMCHANDRAN ET AL (1976) SHAIKH Z. ET AL (1989) FARHAT MOAZAM AND NAZIR (1998) AND AISH MEHNAZ AND S.MOHSIN A.ZAHAER ALI (1991)

Signs and Symptoms	Present study	Ramachandran	Shaikh Z.	Moazam F.	Aisha Mehnaz
Fever	93.04%	75.2%	95.8%	100%	100%
Pain in Right Hypochondrium	93.04%	72.3%	91.6%	81.2%	76.6%
Anorexia	62.03%	2.2%	69.7%	43.7%	13.3%
Dysentry	13.92%	6.6%	16.6%	16.6%	36.3%
Jaundice	31.01%	8%	31.2%	4.1%	6.6%
Hepatomegally	81.65%	79.5%	100%	100%	96.6%

Laboratory abnormalities are not uncommon in patients with amoebic liver abscess. An elevated leukocyte count and mild anemia may be found. For amoebic liver abscess metronidazole is the first line treatment and in cases of pyogenic liver abscess quinolones or other antibiotics according to sensitivity should be used.

To begin with, in our study fever was present in 93.04% patients while it was reported in 75.2% by Ramachandran, 95.8 % by Sheikh Z. and 100% by of Aisha M. and F. Moazam.[9,12,13,14]

Pain right hypochondrium was present in 93.04% of our patients while Ramachandran reported 72.3%, Sheikh Z. 91.6%, Aisha M. 76.6% and F. Moazam 81.2%.[9,12,13,14]

Anorexia was present in 62.03% of our patients while 2.2% in Ramachandaran, 69.7% in Sheikh Z., 13.3% in Aisha M. and 43.7% in F. Moazam.[9,12,13,14]

We report 13.92% incidence of loose motions while studies of Ramachandran, Sheikh Z., Aisha M. and F. Moazam reported 6.6%, 16.6%, 36.3% and 16.6% incidence, respectively.[9,12,13,14]

Further, jaundice and hepatomegally was present in 31.01% and 81.65% of our cases while Ramachandaran reported in 8% and 79.5%, Sheikh Z. in 31.2% and 100%, Aisha M. in 6.6% and 96.6%, and F. Moazam in 4.1% and 100% of cases.[9,12,13,14]

From the comparative figures we can conclude that fever, pain right upper abdomen and hepatomegally are prominent clinical manifestations and should always herald the suspicion of liver abscess.

REFERENCE

1. Hippocrates in the genuine work of Hippocrates translated

from Greek with a preliminary discourse and annotations by Adams F. Vols. II, NEW YORK, WILLIAM WOOD and CO. and I 1886. PP: 55-57, 266, 267. Cited in Sabiston textbook of Surgery 15th Edition, 1997. W. B. Saunders Company, PP: 1061-1068.
2. Bright R. observations on jaundice, Grey's hospital Rep: 1;63 (1836)
3. Fritz H. R. perforating inflammation of the vermiform appendix.
4. Dieleufoy: Le Foie appendialaire Absces du Fore consecutinge al, appendicite. Sem. Med. (Paris) 18:449 (1898).
5. Ochnar A. Debakey M. (1938) Sub phrenic abscesses collective review and an analysis of 3608 patients collected and personal cases. International abstract in surgery. 66-426-438. Surgery Gynecology Obstetrics. May 38.
6. Kevin M. De Cock; Telfer B. Reynolds. Amoebic and pyogenic liver abscess. In: Diseases of the liver, by Leon Schiff and Eugene R. schiff, 6th ed. J. B. Lippincott Company, Philidelphia, 1987; 1235-1253.
7. Adams E. B. Macleod I. N. 1977, Invasive amoebiasis to amoebic liver abscesses and its complications. Medicine 56(4): 325-334.
8. Baily and Loves Short practice of Surgery 22nd ed. 1999
9. Moazam F. and Nazir Z. Amoebic liver abscesses. Spare the knife but save the child. Journal of paediatric surgery 33:1:Jan 1988: PP: 119-122.
10. Mahdi NK. Al-obaidi, Benyan AZ. Hepatic abscesses among Iraqi patients, JPMA, 39(10); 1989 Oct: 259-261.
11. Luis Landa, Neil A. croll. Amoebic liver abscess. In the Diseases of the liver by Leon Schiff and Eugene R. schiff 5th ed. J. B. Lippincott Company, Philidelphia, 1982; 1239-1250.
12. Mehnaz A. Ali SM. Liver abscesses in children not an uncommon problem. JPMA 1991 Nov; 41(11): 273-275.
13. Sheikh Z, khan MH, Qamar R. Clinical profile of 100 cases of liver abscess. JPMA 1989 Oct. 39(10): 256-258.
14. Ramachandran S, Goonatillake HO, Induruwa PAC. Syndromes in amoebic liver abscess. Br. J. Surg 1976; 63: 220.
15. Northover JMA, Jones BJM, Dawson JL, Williams R. 1982. Difficulties in the diagnosis and management of pyogenic liver abscesses. Br J Surg 69: 48-51.
16. McDonald WP, Howard RJ, pyogenic liver abscesses. Worl J Surg 1980(4): 369-380
17. Khan MH, Qamor R, Shaikh Z. Serodiagnosis of amoebic liver abscess by IHA method. JPMA 1989 Oct., 39(10): 262-264
18. Moor S, Miller AJW and Cywas S. liver abscesses in childhood. Paeditric Surg Int 1988(3): 27-32.
19. Kailogowska E, Nobel J. Sonography of hepatic abscesses. Seminars in ultrasound 1983(4): 102-112.
20. Rubinson HA, Isikoff MB, Hill MC. Diagnostic imaging of hepatic abscess. A retrospective analysis. AJR 1980: 135-735.
21. Rall PW, Colleti PM, Boswell WD, Hells JM. Right upper quadrant in Simeone J (ED) co-ordinated diagnostic imaging. Churchil Livingstone, new York. Ch. 1.
22. Barnes PF, De Cock KM, Reynold TN, Ralls PW. A comparison of amoebic and progenic abscesses of liver. Medicine (Baltimore), 1987 Nov., 66(6): 47-83.
23. Freeman-Or Akamaguna-A, Jarikre-LN. Amoebic liver abscess: the effect of aspiration on the resolution or healing time. Ann trop Med Parasitol 1980: Jun, 84(3) 281-7
24. Nigam P, Gupta AK, Kapoor KK, Joshi LD, Sharan GR, Goyal BM. Cholestasis in amoebic liver abscess. Gut 1985 Feb., 26(2): 140-142.
25. Schwarts textbook of surgery 8th ed. 1999.

EXPERIENCE OF FIRST 100 CASES OF LAPAROSCOPIC SURGERY

ATTA HUSSAIN SOOMRO, KHEO RAM, MOHAMMAD SALEEM SHAIKH,

ABDUL SATTAR ABRO, IMAM DIN BALOUCH, AKLEEMA ABRO

ABSTRACT:
Laparoscopic surgery has become a standard surgical treatment for elective cholecystectomy. Elective and emergency appendectomy is also now been done routinely.

This study was carried out at Larkana, Sindh, Pakistan, to document the first 100 cases of laparoscopic surgery. It included 78 cholecysectomies and 22 appendesectomies with special reference to conversion. Seven patients were converted to open cholecystectomy with conversion rate of 8.97%.

Laparoscopic cholecystectomy is a safe procedure with minimum scars for all patients with cholelithiasis. However we still have a higher rate of conversion in acute cholecystitis. The conversion rate is likely to reduce with the passage of time and experience.

Key words:- Laparoscopic cholecystectomy; Lap. appendix; conversion rate.

INTRODUCTION

A dramatic revolution has occurred in the management of gall stone disease[5] lap-chole. has gone a long way since its introduction in 1987.[22] It is widly accepted to be the treatment of choice for calculus and acalculus cholecystitis.[3,5,6]

PATIENTS AND METHODS

This study was carried out on the first 100 patients who under went laproscopic surgery at a private hospital in Larkana.

The Laboratory workup included, serum Bilirubin, Alkaline phosphates, SGPT,SGOT, Blood complete picture and x ray chest , all were within normal limits. All the cases above 45 years of age were referred to cardiologist for cardiac opinion, ECG and electrocardiography if required.

Correspondence:
Dr. Atta Hussain Soomro
Assistant Prof. Surgery,
Chandka Medical College,
Larkana.

All the patients had ultrasound to confirm the findings and to see any adhesions between the gall bladder and other structures. However the study showed 48 patient had Multiple and 30 had solitary stones.

All the patients received as prophylaxis a third generation cephalosporin, injection cephperazone(cefapezone) 1G before induction and 1gm after dressing. And a third dose after 12 hours, later they were shifted on to oral antibiotics.

In all the patients pneumoperitoneum was created with verses needle except 14 patient who had previous laparatomies and 4 other patients were open method was used.

30 degree laparoscope were used to help visualized biliary ductal and vascular anatomy the standard grapsers were used except in case of acutely inflammed gall bladder where claw graspers were used to hold the oedamatous gall bladder. Mucocele and empyema in 10 cases were aspirated for to secure the application of forceps.

RESULTS

This study is based on 100 cases admitted for laparscopic procedure for calculus or acalculus choleystectomy and for acute or elective appendesectomy. It includes 78 cases of lap.chole. and 22 cases of lap appendix. There were 60 female and 18 male in lap choleecystectomy group and 10 female 12 male in appendesectomy group.

The ages ranged between 35-75 (mean 45 years) in lap.chole. and in lap. appendesectomy the age ranged between 12-40 (mean 28 years).

The length of hospitalization before surgery was not more than 12 hours and post operatively 24 hours. All the patients were discharged early except the cases converted to open surgery.

Adhesions were present in 22 cases, where meticulous dissection of the vascular and ductal structures was necessary as they were distorted in the inflammed surroundings. Dissection of the gall bladder from liver bed was accomplished using unipolar diathermy, employing curved scissors blunt tipped spatulas and hook cautery probes.

The opened method of pneumoperitoneum was used in 20 cases of lap. cholecystectomy; 14 patients had previous laporatomies. In one case the anterior abdominal wall was so fatty that open method failed and operation had to be converted to open cholecystectomy. In lap appendectomy all the 20 cases were insufflated by verres needle. The lap.chole. was successful in 71 out of 78. 7 operation were converted to open cholecystectomy which gives conversion rate of 8.97% while successful lap. appendesectomies were 21 out of 22 giving conversion rate of 4.55%.

The reasons for conversion in this study were severe bleeding[2] which occurred from the cystic artery; in other two cases there were cholecystoduodenal fistulae and it was difficult to repair the duodenum. In three cases there were dense adhesions and the anatomy of the calot's triangle was completely distorted and the chance of damage to the CBD or hepatic artery was high. While in another case there was failure of insufflation.

In our study the conversion rate in the first 25 cases was 2 (8%) in next 25 cases it was 3 (12%) while in the last 28 cases conversion was done in only 2 cases (7.14%).

One patient returned after eight days for follow up with jaundice her Alkaline phosphates was 997, ultrasound showed massive collection she was referred to a tertiary care unit and was explored at JPMC where they found injury to the CHD with eight liters of bile inside the peritoneal cavity.

DISCUSSION

Management of biliary tract disease has been changed as a result of laparoscopic cholecystectomy. This is a major improvement over open cholecystectomy.[1,2] Lap. chole. has added a new dimension as for as surgical treatment of gall bladder is concerned[20] the benefits and associated risks for this procedure are well defined[6] but it has expanded to other areas of general surgery[7] it should be stressed that the safety and efficacy of this technique for the most part is untested; little has been reported regarding the role of lap.cholecystectomy in case of acute inflammation of biliary tract diseases[1] Biliary lithiasis occurs frequently in young multiparous females[17,28] while in our study maximum number of patients with cholelithiasis were young multiparous females.

The incidence of conversion from laparoscopic cholecystectomy verses open clolecystectomy in patients with acute cholecystitis was greater than that in patients undergoing elective lap cholecystectomy[20] as has been reported by other workers[7,8,9] and this has direct relationship with the extent of the inflammatory surroundings and the experience of the surgeon.

The increased incidence should not be interpreted as failure or shortcoming of laparoscopic cholecystectomy but a reflection of the severity of the disease. We believe that this low threshold conversion minimizes the risk of iatrogenic injury to the biliary ductal and vascular systems and is in the larger interest of the patient.

In our series 7 cases (8.97%) conversion is comparable with the earlier reported series 11%[20] 2.5%[4] and 7.5%[3] however this rate of conversion is not bad and it shows our learning curve. Most of the patients requiring conversion were males who had acute cholecystitis more and more surgeons all over the world are now performing laparoscopic cholecystectomy for acute cholecystitis .[12,13,14,15,16,17,18]

Lap. chole. procedure takes minimum of 45 minutes but in some difficult cases maximum time was upto 120 minutes average being about 60 - 90 minutes; as compared with others, 1-1/2 hours[4]. Our patients returned to normal work in 8 days, compared to other studies of 10 days.[4] In our study before attempting lap. chole. we had a liberal attitude to conversion and the patients were duly informed.

Lap. chole. has been shown to be the most cost effective method for the surgical treatment of gall stone disease.[19,21] The lap. chole. procedure is as expansive as opened cholecystestomy but one can say that this procedure is cost effective in term of time and patients returns to normal life early. It also save the cost of antibiotic and analgesic.

REFERENCE

1. Barkun JS:barkun-AN Meakins JL. Laparoscopic versus open cholecystectomy:the Canadian expreince.The MC Gill gall stone treatment group Am J. surg 1993 April.165(4):455-8.

2. Noorani,M shaikh,sial-I Laparoscopic versus open cholecystectomy. A comparative study of 200 cases JCPSPS vol7 (1):17-19.

3. Cuschieri A,Dulbois F,Mouiel J,Mouret P,Becker H,Buess G,'The Europiean experiences with laparoscopic cholecystoctomy Am J surg 1991: 161-385-7.

4. A Samad khan,Waqar Alam Jan.A comparative study of laparoscopic and open Mini cholecystectomy.Journal of surgery of pak internationl .vol#5 (1) Jan,Mar 2002-6-.

5. Pervaz Iqbal khadim siyal Ehsan siyal Gall stone disease an experience at civil hospital Karachi Medical channel vol 17 no 2 april_ june 2001 17_21.

6. Peters JH Miller J, Nicholas K . laparoscopic cholecystictomy in patients admitted with acute billary saymptoms.Am J surg 1993:166(3):300-3.

7. Sunders JH. Minimal access surgery in Farquharsons textbook of operative surgery rintoul RF (ed). Churchill Livingstone,Ediburgh.8th edition 1995,pp354.

8. Flower JL baily RW scovil WA et al.the baltmore experience with aparoscopic management of acute cholecystis. Am J sure 1991 Mar,161 (3):388-392.

9. Kum CK,Eypasch E, lefering R,laparoscopic cholecystectomy in acute cholecystitis. Is it really safe ?world journal of surgery 1996 jan;20(1)43-48

10. Estes NC,Mcelhinney C,Estes MA et al.Acute cholecystitis treated urgently by nonselective laparoscopic cholecystectomy.Am J surg 1996 Jul;62(7);5 98-601.

11. Vallina VL,Velasco JM,The influence of laparoscopic on lymphosyte subpopulations in the surgical patient. Surg endoscopy 1996 May ;10(5):481 -4.

12. Cox MR Willson TG,Luck AJ et al.laparoscopic cholecystectomy for acute inflammation of the Gall bladder Ann surg 1993nov;218 (5):630-4.

13. Lujan J A Parilla P , Robles R et al.Lparoscopic cholecystectomy in acute cholecysitictomy in the treatment ofacute cholecystitis.J Am coil surg 1995 Jul; 181 (i):75-7.

14. Koo Kp Thirlby RC: Laparoscopic cholecystectomy in acute holecystitis:what is the optimal timing for the operation?Arch surg 1996 May:131(5):540-4.ctomy and opem cholecystectomy.Br J surg 1994 Jan : 81(i):124-6..

20. Khan AZ Bhutta AR ZA Khan.Early laparoscopic cholecystectomy for acute billaery symptoms: is it worth it? Pakistan Journoul of surgery volume 16 # 3-4july to december.19 to 23.

21. wennwr J graffiner H lindall J cost effective gall stone surgery; laparoscopic cholecystectomy lakartdningen 1995 feb 22;92(6);763_4.

22. Dubois F Icard P Barthelot G cellioscopic cholecystectomy .Perliminary reportof 36 cases. Ann surg 1990 ;211(1)60_2.

PREVALENCE OF BACTERASCITES

QURBAN HUSSAIN, SHAHBAZ HYDER, M. AZHAR CHAUDHRY,

MASHOOR ALAM SHAH

ABSTRACT:
This is a Hospital based prospective study carried out in Medical Unit-I, Department of Medicine, Jinnah Postgraduate Medical Centre, Karachi from June, 1993 to May, 1994, to find the prevalence of bacterascites in cirrhotic patients with ascites.

65 cirrhotic patients with ascites were selected. Aspiration of ascitic fluid of all patients was done. The fluid was sent for analysis, culture and sensitivity. The main laboratory indicators were polymorph count/mm³ and culture positive ascitic fluid. Patients with bacterascites were followed for 12 weeks.

Prevalence of bacterascites was 8%. Twenty percent patients of bacterascites developed spontaneous bacterial peritonitis (SBP) during 12 weeks follow up.

Bacterascites does not require aggressive treatment. It usually resolves spontaneously.

Key words:- Cirrhosis, Bacterascites, Ascites

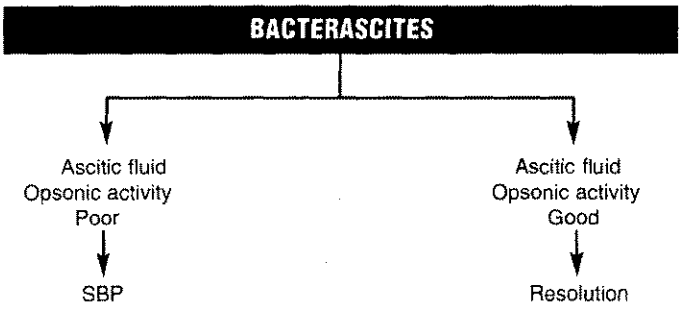
INTRODUCTION

Bacterascites is characterized by positive bacterial culture of ascitic fluid in the absence of highly elevated ascitic fluid polymorphs count or local source of infection.[1] Criteria used for its diagnosis were: A positive bacterial culture of ascitic fluid and A PMN count of < 250/mm³ of ascitic fluid.

On the contrary spontaneous bacterial peritonitis (SBP) is an infection of the ascitic fluid that occurs in these absence of a local source of infection or perforated viscus or both.[2]

The criteria for diagnosis of SBP are:
- An ascitic fluid culture positive for pathogenic bacteria and polymorphs count >250 /mm³ in ascitic fluid.
- If culture is negative, but polymorphs count is equal or more than 500/mm3, it is labelled SBP and called culture negative neutrocytic ascites, -a variant of SBP3.
- If polymorphs are <250/mm³ and even if bacterial culture is positive, it is not called SBP but bacterascites, which signifies the presence of bacteria in ascitic fluid but without production of any significant inflammatory reaction.

The progression of bacterascites to SBP depends upon the opsonic activity of ascitic fluid and is also related to the protein concentration of ascitic fluid. SBP is more likely if ascitic fluid protein content is < 1g/dl.[4,5]



Correspondence:
Dr. M. Azhar Chaudhry
5/110/7, Hashim Raza Road,
Model Colony,
Karachi.

MATERIAL AND METHOD

65 cirrhotic patients were selected, who were diagnosed on clinical criteria and confirmed on investigations in Medical Unit-I of Jinnah Postgraduate Medical Centre, Karachi from June 1993 to May 1994. Paracentesis of ascites was done. The ascitic fluid was sent for detail report {Protein, LDH, Glucose and Polymorphs (PMN)}, culture and sensitivity and for cytological examination, as in other similar studies.[3] The main laboratory indicator in this study was polymorph count in ascitic fluid. The patients with bacterascites were followed for a period of 12 weeks without prescribing any antibiotic or antibacterial agent. At the end of 12 weeks ascitic fluid was reaspirated and sent for detailed report as well as culture & sensitivity.

RESULTS

Out of 65 patients, 5 patients (8%) were found to have a positive bacterial culture but a polymorphonuclear count of <250/mm^3, and grouped under bacterascites. 10 patients (16%) were found to have classical spontaneous bacterial peritonitis (positive culture and polymorphs >250/ mm^3). Five other patients had culture negative ascitic fluid but polymorphs >500/ mm^3 and thus labelled culture negative neutrocytic ascites - variant of spontaneous bacterial peritonitis.

	Gram +ve	Gram -ve	Anaerobic
Organism in SBP	30%	70%	0
Organisms in bacterascites	80%	0	20%

Five patients with bacterascites were further followed up. After end of 12 weeks, ascitic fluid was re-aspirated and sent for D/R and culture and sensitivity. 20% patients had progressed to SBP. The culture was positive for the same organisms but polymorphs count had increased to 756/cmm in the ascitic fluid.
80% of patients showed no organisms, which indicated resolution of bacterascites.

DISCUSSION

Bacterascites is presence of bacteria in ascitic fluid without evoking an inflammatory process, but it can progress to SBP. Different studies show varying results of the progression of bacterascites to SBP. A study by Runyon[6] on bacterascites showed 38% progression to SBP.

Other study by Pelletier[1] in France showed 14% progression to SBP.

Our study reported 20% progression to SBP.

The mortality is very low in patients of bacterascites whereas in SBP it can be around 50%. Due to low mortality in bacterascites treatment is not recommended. It is suggested that these patients should be followed up. If they develop convincing symptoms of fever, abdominal pain, tenderness or hypotension, then paracentesis for ascitic fluid D/R and culture and sensitivity should be done. If it suggests SBP, it should be treated accordingly.

Prophylaxis is recommended when a patient has already suffered from SBP. This decreases the rate of recurrent infection to less than 20%. Prophylaxis should be considered in patients who have not had prior bacterial peritonitis but are merely at increased risk of infection due to low protein in ascites (protein <1gm/dl).

Norfloxacin 400mg daily, Ciprofloxacin 750 mg weekly and Trimethoprim Sulfamethoxazole (Cotrimoxazole) for the prevention of SBP[8,9] can be given.

Bacterascites is only an early stage of SBP. The main laboratory indicator is polymorphs in ascitic fluid. Usually, it resolves spontaneously and should not be treated but must be followed.

REFERENCE

1. Pelletier G., Lesur. G Insk O et al: A symptomatic bacterascites, is it spontaneous bacterial peritonitis. Hepatology 10:327-331;1990.
2. Runyon B A: Monomicrobial non-neutorcytic bacterascites, a variant of spontaneous bacterial peritonitis. Hepatology 12:710-715; 1990.
3. Carey WD BOAYKE, A Leatherman J: Spontaneous bacterial peritonitis clinical and laboratory features with reference to hospital acquired case. Am J. Gastroenterol. 81:1161;1986.
4. Runyon BA: Patients with deficient ascitic fluid opsonic activity are predisposed to spontaneous bacterial peritonitis. Hepatology 1988 18:632.
5. Guarner C et al: Risk of first community acquired spontaneous bacterial peritonitis in cirrhotics with low ascitic fluid protein level. Gastroentrology 1999 117:414.
6. Runyon BA, Hoefs JC: Culture, negative neutrocytic ascites a variant of SBP. Hepatology 4:120 g-12; 1984.
7. Titol, Rimola A, Gines P et al: Recurrence of spontaneous bacterial peritonitis in cirrhosis frequency and predictive factors. Hepatology 1988 8:27.
8. Rimola A et al: Diagnosis, treatment and prophylaxis of spontaneous bacterial peritonitis a consensus documents. Hepatol 2000 32:142.
9. Singh N., Gayowki T, Yu VL et al: Trimethoprim and Sulfamethoxazole for the prevention of SBP in cirrhosis a randomized treat. Ann entern. Med. 1995, 122:595.

HORSE HAIR AND TETANUS

A CASE STUDY

AURANGZEB KHAN

ABSTRACT:
A case of tetanus is reported. The disease was contracted from a horse hair used by a quack to excise a mole. The causative organism, Clostridium tetani, resides in horse hair and excreta. Unhealthy practices still prevalent in rural areas of Pakistan which can lead to this fatal disease.

Key words:- Tetanus, Dung, Hair.

INTRODUCTION

Horse dung is notorious for possessing Clostridium tetani. All roadside injuries are prophylactically treated for tetanus with active, and at times passive immunization. Warts and moles are traditionally excised by ligation with horse or mule hair. This practice can lead to tetanus in addition to sepsis and scarring. This potentially life-threatening procedure is still being practiced in some rural areas of Pakistan.

CASE REPORT

A 45-year-old female was brought with lockjaw and stiffness of lower limbs and back. About six weeks ago, she had a mole over her right orbital margin excised with horse hair. She had myoclonic convulsions of the whole body, occurring every two to three minutes lasting for 1 to 2 minutes. She was unable to open her mouth or swallow anything. The muscles of her abdomen and lower limbs were rigid and movements were painful. Stiffness of her facial and neck muscles was evident in the classic 'sardonic grin'. Her temperature was 100°F and she was stable hemodynamically. She was nursed in a dark and quiet room. Anti-tetanus serum was administered and intravenous benzyl penicillin started. She was fed through a well-lubricated naso-gastric tube and was kept sedated by giving her diazepam, phenobarbitone, chlorpromazine and Dormicum. She needed oxygen inhalation and analgesics for the first few days. Stiffness of her muscles persisted for a week and convulsions stopped after two weeks.

DISCUSSION:

Tetanus is caused by Clostridium tetani, a gram-positive, spore forming rod found in manure and soil. It gains entry into the human body through the skin after penetrating trauma. This does not necessarily cause tetanus. A low oxygen tension is required in the tissues for this bacterium to grow.[1] Once it multiplies, it exerts its effect on the body by producing an exotoxin. Mean incubation period is 5-7 days.[2]

Tetanus has been reported to occur after exposure to dust of old building plaster, containing horse hair.[3] In northern areas of Pakistan, where heated 'ghee' i.e. cooking oil is applied over umbilical stumps of neonates, the causative factor for neonatal tetanus was found to be the cow dung that was used to heat the ghee.[4] As recently as a decade ago, in Chitral, powdered cow dung was used instead of talcum powder when babies were swaddled. This was a cause for many cases of neonatal tetanus because cow dung sometimes contains the bacterium for this disease.[5]

Correspondence:
Dr. Aurangzeb Khan
Head of Deptt of Surgery,
Combined Military Hospital, Malir Cantt, Karachi.

The exotoxin inhibits cholinestrase resulting in local excess of acetylcholine at motor endplates, producing a sustained state of tonic muscle spasm. It also travels along the nerves to CNS where it causes excessive excitation of motor neurons evoking spasm of muscles in response to all types of sensory stimuli. The patient can present with dysphagia[6] and pain in extensors of back but the most common first symptom is trismus or stiffness of the jaw. Respiration and swallowing may become difficult and there may be convulsions. There is a residual tonic muscle spasm between the convulsive episodes. Pyrexia, tachycardia and tachypnoea are all bad prognostic signs. Diagnosis is made clinically. Some conditions to be kept in mind while making a differential diagnosis are strychnine poisoning, which is characterized by absence of tonic spasm between convulsive episodes; and pseudo-tetanus produced by metoclopramide.[7]

In our environment, tetanus is still disease of the young, mostly males (mean age 16 to 35 years) from poor socioeconomic background, and overall mortality is as high as 30%.[8] Principles of treatment are eradication of Clostridium tetani. This may require obliteration of the environment conducive to its multiplication, neutralization of all accessible toxins, control of seizures and meticulous supportive treatment. This involves prompt wound debridement and neutralization of toxin by tetanus immune globulins.

Pencillin-G remains antibiotic of choice for tetanus. Antibiotics and immune globulins should be administered even in the absence of an obvious wound. Diazepam is drug of choice for control of spasm. b-blockers can be used to control autonomic dysfunction. In severe infections, muscle relaxants and ventilatory support may be required.

It is very important to have adequate vaccination for tetanus because more than 95% of patients who develop tetanus have not been previously immunized.[9] This patient was educated and belonged to a financially sound family but her awareness about basic aspects of health and immunization was poor. This actually reflects the lack of awareness about health issues in our society. It is therefore very important to educate our masses about such preventable and dreadful diseases.

REFERENCE

1. Cohn I, Bornside GH. Infections. In: Shwartz SI, Shires GT, Spencer FC, (edi). Principles of Surgery. Singapore. McGraw-Hill 1988; 203-5.
2. Kurtoglus S, Caksen H, Ozturk A, Cetin N, Payrazoglu H. A review of 207 newborn with tetanus. J Pak Med Assoc 1998; 48(4): 93-8.
3. Earis JE, Hillis AN, Macauley MB. Tetanus: An unusual source and site of infection. J Infect 1983; 7(1): 72-3.
4. Bennet J, Ma C, Traverso H, Agha SB, Boring J. Neonatal tetanus associated with topical umbilical ghee: covert role of cow dung. Int J Epidemiol 1999; 28(6): 1172-5.
5. Mull DS, AndersonJW, Mull JD. Cow dung, rock salt and medical innovation in the Hindukush of Pakistan: the cultural transformation of neonatal tetanus and iodine deficiency. Soc Sci Med 1990; 30(6): 675-91.
6. Gilles HM, Moosa RA Specific infections of surgical importance. In: Cuschieri A (edi). Essentials of Surgical Practice. London. Butterworth-Heinemann 3rd edition; 268-269.
7. Shamim SM, Masood SM. Metoclopramide: A drug with versatile therapeutic uses. Ann Abbasi Shaheed Hosp Karach 2002; 7: 256-62.
8. Raza MA, Abbas MH. Tetanus disease patterns observed in a specialised unit. J Coll Physicians Surg Pak 2000; 10(7): 249-54.
9. Talati N, Salahuddin N. Factors affecting tetanus mortality in a tertiary care hospital in Pakistan. Infect Dis J Pakistan 2001; 10(1): 13-5.

INTUSSUSCEPTION OF VERMIFORM APPENDIX

A CASE STUDY

AURANGZEB KHAN

ABSTRACT:
A case of intussusception of vermiform appendix diagnosed on sonography is reported. Appendectomy was carried out through an elliptical incision around the base of the appendix recovery was smooth.

Key words:- Appendix, Intussusception.

CASE REPORT

A six year old girl presented with twelve hours history of loose watery stools and vomiting. She developed colicky central abdominal pain almost six hours after loose motions. Few hours later she passed blood in stools. The blood was initially mixed with stools but later became currant jelly like. The girl was dehydrated and pale but apparently not in acute distress. Her pulse was 120 beats per min and respiratory rate was 32 per min. Her temperature was 99°F. There was an ill-defined tender mass in the right iliac fossa and adjacent paraumbilical region. Rest of the abdomen was soft and non-tender. Bowel sounds were exaggerated. Per rectal examination revealed clotted blood, which on evacuation was followed by fresh blood coming from higher up. No anorectal bleeding point or any other pathology was found. Sonography of abdomen revealed a mass involving ileocaecal region suggestive of intussusception.

Exploration through a right paramedian incision found that the appendix had invaginated into the caecum causing an intussusception. The intussusception was the cause of the mass and bleeding. Caecum itself was mobile and had a long mesentery. Appendix was removed through an elliptical incision around the base, which was closed in two layers. Caecopexy was done after placing caecum in right iliac fossa. Her post operative recovery was smooth. Histopathology of the specimen confirmed the diagnosis of intussusception of appendix. It contained no pathologic lead point.

Correspondence:
Dr. Aurangzeb Khan
Head of Deptt of Surgery,
Combined Military Hospital, Malir Cantt,
Karachi.

DISCUSSION

Intussusception of appendix is a very rare condition. Only a few hundred cases have been reported in the literature. Usually there is a preexisting pathology—pathologic lead point[1]—of appendix that precipitates this condition. The most common underlying condition is an adenomatous polyp carcinoid tumour or mucocele; are found in only 0.2 to 0.3% of all appendectomy specimens,[2] it may also cause the vermiform appendix to invaginate. Intussusception of appendix can also lead to ileocolic or caecocolic intussusception. Sometimes the stump of a recently amputated appendix forms the lead point of intussusception.

Clinical features of intussusception of appendix can be indistinguishable from other forms of intussusception. The main symptom is colicky abdominal pain and a tender mass which may be palpable in the right lower abdomen. An intussusception of appendix may be very difficult to diagnose preoperatively as the classic features of a mass and rectal bleeding may not always be there. Therefore in all children under 7 years, with abdominal pain, this should be a part of the differential diagnosis.[3] Intussusception of appendix usually occurs in children under 2 years of age and is five times more common in healthy males.[4] It usually follows a bout of viral gastroenteritis. Blood in stools is a common finding and can range from occult bleeding to typical red-currant jelly stools.

Ultrasonography is very helpful in diagnosing this

condition. It can demonstrate a lead point within a characteristic multiconcentric ring.[5] Sonography can detect a pathologic lead point in two third of the cases.[1] Other cases may require confirmation by performing a barium enema study or air-insufflation roentgenogram. Colonoscopy or a CT scan[6] may be advised to confirm the diagnosis in doubtful cases.

Barium enema or air insufflation are effective methods to reduce a recent intussusception[7] by pushing back the invaginating part of the gut (intussusceptum). This is only done if there is no doubt about the diagnosis, because treatment of acute appendicitis with barium enema may lead to catastrophic results. Barium should be held about 3 feet above the child and air pressure should not exceed above 80 mmHg in infant and 120 mmHg in older children. After the first few hours the intestine becomes inflamed and swollen and it is not possible to reduce it by this method. Failure of reduction, a history of more than 72 hrs or a suspicion of strangulation/gangrene, are indications for surgery.

REFERENCE

1. Navarro O, Dugougeat F, Kornecki A, et al. Management of intussusception owing to pathologic lead points in children. Pediatr Radiol 2000; 30(9): 594-603.
2. Coulier B, Pestieau S, Hamels J, et al. US diagnosis of intussusception caused by appendiceal mucocele. Eur Radiol 2002; 12: 324-328.
3. Ozuner G, Davidson P, Church J. Intussusception of vermiform appendix: preoperative colonoscopic diagnosis of two cases and review of literature. International Journal of Colorectal Disease 2000; 15(3): 185-187.
4. Mann CV. Intestinal Obstruction. In: Mann CV, Russel RCG, Williams NS, (edi). Bailey and Love's Short Practice of Surgery. 22nd ed. Chapman and Hall 1995; 810-28.
5. Pumberger W, Pumberger G, Hallwirth U. Sonographic diagnosis of intussusception of appendix vermiformis. J Clin Ultrasound 2000; 28: 492-6.
6. Koumanidou C, Vakaki M, Nikas J, et al. Appendiceal and appendiceal-ileocolic intussusception: sonographic and radiographic evaluation. Pediatr Radiol 2001; 31: 180-183.
7. Shwartz SI. Appendix. In: Shwartz SI, Shires GT, Spencer FC, (edi). Principles of Surgery. 5th ed. Singapore. McGraw-Hill 1988; 1320.