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MEDICAL RESEARCH AND DEVELOPMENT

Authentic research and its use for development is almost non-existent in our setup. Whatever little research is being carried out, especially in the medical field, is fragmented and ends up, at best, on the shelves of libraries and offices. The practice of many researchers at meetings and conferences is to challenge other's work without scientifically countering, to impress by advocating ones own experiences and impressions. Hence conferences, meetings and symposia fail miserably in drawing conclusion and recommendation for development and also manage to depress and discourage new researchers.

Organisations either work on their own whims or at best look for other countries, societies or setups for planning. They implement the ideas, thoughts and experiences in entirely different settings. Thus experimenting and emperical use of resources and manpower result in waste of finances and hard work.

It is a wrong notion that considerable amount of money is needed to carry out research. This may be true for certain areas but is not generally correct. A lot can be accomplished with 'little money' and 'hard work' with proper attitudes and appropriate use of resources with research orientation and correct use of the modern techniques and methodologies.

Guidelines should be clearly laid down on what kind of research is needed for the development of the country. How to teach and train people to carry out research which is useful, cost effective, productive and helpful in "development".

Government should take initiative for 'Paradigm shift' in research and set up an efficient and effective body representing planners, workers and research experts. Their primary task should be to design and make 'priority lists' for researchers in various areas requiring improvement and development in the country. It is also imperative that all the research which is carried out should be checked and reviewed to avoid duplication and fraudulent submission of manuscripts.

The aim should be national interest and betterment of the society at large, the programmes should be focused, realistic and workable within the available resources. Manpower development should also be another priority area of concern for development with specific targets, aims and achievable objectives. The research should be appropriate and easily available for everyone's benefit. Thus an effective, preferably Government organisation should provide expertise, resources and finances for research in the field where it is most needed for development of the country.

ASADULLAH KHAN

COMMON CAUSES OF EPISTAXIS

A TWO YEARS EXPERIENCE

AT RAWALPINDI GENERAL HOSPITAL

MUHAMMAD HANIF, MUHAMMAD RIZWAN, MOHAMMAD ZAFAR RABBANI,

MUHAMMAD ASLAM CHAUDHRY

ABSTRACT:

Epistaxis is a common ENT emergency. During the years 1999-2000, 205 patients with epistaxis presented at Department of ENT, Rawalpindi General Hospital. Hypertension (48%); trauma (37%) and upper respiratory tract infection (14%) were the common causes of epistaxis in old age young adults and children respectively. The site of bleeding in 98% of the cases was anterior and managed with anterior nasal packing, Only 2% of cases required postnasal packing.

KEY WORDS: *Epistaxis, Hypertension, Trauma.*

INTRODUCTION

Epistaxis is a common ENT emergency and is seen in all age groups Anterior nasal bleeding is more common in children and young adults while posterior nasal bleeding is more common in older individuals¹. The common age groups who suffer from epistaxis are 15-25 years and from 45-65 years. Males are more prone to epistaxis than females.^{1,2} The prevalence of epistaxis in the population is 10-12% and incidence is about 30 per1000.³

The common causes of epistaxis are external trauma, hypertension, disorders of blood vessels or clotting mechanisms and upper respiratory tract infection. Nose blowing, sneezing, coughing, straining, pregnancy, coryza, and sinusitis can precipitate epistaxis due to sudden rise in vascular pressure. Other factors responsible for epistaxis are use of alcohol and drugs like platelet inhibitors.⁴ The major forms of treatment for epistaxis are the anterior and posterior nasal packing,⁵ arterial ligation⁶ and arterial embolization.⁷ In some cases flexible nasopharyngoscope with suction electrocautery has also been effective.⁸ Now-a-days epistaxis is getting importance due to increase in incidence of road traffic accidents resulting in trauma to nose.

This article presents our experience of patients who needed nasal packing for the control of epistaxis.

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PATIENTS AND METHODS

All the patients with epistaxis were studied for pathology and treatment in ENT Department emergency or referred from other departments. A brief history and examination was done. Recording of pulse, blood pressure and general condition of the patient in order to assess the extent of blood loss was made. Complete local examination of nose and nasopharynx was performed. Treatment started with maintenance of airway especially in case of road traffic accidents; setting up intra venous line with either normal saline, plasma expanders or blood according to individual's requirement. Measures were adopted to stop nasal bleeding. When the conservative measures; pinching the nose with thumb and index finger for 5-10 minutes etc. failed to stop the bleeding, chemical cautery was tried with silver nitrate if the bleeder was visible. If this was not possible due to profuse bleeding, anterior nasal packing with ribbon gauze soaked with acriflavin or polymaxim for 48 hrs was performed and nose re-examined after removal of the pack. Post nasal packing was required only in 5 patients where bleeding was postnasal. Arterial ligation was not needed in any case. After controlling the nasal bleeding, medical or surgical advice was obtained in some patients. Blood complete picture bleeding time and clotting time was done in all cases. PT, APTT and other systemic investigations were required in few cases.

RESULTS

Out of 205 patients with epistaxis over a period of two years from January 1999 to December 2000, 96 had hypertension and 75 trauma (Table I).

TABLE-I CAUSES OF EPISTAXIS		
Causes	No. of Points	Percentage
Hypertension	96	46.8%
Trauma	75	36.58%
Upper Respiratory Tract infection	30	14.63%
Tumours (fibromas)	2	0.9%
Idiopathic	2	0.9%
Total	205	

In our series, 136 (66.34%) patients were males and 69 (33.65%) females. Most of the patients (n=92, 44.87%) were around 40 years. This relates to the incidence of hypertension in this age group. Second age group was young adults (35.6%) due to high incidence of road traffic accidents. It was noted that 160 (82.43%) patients reported within two hours. In 200 (97.56%) patients, the bleeding point was anterior and only in 5 (2.43%) it was posterior in location.

DISCUSSION

Epistaxis itself is not a disease but a commonly occurring symptom. Venous epistaxis tends to occur in subjects under the age of 3-5 years where as arterial epistaxis occurs in older age groups. The duration of bleeding is short lived in venous epistaxis and quite prolonged in arterial epistaxis. There is an inverse relation between the frequency and duration of epistaxis. There is some correlation between the severity of epistaxis and the degree of vessel wall disease.⁹ In about 98% cases bleeding is from Little's area i.e. anterior inferior angle of nasal septum, which can be controlled by anterior nasal packing and only 2% cases require postnasal packing.

Little's area is very rich in blood supply. In old age medium and small sized arteries of this area have progressive replacement of muscle tissue in tunica media with

collagen. This change varies in degree from interstitial fibrosis to almost complete replacement of muscle by scar. As a result of lack of contractility, vessels rupture and bleeding continue for longer period as vessel contraction is defective. Moreover, due to calcification of maxillary and other large arteries, elasticity of these arteries is reduced and are thus more prone to rupture.¹⁰ Hypertension and road traffic accidents are the major causes. Patients can be managed easily with proper anterior nasal packing. Only few patients require postnasal pack.

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CORRIGENDUM

In the article "VESICOURETERIC REFLUX IN CHILDREN" published in JSP Vol.6 No.1 (January - March, 2001) please add the name of SAIFULLAH JAMRO as the second Co-Author.

A SURGICAL AUDIT OF THE MANAGEMENT OF TYPHOID PERFORATION

SALEH A.B. MEMON

ABSTRACT:

A study on all cases with typhoid enteric perforation between April 1996 and October 2000, was carried out at Surgical Unit IV Liaquat University of Medical & Health Sciences, Jamshoro, Hyderabad to evaluate the methods of treatment of typhoid perforation. Ninety patients of typhoid enteric perforation were studied in two groups: Group 'A' treated with two layers closure and Group 'B' treated by ileostomy. A copious lavage of the peritoneal cavity was carried out with normal saline in both the groups. The complications rate for group 'A' patients was 20% and for groups 'B' 31%. We conclude that the better treatment of typhoid enteric perforation is two layers closure with copious peritoneal lavage

KEY WORDS: Typhoid enteric perforation.

INTRODUCTION

Typhoid fever is a major health problem in developing countries, but rare in western countries. It is endemic in certain areas of the Indian subcontinent.¹ Chloramphenicol was the main weapon against salmonella typhi. Modern supportive care, early surgical intervention and use of gentamycin and metronidazole, in addition to chloramphenicol, are recommended and improve the mortality.^{2,5}

PATIENTS AND METHODS

A study was carried out at in the Department of Surgery, Liaquat University of Medical & Health Sciences, Hyderabad. All the patients with typhoid perforation, from April 1996 to October 2000 were included. Detailed history and thorough clinical examination were carried out. Routine baseline laboratory investigations were performed. X-ray abdomen and chest were obtained in all cases and management plan was worked out for each patient.

All the patients had intravenous antibiotics (Gentamycin, Metronidazole and Chloramphenicol). Ninety patients of typhoid perforation were studied in groups of 45 patients each. Two layer closure of the perforation was performed in Group 'A' using full-thickness continuous 3/0 chromic catgut for the inner layer and 3/0 silk for the outer seromuscular layer. In Group 'B' loop ileostomy was performed in the right iliac fossa. Copious peritoneal

lavage was done with normal saline in all the cases. After discharge, patients were followed at monthly intervals for the first 2 months and then every 3 months for a year.

RESULTS

During the period of four and half years (from April 1996 to October 2000) 90 cases of typhoid perforation were admitted in the Department of General Surgery, LUMHS, Hyderabad. Sixty were males and 30 females. Age distribution is shown in Table 1.

TABLE-I		AGE DISTRIBUTION	
Age	No. of Patients	Percentage	
1-10 years	4	3.6%	
10-20 years	29	4.4%	
20-30 years	35	32.2%	
30-40 years	10	38.8%	
40-50 years	8	8.8%	
50-70 years	4	4.4%	

Plain chest radiograph showed free subdiaphragmatic air in 70 and widal test was positive in 88 patients. Diagnostic peritoneal aspiration was carried out only in equivocal cases. Peritoneal fluid and stool culture grew salmonella typhi in 23% cases.

Half of the patients developed perforation of the ilium during the third week of fever. Perforations were round or oval in shape. The perforations were solitary in 90 percent of cases and occurred along the antimesenteric border of

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the bowel. The most common complications in two layer closure were wound infection in 4 (8.8%), partial wound dehiscence in 2 (4.4%), prolonged paralytic ileus in 2 (4.4%) and hyperpyrexia in one (2.2%). The common complications in ileostomy were wound infection in 5 (11.1%), excoriation of skin around stoma in 8 (17.7%), partial wound dehiscence in one (2.2%) and hyperpyrexia in 2 (4.4%). The morbidity rate was 20% in two layer closure of the perforation and 31% in loop ileostomy group.

DISCUSSION

Typhoid ileal perforation is a common and dreaded problem in developing countries. The preoperative diagnosis is based on history, clinical examination, serological and bacteriological tests. Chest radiographic findings are supportive. The operative findings of antimesenteric perforation of terminal ileum is pathognomonic of the disease. Spontaneous sealing of perforations rarely occur.^{1,2} The mortality of conservative treatment is very high.² In Ameh study clinical findings were abdominal pain and tenderness in 93.4% and associated haemorrhage³ (20.3%). In our study all the patients had abdominal pain and tenderness.

In the present series, early surgical intervention by two layer closure of the perforation under cover of gentamycin and metronidazole, in addition to chloramphenicol achieved morbidity rate 20% compared with reported morbidity rate of 20-40%^{3,4,5} while surgical intervention by

loop ileostomy under cover of the above antibiotics mortality was 31%. Addition of a second layer closure of the perforation has been helpful to lessen the chance of suture line leakage. Singh et al has supported the above findings.⁷

Our series reflect that with correction of fluid and electrolytes; blood transfusion and early surgical intervention with two layer closure mortality can be reduced, in typhoid enteric perforation.

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A PRIMARY INVESTIGATION FOR DIAGNOSIS OF INTERNAL URINARY SYSTEM MALFORMATIONS

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AFROZE RAMZAN, TARIQUE.

ABSTRACT:

A prospective study, from January 1996 to December 1997, was carried out at the Nephrology unit of National Institute of Child Health (NICH), Karachi to determine the primary role of ultrasound investigation for Internal Urinary System Malformations (IUSM). Eighty cases 60 males and 20 females of 0-14 years age of IUSM confirmed on clinical and laboratory investigations were included. Forty-two cases were below 5 and 38 above 5 years of age. Ultrasound was diagnostic in most of the cases of pelviureteric junction obstruction (PUJO), hypoplastic, aplastic or dysplastic kidneys, posterior urethral valves (PUV) and juvenile nephronophthisis (JNN). It was suggestive in majority of the cases of VUR. However it was not diagnostic in vesico ureteric reflux (VUR), and missed some cases of VUR, PUV and duplex system.

KEY WORDS: Ultrasound, Internal Urinary System Malformations, Children.

INTRODUCTION

Congenital urinary tract anomalies are anatomical defects present at birth. The anomalies present in an individual, may be single or multiple and unilateral or bilateral.^{1,2,3} Presence of more than one anomaly is labeled as complex malformations.⁴ Congenital urinary tract malformations are common, occurring in 10% of population and accounting for one third of all congenital malformations⁵ Ultrasound is very much helpful as a primary investigation in antenatal and postnatal detection of IUSM.^{4,6,7} Stoll C et al study shows incidence of 3.5/1000 live birth and found IUSM antenatally in 54.4% at birth, 15.6% during first month, first year and after first year of life in 4.6%, 8.9% and 16.5% babies respectively.⁴ Exact incidence and prevalence of IUSM is not known in Pakistan though the facilities of ultrasound are available in most cities. This study was done to determine the ultrasound as a preliminary investigation for diagnosis of IUSM.

PATIENTS AND METHODS

All the children suspected of IUSM on the basis of clinical presentations like abnormal urinary stream, retention of urine,

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renal failure and UTI were included. All the cases underwent ultrasound scan of kidney ureter bladder (KUB) as a primary investigation. Cases that showed abnormal finding on ultrasound and normal ultrasound with strong clinical suspicions of IUSM had further selective investigations like micturating cystourethrography (MCUG), intravenous pyelography (IVP), diethylenetriaminepentaacetic acid (DTPA) scan and dimercaptosuccinic acid (DMSA) scan to confirm the diagnosis.

RESULTS

Out of 132 clinically suspected cases, 80 cases proved to be suffering from various IUSMs. Age and sex distribution is shown in Table I. Forty-two (52.5%) cases were below 5 years age with mean age 4.9 years. It was observed that 29 (36.3%) cases had single anomaly. The total number of anomalies, seen in 80 cases, were 143.

TABLE-I AGE AND SEX DISTRIBUTION (n=80)

Sex	0-1 years	1-5 years	5-14 years	Total
Male	17	19	24	60
Female	3	3	14	20

Male to female ratio = 3:1

The results of ultrasound are presented in Table II. Ultrasound was diagnostic in 85 (59.4%), suggestive in 38 (26.6%) and not helpful in 20 (14.0%) anomalies. Ultrasound was found to be most useful diagnostic tool in PUJO 23/25 (92.0%), PUV 12/23 (52.2%), JNN 8/8 (100.0%) and duplex system 4/7 (57.1%). However ultrasound was also suggestive of VUR in 26/36 (72.2%) and of PUV in 8/23 cases.

TABLE-II ULTRASOUND SCREENING AS A PRIMARY TOOL IN IUSM FINDINGS:

S.No.	Disease	U/S Diag.	U/S Suggestive	U/S Not Helpful	Total
1.	PUJO	23	2	0	25
2.	PUV	12	8	3	23
3.	VUR	0	26	10	36
4.	Hypoplastic kidney	21	0	1	22
5.	JNN	8	0	0	8
6.	Duplex system	4	0	3	7
7.	Aplastic kidney	4	1	1	6
8.	Dysplastic kidney	5	1	1	7
9.	Pelvic Kidney	2	0	0	2
10.	Ureterocele	1	0	1	2
11.	VUJO	1	0	0	1
12.	Horse shoe kidney	1	0	0	1
13.	Ectopic kidney	1	0	0	1
14.	Bilateral extra renal pelvis	1	0	0	1
15.	Diverticulum	1	0	0	1
		85(59.4%)	38(26.6%)	20(14.0%)	143

MCUG was done in 67/143 anomalies (Table III). In VUR it confirmed the findings of ultrasound in 26/36 suggested in addition to 10/36 ultrasonographically normal. In PUV, it confirmed the ultrasound diagnosis in 12 out of 23 and 8 out of 23 suggestive anomalies, whereas in 3 anomalies diagnosis was made in which ultrasound was normal.

TABLE-III RESULTS OF ULTRASOUND V/S MCUG (n=59/143)

S.No.	Disease	U/S Diag.	U/S Suggestive	U/S Not Helpful	Total
1.	VUR	0	26	10	36
2.	PUV	12	8	3	23

IVP was done in 45/147 anomalies. In PUJO, IVP confirmed 23/25 anomalies diagnosed by ultrasound and 2/25 suspected anomalies were also confirmed. IVP confirmed 4/7 duplex system diagnosed by ultrasound, whereas 3 missed anomalies by ultrasound were also diagnosed. Horse shoe kidney, pelvic kidney, ureterocele, blind and diverticulum, aplastic kidney and vesico ureteric junction obstruction (VUJO) diagnosed on ultrasound were also confirmed by IVP in addition to one anomaly of ureterocele and aplastic kidney missed on ultrasound. Scintigraphy (DTPA, DMSA) was done in 71/143 anomalies (Table IV). It confirmed 23/25 ultrasonographically diagnosed PUJO in addition to 2/25 suggested cases. It also confirmed ultrasonographically diagnosed hypoplastic, dysplastic and aplastic kidneys, JNN, pelvic and ectopic kidneys in addition to 3 missed anomalies.

TABLE-IV ULTRASOUND V/S SCINTIGRAPHY (n=71/143)

S.No.	Disease	U/S Diag.	U/S Suggestive	U/S Not Helpful	Total
1.	PUJO	23	2	0	25
2.	Hypoplastic kidney	21	0	1	22
3.	JNN	8	0	0	8
4.	Dysplastic kidney	5	1	1	7
5.	Aplastic kidney	4	1	1	6
6.	Pelvic kidney	2	0	0	2
7.	PUV	12	8	3	23

Five cases were diagnosed on routine obstetric ultrasound and were later confirmed to be suffering from obstructive lesions. (Table V).

TABLE-V ANTENATAL ULTRASONOGRAPHY (n=05)

S.No.	Number of Anomalies	Type of Anomalies
1.	Single	Left PUJO
2.	Double	Right VUJO + Right Hypoplastic Kidney
3.	Double	Left PUJO + Right Hydronephrosis and Hydroureter
4.	Double	Left PUJO + Bilateral Hydronephrosis
5.	Triple	PUV + Bilateral External Pelvis

PUJO = Pelviureteric junction obstruction.

VUJO = Vesicoureteric junction obstruction.

PUV = Posterior urethral valves.

DISCUSSION

With the widespread use of real time ultrasound, majority of IUSM are nowadays detected on antenatal ultrasonography. In Pakistan routine antenatal checkup and ultrasonography is not practiced where as Stoll C et al detected 54.4% cases.⁴ We received five antenatally diagnosed cases for further evaluation.

In our study 20/80 (25.0%), 53/80 (66.3%) 7/80 (8.4%) were 0-1 year, 1-11 year and over 11 years respectively which is little lower than Bois et al study i.e. 33%, 57% and 10% for the respective ages.⁸ Male to female ratio of IUSM in our study was 1.45:1 possibly due to greater number of PUV in our study (23/80) as compared to Stoll C et al (13/370) cases.⁴ We have found single and multiple malformation in our children which is similar to Stoll C et al,⁴ Clarren et al,³ Crambelhome et al⁹ and Boemers TML et al.¹⁰

Ultrasound is a very important tool in the diagnosis of PUJO. Raviv G et al diagnosed PUJO in 66.6% cases antenatally. In our study we found ultrasound diagnostic in 23/25 (92%) which is higher than Raviv G et al study¹¹ because our study age is 0-14 years. Ultrasound is also important in diagnosis of PUV which demonstrates abnormal dilatation of posterior urethra and also suggestive of it when it shows bilateral ureterohydronephrosis together with a thick walled persistently full bladder which fails to empty.¹² Scott JES diagnosed in 25% of neonates and recommended that pre and postnatal practice of ultrasound can increase this proportion.¹³

Ultrasound is not diagnostic for VUR, but presence of hydroureter and hydronephrosis are suggestive of VUR.¹⁴ It was also not diagnostic in our cases, however it suggested in 72%. Twenty-eight cases were missed on ultrasound which is similar (25%) to Tibbals et al.¹⁴ and Zerlin et al.¹⁵ Ultrasound is a very important primary diagnostic and suggestive investigation for IUSM. It is recommended that antenatal ultrasound practice should be increased and in a very suspected case of IUSM, it should be carried out as a base line investigation.

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ONE LAYER INTERRUPTED INTESTINAL ANASTOMOSIS

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ABSTRACT:

Anastomotic leak is a serious complication of gastro intestinal surgery and is associated with a high morbidity and mortality. A single layer interrupted full thickness inverting technique was used for anastomosis of both elective and emergency cases in 174 patients. There were 110 male and 64 female patients. Out of a total of 208 anastomosis carried out in 174 patients 150 were performed in the emergency while 58 were elective procedures. There were three fatalities in the immediate postoperative period and none of them could be attributed to anastomotic complications. There were three anastomotic leaks, two in oesophago-gastric anastomosis following transhiatal oesophagectomy and one occurred in right hemicolectomy. All of them closed spontaneously with conservative management. Simplicity of the technique and the results affirm our confidence in this technique and justify its usage.

KEY WORDS: *Intestinal anastomosis, Complications.*

INTRODUCTION

Leak and dehiscence in gastrointestinal surgery are very serious complications. The aim is to achieve a secure joint allowing free passage of contents, while carrying out intestinal anastomosis.¹ The problem of anastomotic leakage leading to the formation of faecal fistula is disastrous. In developing countries like ours, the management of such patients is an economic burden. Minimal amount of tissue trauma should be inflicted while carrying out an anastomosis, and it should be secure, watertight and haemostatic. A single layer method of intestinal anastomosis was first used in 1887.² It has subsequently been used by others with success in anastomosis of all parts of the gastrointestinal tract.³⁻⁶ For the last eleven years we have been using single layer interrupted sutures for intestinal anastomosis. Initially the method was employed for colonic anastomosis but later we started using it in all cases.

PATIENTS AND METHODS

During the past twelve years 208 anastomosis were performed in 174 patients. There were 110 males and 64 females. Fifty-eight were carried out in elective cases, while the remaining one hundred and fifty were done in emergency cases. The anastomotic sites were oesophago-gastric (15), jejuno-jejunal (40), ileo-ileal (38), ileo-colic (41), colo-colic (59) and colo-rectal (15).

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Single layer anastomosis was carried out using interrupted 2/0 Vicryl suture. The posterior halves of the intestinal circumferences were sutured from within employing posterior vertical mattress sutures. The remaining anterior half of the intestine was sutured using modified Gambee's sutures. The original Gambee's sutures are interrupted inverting sutures with the knot tied on the outside, whereas in Modified Gambee's sutures the knot is tied on the inside of the bowel lumen. The sutures were spaced 3mm apart. After completion of the anastomosis the spacing of the sutures was checked using a fine haemostat. Additional sutures were inserted in case the tip of the haemostat could be inserted between the initially placed sutures. In the later stages rarely one or two additional sutures were necessary to secure a sound join.

RESULTS

Anastomotic leakage occurred in three cases. The first occurred in an ileo-colic anastomosis, which presented as minimal faecal discharge on the fourth day from the intraperitoneal drain. The patient was managed conservatively and did not require re-exploration. The other two occurred in oesophago-gastric anastomosis after transhiatal oesophagectomy, both of them closed spontaneously while the patients were kept nil per oral and enteral feeding was carried out through jejunostomy.

The possible cause of leakage cannot be attributed to failure of anastomotic technique. The cause of ileocolic

leak was probably the distant placement of the interrupted sutures, as the procedure was carried out in the initial period of the trial. While the cause of the leak in the oesophago-gastric anastomosis was the retraction of the mucosal and submucosal layers at the time of division of oesophagus. These leaks occurred in the second and third cases of the oesophago-gastric anastomosis. In the subsequent cases special care was taken to prevent retraction of these layers, by dividing them at a lower level in relation to the muscular layer. Adoption of this technique prevented leakage in the remaining cases.

DISCUSSION

The method adopted for achieving intestinal continuity should be such that it should make a sound join of the bowel with minimal reduction of the lumen. In the immediate postoperative period it should be secure, watertight and haemostatic. While achieving these goals the amount of tissue trauma inflicted should be minimal, as the eventual strength of the join and the rapidity at which normal bowel function returns will depend on it. There seems to be little clinical or experimental support for the two-layer inverting stitch in living tissue. Yet most surgeons still use it as their standard technique.¹

A single-layer anastomosis was first used by Halsted in 1887,² who regarded a second row as a factor of danger rather than security. It has subsequently been used with success by a number of others³⁻¹¹ for the anastomosis of all intestinal structures. Clinical and experimental studies have been published in which the results of one-layer and two-layer intestinal anastomosis have been compared.^{12,13}

Experimentally one-layer technique has been proven superior to two-layer method with respect to luminal reduction,^{1,2,14,15} tissue strangulation^{1,14} and strength of anastomosis on the fifth postoperative day.^{1,12,14,15} Mucosal continuity and muscle realignment on histological examination occurs more rapidly with single layer methods.^{1,15}

In addition to the safety associated with the use of one-layer technique there are other advantages, of which most appealing is its simplicity. This is especially apparent in very low rectal anastomoses, where a single layer is much easily placed compared to a two-layer technique in the deep confined space.¹⁰

We conclude that single layered interrupted technique for intestinal anastomosis is a safe technique, can be easily

learned by relatively inexperienced surgeons and should be a part of the armamentarium of the well-trained surgeon.

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TYMPANOPLASTY IN CHILDREN

A STUDY OF 30 CASES

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ABSTRACT:

A retrospective study of 30 cases, in which Type-I tympanoplasty was done, over a period of three years from 1998 to 2000 is presented. Tympanoplasty in children under 18 years of age is usually not done because of the high failure rate, as compared to adults and surgery is deferred till they reach the age of 18 years. The effect of delaying surgery is on speech development and chances of development of cholesteatoma due to invasion of squamous epithelium.

Majority of the patients had dry ear, except few who had moist ear. Post-aural underlay technique was used in majority of cases. Clinical success with an intact graft on a six months followup; was 72% which, though low, is encouraging.

KEY WORDS: Paediatric Tympanoplasty.

INTRODUCTION

Tympanoplasty in children under 18 years is a controversial topic; there are proponents of delaying surgery till the age of 18 years as they feel that these children have a high failure rate due to recurrent upper respiratory tract infection, poor Eustachian tube function and also because of technical difficulty in doing surgery.¹⁻⁴ Also perforation in this age may serve as a myringotomy opening⁵⁻⁶ and avoid the development of secretory, otitis media or retracted tympanic membrane.

The supporters of early surgery maintain that normal anatomy of the ear is restored, hearing improves and speech development is not hindered. There is a possibility of ingrowth of squamous epithelium into the middle ear resulting in cholesteatoma.⁷

PATIENTS AND METHODS

A total of 30 patients between 8 and 18 years of age were admitted between 1998-2000 at Jinnah Postgraduate Medical Centre and Medicare Hospital, Karachi. Glasscock⁴ believed that child upto three or four years of age could be operated, but in our view 8 years of age is an optimal age.

The children had history of dry ear for at least 6 weeks,

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although a few patients who were operated, had a slightly moist ear. The patients were thoroughly examined for upper respiratory tract infection and Pure-tone audiometry was done and any ear bone gap of more than 60db was not included, as it suggested ossicular discontinuity. The presence of cholesteatoma was also a contra indication for inclusion.

Bilateral tympanoplasty was carried out in four cases, with a gap of six months between the surgeries. The presence of sensorineural deafness or any congenital anomaly, as cleft palate or cleft lip, was also a contra indication for inclusion. Patients were followed up for 6 months, with intact tympanic membrane, is a clinical success.

RESULTS

Results were based on the success of surgery and closure of the air-bone gap. The surgical success was labelled as an intact graft six months after surgery. Out of the thirty cases under study, eight were complete surgical failure with perforation still present in 3 cases. Perforation was present when the intracanal pack was removed 10 days post-operatively. This shows a faulty technique as three cases developed perforation in the first three months following surgery which could be due to negative middle ear pressure caused by Eustachian tube blockage or infection. Two of the failures occurred after first 3 months but before six months of followup. The air bone gap was closed in successful cases with closure in range

of 20 db in 12 cases and 30 db in 10 cases. The results also showed that children above 12 years of age had a better success rate of 83%, whereas children below 12 had success rate of 68%. The hearing and speech development improved in these patients in periods following surgery.

The success rate reported by Koclt et al⁷ is 73% and Lau and Tosis⁸ is 90%, but in our case the success rate was 72%. One important factor in the success is the surgical skill and probably better results could be achieved in more experience hands. The central and smaller perforations have better success rate than large and marginal perforations. The patients with intracanal type tympanoplasty with on lay grafting were technically more difficult and success rate was low, as compared to post-aural underlay grafting with high success rate.

DISCUSSION

The type-I tympanoplasty done in children with age ranging from 8 to 18 years, majority of whom had developed perforation following an attack of acute otitis media, in which perforation has failed to heal. Patients with chronic discharging ear were not included.

Majority of ENT surgeons prefer to delay tympanoplasty in children till they attain the age of 18 years, as the clinical success rate is low and technically surgery is difficult, as compared to adults, but those who favour doing this at an early age believe that the success rate is not all that poor and the number of patients (72 in our study) with clinical success would be benefiting in hearing and speech development. Only a very small number (28%) will remain handicapped, but they can be benefited by a repeat surgery after 18 years of age.

The success in our series depended to a large extent on age and site of perforation as children below 12 years did not do that well, as compared to those above 12 years. The perforations, which were central and less than 50% of the total area, had a better success rate.

In patients where graft was placed transcanal, was technically difficult due to narrow external auditory canal; also had a low success rate. Though grafting in children for tympanic membrane perforation remains controversial, but in our opinion the advantage of a successful graft makes the risk worth taking, as a second grafting after failure can always be done after 18 years of age.

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NELATON'S CATHETER-AN ALTERNATIVE TO SUCTION CANNULA

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ABSTRACT:

A study was carried out at Services Hospital Lahore from January to August, 2000 to compare the duration of procedure, effectiveness, blood loss and operator satisfaction in conventional D & C with suction evacuation by Nelaton's catheter in missed abortion of less than 14 weeks of gestation. Women with ultrasound confirmation of missed abortion were allocated to one of the two groups - in Group-I, 68 women underwent suction evacuation using Nelaton's catheter and in Group-II, 63 patients underwent conventional dilatation and curettage.

Average duration of procedure was less in Group I, 16.84 minutes as compared to 20.77 minutes in Group II. Blood loss was significantly less with suction evacuation was achieved in 52.9% of cases and additional help was required in 47.07% in the form of sponge holding forceps or curettage at the end of suction evacuation. Operator satisfaction was more in Group I as we felt confident in evacuating the uterus with soft Nelaton's catheter with minimal risk of perforation and genital tract injury.

KEY WORDS: Dilatation and curettage (D&C), Suction evacuation (SE).

INTRODUCTION

Advantages of suction evacuation in the management of abortion have been recognized for the last 15 years.^{1,2,3} Limited number of government hospitals have metal suction cannulas and disposable ones are not readily available. Curettage in cases of missed abortion is traumatic, prolonged with considerable blood loss. Suction evacuation in these cases reduce the number of these problems. Nelaton's catheter is a soft catheter commonly used for drainage of cavities postoperatively. It is cheaper, readily available and is a good alternative to expensive metal suction evacuation cannulas.

PATIENTS AND METHODS

The patients included in the study from January 2000 to August 2000 at Services Hospital, Lahore, with ultrasound diagnosis of missed abortion less than 14 weeks of gestation, were 131. Average discrepancy between gestational age by dates and ultrasound was three weeks. Coagulation profile and other screening tests were normal in all the patients. The patients were randomly allocated to either group. In Group I, after

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dilatation of the cervix with Hegar dilator, evacuation was carried by applying suction through Nelaton catheter no.20-22. One end was cut in a wedge to increase surface area of the tube, the other end was attached to the sucker tube of the suction machine. In 63 patients conventional dilatation and curettage was performed. All the patients received 10 units syntocinon stat and 30 units syntocinon infusion during the procedure.

Duration of procedure was noted from start of dilatation to complete evacuation. Blood loss was measured by pouring contents from suction bottle or kidney tray (depending upon the procedure) into a measuring cylinder. In case of suction evacuation uterine cavity was checked with a curette at the end. All the Rh negative women received anti-D prophylaxis post-operatively.

A questionnaire was given to 12 different operators regarding their apprehension for each procedure.

RESULTS

In Group I, out of 68 patients undergoing suction evacuation 65 (95.5%) had the procedure completed in 20 or less than 20 minutes. In Group II 38 (60.3%) out of 63 had the procedure completed in 20 or less minutes.

Suction evacuation is a quicker procedure¹ (Table I).

TABLE-I				DURATION OF PROCEDURE			
Group I Suction Evacuation				Group II D & C			
n=68	Individual Time(min)	Total Time(min)	Average Time(min)	n=63	Individual Time(min)	Total Time(min)	Average Time(min)
10	08	80	16.84	12	12	144	20.77
22	15	330		26	20	520	
33	20	660		23	25	575	
03	25	75		02	35	70	
		1145				1309	

Blood loss was less with suction evacuation¹. Average blood loss in suction evacuation group was 55.7 ml as compared to 95.71 ml in D&C group (Table II).

TABLE II				BLOOD LOSS			
Group I Suction Evacuation				Group II D & C			
n=68	Individual Blood loss (ml)	Total Blood loss (ml)	Average Blood loss (ml)	n=63	Individual Blood loss (ml)	Total Blood loss (ml)	Average Blood loss (ml)
10	20	160	55.01	06	25	150	95.71
17	35	595		12	40	480	
21	50	1050		09	70	630	
31	65	845		16	85	1360	
07	85	595		13	120	1560	
02	250	500		06	250	1500	
		3745		01	350	350	
						6030	

Though complete evacuation was achieved in all D&C cases, it was complete only in 36(52.9%) patients in case of suction evacuation. Final evacuation was attained either by using a curette or sponge holding forceps in 32 women (47.05%). (Table III).

TABLE-III			EFFECTIVENESS OF PROCEDURE	
		Group-I	Group-II	
		(n = 68)	(n = 63)	
Complete		36 (52.09%)	63 (100%)	
Incomplete		32 (47.05%)	---	

Operator apprehension regarding perforation, hemorrhage and other injuries was more with D&C than suction evacuation. Operator felt more comfortable using the Nelaton's catheter. (Table IV).

TABLE-IV			OPERATOR APPREHENSION	
Apprehension	Group-I (S.E)	Group-II (D&C)		
Perforation	01	06		
Haemorrhage	01	05		
Other injuries	0	03		

DISCUSSION

Advantages of suction evacuation over conventional D&C are well documented. Decreased intra-operative blood loss, shorter duration of procedure, less pain and cost effectiveness are some of the advantages.^{1,4} Other documented advantages are women whose first pregnancy is terminated by suction aspiration are at no increased risk of subsequent ectopic, except women whose abortion is complicated with chlamydia trachomatis or PID when compared with D&C. These women are also at no increased risk of subsequent mid trimester abortion, pre-term delivery or low birth weight whereas in D&C the risk is higher.⁶

With these advantages suction evacuation in any form is superior to conventional D & C. It is not widely practiced in Pakistan because of non-availability of suction cannulas, metal or disposable, or if available these are not cost effective. Nelaton's catheters, though not equivalent or superior to suction cannulas are a better alternative to conventional D & C. In this study, its effectiveness for complete emptying of uterus was only 52.9%. However, this did not increase the duration of procedure or amount of blood loss in the 47.03% cases where additional help with a curette was taken. It is important to note that suction curettage with cannulas is very effective for complete emptying of uterus.⁵

Considering its less cost, ready availability, effectivity and disposability, Nelaton's catheter is a safer alternative to conventional D & C in a population with high incidence of hepatitis B, C and unknown incidence of HIV.

In predominantly anaemic pregnant women, decreased intra-operative blood loss is not only beneficial, it also reduces the need for blood transfusions which should be kept to an absolute minimum. In suction evacuation of uterus with Nelaton's catheter, even if completeness was achieved only in 50% cases, it helped saving blood loss in several ways.

It is concluded that Nelaton's catheter should be used where suction cannulas are not available because it is a superior method of emptying the uterus as compared to conventional D&C.

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ROLE OF RECOMBINANT ERYTHROPOIETIN IN THE MANAGEMENT OF THERMAL BURN PATIENTS

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ABSTRACT:

To evaluate the role of recombinant human erythropoietin in treating anemia due to severe thermal injury a prospective comparative study in patients with severe thermal injuries was carried out at the Department of Plastic Surgery; Pakistan Institute of Medical Sciences; Islamabad; from September 1998 to March 2001. Eighty patients with 25% to 60% second and third degree burns were included in the study. Forty-five received erythropoietin, while 35 patients were treated with blood transfusions. All the other treatment protocols were the same. No complication was seen. All the patients who received recombinant human erythropoietin showed remarkable recovery. Number of transfusions were reduced grossly; hospital stay was shortened and it was found to be cost effective.

KEY WORDS: Recombinant Human Erythropoietin; Burn Patients; Anemia.

INTRODUCTION

Severe anemia commonly occurs in extensive burns. This is related to infections, surgical blood loss, unstable metabolism and hormonal factors. Multiple transfusions are required for the management of this anemia. On an average, in a 40% total body surface area (T.B.S.A.) deep burns, 10-15 % of the R.B.C.s are destroyed as a direct thermal insult while 25% of the R.B.C.s are destroyed secondary to decreased survival time. So a 40 % T.B.S.A. burn patient requires an average of 8- 15 units of blood. These multiple blood transfusions carry increased risk of transmission of various infections, particularly hepatitis, HIV and cytomegalovirus. Most of the time arranging such large volumes of blood is a big problem due to lack of blood donors, inability shown by patient's attendants or rare blood groups.

PATIENTS AND METHODS

This is a prospective comparative study in patients with severe thermal injuries carried out at the department of plastic surgery, P.I.M.S. Eighty patients with second and

third degree burns of 25% to 60% T.B.S.A. were included in the study. Forty-five patients received 2000iu of erythropoietin from day one on twice weekly basis through subcutaneous route throughout the whole course of treatment (total recovery). The other 35 patients of nearly the same percentage of burns did not receive erythropoietin and instead were given regular blood transfusions. All 80 patients received ferrous sulphate 200 mg twice daily, Vit C 500 mg and high protein diet; according to their requirements.

Hemoglobin and haematocrit were done on every fourth day and prior to transfusion. Blood cell count, reticulocyte count, total protein, serum albumin, serum ferritin, serum calcium and Liver Function Tests were recorded on weekly basis. Efficacy was evaluated by comparison of reticulocyte count, hemoglobin and haematocrit levels. Comparison of transfusion requirements between the two groups was also done.

Patients excluded from the study were those below 15 and above 45 years of age, burns less than 25% and more than 60% and Superficial burns below 35%. Those with major non-thermal trauma, primary hematological disease, seizure disorders and uncontrolled hypertension were excluded from the study.

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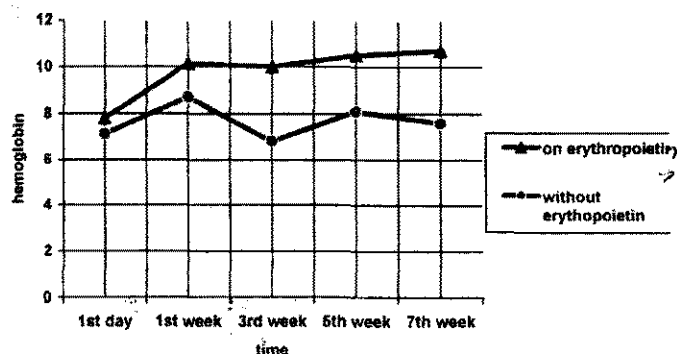
P.I.M.S. Islamabad

The criteria for blood transfusion was hemoglobin below 9 gm/dl, haematocrit below 25% and acute blood loss during surgery.

RESULTS

80 patients were included in the study. Out of these 45 received erythropoietin (Group 1); remaining 35 were used as control (Group 2). In groups 1 and 2 hemoglobin levels were recorded at day 1 and then after every four days. Results are summarized in Figure 1.

Fig. 1: Comparison of hemoglobin shift in group 1 and 2



All the patients on erythropoietin showed better appetite, increase cooperation during physiotherapy and decreased fatigability attributable probably due to improvement in hemoglobin levels, which is maintained and hence the patient had lesser episodes of anemia. All the patients in group 2 showed loss of appetite, early fatigability and severe depression. Results are summarized in table I.

TABLE-I COMPARISON OF SIGNS & SYMPTOMS: ERYTHROPOIETIN AND NON-ERYTHROPOIETIN PATIENTS		
Sign & symptoms	Erythropoietin patients	Non-erythropoietin patients
No. of Blood transfusions	Average 3 /Patient	Average 8/Patient
Hemoglobin	Increased by 2.5gm/dl	Decreased & unstable
Hematocrit	Increased by 6%	Decreased & unstable
Hospital stay	Decreased by 15-20 days	Increased
Appetite	Increased	Decreased
Physical activity	Increased tolerance to exertion	Easy fatigability
Burn related depression	Decreased remarkably	Pts are in severe depression

Hypertension and seizures are known complications of long-term erythropoietin therapy, were not encountered in our patients. Three patients died in Group 1 and 11 in group 2. Septicemia and infections were seen in both groups.

DISCUSSION

Erythropoietin is a glycoprotein hormone produced by the kidney in response to hypoxia. Erythropoietin is secreted mainly by the kidney but liver also secretes a small amount. It acts on the erythroid progenitor cells.

Epoetin beta is a recombinant human erythropoietin (r-HUEPO), developed after cloning of the human erythropoietin gene and its subsequent expression in Chinese hamster ovary cells.¹ Vasko studied endogenous serum erythropoietin level in 27 burn patients. 25 patients had reticulocytopenic anemia by the end of 1st post burn week and 23 patients remained anemic throughout the study period. Erythropoietin levels increased appropriately, as the patient became anemic. Even though erythropoietin levels increased, anemia persisted during acute burn phase due to increased R.B.C.s loss and decreased production. So his results indicated the use of exogenous erythropoietin to supplement endogenous erythropoietin to increase the production of R.B.C.s.²

Law reported on the use of erythropoietin to treat two anemic untransfused burn patients who were Jehovah's witnesses. There was a satisfactory improvement in the haematocrit. Both patients had elevated endogenous erythropoietin but still responded to the exogenous administration of recombinant human erythropoietin. Poletes G.P., Miller and associates undertook a prospective study in 5 patients. They started administering erythropoietin on day one. According to them none of the five patients receiving erythropoietin required transfusion of blood or blood products.³

Dietch E.A., Guillary D and Cruzn⁴ successfully treated burned Jehovah's witnesses who refused blood transfusion with recombinant human erythropoietin as an alternative for blood transfusion. Jehovah's witness members abstained from receiving blood transfusion or blood products; so McGill V, Kowal and Gamelli used erythropoietin with blood conservation, restricted lab work, utilization of non blood plasma expanders, iron supplementation along aggressive nutritional support and were able to manage these patients conservatively. Still J.M.J; conducted a double blind randomized study of 40 patients to prevent anemia due to extensive thermal burns. In their work the administration of recombinant human erythropoietin in acutely burnt patients did not prevent or decreased the blood transfusion requirement.⁵

Our study showed increase in R.B.C.s, hemoglobin and haematocrit levels by administering recombinant human erythropoietin. The need for transfusions was decreased dramatically from 8 units per patient to 3 units per patient in an average 40% second and third degree burns. In the light of this study recombinant human erythropoietin in combination with proper surgical management appears to have a life saving role in the treatment of major burns. Erythropoietin however can only be used in centers able to cope with major burns in terms of resurfacing large areas of skin.

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XIV ASIA PACIFIC FEDERATION CONGRESS HYDERABAD, INDIA

The International College of Surgeons, Indian Section will host the XIV Asia Pacific Federation Congress of International College of Surgeons in association with 47th Annual Conference of Indian Section of International College of Surgeons at Hyderabad (India) on November 8-11, 2001. The theme of the Congress is "Surgery in 21 Century".

The last two decades has witnessed breathtaking developments in the field of Surgery but there is still so much to share in the future. With the co-operation of the scientific community in India and abroad, we will present an outstanding programme in all the areas of surgical science and allied specialities. It is hoped that each session of this conference will serve as a forum for the exchange of ideas and true meeting of minds of active researchers from varying scientific backgrounds but with common interests.

These are some of the aspects to be covered during the conference. Interested Surgeons may contact Prof. F.U. Baqai, President I.C.S. (Pakistan Chapter) Baqai Postgraduate Medical Institute, III-C, 1/12 Nazimabad, Karachi or Prof. Abdul Aziz, Secretary I.C.S. (Pakistan Chapter), National Institute of Child Health, Sarfraz Rafiqi Road, Karachi.

ACUTE HEAD INJURY: SURGICAL MANAGEMENT AND OUTCOME ANALYSIS OF 185 CASES

ALI AKBAR

ABSTRACT:

To present experience of surgically managed acute head injury of patients without facilities of CT scan, a prospective study was carried out from July 1998 to June 2001 at the Department of Neurosurgery, Chandka Medical College Hospital, Larkana. Patients admitted with closed head injury with deterioration of conscious level, coma, with or without linear fracture, pupillary dilation and neurological deficit were operated by exploratory burr holes. Postoperatively intracranial pressure was reduced by intravenous infusion of mannitol 20% and frusemide. There were 185 patients (116 males, 69 females) upto 40 years of age. Common mode of injury was road traffic accidents (42%) and assaults (34%). Haematomas were extradural in 83, acute subdural in 16, brain contusions in 22 and combined extradural and subdural haematomas in 18 cases. Overall survival rate was 69.72% with satisfactory recovery in 57.29% cases on Glasgow Coma scale.

KEY WORDS: Head injury, Intracranial haematomas, exploratory burr holes.

INTRODUCTION

Head injury is a serious health problem, affecting young people during their working life and is often associated with poor outcome.¹ About one million head injury patients are being admitted in the hospitals of United Kingdom every year, out of which 10,000 sustain severe head injury.² Severe head injury accounts for more than 50% of trauma related deaths, these usually occur following road traffic accidents, assaults and falls.³ Head injury deaths can be reduced by better prehospital care, ready availability of hospital facilities, such as neuroimaging, intensive care units and ventilators.⁴ The role of computed tomography is invaluable in the diagnosis of head trauma, but is only available in few public hospitals in our country.

The aim of this study is to present experience of managing acute head injury patients with exploratory burr holes, without C.T. scan or intensive care unit facilities.

PATIENTS AND METHODS

This is a prospective study conducted at the Department of Neurosurgery, Chandka Medical College Hospital, Larkana from July 1998 to June 2001.

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This is a tertiary care teaching hospital without the facilities of C.T. scan or intensive care unit, providing care to a vast areas.

The patient inclusion criteria was Glasgow coma score of 13 or below with persistent vomiting and headache with pulse rate of below 60, with or without pupillary dilatation and neurological deficit. Simple linear fracture with severe headache or coma (GCS below 8) even after resuscitation and even without skull fracture and deterioration in the level of consciousness of more than 2 Glasgow coma scale points or progressive neurological deficit such as mono or hemiparesis of upper motor neuron type.

The exclusion criteria was patients with compound or simple depressed skull fractures, penetrating injuries, gunshot wounds of head and patients with cerebrospinal fluid otorrhoea or rhinorrhoea, were clear indications for surgery.

The data collected on a proforma were patient's age, sex, past medical history, history of injury, time since injury, cause and mechanism of injury, details of neurological examination, trends in conscious level (Glasgow coma scale) and pupillary and limb responses.

Also recorded were cardio respiratory status, pulse rate, blood pressure, respiratory rate and rhythm as well as details of other body injuries such as limb or pelvic fractures, chest trauma, abdominal visceral injuries and radiographic findings. After cardiovascular stabilization, resuscitation and correction of any clotting deficiencies, neurosurgical intervention in the form of exploratory burr holes were made. Five separate burr holes, frontal, parietal and pterional made after giving scalp incision of about one inch. These were repeated on the other side if no haematoma found. Two burr holes at sub occipital region were made for posterior fossa haematomas. If epidural or subdural haematoma found, formal craniotomy done by joining all three the burr holes. After removal of epidural haematoma, dura examined for subdural haematoma, in doubtful cases dura was opened to remove subdural haematoma or cerebral contusion.

Post operatively intracranial pressure was controlled with intravenous mannitol 20% at a dose of 1 gm / kg body weight and frusemide, as both have synergistic effect.⁶ Outcome from acute head injury was assessed by Glasgow outcome scale.⁷

RESULTS

There were 185 patients in the study, details are shown in Table I.

TABLE-I AGE AND SEX DISTRIBUTION			
Age Group	Sex		Total
	Male	Female	
08-20 years	32	18	50 (27%)
21-40 years	55	30	85 (45.94%)
41 years - 60	21	16	37 (20%)
> 61 years	8	5	13 (7%)
Total:	116 (62.70%)	69 (37.29%)	185*

The causes of head injuries were 78 road traffic accidents (42.16%), 63 assaults (34%), 41 fall from height (22.16%) and 3 sport injuries (1.62%). Glasgow coma scale of the 185 patients were 13-14:18(9.72%), 9-12 :92 (49.72%) and < 8.75 (40.54%) patients. Haematomas were found in 139 patients, Table II.

TABLE-II INTRACRANIAL HAEMATOMAS FOUND:	
Intracranial haematoma	Number of Patients
Extradural haematoma	83
Acute subdural haematoma	16
Brain contusion/intracerebral haematoma	22
Extradural and subdural haematomas combined	18
Total:	139

Outcome of surviving patients assessed on Glasgow outcome scale is shown in Table III.

TABLE-III OUTCOME OF SURGICALLY TREATED PATIENTS ON GLASGOW OUTCOME SCALE	
Glasgow outcome scale	Number of Patients (n = 185)
Good recovery (G)	78 (42.16%)
Moderately disabled (MD)	28 (15.13%)
Severely disabled (SD)	18 (9.72%)
Vegetative (V)	5 (2.70%)
Dead (D)	56 (30.27%)

Follow up period was considered of 3 to 20 months.

DISCUSSION

Trauma is the leading cause of death among younger age groups and accounts for loss of a greater proportion of potential working life than cancers and heart disease combined. Head injuries contribute significantly to these losses.⁸ In a local study, 72% of the trauma cases sustained head injuries and mortality in these patients was 55%.¹⁰

In this study 73% of the patients involved in head injuries were below the age of 40 years, injuries sustained were mostly in road traffic accidents (42.16%) and assaults (34%). Most of the patient had moderate to severe head injuries (90%) requiring early diagnosis and management in intensive care set up.

In this study decision for surgery was based on detailed history, physical examination, neurological examination and radiographic findings. Whenever neurological deterioration occurs prompt decision should be made regarding evacuation of haematoma or contusion, which still ensures good outcome.¹¹ This usually happened in our study with those patients who had mild head injury (GCS 13-14), because of lack of computed tomography scan facility in our hospital.

Mortality was 30%, because of delay in diagnosis and proper planning of surgery in critically ill patients. The mortality was very high in patients with severe head injury (GCS below 8) and patients with acute subdural haematomas. Adequate control of intracranial pressure, required postoperatively by controlled ventilation in a intensive care unit, influences the outcome of patients dramatically.¹³

Most common intracranial haematoma found by exploratory burr holes was extradural haematoma in 83 cases. Extradural haematomas carry good prognosis, if the condition is recognized early and treated promptly, an outcome of patients would be excellent. The treatment is neither technically difficult nor intellectually demanding.¹⁴

Prediction of outcome, soon after head injury should be deferred until resuscitation is complete as brain damage may appear more serious at the time of injury than it really is, owing to extra cranial factors such as associated injuries, shock and respiratory problems.¹⁵

Early prediction of intracranial haematoma from available history, neurological findings and radiographs, with timely decision of burr hole exploration may save many lives of acutely head injured patients even with limited facilities of diagnosis and post operative care.

The goal of neurosurgeon in managing acute head injury patients with suspected traumatic haematomas is to predict and prevent secondary brain damage by early evacuation of mass lesions and rapid treatment of complication that might worsen the underlying injury. To do this effectively considerable attention must be directed to all phases of patient management, as early transport to neurosurgical center and provision of facilities of computed tomography and intensive care units with ventilators in at least tertiary care hospitals.

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GUNSHOT PERFORATION OF GUT AND ASSOCIATED INJURIES

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ABDUL SATTAR MEMON.

ABSTRACT:

A prospective study of 70 cases of traumatic perforation of gut was carried out at Liaquat Medical College Hospital during January 1995 to December 2000. Males were the common victims with a ratio of 9:1 to women. Viscera other than intestines were involved in 95% cases. Liver and thoracic injuries were common concomitant injuries. Due to delay in transportation to hospital 25% patients die before any form of treatment could be given. Complication rate with multiple injuries involving intestine at more than two places was high. Mortality was 20.5% in patients with multiple organ injuries as compared to 2% with isolated intestinal perforations. Delay in transportation of patients, inadequate resuscitation, hypovolaemia, hypoxaemia and multiple injuries involving vital organs were the main causes of death. Patients who die from multiple injuries had significant thoracic injuries. 80% of deaths are due to intracardiac injuries.

KEY WORDS: Gunshot, pattern of Multiple Injuries, Intestinal Perforation.

INTRODUCTION

Trauma is the leading cause of mortality and morbidity during the first four decades of life and is the third most common cause of death overall.¹ Pre-hospital deaths resulting from gunshot abdominal injuries are due to concomitant vital organ or vessels injuries leading to exsanguination and death. There is an eight to ten fold difference in mortality rates associated with gunshot wounds when compared with stab wounds.² All gunshot patients who reach hospital alive should be given immediate life saving resuscitation before specific surgical intervention.³

PURPOSE OF STUDY

This study was conducted to evaluate the intestinal perforation and pattern of multiple injuries and management outcome of patients with gunshot abdominal trauma at Liaquat Medical College Hospital, Hyderabad from January 1995 to December 2000.

PATIENTS AND METHODS

This study included all the patients with abdominal gunshot injuries referred to Surgical Unit-I, Liaquat

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Medical College Hospital, Hyderabad from the casualty department. Resuscitation and the preliminary evaluations were carried out and recorded. Two intravenous lines, O₂ inhalation, grouping and cross-matching of blood, Hb, TLC, DLC and urinalysis were mandatory. X-ray chest, x-ray abdomen and pelvis as well as ultrasound scan were carried out once the patient's condition was stable. The decision for immediate surgical intervention was based on the evidence of circulating instability, continuous deteriorating of vital signs and evidence of multiple organs or system involvement. This high risk group of patients was directly transported to operating room for immediate laparotomy; decisions were made by a team of senior surgeons and anaesthetists without delay.

Postoperatively the critically injured patients were followed in the intensive care unit. Pulse, blood pressure, temperature, respiratory rate, hourly urine output, PaO₂, PaCO₂, O₂ saturation perfusion and drains were closely monitored and recorded. Antibiotics, antitetanus prophylactics and analgesics were mandatory. Once patients' condition was stable, they were shifted to the wards.

RESULTS

A total of 70 patients admitted with abdominal gunshots in

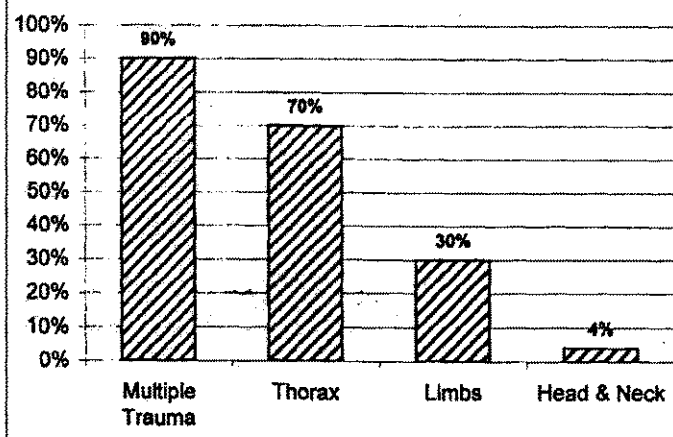
the Surgical Department, Unit I, Liaquat Medical College Hospital, Hyderabad were included in this study. The age incidence was less than 40 years in 90% cases (mean 35 years). Male to female ratio was 9:1. Table No. 1 shows the age and sex distribution.

TABLE-I AGE AND SEX DISTRIBUTION IN ABDOMINAL GUNSHOTS			
Age	Male	Female	Total
11-20 years	2	0	2
21-30 years	20	2*	22
31-40 years	35	3	38
41-50 years	4	1	5
50-70 years	3	0	3
Total	64	6	70

* One patient was pregnant with 7 month gestation.

Reporting time was also mentioned at the time of arrival which was 0-6 hours in 46, 6-24 hours in 20 and less than 24 hours in 4 cases. Patients with associated thoracic injuries with haemo-pneumothorax were 70% (Figure 1).

Figure 1: Pattern of Associated Involvement of System in Gunshot Wounds



Patients had greater omentum in 30% and small intestine in 10% cases eviscerated.

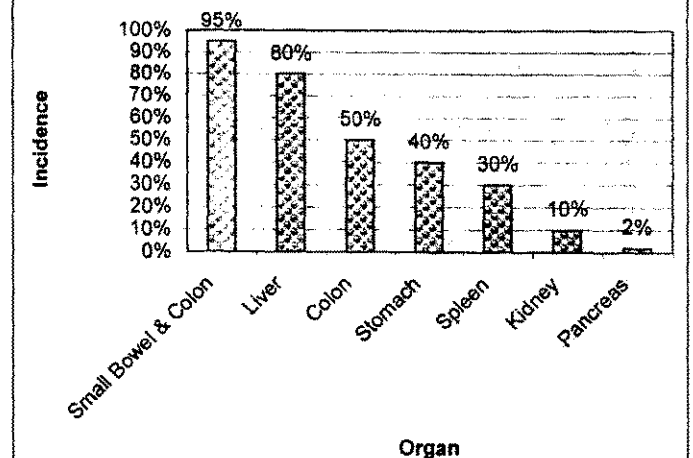
All the patients of abdominal gunshot consented for laparotomy. Four patients with doubtful penetration of peritoneal cavity, presented after 24 hours in stable condition, were locally explored, aided with x-ray abdomen and ultrasound scan. Three patients were managed conservatively, one required surgery with doubtful assessment and was found to have retroperitoneal haematoma at laparotomy. Majority of the gut perforations were treated either by primary closure or colostomy (Table II).

TABLE-II MANAGEMENT Treatment

Small Bowel Perforation		
Single	Closed transversely.	40%
Large		
Multiple		
Mesentery damage	Segmental resection with end to end anastomosis.	60%
Duodenal	Kocherisation and closed transversely.	90%
	± Gastrojejunostomy	10%
Liver injuries	Suture.	
	+ Drainage.	95%
	+ Ribbon gauze packing and drainage.	30%
Spleen injury	Splenectomy.	100%
	No conservation due to severity of injuries.	
Kidneys	Conservation.	80%
	Nephrectomy.	20%
Caecal injuries	Right hemicolectomy.	90%
	Caecostomy.	10%
Right colon injury	Right hemicolectomy and primary ileocolic anastomosis.	100%
Transverse & left sided colon	Exteriorisation.	100%
Sigmoid colon	Exteriorisation.	80%
	Hartman's operation with secondary anastomosis.	75%

Liver injuries were suspected in patients with penetrating gunshot wound that involved the right lower chest and upper abdomen. Liver was second only to small bowel as the most commonly injured organ (Figure No. 2). In these patients early abdominal exploration was carried out

Figure 2: Pattern of Abdominal Organ Involvement



In these patients early abdominal exploration was carried out with long midline incision. Majority of liver lacerations were treated initially with Pringles maneuver and manual compressing and packs followed by suturing of laceration and drainage. In major lacerations (40%) liver was compressed by ribbon roll gauzes, the other ends were marked and brought out separately through abdominal wound for 48 hours. Success rate of control of bleeding was 90% after removal of the gauzes with incidence of bile leakage upto 80-90% for up to one month. Two patients were referred to hepatobiliary unit, JPMC Karachi following failure of this maneuver. Splenic injuries were treated by splenectomy. No patient justified for splenic conservation because of the severity of trauma and multiple organ involvement.

Amongst the 40 patients who had associated haemothorax were treated with chest intubation. Two patients were referred to cardiothoracic unit, Karachi when initial drainage of blood was more than 1500-ml. These patients were transferred after concerned thoracic surgeon having been informed on phone in Karachi. These patients were accompanied by a doctor with ample supply of blood and resuscitation drugs. Postoperative complications were noted in 70% of the patients. Specific management according to organ is given in Table No. II.

The most common complication was postoperative fever. Incidence of complications is given in Table No.III.

TABLE-III INCIDENCE OF COMPLICATIONS	
Complication	Incidence
Fever	70%
Wound infection	65%
Biliary leak	30%
Death	25%
ARDS	20%
Anastomotic leakage	10%

DISCUSSION

Martin Luther King said "violence as a way of achieving justice is both impractical and immoral. It is impractical because it is a descending spiral ending in destruction for all. It is immoral because it seeks to humiliate the opponent rather than wins his understanding".⁴

The medical profession has to treat the consequences of such violence. Although blunt trauma involving road traffic accident is more common than the penetrating injuries involving gunshot wounds, but latter is more likely to require surgery than the blunt trauma. Trauma is the leading cause of mortality and morbidity during the first 4 decades of life and is the 3rd most common cause of death, overall.¹

Gunshot wounds, especially those caused by high velocity bullets has increased to 90-95% of incidence of

penetration as compared to 40% by stab wounds.^{1,2} There is an eight to ten fold difference in mortality rates associated with gunshot wounds when compared to stab wounds.¹ Liver was the second most common organ insured after small bowel. At the time of surgery in half the patients with liver laceration, bleeding had stopped or had slowed down considerably.⁶

Gunshot injuries involving more than one organ were 90-95%. Small bowel perforation, commonest injury in 60-70% of all cases, was at more than one site. In our study, splenic preservation was not achieved because of either extensive laceration, precarious condition of patient, or due to associated multiple injuries. Gunshot wounds were most frequently encountered in young males which is similar to other studies.⁷

In our study of patients with liver and intestinal injury, mortality was about 10-15% which is comparable with the available^{2,6} literature. However, mortality was higher when the trauma was associated with injuries of other abdominal organs or when liver was massively lacerated (parenchymal destruction involve 25-75% of hepatic lobe). Mortality rose to more than 50%, which is also comparable with the literature in the west.³

Among the patients who had laparotomies postoperative fever, wound infection and anastomotic leak were the main complications. Mortality was high due to sepsis in these cases.⁸ In this study it has been observed that immediate resuscitation, an early transportation of patients and timely surgical intervention can reduce the rate of morbidity and mortality.

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LYMPHANGIOMA AND CYSTIC HYGROMA IN CHILDREN

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ABSTRACT:

Lymphangioma and cystic hygroma (LCH) are the malformations of lymphatic system. A retrospective review of all cases of LCH managed between January 1997 and December 1999 was carried out. A total of 21 cases were managed during this period that included 12 male and 9 female patients. The most common site was neck followed by axilla. Two neonates were admitted through emergency because of respiratory distress. Surgical excision was done in all the cases. Recurrence was seen in two cases. No mortality occurred in this series.

KEY WORDS: *Lymphangioma, Cystic hygroma, Child*

INTRODUCTION

LCH are known to mankind since ancient times. It used to be an unsightly lesion and monographs can be found in literature depicting these unfortunate victims. Following detailed description as to the origin of lymphatics in the early 20th century the management becomes more scientific.¹ Previously many hazardous modes were also used including radiotherapy with disastrous results.² The experience with this condition is rarely reported in local literature although it is a common lesion in paediatric surgical practice³. So far no study has been published from the Baluchistan province. This article is prepared in this background so as to know various modes of presentations and outcome of surgical excision.

PATIENTS AND METHODS

The record of all the patients who were admitted with LCH was reviewed. The data related to these patients were recorded on a proforma. All those patients who were managed as outdoor cases underwent routine investigations. Radiology and scan were added according to the site of the lesion. Surgery was performed under general anaesthesia with endotracheal intubation. The part of the malformation that could be excised without damaging adjacent important structures was removed. The cysts of the lesions were laid open if could not be removed. Suction drain was kept in all cases. Cases were followed in OPD for appearance of recurrence.

RESULTS

In two years study 21 patients were managed. There were 12 males and 9 female patients. In 90% cases the tumor

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was present at birth. The age at presentation of these patients is shown in table I. Majority were between 1 – 5 years of age. Two neonates with cervical cystic hygroma presented in emergency with respiratory distress.

TABLE-I AGE AT PRESENTATION	
Age Group	Number of patients
Less than 1 year	08
1 – 5 years	11
More than 5 years	02

Cervical region was the most common site where lesion occurred followed by axilla (Table II). No intra thoracic and intra abdominal lesion found in present series.

TABLE-II ANATOMICAL DISTRIBUTION	
Region involved	Number of patients
Cervical region	8
Axilla	4
Upper limb	2
Face	1
Trunk	4
Lower limb	2

Surgical excision was performed in all cases. For extensive lesion involving more than one region staged procedure was performed (Fig. I, II). No mortality occurred in this series. Recurrence was noted in two cases of cervical cystic hygroma.

DISCUSSION

Cystic hygroma and lymphangiomas are considered to be hamartomatous lesions with variable appearance and



Figure I: A child with cystic hygroma involving more than one region.

sizes. About 2/3rd of these lesions are apparent at birth and rest of them appear later but majority of tumors are present by the age of 2 years. Rarely lesion appears in adult life.^{4,5} More than 50% of our patients presented for surgery after infancy although lesion was present at birth. The patients did consult various doctors but as awareness even among medical community about the management

of lesion is almost non existent the patients are not properly guided. The lesion should be excised as early as possible provided general condition of the patient is fit for anaesthesia and surgery. If lesions are left untreated there are chances of infection, intra cystic haemorrhage and of course with increase in size the lesion infiltrates the surrounding important structures make the excision hazardous. The psychological trauma to the family is another issue in the management of these patients.⁶

The most common site of involvement is cervical region as most the of lymphatic tissue is found there. At this locale tumor is in the form of cystic hygroma and is often unsightly. The typical picture of lesion that is not attached to skin but attached to deeper structures, non compressible and positive transillumination makes the diagnosis easier and no other sophisticated test is required except to see its extent into deeper tissue so that counseling could be done with family as to the complete excision of the tumor which may not be possible with ever

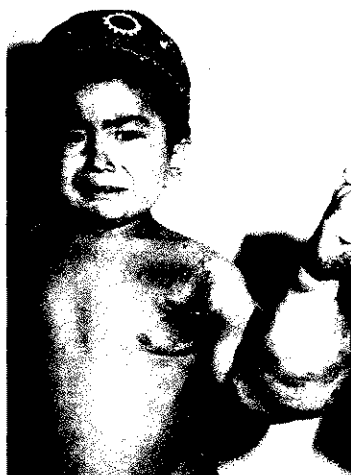


Figure II: Same child following staged excision.

increasing chances of recurrence.⁷ In our series 40% of the cases involved cervical region. Two of the neonates with cervical cystic hygroma presented with respiratory distress and were initially managed non operatively with stabilization of respiratory status and later subjected to surgery. Recurrence occurred in two cervical cystic hygroma cases where it was not possible to excise the tumor completely.

Recurrence of the lesion is difficult to treat as repeat surgery is associated with chances of damage to adjacent vital structures because of distortion of anatomy due to fibrosis. Many modes of treatment has been described to decrease the chances of recurrence at operation and in follow up period. The results even then are less than ideal. Successful ablation of lesion is described with the use of OK 432 and intra lesional bleomycin in literature.^{8,9} OK 432 is not available in Pakistan and bleomycin is chemotherapeutic agent and can lead to pulmonary fibrosis. We did not use any of these agents in our series.

Staged excision in extensive lesions is a novel approach. We used this technique in few cases and results were satisfactory. We did not encounter any visceral lymphangioma although they are reported in literature. In this small series of cases good outcome indicates that surgical excision even in infancy is possible with excellent cosmetic results. Delaying the treatment to later age increases the morbidity and psychological trauma to family and the child.

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ROLE OF CYCLOSPORIN MONOTHERAPY IN NEPHROTIC SYNDROME

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ABSTRACT:

A prospective study on Role of Cyclosporin Monotherapy in Nephrotic Syndrome was carried out from January - June 2001 at Jinnah Postgraduate Medical Centre, Karachi. Twenty-five patients suffering from nephrotic syndrome (15 males and 10 females, ages 8 to 50 years), were given a moderate dose of cyclosporin. Renal biopsies were performed in all cases. Two had minimal change, eight mesangiol proliferative glomerulonephritis (MPGN), nine focal segmental glomerulosclerosis (FSGS) and six membranous nephropathy had received past treatment with steroid, cyclophosphamide and/or combination. Most of these patients were steroid-dependent, steroid-resistant, frequent relapsers, and non-responders. Cyclosporin in the form of Consupren was prescribed in doses 3 to 5 mg/kg body weight and toxicity was monitored closely by trough level estimation of cyclosporin. Results show that 08 patients are in remission, 13 in partial remission, and 04 have not yet responded. No toxicity was encountered in this short duration study. These findings suggest that cyclosporin monotherapy may be useful in nephrotic syndrome patients in whom steroids and alkylating agents may have failed or are contraindicated.

KEY WORDS: Nephrotic syndrome, Minimal change disease, Cyclosporin treatment.

INTRODUCTION

Nephrotic syndrome is a symptom complex characterized by proteinuria. The proteinuria is defined by international study of kidney diseases in children as urinary protein excretion >40 mg/m²/hour. Remission is defined as reduction of urinary protein excretion to <4 mg/m²/hour for three consecutive days. Relapse is defined as reappearance of proteinuria >40 mg/m²/hour for three consecutive days.¹ Frequent relapses are defined as having two relapses in a six months. Steroid dependency was defined as a remission within four weeks of prednisolone therapy, with relapse occurring when the dose of prednisolone was reduced to below a critical level or within two weeks of discontinuation of therapy.²

In most children with idiopathic nephrotic syndrome minimal change disease accounts for approximately 90 percent cases under the age of 10 years and more than 50 percent in older children.³ However other patterns have been identified, including FSGS, MPGN, and minimal change with IgM deposition with or without C₃ (complement). The clinical significance of the above subtypes of the idiopathic nephrotic syndrome has been

the subject of many studies. Although minimal change disease has the best response to therapy and prognosis, there is substantial clinical overlap and these conditions are thought by many to represent different parts of a disease spectrum rather than disorders with different pathogenesis.⁴

Therefore two types of lesions can be defined: steroid-responsive nephrotic syndrome, in which the proteinuria rapidly resolves and steroid-resistant nephrotic syndrome, in which steroids do not induce remission.

Membranous nephropathy is the most common cause of adult-onset idiopathic nephrotic syndrome. Although the overall renal survival percentage remains as high as ten years, its incidence rate results in the disease being the second or third most common primary glomerulopathy to terminate in end-stage renal failure.^{5,6}

The basic principles of therapy of idiopathic nephrotic syndrome includes symptomatic and specific treatments. Regarding the symptomatic treatment, oedema should be treated by salt restriction with fluid restriction. Although diuretics are commonly used in adults, their role in children is less clear as they may cause plasma contraction which may predispose to thrombo-embolic

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complication, hypovolemia, hyponatremia, and may lead to acute renal failure. Nephrotic children are at high risk for bacterial infections, particularly peritonitis due to loss of IgG and complement factor B and D in urine. These infections should be treated adequately.⁷

Cyclosporin has also been used in treatment of membranous glomerulonephritis for over 10 years. But the most recent and first randomized controlled trial of cyclosporin has been reported in adults with steroid-resistant membranous nephropathy and nephrotic-range proteinuria but with preserved renal function.⁸

PATIENTS AND METHODS

A prospective study of six months followup of 25 patients was carried out at Department of Nephrology, Jinnah Postgraduate Medical Centre, Karachi from January to June, 2001. Out of these 25 patients, 15 were males and 10 females with ages ranging between 8 and 50 years. Patients included in this study met the following criteria:-

- Suffered from steroid-dependent nephrotic syndrome.
- Experienced significant steroid toxicity.
- Were steroid-resistant.
- Were non-responders to steroids, cyclophosphamide, or a combination of both and
- They were frequent relapsers.

All patients underwent detailed clinical examination and thorough investigations which included 24 hours urine protein and in certain cases urine for protein selectivity. Blood was examined to evaluate renal function and relevant immunological tests were done. All of them underwent renal biopsies. Out of these 25 patients 02 had minimal change, 08 MPGN, 09 had FSGS, and 06 membranous nephropathy. These were put on cyclosporin 3-5 mg/kg body weight and were followed once a week for first four weeks of cyclosporin treatment and monthly thereafter. At each followup visit, patients were asked about the symptoms and were monitored for any side effects of cyclosporin treatment. The following tests and measurements were carried out at each visit:

- Haemoglobin
- White blood cells and platelets
- Blood urea nitrogen (BUN)
- Serum creatinine
- Serum cholesterol
- Liver function test (LFT)
- Serum electrolytes
- Serum uric acid
- Urine analysis
- 24 hours urinary protein
- Creatinine clearance
- Body weight
- Blood pressure

The dose of cyclosporin was adjusted to maintain trough levels between 100 and 200 µg/ml.

RESULTS

The duration of this on-going study is six months. Renal biopsies were performed in all the 25 patients. Out of these 08 patients started showing response by six weeks of treatment with cyclosporin and showed complete remission in 12 weeks time. From these 08 patients 02 had minimal change, 02 MPGN, 01 FSGS, and 03 had membranous nephropathy. They are still in remission and in regular followup, and continuing the same dose of cyclosporin. Out of the remaining 17 patients, 13 are in partial remission, and the remaining 04 have not yet responded to this treatment. These four patients who have not responded belong to the FSGS group.

DISCUSSION

Corticosteroids have been established as the first line of treatment of nephrotic syndrome.¹ Although about 95% children with minimal change nephrotic syndrome respond to corticosteroids therapy, 40% to 90% of the responders have subsequent relapses.^{8,9} The natural history of untreated idiopathic membranous nephropathy shows that spontaneous remission has been noted in 20% to 30% cases and progressive renal failure in another 20% to 40%; the remaining patients maintain their proteinuria even after 5 to 10 years.¹⁰

Oral prednisone is generally preferred to prednisolone. It is begun at a dose of 60 mg/m² per day to a maximum of 80 mg per day. Usually proteinuria disappears in the second week in many children and in most within four weeks. Prednisone is continued at the same dose for 30 days and the patient is then switched to alternate day therapy at the same daily dose for two months. Thereafter, the alternate day dose is decreased every two weeks by 15 mg/m². The net effect is that the total duration of therapy for the first attack is about 4-5 months. When the duration of treatment is shorter, the percentage of relapse is higher.¹⁰

The major problems in the management of the nephrotic syndrome patients, who have frequent relapses are the serious side effects resulting from continuous steroid therapy. Alkylating agents such as cyclophosphamide and chlorambucil have been used as adjunct to steroids for inducing longer remission in frequent relapsers. The effect of these alkylating agents is well established in patients without steroid dependency, but they are unsatisfactory in steroid-dependent patients.¹⁷ Due to numerous adverse effects of corticosteroids and alkylating agents, it is difficult to treat patients of nephrotic syndrome who are steroid-dependent, steroid-resistant, frequent relapsers, and non-responders to the above agents. They are initially treated with repeated courses of prednisone. On the other hand, the therapeutic use of cyclosporin has been reported in the treatment of steroid-resistant and steroid-dependent nephrotic syndrome and several glomerular diseases¹² with good results.

In the present study the initial dosage of cyclosporin, 3.5 to 5 mg/kg/day, was sufficient to reduce proteinuria, renal function was stable or improved, and there was no evidence of cyclosporin toxicity. However, the duration of this study is too short to comment on the important potential side effects of cyclosporin therapy.

Prolonged or repeated steroid therapy can lead to a variety of serious side effects. These include diabetes mellitus, hypertension, statural growth impairment, obesity, osteoporosis, cataract and psychological disturbances. For these patients several different regimes have been used. One of these regimes is the use of alkylating agents in the form of cyclophosphamide and chlorambucil. These agents have the advantages of minimizing the above problems and of successfully inducing longer lasting remissions in many children.¹³ The recommended dosage for cyclophosphamide is 2 mg/kg, but the daily doses should not exceed 2.5 mg/kg. Similar efficacy can also be achieved with chlorambucil, the recommended dosage of which is 0.2 mg/kg for two months.

The use of alkylating agents is limited by complications they can induce. These are bone marrow toxicity, alopecia, and haemorrhagic cystitis, and gonadal toxicity. The risk of gonadal toxicity is more in boys than girls.

The other therapies include mechlorethamine, levamisole. The most serious side effects of levamisole is reversible neutropenia. Cyclosporin is a well known and effective immunosuppressive agent that has been used in most solid organ transplant programs. Therapeutic use of cyclosporin-A (CsA) in nephrotic syndrome began in 1985.¹⁴ Favourable antiproteinuric effects of CsA have been reported in the treatment of steroid-resistant and steroid-dependent nephrotic syndrome and several glomerular diseases.¹⁵

Most studies have reported that nephrotic syndrome reappeared soon after cyclosporin was tapered off. However, Ponticelli et al reported that gradual reduction of cyclosporin may prevent an early relapse.¹⁶ In fact, Meyrier reported some cases which had no relapse after cyclosporin was tapered off.¹⁷ Moderate tapering may solve the cyclosporin dependency. Thus cyclosporin monotherapy seems to be a rational and important option in the management of patients of nephrotic syndrome in which the classical regime of treatment has failed.¹⁸ It provides a valuable therapeutic alternative in the management of nephrotic syndrome. The question of how to taper cyclosporin must be further investigated.

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GRANDMULTIPARITY – A CONTINUING OBSTETRIC RISK IN PAKISTAN

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ABSTRACT:

A study was carried out at Services Hospital, Lahore to review the obstetric risk factors associated with grandmultiparity. Obstetric complications were investigated and comparison was made between multiparous (MP) and grand multiparous (GMP) patients. There were higher rate of complications such as anaemia, malpresentation, cephalopelvic disproportion, antepartum haemorrhage, postpartum haemorrhage (PPH), retained placenta and ruptured uterus among the grand multiparous patients. Still birth rate and neonatal mortality were higher for GMP than for MP.

KEY WORDS: Multiparous, Grand multiparous, Obstetric risks.

INTRODUCTION

Women who have five or more children are called Grand multiparous and those who have 2-4 children multiparous and many authors have confirmed the hazards of grandmultiparity.^{1,2,3} Solomon's and Cartman noted increased maternal and perinatal mortality in para 5 or above.⁴

In Pakistan increased grandmultiparity, especially in lower socioeconomic class is due to early marriages, illiteracy and male dominance. The number of children, desire for male offspring and above all lack of knowledge of contraception contribute to multiparity even at the age of 18 or 19 years. Malnutrition, lack of medical facilities and repeated pregnancies make them a high-risk obstetric population.

The purpose of this study is to investigate and compare the complications in multiparous and grand multiparous women.

PATIENTS AND METHODS

In this study 885 patients were reviewed from June 2000 to May 2001 at Services Hospital, Lahore. Complications were documented from history, examination and investigation record. Outcome of baby was noted in each case. Comparison were made between GMP and MP.

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RESULTS

The most frequently encountered complications were anaemia, defined as haemoglobin of less than 10 gm/100 ml. Anaemia was prevalent in both groups, however severe anaemia i.e. Hb less than 6 gm was more common in GMP (20.5%) as compared to MP (1.9%). (Table I).

TABLE-I		HAEMOGLOBIN LEVELS		
Hb (gm)	Multiparous (n=685)		Grand multiparous (n=200)	
	No.	%	No.	%
> 10	102	14.8.	27	13.5
7 – 10	571	83.3	132	66
< 6	12	1.9	41	20.5

Common malpresentation in GMP were breech, transverse lie, cord presentation and prolapse. Malpresentations were 2_ times more common in GMP, when compared to MP Table II).

TABLE-II		FETAL PRESENTATION		
Presentation	Multiparous (n=685)		Grand multiparous (n=200)	
	No.	%	No.	%
> 10	102	14.8	27	13.5
7 – 10	571	83.3	132	66
< 6	12	1.9	41	20.5

Cephalopelvic disproportion in unsupervised labour results in obstructed labour. This was more common in GMP (5.5%) as compared to MP (0.03%).

The complications encountered in grand multiparous patients compared with multiparous patients are shown in Table III.

TABLE-III		COMPLICATIONS		
Presentation	Multiparous (n=685)		Grand multiparous (n=200)	
	No.	%	No.	%
Vertex	639	88.32	168	84
Breech	28	4.08	17	8.5
Face	3	0.44	2	1
Brow	3	0.44	3	1.5
Transverse	6	0.88	8	4
Compound	2	0.29	1	0.5
Others	4	0.58	1	0.5
Total malpresentation	46	6.71	32	16

Incidence of placenta praevia and abruptio though present in both groups was more than twice in GMP when compared to MP. Retained placenta was encountered nearly 5 times more frequently in GMP than MP. Incidence of ruptured uterus was 7 times higher in patients with high parity as compared to patients with low parity. From the records it was not possible to calculate perinatal mortality as only still births were noted. When compared still births are 4 times higher in GMP, being 4% as compared to MP (1.02%).

In GMP group maternal deaths occurred in patients brought to the hospital with ruptured uteri. It is difficult to say that grandmultiparity directly caused maternal deaths however the incidence is higher (17.8%) in this group than in women with lesser number of children (0.29%).

DISCUSSION

Solomon regarded GMP as the "dangerous multipara". In Pakistan marriages at early age and short birth intervals eventually jeopardize the health of the mother and her offspring.

Anaemia, commonly encountered complication, has been shown to be higher in GMP in many studies.^{6,7} The magnitude of severity (Hb less than 6 gms) is only reflected in our review. It has been rightly pointed to by Lawson⁸ that malnutrition and undernutrition are rife in developing countries. Pregnancy imposes an extra demand contributing to severity of anaemia.

Malpresentations are common in the GMP group probably due to flabby uterine abdominal muscles, lumber lordosis and delayed engagement of foetal head.^{3,5,10}

Cephalopelvic disproportion is a recognized complication pointed out by many authors.^{2,11} Its incidence in our review is

of higher magnitude. Perhaps grandmultiparity alone is not responsible for changes in the pelvis. Socioeconomic status and nutrition may have a major role to play in pelvic changes.

High parity leads to augmentation of venous drainage from lower portion of the uterus and therefore lower placentation, creating propensity for both abruptio placenta and placenta praevia.⁶ The incidence of these complications remains high in many studies.^{1,3,6} It remains a major cause of maternal mortality in Pakistan.

PPH is another danger faced by GMP. In this study it is 2.15 times more common than women of lesser parity. It may be due to poor uterine contractility. Therefore liberal use of oxytocin and ready availability of blood will help to counter this complications.⁶

Rupture of uterus was the cause of two maternal deaths in this review. Higher incidence of rupture is said to be because of increased fragility of uterine wall. In each succeeding puerperium additional connective tissue is laid down and myometrium becomes poorer in elastic tissue contributing to increased fragility

It is rightly stated that perinatal mortality rates reflect the background of social and biological environment of the population.¹² Though we could not calculate the perinatal mortality, incidence of still birth was high in this review of GMP. Review of these complications and high incidence of maternal deaths indicate that grand multiparity is the single most important indication for hospital delivery. The risks should be periodically emphasized in literature.⁹

In Pakistan rural health centres covering 90% of our population are not only less in number but are also inadequately equipped with trained staff. Sufficient density or quality of services is not available. It is essential, therefore, to energetically develop the health system within existing resources, so that proper antenatal screening of all the grand multiparous patients can occur and they can then be referred to properly equipped hospitals at the right time. Motivation of these patients to accept family planning methods can further improve the situation. Perhaps in a decades' time we, like Scharfman¹³ and Silverstein, may say "with adequate medical and obstetric care during the prenatal period of delivery the word "dangerous" can be eliminated from literature for grand multiparous patient.

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PREVALENCE OF HEPATITIS C AMONG PREGNANT WOMEN

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ABSTRACT:

A study for the prevalence of Hepatitis C Virus (HCV) infection among 300 pregnant women booking for antenatal care between November 1999 and April 2001 was carried out at the Antenatal clinics, Lady Aitchison Hospital Lahore. Serum analysis for antibodies against HCV, was carried out and samples positive for HCV antibodies were tested for the presence of HCV RNA by polymerase chain reaction.

The overall prevalence of anti-HCV was 6.0% and HCV viraemia was 4.0% while 2.0% of women had false positive result. Nine out of 18 (50.0%) of HCV infected women were newly diagnosed. The prevalence of anti-HCV in pregnant women attending ante natal clinic at Lahore is 6.0% and most were undetected prior to testing/screening.

KEY WORDS: HCV prevalence, Polymerase chain reaction(PCR). Pregnant women.

INTRODUCTION

Hepatitis C virus is an RNA virus that is a major cause of acute and chronic hepatitis. It is contacted chiefly through parenteral exposure to infected material such as blood transfusions or injections with contaminated needles.¹ It is estimated that there are approximately 170×10^6 persons infected with HCV worldwide.² This is nearly 3% of the world population, which in many instances appear to be related to medical procedures (eg, vaccinations, and parenteral drug treatments). In some highly endemic areas of the world, e.g. in Egypt, the prevalence rates range from 10% to 30%.³ The prevalence of infection remains high because chronic hepatitis C develops in about 75% of those infected. Both acute and chronic hepatitis C are asymptomatic in most patients. However, chronic hepatitis C is a slowly progressive disease and results in severe morbidity in 20% to 30% of infected persons.

The first clear association of blood transfusion with the development of hepatitis was not reported until 1943. The triumph of modern molecular biology and recombinant DNA techniques was first described in 1989 and it allowed

investigators to establish the sequence of the entire viral genome called hepatitis C virus.⁴

PURPOSE OF STUDY:

Since the infection is prevalent in Pakistan and most of the infections are asymptomatic, this study was carried out in pregnant women attending Ante natal Clinic of Lady Aitchison Hospital, Lahore to see its prevalence.

PATIENTS AND METHODS

Three hundred pregnant women, 16 to 48 years of age (mean 28 years) presenting to Lady Aitchison Hospital, Lahore from November 99 to April 2001, were enrolled. After informed consent, their blood was obtained for Anti HCV antibody analysis by a third generation ELISA technique. Sera testing positive were also tested for HCV-RNA by PCR.

RESULTS

Eighteen out of 300 sera (6.0%) tested positive for Anti HCV antibody; 12 out of 18 (66.6%) also tested positive for HCV-RNA by PCR. Nine out of 18 cases (50.0%) were newly diagnosed.

DISCUSSION

There are only a few studies of prevalence of HCV infection in Pakistan, but it is the acquisition of infection

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which is of greater significance. HCV infection is a major health problem in Pakistan and after introduction of routine screening of blood and blood products prior to transfusion, other modes of spread are gaining importance. When blood is transfused from an anti-HCV antibody-positive donor, more than 80% of the recipients will become infected with HCV.

Small outbreaks of HCV have been reported in hospitals. For example, in one Swedish hematology ward, 5 clusters of patients infected with identical or closely related viruses were found. Needlestick exposure also constitutes a risk factor for the transmission of HCV to health care workers.⁵ Two percent to 8% of needlestick exposures from HCV-infected patients are followed by the development of HCV infection in health care workers.

The frequency of sexual transmission of HCV is low (~5%), unlike that of HIV transmission (10%-15%) or HBV transmission (~30%). Based on these data, the Centers for Disease Control and Prevention (CDC) have not recommended barrier precautions (eg, latex condoms) between stable, monogamous sexual partners when one is HCV positive. Emphasis instead should be placed on avoidance of potential exposure to blood (no sharing of razors, combs, or toothbrushes).

Coinfection with HIV increases the risk of sexual transmission of HCV. In addition to HIV, the severity of liver disease may also play a role in the risk of transmission. In one study, nearly 15% of household contacts of patients with HCV-related chronic liver disease due to HCV developed HCV positivity, as compared with no infections among the household contacts of 30 asymptomatic HCV-infected blood donors. Thus The risk of perinatal transmission of HCV from mother to infant is low. In one study from Japan, the risk of HCV transmission from mother to infant was 6% in babies born to mothers with anti-HCV and 10% in babies born to mothers with HCV RNA.⁷

There was no risk of transmission if the maternal viral load in serum was less than 105 copies/ml. In contrast, for mothers with serum levels of viral HCV RNA more than 106 cm³ /ml, the rate of transmission to newborns was 36%.⁸ HIV coinfection also plays a role. the stage of the liver disease, and not the length of relationship, may chiefly influence the risk of household transmission.

In 12 studies of 105 babies born to mothers with HCV plus HIV coinfection, 18% became infected with HCV, as against an incidence rate of 4.5% of among 310 babies born to mothers with HCV but without HIV.⁹ The higher HCV loads in patients infected with HIV may partly explain this. Cesarean section does not appear to decrease the risk for HCV transmission as it does in the

case of hepatitis B, HCV transmission by breast-feeding is unusual consensus recommendations of the CDC do not proscribe breast-feeding by mothers with HCV infection

If organ or bone marrow donors are HCV RNA positive, there are higher rates of HCV infection among recipients of solid organs (liver, kidney, heart, lung) or bone marrow.^{10,11}

We conclude that HCV positivity in urban metropolis of Lahore is 6.0% in pregnant women and most of the cases 50.0% were newly diagnosed. We recommend that all pregnant women should be screened for Anti HCV antibody and those testing positive should be tested for HCV – RNA by PCR.

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PREVALENCE OF HELLP SYNDROME AMONG PREGNANT WOMEN

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ABSTRACT:

A study was carried out to examine the prevalence of HELLP syndrome at Lady Aitchison hospital Lahore, between Jan 2000 and August 2001. A total of 8230 pregnant women, ages 15 to 44 years (mean 25), presenting for delivery were evaluated and 2705 were selected for screening in order to diagnose HELLP syndrome. These were either suspected to have preeclampsia or had eclampsia (1735) or pain in epigastrium or right hypochondrium along with malaise (467) or severe nausea and / or vomiting (503). They were evaluated by liver function tests, platelet count and peripheral blood smear for RBC morphology. Hemolysis was defined by abnormal peripheral smear and increased bilirubin (≥ 1.2 mg/dL). Elevated liver enzymes, defined as increased serum aspartate amino transferase (≥ 70 IU/L), increased alanine aminotransferase (> 70) and a low platelet count ($< 100,000/\text{mm}^3$). A total of 43 cases of HELLP syndrome were diagnosed, who fulfilled all the three criteria.

KEY WORDS: HELLP syndrome prevalence, preeclampsia, eclampsia, pregnancy outcome.

INTRODUCTION

HELLP syndrome, characterized by hemolysis, elevated liver enzyme levels and a low platelet count, is an obstetric complication that is frequently misdiagnosed at initial presentation. Some physicians consider the syndrome to be a variant of preeclampsia, but it may be a separate entity.

The incidence of HELLP syndrome in western literature ranges from 4% to 12% of preeclampsics, and its presence is associated with high maternal and perinatal morbidity and mortality.¹ Sibai et al² recommended the following diagnostic criteria, used by us for its diagnosis.

- Hemolysis, defined by abnormal peripheral smear and increased bilirubin (≥ 1.2 mg/dL)
- Elevated liver enzymes, defined as increased serum aspartate amino transferase (≥ 70 IU/L) and increased alanine aminotransferase (> 70)
- A low platelet count³ ($< 100,000/\text{mm}^3$).

PURPOSE OF STUDY:

This study was undertaken to find out the prevalence of

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HELLP syndrome in our population. It was conducted at Lady Aitchison hospital, Lahore, a teaching hospital attached with King Edward Medical College, Lahore.

PATIENTS AND METHODS

We evaluated 8230 pregnant women, age range 15 – 44 years (mean 25 years) presenting to Lady Aitchison hospital Lahore, between January 2000 to August 2001. Patients selected for screening in order to diagnose HELLP syndrome were 2705. A large number of patients (1735) had hypertension, oedema and / or Proteinuria with or without seizures (preeclampsia and or eclampsia), 503 had severe nausea and/or vomiting and 467 had pain in the right hypochondrium or epigastrium. The diagnostic criteria used by Sibai were used in order to make the diagnosis. The investigations included full blood counts, liver function tests and peripheral blood film for RBC morphology.

RESULTS

Fortythree cases fulfilled all the criteria laid down for the diagnosis of HELLP syndrome, of these the highest number was from preeclampsia / eclampsia group. Thirtyfour out of 1735 (1.95%), from cases of suspected preeclampsia / eclampsia, had HELLP syndrome. Five out of 503 (1.01%) cases of severe nausea and vomiting had HELLP syndrome and four out of 467 (0.85%) from cases of pain epigastrium and

right hypochondrium had HELLP syndrome. The details of 43 cases with HELLP syndrome are given in Table I:

TABLE-I TOTAL NUMBER OF CASES WITH HELLP SYNDROME (N = 43)

Associated with Preeclampsia / eclampsia. N=34	Associated with nausea / vomiting. N = 5	Associated with pain epigastrium and right HC. N = 4
% age of total cases of preeclampsia/ eclampsia. 1.95%	% age of total cases of nausea vomiting. 1.01%	% age of total cases of pain epigastrium/ right hypochondrium. 0.85%

The characteristics of patients with HELLP syndrome are given in Table II.

TABLE-II CHARACTERISTICS OF PATIENTS WITH HELLP SYNDROME.

Pain epigastrium n = 37	Nausea and vomiting n = 29.	Bruising and ecchymosis N = 5
Hematuria. N= 3	Abrupton of placenta. N=8	Blurring of vision. N=6
AGE RANGE 15 – 35 years	Fetal outcome. Live births= 32.	Maternal mortality N= 8.

DISCUSSION

The acronym HELLP was introduced in 1982 to describe a syndrome consisting of hemolysis, elevated liver enzyme levels and low platelet count.³ This syndrome has been considered a variant of preeclampsia, but it can occur on its own or in association with preeclampsia. Pregnancy-induced hypertension, preeclampsia and HELLP syndrome are related and overlap in their presentations. HELLP syndrome is a serious disorder associated with significant morbidity and mortality.

Approximately 90% of patients initially complain of epigastric or right upper quadrant pain with a history of malaise. Some have nausea and vomiting (50%), and others have nonspecific viral-like symptoms.⁴ Hypertension and proteinuria may be mild or absent in 20% to 30% of cases. Therefore, all pregnant women presenting with the aforementioned symptoms should have a complete blood count with platelet count and liver enzyme tests.^{4,5} Maternal morbidity increases significantly as the platelet count falls to less than 50,000/mm³, and perinatal morbidity increases with increasing severity of the disease days after delivery. Because delivery represents the only definitive treatment of the disease, immediate delivery is usually indicated.

According to the western literature HELLP syndrome occurs in approximately 0.2 to 0.6 percent of all pregnancies.⁴ In comparison, preeclampsia occurs in 5 to 7 percent of pregnancies. Superimposed HELLP syndrome develops in 4 to 12 percent of women with preeclampsia or eclamps.⁶ When preeclampsia is not present, diagnosis of the syndrome is often delayed.⁶

The syndrome generally presents in the third trimester of pregnancy, although it occurs at less than 27 weeks of gestation in an estimated 11 percent of patients.⁷ The syndrome presents antepartum in 69 percent of patients and postpartum in 31 percent of patients. With postpartum presentation, the onset is typically within the first 48 hours after delivery; however it can occur upto seven days after delivery.⁸

The prevalence in our study is much lower and the difference is largely due to the fact that it is lower in Asian population. More studies are needed to ascertain the epidemiology and prognosis of this serious yet not uncommon illness.

HELLP syndrome is not a rare diagnosis, though the highest prevalence is amongst the cases with preeclampsia / eclampsia, it can occur without it. Regular screening is essential for prompt diagnosis.

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REVIEW ARTICLE

CLINICO-RADIOLOGICAL CORRELATION OF CRANIO-CEREBRAL TRAUMA

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Head injury is the third leading cause of death in general population, while trauma itself, in general, is the most common cause of death in individuals under the age of 30. Those who survive head injury, 3% will remain vegetative while 5 -18% will sustain some degree of prolong disability.

The aim of management of patients with head injury is to provide best conditions for recovery from any brain damage already sustained and to prevent or treat complications secondary to brain damage. The role of casualty department in management of patients with head injury is of prime importance. As soon as the patient arrives in the department, the doctor on duty must be able to detect or exclude injuries, ensure adequate arrangements for observations and maintaining patient's condition, liaise with other specialities like neurosurgery; orthopedics etc. In addition, he should ask for timely initial investigations.

There are many factors that affect consequence of head trauma. They include thickness of scalp and density of ossification of calvarium, the direction and nature of force producing head injury, position of the head, the protection afforded to the head, the status of intracranial contents at the time of injury and the time lapsed between initial injury and clinical management. Traumatic brain injury can be divided into primary injury that occurs at the time of injury and secondary injury that occurs thereafter. Types of intra-axial injuries are diffuse axonal injury, cortical contusion, brainstem injury, intra-parenchymal hematoma and post-traumatic infarction. Types of extra-axial injuries are subdural hematoma, epidural hematoma, and subarachnoid hemorrhage and intraventricular hemorrhage.

The different diagnostic modalities that can be used according to the nature and extent of injury, as well as availability along with the factor of patient's affordability, are plain film radiography (skull x-ray), Computed tomography, (C.T), radionuclide brain scanning, magnetic resonance imaging (M.R.I) and cerebral angiography.

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The importance of plain radiography^{1,2,3,4} (skull x-rays) immediately after the time of initial impact cannot be denied but banking and relying on normal plain skull radiographs, even in the presence of worsening clinical symptoms is not justifiable. A negative x-ray does not exclude the possibility of intra cranial or intra cerebral hematoma. Most important is the history of unconsciousness, but this may remain insignificant if the patient remains unconscious with a normal x-ray. When looking for fracture of skull x-ray, soft tissue swelling often accompanies acute fracture, an acute fracture line is sharp, does not branch or have sclerotic margins. There are no sutures within parietal bone; therefore any sharp, linear lucency in this region is a fracture, unless proven otherwise.

A definite and systemic approach to ascertain and interpret plain x-ray skull is to begin from external surface, through calvarium, down to the face and spine. How likely a skull x-ray demonstrates a patient suffering head injury depends to a large extent on the severity of trauma. It has been reported that 5% of patients with compound fractures do not suffer loss of consciousness and around 40% patients with intra cranial hematoma do not have initial loss of consciousness. If a fracture is present, there is possibility of associated intra cranial hematoma. Skull is often fractured without significant injury to the brain, generally in infants and children.

There are certain characteristics of a skull fracture which make it easier to differentiate it from vascular markings, grooves and sutures. Fractures are seen as straight more translucent lines, mostly straight but change direction suddenly, sharply demarcated, show parallel margins with no tapering and may run across grooves and sutures. The characteristics of a skull suture includes winding serpiginous lines, fine sclerotic or corticated margins not sharply radiolucent, typical anatomic site and are usually symmetrical. The skull vascular markings are less translucent as they affect inner table only, not sharply demarcated, meningeal grooves taper as they run peripherally, branching pattern and symmetry and wide diploetic venous channels.

Computed tomography (CT) has contributed immensely to decreased morbidity and mortality of head injury and has revolutionized radiologic evaluation of head trauma. C.T scan is used in craniocerebral trauma, because it is non-invasive, fast, widely available, lacks contraindications and has high accuracy.^{5,6,7} It is sensitive for detection of skull fractures where conventional x-rays fail. It is mostly affordable and is compatible with life supporting devices. It is very useful in assessing depressed fractures, except at high vertex. It delineates anatomical displacements and hydrocephalus resulting from trauma. It clearly outlines the bony fractures as well as changes in the sinuses and soft tissues. It is sensitive in detecting smaller amounts of intracranial air as compared with skull x-ray and is better in anatomical localization of multiple metallic foreign bodies.

The indications for C.T are neurologic deficit, observed loss of consciousness, severe trauma and obvious injury. The clinical indications for C.T are disturbances of consciousness, delay in onset after trauma, deterioration of clinical symptoms, lack of improvement in the first hour, increasing or unexplained focal neurological signs (early CT scans are normal in 50% head injury), suspected intra cranial or intra-orbital foreign body after penetrating trauma, blood and fluid discharge from ear, CSF discharge from ear or nose, ecchymosis behind the ears, bilateral orbital ecchymosis.^{8,9}

Contrast may be given in an acute phase to confirm isodense extra cerebral collection equivocal on plain study; in anemic patients. It is also given to assess the size of resolving hematoma, by ring enhancement and vascular or inflammatory complications. Cerebral contusion usually occurs when there is subtle injury to the vault resulting in shearing injury. The hematomas or clots are not big enough to be operated and only need to be watched for any worsening symptoms.

CT findings in cerebral contusion are variable, depending on the state of head at the time of impact and intra cerebral contents, whether they are densely packed in younger brain or loosely placed in elderly due to atrophy. However, edema is hypodense, while the mass produced due to contusion is usually isodense, again depending on the individual's hematocrit values and hemoglobin percentages. It is usually hyperdense with mottled and speckled appearance. The ventricles are generally smaller in size due to generalized cerebral edema.

Epidural hematoma occurs in potential space between inner table of skull and duramater. Its shape is usually lenticular or biconvex due to calvarial attachment. It is usually associated with fracture in 82% cases. This hematoma results in rapid decline in patient's condition.

Subdural sub-acute or chronic trauma^{10,11} is usually mild or unremembered and there is progressive deficit. It occurs usually at extremes of age i.e. during infancy or old age. There is sub-acute presentation which may take days or weeks after trauma. In these cases fracture is not necessary. The hematoma is crescentic shaped and is not usually hyperdense. It crosses sutures and inter-hemispheric fissures. On CT subdural hematoma^{12,13} is hyperdense, homogenous, (may be inhomogeneous due to unclotted blood), crescent shaped collection, conforming to the shape of inner surface of skull. The natural history of subdural hematoma as seen on the imaging of CT scan depends on the hemoglobin content of the individual resulting in various densities. In acute stage, within seven days, it is hyperdense than the adjacent normal brain (65-90 HU) while in sub-acute stage, 7 to 22 days, it becomes isodense with the normal brain i.e. 20-40 HU. In chronic stage, more than 22 days, it becomes hypodense than the adjacent normal brain i.e. 20-40 H.U. The hematoma is isodense in anemic patients with hemoglobin of < 11 gm/dl.

Chronic subdural hematoma results in what is so called "too good brain". This is due to sulcal effacement and small size of the ventricles even in an old patient resulting from bilateral isodense subdural hematoma. There may be lower attenuation than the brain and is usually surrounded by well defined capsule on contrast enhancement.

Penetrating trauma is due to one in which the integrity of skull has been disrupted and brain is penetrated by the foreign object. On C.T., bullet fragments produce streak artifacts, while fracture, lacerations, contusion or edema can be easily identified. Wound will always be hypodense.

Subdural hygroma¹⁴ develops due to tear in arachnoid allowing influx of CSF into sub-dural space. This is usually frontal in location and develops after 2-14 days. CT findings include extra-axial fluid collection of CSF density that is difficult to differentiate from chronic subdural collection¹⁵. The MRI findings of subdural hygroma resemble that of CSF that is chronic sub-dural hematoma will appear hyperintense on T2WI.

Magnetic Resonance Imaging: (M.R.I.).^{16, 17, 18, 19}

In non-acute head trauma Magnetic Resonance Imaging (MRI) has high sensitivity for lesion detection^{16,17,18,19}, which are missed on CT. It has a unique sensitivity and capability of demonstrating shear or diffuse axonal injuries. It has an improved visualization of extra-axial blood and the pathology in the posterior fossa and brain stem is best seen. It also allows precise localization and lesion detection.

MRI is not indicated in cases of trauma because of greater cost, longer examination duration, lower accuracy for

detecting fractures, lower conspicuity of hyper-acute hematoma and last but not the least, physician's unfamiliarity with MR images. MR is considerably more sensitive than CT for detection of primary neuronal injuries.

All stable patients with persistent and significant impairment of consciousness or neurological deficit should usually be studied with MR during first week to ten days after the injury. Patients with persistent 4-6 hours of impairment of consciousness are apt to have diffuse axonal injury. It is best to have MR in the first two days before elevation of increased cranial pressure or after 7-10 days when increased cranial pressure becomes normal. It is suggested that the MR will give the best results in sub-acute and chronic injuries as sequel of trauma.

The primary goals of MRI are detection of hematoma, identification of non-hemorrhagic form of injury, provision of sufficient anatomical information and estimation of long term prognosis.

MRI findings in subdural hematoma are: acute subdural hematoma is hypo-intense on T2W1. In early sub-acute stage, a peripheral rim of high signal due to free meth-Hb surrounding a center of low signal intensity, deoxy-Hb or intra-cellular meth hemoglobin. Late sub-acute stage shows high signal along the entire collection on all pulse sequences.

Epidural hematoma occurs in potential space between inner table of skull and dura mater. It takes lenticular or biconvex shape due to calvarial attachment. It may be arterial or venous. Arterial due to middle meningeal artery and is associated with skull fracture in 82% cases.

Extradural hematoma may present similar in MRI findings to that of subdural hematoma. It results in displacement of the meningeal vessels from the vault; on tangential view. The branches of middle meningeal artery may be displaced out of their sulci; on lateral view. Typically it has a convex border against the brain like in old subdural hematoma, as it dislocates the dura locally from the vault. On the convexity, the superior longitudinal sinus may be displaced from the vault which is never seen in subdural hematoma. Rupture of vessel may be shown as an extra-vascular leak of contrast.

In cases of post-traumatic cerebral edema, there is diffuse cerebral swellings as a result of hyperemia that is increased blood flow and increased water content. It causes mass effect, resulting in sulcal effacement as well as displacement of ventricles. On MR, it appears hypointense on T1W1, while it appears hyperintense on T2W1. Post-traumatic cerebral edema is maximum between third and seventh day and may be focal or global. The different types of edema are vasogenic due to damage to blood brain barrier, cytotoxic neuronal

damage, hydrostatic sudden increase in intra-vascular or perfusion pressure, obstructive due to trans-ependymal flow in obstructive hydrocephalus and hypo-osmotic secondary to serum hypo-osmolality.

Cerebral Angiography:^{20, 21}

After the invention of Cerebral Angiography (CT scan) and MR, the role of angiography has become almost obsolete.^{20,21} In rare cases where there are chances of locating bleeding vessels, angiography may be needed. In places where CT scan is not available angiography plays an important role as it can provide information about the intracranial bleed by displacing the vessels, provided the clot is large enough and is close to the blood vessel.

The disadvantages of angiography include invasive and painful procedure which is less informative. It gives indirect evidence of lesion and may mimic associated space occupying lesion. Special system and expertise are needed to perform and interpret the images. Contrast medium may cause deterioration of the patient's condition due to breakdown of blood brain barrier and the information provided may be overlapping.

The subdural hematoma on angiography results in interposition of blood in subdural space dislocates the brain from the inner table leaving an area completely void of vessels. If hematoma is of less than 2 weeks, it takes convex shape as it borders against brain. Large subdural hematoma always causes dislocation of peri-callosal artery and internal cerebral vein towards the opposite side. If it remain in the midline, the chances of bilateral subdural hematoma are strong.

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CAROTID BODY TUMOUR

A CASE REPORT

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ABSTRACT:

Paragangliomas are neuroendocrine neoplasms arising from the chief cells of the paraganglia and are slow growing. A middle aged lady was suffering from a huge carotid body tumour as confirmed by a previous open biopsy and later by CT scan and angiography. She was treated by surgical excision and common carotid artery repair. The recovery and followup were uneventful.

KEY WORDS: Carotid body tumour, Surgical management, Carotid artery repair.

INTRODUCTION

Carotid body tumours, being neuroendocrine tumours, are one of the paragangliomas. They are also located medial to the carotid bifurcation and are also known as "potato tumours", chemodectomas and glomus tumours.¹ These account for 0.3% of all neoplasms and 0.6% of head and neck tumours. They do have a familial tendency in 10% of cases but no sexual preponderance.

They are more commonly seen in Peru, Colorado and Mexico city, due to high altitude and hypoxia, leading to carotid body hyperplasia. They are mostly found in the fifth decade of life as a neck mass, with cranial nerve palsies, dysphagia or hoarseness. Diagnosis is basically on angiography and fine needle biopsy. Treatment of choice is surgical excision but radiotherapy is also indicated as a second line treatment or they could be left untreated as they are very slow growing tumours.

CASE REPORT

A 50 years old lady was admitted in the ENT ward of Jinnah Postgraduate Medical Centre, Karachi with a history of a slowly progressively growing swelling on the left side of the neck for the last 10 years. The swelling was not associated with pain, tenderness, change of voice or dysphagia. There was only mild ear ache for 6 months and no systemic disease.

Examination revealed a visible swelling on the left upper third of the neck, about 8cm x 4cm in size, non tender,

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lobulated, firm in consistency and mobile sideways. The overlying skin was non-adherent with a horizontal scar mark. In the inferio-posterior quadrant there was a visible as well as palpable pulsation. No bruit was auscultated. The examination of the nasopharynx showed a smooth rounded bulge situated on the posterior pharyngeal wall, ipsilaterally. There was no loss of gag reflex, shoulder shrugging or tongue movement.

An incisional biopsy was taken at a local hospital 5 years earlier, revealing appearance consistent with paraganglioma. CT Scan, the main stay of diagnosis,² showed a large, homogenous mass extending from the left para pharyngeal area to left retromandibular area and downwards into the neck below the carotid bifurcation. The major vessels were engulfed in the mass. Suspecting vascular involvement was indicated digital subtraction angiography which revealed evidence of a large highly vascular tumour, supplied by the external carotid artery just beyond its origin. We found displacement of the common carotid artery as well as the left internal carotid artery. There was a small branch supplying it from the left subclavian artery.

Since the patient had no evidence of flushing or relapsing hypertension, catecholamine levels were not estimated. The patient was offered surgical management. A skin crease neck incision was made, on elevation of the flap and on further dissection, a huge Lobulated firm mass was found. It was completely embracing the common external and internal carotids of left side. It was almost impossible to dissect out the common carotid artery which was stretched over the tumour; thinned out and was torn during dissection. Bulldog clamps were applied on both

ends of the common carotid artery for hemostasis. Vagus and hypoglossal nerves were identified and secured, the tumour was then dissected and separated from the left internal and external carotid arteries. A vascular surgeon stitched the common carotid artery end to end using 6 zero proline. It took about forty five minutes for the vessel to be repaired while the clamps were continuously applied during that time.

The patient was closely observed. She recovered smoothly and uneventfully. There was no neurological or vascular deficit noted even on 6 month followup.

DISCUSSION

Carotid body tumours lying in the adventitia of the carotids, are very slow growing, with average size of the type III tumour being 22cm.² In our case there was a huge growth of about 8cmx4cmx6cm i.e. 194 cm² over a period of 10 years. This patient had no symptoms of cranial nerve weakness, dysphagia or voice change.

FNAC is worth carrying out but open biopsy should always be avoided. Regarding management of carotid body tumours, surgical excision should be the first line of treatment in all those cases where severe symptoms are produced due to the pressure or neurological and vascular deficit. It is very important to prepare for any vascular damage, as happened in our case, by having four to five pints of blood arranged and a vascular surgeon present, as there is a very strong chance of vessel trauma requiring anastomosis.

The second choice of treatment is radiotherapy in those cases where surgery cannot be undertaken due to any reason. It should be remembered that carotid body tumour is very slow growing and it appears in the fifth decade of life. If it is asymptomatic, it may be left as such and need not be excised or radiotherapy given.

The tumour, if present for a long period of time, causes the carotid vessels on that side to be compromised and over several years collateral blood supply to that half of the brain is established and as such when the common carotid artery is clamped for even more than forty five minutes, no untoward effects are seen later in the post-operative period.

Carotid body tumours, although unusual, represent a challenge to the diagnostic and surgical acumen of the head and neck surgeon. A thorough pre-operative evaluation including the anatomic and vascular imaging is essential. Pre-operative biochemical survey is required if hormonal symptoms are present, Surgical excision is the best treatment option.

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FRACTURE OF FEMORAL NECK DURING INTRA MEDULLARY NAILING OF THE FEMUR

A CASE REPORT

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ABSTRACT:

Intra medullary nailing is the main stay in management of fracture of femur, because of high rate of union. In this report a fracture of femoral neck in a young male of 30 years due to technical error in intra medullary nailing of the femur is presented.

KEY WORDS: *Intra Medullary Nailing, Fracture Neck of Femur.*

CASE REPORT

A thirty year old man sustained closed fracture of the right femur in a road traffic accident. Three days after the fracture he underwent intra medullary nailing of the femur using ten millimeter intra medullary nail. During the procedure difficulty with penetration of the proximal part of the femur in the area of the piriform recess was noted and several large drill holes were made at the entry site, which resulted initially in the pin passing through the soft tissues medial to the fracture site. The pin was withdrawn and then directed more laterally. This resulted in the pin passing down the medullary canal, and the remainder of the nailing procedure was uneventful.

On the first post operative day the patient complained of excessive pain. Radiograph confirmed fracture of the femoral neck. The fracture apparently began superiorly in or adjacent to the entry site for the intra medullary nail.

The patient was maintained on crutches, with only light toe-touch for two months. Then he was gradually started weight bearing. Radiographs taken six months after the intra medullary nailing showed healing of both the femoral fractures.

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DISCUSSION

Intra medullary nailing has become increasingly popular in the management of femoral fracture because of a high rate of union,¹ low rate of complications and excellent return of function.^{1,2} Kuntscher^{3,4} originally described the starting point of the nail at the tip of the greater trochanter, while some authors recommended that the proximal part of the femur be penetrated at the base of the greater trochanter medially and posteriorly in the area of the piriform recess^{5,6,7} as very few complications have been reported with this starting point.

Intra medullary nailing has many potential advantages in terms of fracture management and healing, but it is a technically demanding procedure. Although the piriform recess^{1,3} would appear to be a reasonable entry site for an intra medullary nail, proper direction of penetrating device in line with the longitudinal axis of the femur is essential. Misdirection^{6,7} may result in violation of the medial aspect of the femoral neck with an associated fracture of the femoral neck.

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ACHALASIA – A RARE DISEASE

A CASE REPORT

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ABSTRACT:

Although achalasia is a rare disease with a reported incidence of 1:100,000, it still is the commonest of specific primary esophageal motility disorders¹. This case report is of a patient admitted in Unit II, Ward-3, of Jinnah Post-graduate Medical Centre, Karachi. He responded well to a Modified Heller's cardio-myotomy

KEY WORDS: Achalasia, motility disorder.

INTRODUCTION

Esophageal motility disorder may be primary or secondary. Its cardinal features are: absence of peristaltic contraction within the esophageal body and incomplete relaxation of the high-pressure zone (HPZ).

Usually achalasia occurs in patients 20-40 years of age but it can occur at any age during adult life and equally in both sexes.² The characteristic pathology is a deficiency of or changes in the ganglia of Auerbach's plexus. The symptoms are non-specific, but progressive dysphagia and regurgitation are common. Aspiration, particularly when recumbent at night can cause recurrent pneumonia.³ Barium swallow, esophageal manometry and flexible endoscopy confirm the diagnosis. The optimal treatment for achalasia include several options and present a challenge for the gastroenterologists.

Treatment is based primarily on disruption of the lower esophageal sphincter and can be achieved by both medical and surgical procedures. Medical therapy include injection of botulinum toxin and pneumatic dilatation with Polyethylene dilators (sizes 3.0, 3.5, and 4.0 cm) 4. Surgical treatment consists of Heller's Myotomy with or without an anti-reflux procedure; achieving relief for dysphagia in 85%-94% patients.⁵

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CASE REPORT

A 20 year old male patient was admitted in Surgical Ward 3, JPMC with a three-year history of epigastric pain that was intermittent in character, burning in nature, and mild to moderate in intensity. It was associated with vomiting of partially digested food material. Acid brash and regurgitation were also present. There was however no history of hematemesis, melena, coughs or weight loss, nor any significant past, personal or family history.

The patient was found to be haemodynamically stable with no positive physical findings. Laboratory investigations were within normal limits. Barium Swallow showed a dilated esophagus with a smooth narrowing of the lower segment (Figure I). Upper G. I. endoscopy then revealed a dilated esophagus filled with fluid, but when the endoscope was passed deeper through the very small gastro-esophageal opening, the remaining examination was normal. Histopathology revealed inflammatory changes at the lower end of the esophagus secondary to reflux esophagitis. Radio-nucleotide Esophageal Transit Time Scintigraphy depicted a hold up of tracer over the lower two third of dilated esophagus with no appreciable clearance into the stomach, in both standing and lying studies. This was suggestive of a near complete obstruction of the gastro-esophageal junction.

The upper esophageal sphincter was found to be normal through esophageal manometry, and the esophagus

was seen to be aperistaltic for both dry and wet swallows. Basal tone at the lower esophageal sphincter was between 50-75 mmHg with less than 50% relaxation on swallowing.

After the diagnosis Modified Heller's esophago-cardio-myotomy performed through a midline laparotomy. A single incision was made in the esophagus anteriorly about 4 cm above the thickened muscle, through the longitudinal and circular muscle fibers of the esophagus all the way down to the mucosa that bulged through. Care was taken not to perforate the mucosa during the procedure and no anti-reflux procedure was performed. A drain was placed in the supra-colic compartment and the abdomen was closed with Prolene #1 in a single layer. The skin closed with 2/0 silk.

Post-operatively the patient showed an uneventful recovery. The drain, containing approximately 200mls of serous fluid on day one was removed on the 2nd post-operative day, and he was started on clear fluids. On the 10th post-operative day a gastrograffin swallow revealed an improved picture with a significant opening at the gastro-esophageal junction (Figure 2). In a recent follow-up the patient looked healthier and had no subjective complaint. He was eating well and tolerating his diet.

DISCUSSION

Achalasia is a motility disorder of the esophagus. The esophagus becomes dilated and tortuous and shows persistent retention esophagitis due to stagnation of foul smelling septic liquid in the lumen of the organ. There is regurgitation of food for several hours after meals. In

advanced cases mucus and froth are brought up in considerable quantities. There may be retro-sternal discomfort, fetid flatulence, and aspiration pneumonitis. There is also an increased risk of carcinoma of the esophagus in patients with achalasia.⁸

The diagnosis can be confirmed by a barium swallow and esophageal manometry, which reveals aperistalsis with high pressure at the lower esophageal sphincter above 35mm of Hg.

Medical therapy for treating Achalasia includes pharmacological and pneumatic dilatations. Long acting nitrites (isosorbide) provide some benefits, though the effects are variable and short term. Earlier suggestions favoring the use of calcium channel blockers (nifedipine) could not be proven, as these agents tend to precipitate reflux.

A number of studies have provided evidence that the cholinergic innervation of the esophagus is preserved in achalasia. This forms the rationale for the treatment of Achalasia with botulinum toxin.⁹ Achalasia may be treated by forceful dilatations with a hydrostatic bag passed during esophagoscopy.²

Surgical treatment of Achalasia consists of Heller's myotomy with or without an anti-reflux procedure.⁵ Although referred to as Heller's cardio-myotomy, the modern operation consists of an anterior division of the musculature of the lower end of esophagus as far as the mucosa which bulges out once the contracted muscle is divided. The original procedure described by Heller consisted of anterior and posterior cardio-myotomies. We performed modified procedure and our patient responded well.

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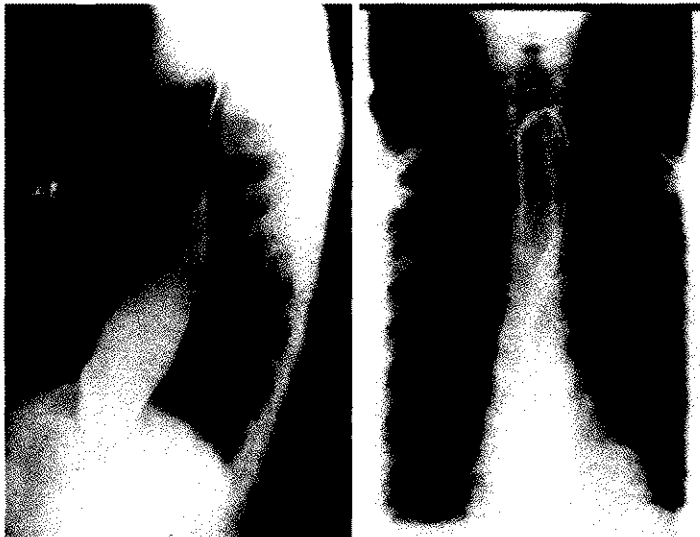


Figure 1:
Pre-operative achalasia

Figure 2:
Post-operative achalasia