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Editorial:

BASIC SURGICAL SKILLS WORKSHOPS

The entrance of a resident to a training programme of surgical discipline, following clearance of primary examination, exposes him to an environment with different requirements. It is imperative that he should have a working knowledge of basic surgical principles. The idea of introducing a workshop on Basic Surgical Skills at this stage greatly helps in creating awareness and at the same time exposes him practically to fundamental principles of surgery.

The idea of introducing this workshop, although implemented late, is appreciated by all and is need of the day. Ever increasing load of trainees on already full existing training slots puts a great burden on supervisors of these training programmes. The Basic Surgical Skills workshops are a bridge to the application of surgical skills to actual patients. Various dummies, models and animal viscera help trainees in building up confidence and learning practical skills.

These workshops start with teaching and demonstrating etiquettes of entrance into operation theatre, principles of sterilization, clean area maintenance, scrubbing, gowning, gloving and handling instruments etc. A brief description of suture material and their handling, followed by actual practice on models and animal viscera, goes a long way to enhancing surgical skills.

Learning of performing a task from beginning of training is the right way and a straightforward course to achieving the goals of any training programme. The end result of such training is the provision of excellent surgical cover to the end users, who are the patients.

ABDUL AZIZ

EFFECT OF ACCURATE PREDICTION OF MANDIBULAR MOLAR POSITION IN ORTHOGNATHIC SURGERY

AMBREEN AFZAL, RAUF SHAH.

ABSTRACT:
This prospective study was carried out to evaluate the effect of accurate prediction of mandibular molar position in orthognathic surgery at the Center for Dentofacial Deformities, New York University College of Dentistry, U.S.A. during 1994-1997.

Twenty patients with Lefort-I osteotomy with impaction were investigated. Two methods were used to simulate rotation of mandible, the standard method with center of rotation of mandible being center of condyle and the other method with the center of rotation of mandible being 14.9mm below and 5.0 mm behind the superior mid surface of the condyle in sagittal view. Eight variables were evaluated but only one, that is the most anterior point of the lower molar horizontally, came out significantly different. It was concluded that the position of mandibular molar could not be significantly predicted vertically and horizontally and there was no significant difference in the position of lower molar with both the methods of prediction.

KEY WORDS: Orthognathic Surgery. Lefort I impaction. Osteotomy.

INTRODUCTION

Dentofacial deformities is the term used for severe problems that might require a combination of surgery and orthodontics. This distinguishes them from the less severe malocclusions that are treatable by orthodontics alone.[1] The treatment is indicated not only for esthetic reasons, but also for many other factors. Facial appearance plays a very important role in the quality of life and life adjustment. The patient's physical health may be affected by dentofacial deformity in several ways. If the problem is severe enough, mastication can be impaired, with an impact on digestion and general health. Tooth and jaw malposition can also cause speech problems. These teeth are more susceptible to caries and periodontal diseases. There is some evidence that temporomandibular joint pain and dysfunction are more likely to develop in some types of jaw deformities.

If the jaw relationship is correct, crowded and mal-aligned teeth nearly always can be corrected by orthodontic tooth movement. However, there are limits to orthodontic treatment and these limits become important when bite relationships must be changed to correct crossbite, deepbite, openbite, or incisor protrusion.

Tremendous advances in the area of orthognathic surgery have occurred over the past 25 years. Rapid advances in surgical technology have made it possible to successfully treat patients for whom orthodontic camouflage was once the only method of treating dentofacial deformities, which often resulted in esthetically unacceptable and quiet often, unstable result.[1] We have witnessed the evolution of surgical-orthodontic treatment over the past three decades. Increasing sophistication in diagnosis and treatment planning, improvements in orthodontic mechanics, techniques and significant advances in anesthesia and orthognathic surgery have allowed patients with complex problems the option of treatments to correct their skeletal jaw deformity and align their teeth.[2] The total treatment time for the majority of patients can be less than two years and improved function and esthetics can be expected.[3] Post operative results, following orthognathic surgery, are sometimes different from the intended results, thereby producing occlusal errors.

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Cephalometric prediction allows direct evaluation of both dental and skeletal movements, whereas cast predictions show in more detail the dental relationships that indirectly reflect underlying skeletal changes. In surgical procedures that change the vertical dimension of the maxilla or mandible relative to the cranial base in the sagittal plane, one of the causes of these occlusal errors is the inaccuracy of reproducing the center of the rotation of patient's mandible in the articulated models used for the pre-surgical treatment planning or the splint construction(Figure1).[4] Any discrepancy between the locations of the centers of rotation will produce an error.[5] Whenever the vertical dimension changes, this inaccuracy produces an actual post-treatment occlusion that is different from that intended and predicted from the patient model.[6]

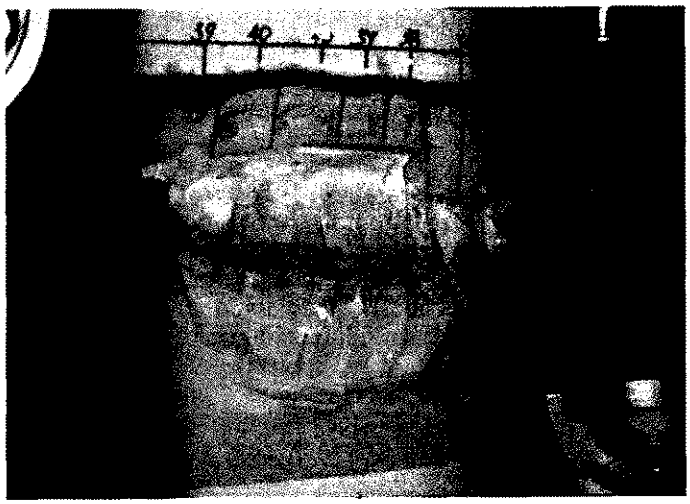

Figure1: Picture showing model surgery

This investigation focuses on the position of the mandibular first molar when it is rotated on the mandibular center of rotation. If the landmarks used are correctly selected, it may be possible to increase the accuracy of the prediction of the surgical outline.[8]

PATIENTS AND METHODS

Twenty patients who had undergone Lefort I osteotomy with superior repositioning of the maxilla were selected. The subjects were treated at the Center for Dentofacial Deformities at the New York University College of Dentistry. All the patients had completed their growth and were between the ages of 16 and 37 years.

For all the subjects, clear preoperative cephalometric radiographs with the teeth in occlusion were available (Figures 2,3, & 4 show records of one of these patients). The radiographs were traced according to standard procedure, the outline of the anterior cranial base, the maxilla [including the first molars and central incisor] and the mandible [including internal border of symphysis and mandibular canal] were recorded. When the tracings were completed, a number of landmarks were digitilized on the computer. The digitilizing was accomplished with a computer program "Prescription Portrait, version 3.5".

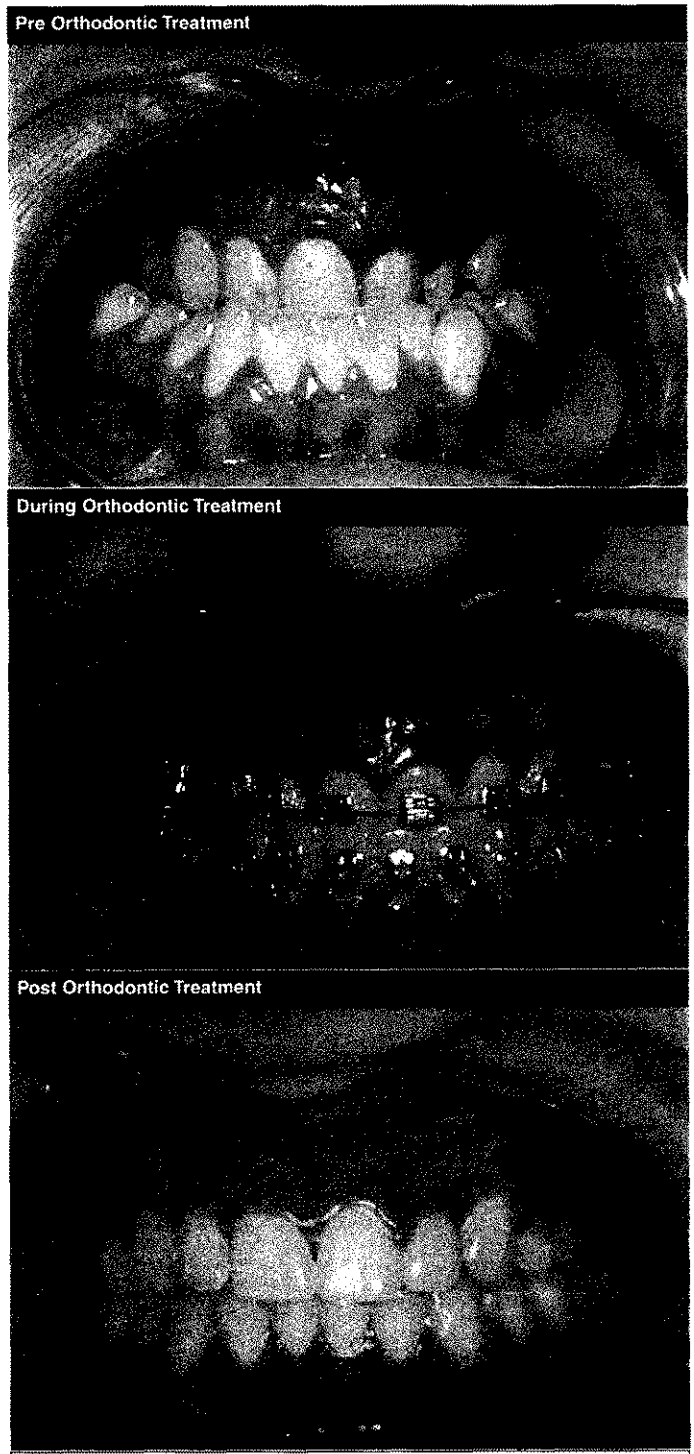

Figure 2: Slides showing Intraoral view of pre tratment, during treatment and post orthodontic treatment view of the dental occlusion

The following are the steps which were used in this study:

- Cephalometric x-rays of 20 pre-surgical patients were collected and digitized on the computer.
- The center of rotation of each of these pre-surgical patients was determined. The center of rotation taken was 5mm behind and 14.9 mm below the superior midsurface of the condyle.[called=B; Point of Rotation].[8]

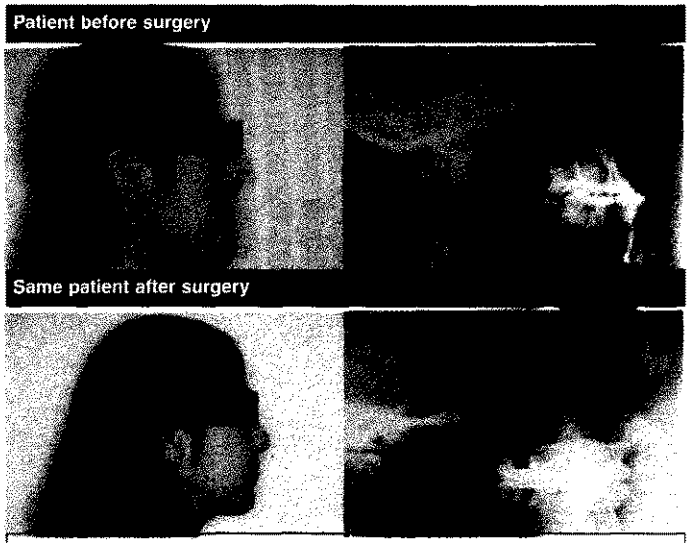

Figure 3: Profile view of pre and post surgical result.

Figure 4: Frontal view of the patient showing before and after orthognathic surgery

surgical patients was determined as a point located at the center of the condyle in sagittal view. [called A, Condylar Rotation].[9]

Initially each patient went through orthodontic treatment. The stages of orthodontic treatment included, alignment , leveling and decompensation. The stabilizing arch wires were engaged as final step before surgery,

The next step in the planing sequence is mold surgery. When both jaws are to be repositioned, the maxillary dental cast is mounted on semi-adjustable articulator with the aid of the facebow transfer from the patient14. The mandibular dental cast is mounted with the aid of bite registration taken with patient's jaw in retruded contact position or centric relation. Model simulation of anticipated surgical movements are performed next (Figure1). The measured movements of dental casts as repositioned in the articulator should be very close to the measurements obtained from prediction tracings.

Clear post-surgical Cephalometric with teeth in occlusion were taken and traced. When tracings were complete, the number of landmarks were digitised on computer with a same computer program "Prescription Portrait, version 3.5.

For prediction procedure a template of the mandible was placed over the pre-operative tracing. A pin was placed through the template at both A and B points separately. The template was rotated, simulating autorotation after maxillary impaction, and landmarks were digitilized. The process was repeated 10 times for each of these two points. The post-surgical cephalometric radiographs with the teeth in occlusion of all these twenty patients were traced and digitilized on the same computer program. Each of the post-surgical digitilized cephalometric tracing were compared with the predicted cephalometric tracings, separately with the one rotated at point A and the other rotated at point B. Landmarks such as porion (anatomical landmark), orbitale, and sella midpoint are identified and traced on all the three cephalometric tracings: Final post-surgical tracing[F], Predicted tracing at point A[A],[8] and Prediction tracing at point B[B].[9] Frankfort Horizontal plane is drawn, joining porion with inferior orbitale. Then a line is dropped from the sella midpoint perpendicular to the Frankfort Horizontal. Both of these lines are identified and marked on all of these three tracings.

Four points are identified and marked on these three tracings:

- Most superior point on the cusp tip of the mandibular incisor.
- Anterior most point of the mandibular incisor.
- Most superior point on the highest cusp of mandibular first molar.
- Anterior most point of the mandibular first molar.

Distance of each of these four points are measured from the Frankfort horizontal and from the line drawn perpendicular from the sella midpoint to Frankfort horizontal.

These measurements were used in comparing the accuracy of the two prediction tracings with the final post-surgical tracing. Vertical component was the distance measured from each selected point to the Frankfort Horizontal and horizontal component was the distance measured from each selected point to the line drawn

perpendicular from Sella midpoint to Frankfort Horizontal. For carrying out statistical analysis paired T-tests were used to compare the difference between each of the predicted measurements as determined by using "A" and "B" points of rotation. A level of significance was set at P less than 0.05. Eight comparison points were used.

Vertically and horizontally, the occlusion differed insignificantly between two centers of rotation. The position of the lower mandibular molar could not be predicted significantly different from both methods of prediction. Eight variables were evaluated, out of which only one that is the most anterior point of the lower molar horizontally came out significantly different while others were not significantly different.

RESULTS

The measurements were taken from pre- surgical and post surgical radiographs of twenty patients who had undergone Lefort I osteotomies with superior repositioning of the maxilla. All patients had completed their growth and were between the ages of 16 to 37 years. The two components were measured to compare the accuracy of two prediction tracings with final post-surgical tracings. Vertically (Table I) and Horizontally (Table II) , the occlusion differed significantly between two centers of rotation. The position of the lower central incisor could be predicted significantly different from both methods of prediction. Moreover, the lower central incisor became anterior and superior when predicted from "A" as a center of rotation, as compared to the final post-surgical radiograph than when rotated at point "B".

TABLE-I VERTICAL COMPONENT OF TWENTY PATIENTS

Variable	No. of pairs	2-tail sig	Variable	No. of pairs	2-tail sig
DHL1	20	* 0.046	DHL1	20	* 0.046
DAL1	20	* 0.027	DAL1	20	* 0.027
DHLM	20	. 0.720	DHLM	20	. 0.720
DALM	20	. 0.543	DALM	20	. 0.543

Diff=D1-D2	mean	Significance
0.525-0.12	-0.4	P less 0.05
0.10-0.42	-0.325	P less 0.05
0.80-0.875	-0.075	NS
1.775-1.65	-0.125	NS

TABLE-II HORIZONTAL COMPONENT OF TWENTY PATIENTS

Variable	No. of pairs	2-tail sig	Variable	No. of pairs	2-tail sig
DSHL1	20	* 0.018	DSHL1	20	* 0.018
DSAL1	20	* 0.008	DSAL1	20	* 0.008
DSHLM	20	0.077	DSHLM	20	0.077
DSALM	20	* 0.000	DSALM	20	* 0.000

Diff=D1-D2	mean	Significance
0.425-0.85	-0.425	P less 0.05
-1.10-0.550	-1.65	P less 0.05
0.625-1.075	-0.45	NS
0.050-0.625	-0.575	P less 0.05

** is placed in front of significantly different variables.*

. The results came out statistically significant for both vertical and horizontal component.

DISCUSSION

Certain procedures do not yield stable results, which is largely dependent on the direction of movement of the jaws, method of fixation, and surgeon's technique.[1] Planning for orthognathic surgery involves integrating diagnostic information from 3 different sources: the patient examination, the cephalometric radiographs, the dental models.[2] To link this information, a common reference plane is required which in most cases is Frankfurt horizontal. In this study the four points are identified and marked on three tracings; most superior point on the cusp tip of the mandibular incisor, anterior most point of the mandibular incisor, most superior point on the highest cusp of mandibular first molar, and anterior most point of the mandibular first molar. Distance of each of these four points are measured from the Frankfort horizontal. These measurements were used in comparing the accuracy of the two prediction tracings with the final post-surgical tracing. The primary aim of this study is to determine the extend to which the prediction of lower mandibular molar from both the method of prediction is predicted significantly different. The rather restrictive inclusion criteria used in this study, together with the number of patients for whom the part of the records were missing, may in part account for few patients being available. The sample identified had a wide distribution of both age (16yrs to 37 years) and gender (13 females and 7 males. The position of the lower mandibular molar could not be predicted significantly different from both methods of prediction. Only the most anterior point of the lower molar horizontally came out significantly different while others were not significantly different. This will not be a very important during finishing stages as this could be controlled with post surgical orthodontics. Also the B method will need to be more technique sensitive and more time consuming.

For small changes in vertical dimension, clinically insignificant errors result, independent of the degree of mismatch between the centers of rotations. Moreover, with both of these centers of rotations "B" and "A", the difference is so small that it may be not clinically significant orthodontically, but may be very significant surgically.

Concern must be given not only to the magnitude of any occlusal errors, but to their direction as well. In some cases, the same magnitude and direction of error can create a clinical challenge.[16] The predicted result for the position of lower molar came out insignificant statistically because of its close position to both centers of rotations. In this study eight variables were evaluated, out of which five came out significantly different while three were not significantly different. There was no significant difference in the position of the lower molar. When the incisor is rotated on the center of rotation being more than 100 mm

away, its arc of rotation is much greater than that of the lower molar. Probably this point is very close to center of rotation, so the closer the point, the difference detectable will be minimal.

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EVALUATION OF BREAST CARCINOMA IN BREAST LUMP

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PARKASH AHUJA, *ABDUL SATTAR MEMON*

ABSTRACT:
Sixty patients with breast cancer were found from 305 patients of breast lumps, referred to surgical unit I of Liaquat Medical College Hospital, Jamshoro from January 1998 to December, 1999. More than 80% patients belonged to age group 30-60 years. Most presented with breast lump having ulceration, Peau d' Orange appearance and chest wall fixation at an advanced stage. Advance breast carcinoma is a common surgical problem in females of our community because of illiteracy, ignorance and avoidance by male attendants of the female patients for consultation by male doctors. Left breast was involved more than the right one (1.5:1). Other main complaints for which patients referred were nipple retraction, discharge, pain, fungation and ulceration of skin.

KEY WORDS: Advance breast cancer, breast lump

INTRODUCTION

Carcinoma breast is a potentially curable disease when treated while it is still confined to the breast.[1] Clinical presentation and course of carcinoma of breast in Pakistani women is different from the west.[2] Our patients generally come in late stage so surgical treatment is usually palliative adjuvant radiotherapy, chemotherapy and hormonal manipulation. Carcinoma in situ in our society is an incidental finding in otherwise benign breast diseases. Mammographic screening is new in our country while importance of self examination by experienced clinicians is yet to be well understood.

PATIENTS AND METHODS

This study was conducted at Surgical Unit I of Liaquat Medical college Hospital Jamshoro from January 1998 to December 1999. Detailed history recording and complete physical examination of all patients was carried out and 60 patients of breast cancer, out of 305 breast lump were selected (Table I).

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TABLE-I TYPES OF BREAST LESIONS

Duration	No. of Patients	%
Fibroadenoma	130	42.62
Fibrocystic disease	49	16.07
Mastitis—lactating	48	15.74
Advanced breast carcinoma*	40	13.11
Early breast carcinoma*	20	6.56
Mastitis—non lactating	13	4.26
Ductal papilloma	05	1.64
Total	**305**	**100**

Carcinoma breast was confirmed by fine needle aspiration cytology and trucut biopsy. Mammography was advised in patients above 35 years of age with suspicion of malignancy. Cardiocranial and mediolateral views were asked for. Other investigations like full blood count, E.S.R, L.F.T, X-ray chest, ultrasound of abdomen were also requested in all patients. Majority of the patients were subjected to palliative toilet mastectomy for their advanced breast cancer and simple biopsy.

For early breast carcinoma, a simple mastectomy with axiliary lymph nodes clearance operation was carried out in majority of cases while 5% required more radical mastectomy. All postmenopausal and patients above 35 years of age were put on Tamoxifen 20-mg on 4th postoperative day and referred to Oncology department.

RESULTS

Sixty two patients were found in this study of whom 2 male patients with carcinoma breast were excluded. Clinical presentation of advanced breast carcinoma is shown in Table II. Right breast was involved in the

TABLE-II CLINICAL PRESENTATIONS OF ADVANCED BREAST CARCINOMA

Presentation	Percentage
Peau D' Orange	66.66%
Ulcerations	26.66%
Nipple retraction	30%
Pectoral muscle fixation	50%
Chest wall fixation	13.3%
Oedema of arm	16.66%
Pleural effusion	3.33%
Haemoptysis	8.33%
Bone pain	8.33%
Jaundice	16.66%
Abdominal distension	10%
Maggots	3.33%
Axiliary lymph nodes (Palpable)	63.33%
Mobile	21.66%
Fixed	41.66%

25 (41.66%) patients and left breast in 35 (58.33%). Majority (87%) of patients belonged to age group 30-60 years (Table III).

TABLE-III AGE DISTRIBUTION

Age (in years)	No. of Patients	Percentage
30-40	20	33.33 %
41-50	18	30 %
51-60	14	23.33 %
> 60	08	13.33 %

All the patients were married and multiparous. Upper outer quadrant of breast was involved in 36 (60%) patients (Table IV).

TABLE-IV BREAST QUADRANT INVOLVEMENT IN BREAST CARCINOMA

Quadrant	No. of Patients	Percentage
Outer---upper	36	60%
Outer---lower	6	10%
Inner---upper	7	11.66%
Inner---lower	4	6.666%
Central Subaerolar	7	11.66%

The duration of lump was 1-2 years in 38 (62%) patients (Table V).

TABLE-V DURATION OF LUMP

Duration	No. of Patients	Percentage
3-6 months	09	15
6-9 months	13	21.66
9-12 months	16	26.66
01-2 years	14	23.33
> 2 years	08	13.33

Forty patients with advanced carcinoma breast presented with lump breast with Peau d' orange 66.6 %, muscle and chest wall fixation in 63 % and axiliary lymph adenopathy in 63 % patients. In 05 (8.33 %) metastasis was noted in bone, 10 patients having liver metastasis and 05 in the lungs.

Twenty patients presented at an early stage-1 (25%) and stage-2 (75%) with the ratio of 1:3. Curative form of mastectomy was carried only in 20 (40%) patients with axiliary clearance. In patients with advanced breast cancer (locally advanced stage T_3–T_4N_2) was upto 80%, while metastatic M_1 stage was seen 20%. These patients were difficult to treat. All these patients opted for toilet mastectomy (70%) and biopsy (30%). Postoperatively upper arm limb oedema was noticed in 10 cases, 7 in left and 3 in right with good range of movement at shoulder joint.

All patients were put on adjuvant chemo, hormono or radiotherapy with the consultation of oncologists.

DISCUSSION

The fear of breast cancer is the most important concern for women.[3] Breast cancer is the commonest cause of death in middle aged women in western countries.[4] Breast cancer is also the leading cancer in female population of Pakistan.[1,5] An increase in incidence rates in urban area has been observed and ratio of urban to rural is 3 to 1, which is compatible to a study in India.[6] Advance breast cancer in our study mainly occurred in the age 30–60 years with male to female ratio of 1: 29, which is comparable with the Baloch study.[5]

Breast cancer is a global problem affecting women in both industrialised and developing countries. Genetic predisposition is responsible for a small proportion of cases, but non genetic factors including the cumulative exposure of breast to estrogen (and progestrone) are critically important.[7] In women with advanced disease, bone metastasis is a significant problem.[7] Management of breast cancer is therefore a major health care priority. Because of its high incidence, it fulfills the criteria for breast screening suggested by WHO. More and more cases of mammographic screening detected early cancers of breast in the west.

Because of the poor surveillance and compliance of patients, we still believe that mastectomy has an edge over local excision of primary breast tumour with radiation. Lumpectomy, followed by radiotherapy is not an appropriate procedure for all patients particularly those with large and central tumours as in our study.[8] In our series patients with early breast cancers following mastectomy and auxiliary nodes clearance were referred to Oncology department for the integration of chemotherapy/±hormonotherapy and radiation therapy. Over the past decades the increasing use of systemic chemotherapy along with breast conserving therapy in the treatment of early breast cancer has made the optimum sequencing of chemotherapy and radiation therapy an important question.[9]

In our study surgery for advanced breast cancer was in the form of toilet mastectomy which was only option acceptable to 95% patients. It was difficult, bloody and mutilating with no improvement either in local control or survival. All these patients were put on Tamoxifen irrespective of their hormonal or menopausal status. We strongly recommend the need for breast clinics equipped with facilities of mammography and fine needle aspiration cytology.

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PERCUTANEOUS ULTRASOUND GUIDED ASPIRATION OF OVARIAN CYST

MAMOONA MUSHTAQ

ABSTRACT:
Open non randomised retrospective study of 25 cases of ovarian cysts presented at P.N.S Shifa, Karachi from 01-01-1992 to 30-12-1993 is being analysed. They were treated by Ultrasound guided aspiration of ovarian cyst- a way of conservative treatment of ovarian cysts.

KEY WORDS: Ovarian Cyst, percutaneous Ultrasound guided aspiration.

INTRODUCTION

In certain circumstances surgeons are reluctant to resort to laparotomy for evaluation of persistent ovarian cysts. A cystic tumour of less than <5-6 cm diameter can be treated conservatively initially, but explored if it persists for more than three months. Most of these cysts in young women are entirely benign and laparotomy would seem excessive. Likewise, in pregnancy most cysts discovered at routine ultrasound are benign. Treatment is desirable to avoid complications such as torsion, haemorrhage or rupture. In pregnancy there are the additional concerns of malpresentations and obstructed labour. It has been advocated that fine needle aspiration under ultrasound control might be employed to treat such cysts and cytopathological techniques be employed on the aspirate to confirm the diagnosis. The technique is well tolerated and complications are rare.[1]

PATIENTS AND METHODS

Twenty five patients included for above mentioned treatment were young (age between 20 - 40 years) and ovarian cysts fulfilled all the criteria of benign cyst on ultrasound scan. Probe was used for scanning and for guidance 20 gauge disposable spinal needle was used. No anaesthesia was used. Sixteen patients presented within first and second trimester of pregnancy and nine patients presented with discomfort lower abdomen, menstrual disorders or cysts diagnosed on routine ultrasound (Table I).

TABLE-I

Symptoms	Number	Percentage
Severe pain lower abdomen	16	64%
Pregnancy and Ovarian cyst	16	64%
Menstrual Irregularity	03	12%
Mass lower abdomen	05	20%

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Procedure was performed as outpatients base on 50% patients. Bladder emptied before aspiration of the cyst. Aspirate was collected with 30 cc syringe and subjected to cytology and culture. Outcome of sixteen patients ovarian cysts and pregnancy is given in Table II.

TABLE-II

No. of pts.	Complication	Recurrence	Outcome	Histopathology
Case No.1	Nil	Nil	SVD	Benign
Case No.2	Nil	Nil	SVD	Benign
Case No.3	Nil	Yes	Not delivered	Benign, but haemmorrhagic fluid
Case No.4	Nil	Nil	LSCS	----
Case No.5	-	-	SVD	Torsion
Case No.6	Persistence of symptoms	Laparotomy		Rupture of cyst and Preg.
Case No.7	Nil	Nil	SVD	Benign
Case No.8	Nil	Nil	SVD	Benign
Case No.9	Nil	Nil	SVD	Benign
Case No.10	Nil	Nil	SVD	Benign
Case No.11	Nil	Nil	SVD	Benign
Case No.12	Nil	Nil	SVD	Benign
Case No.13	Nil	Nil	SVD	Benign
Case No.14	Nil	Nil	SVD	Benign
Case No.15	Nil	Nil	SVD	Benign
Case No.16	Nil	Nil	SVD	Benign

RESULTS

Cytology report came out to be benign in all twenty-five patients. One patient had aspiration of ovarian cyst following pregnancy. She had history of aspiration in previous pregnancy as well. Her repeat aspiration was performed during pregnancy and pregnancy is going on smoothly. One of the patients had C-Section 6 months after aspiration of ovarian cyst and ovaries were absolutely normal looking on naked eye. No patient had pain during aspiration so anaesthesia of any sort was not required. All of twenty-five patients otherwise were candidates for laparotomy and were saved from surgery. One of the patients had persistence of symptoms and had

laparotomy for rupture and torsion of the pedicle, which was present even before aspiration of the cyst.

DISCUSSION

The success of fine needle aspiration under ultrasound control rests on two factors. Initially an ultrasound facility that can identify those features of an ovarian cyst that would suggest neoplasia and the fact that100% accuracy is an unrealistic execution for cytological diagnosis. Careful clinical assessment is the mainstay of treatment.[2]

It is assumed that unilocular cysts will be benign. Maltiloculairty, thick septa and solid areas indicate possible malignancy. False positive rates of 4-27% have been quoted for ultrasound on these criteria. These could be identified by positive cytology on aspiration. Malignant cystic fluid usually contains large number of malignant cells but the fluid may not contain insufficient cells for accurate diagnosis. Necrosis or inflammatory changes and haemorrhage can further obscure the picture. In the group of women under consideration the aim is to identify cysts of follicular origin. Such aspirates should contain normal or luteinized granulosa cells and should be rich in oestrogen (>4 n mol/L). The identification of epithelial cells indicates need for removal.

In a small group of patients therefore, there would seem to be place for conservative treatment (aspiration) when small unilocular ovarian cysts (< 10 cm diameter) persist in young women or present in early pregnancy. However the technique must only be employed with a thorough understanding of the limitations of ultrasound and cytopathological facilities available to the operator. It is imperative that investigations of this kind take place in direct collaboration with the cytopathologist concerned.

In conclusion, all benign looking ovarian cysts on ultrasound in young patients should have conservative treatment, follow-up and confirmation by cytopathology. All solid/suspicious tumours should have laparoscopy / laparotomy. Patients of more than 40 years should have laparotomy anyway, combined with hysterectomy, if indicated.[3]

Pick up rates of smaller cysts was more because of vaginal ultrasound scans. Cysts <5 cm which persisted after repeated USS were dealt with laparoscopy, which is another aspect of conservative surgery.

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RECURRENT LARYNGEAL NERVE PALSY DURING THYROIDECTOMIES

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ABSTRACT:
To detect overall rate of recurrent laryngeal nerve (RLN) palsy during thyroidectomies and factors influencing it, a prospective study was conducted on patients with thyroid enlargement presenting at Surgical Unit II, LMCH Jamshoro during a period of six years from Jan 1995 to Dec 2000. Two hundred five patients (177 females, 28 males) with thyroid enlargement were managed, of whom 170 patients were operated. After clinical examination, appropriate investigations and post operative histopathology, different types of thyroid diseases were noted. The size of thyroid gland and weight of thyroid tissue removed measured. The surgeons were divided into consultants, residents under supervision of consultants and residents independently. Post operative RLN palsy noted by direct laryngoscopy on operation table, hoarseness of voice and later on by indirect laryngoscopy.

Overall RLN palsy rate was 16/170 (9.4%), permanent in 8 patients (4.7%) and transient in 8 (4.7%). Incidence was high among cases operated by resident (13.2%) a compared to operated by consultants (7.62%). Incidence was lowest among solitary nodules (2.43%) while high in carcinoma thyroid (37.5%), Recurrent goiters (33.3%) and toxic goiters (50%). Among thyroid <50gm of tissue removed the incidence was only (1.54%) while among thyroid > 150gm it was 22.7%.

KEY WORDS: Thyroidectomy, Operative complications, Recurrent Laryngeal Nerve Palsy.

INTRODUCTION

Thyroid enlargement is a common problem in our community and a number of patients present to surgical units at Liaquat Medical College Hospital (LMCH) Jamshoro for various types of thyroid enlargements. Thus thyroidectomy is one of the common operations performed at LMCH. Complications that arise after thyroid surgery may be associated with infection, haemorrhage, hormonal problems and laryngeal nerve injury1. The major complications associated with thyroid surgery are injury to recurrent laryngeal nerve and parathyroid insufficiency.[2] Among these injury to recurrent laryngeal nerve in one complication that is quite troublesome for the patient. It leads to a significant morbidity up to 20%, depending on the type of surgery performed.[3]

The laryngeal nerves are at risk during thyroid surgery and several techniques have been described for their intraoperative identification to minimize potential damage.[4] Some surgeons describe the capsular technique to protect recurrent laryngeal nerves and minimize the complications of thyroid surgery.[5] Some emphasize systemic isolation of recurrent laryngeal nerve to prevent complications in thyroid suregry.[6] While others say that the demand for obligatory intraoperative identification of recurrent laryngeal nerve is not tenable.[7] The complications also depend upon the nature of thyroid enlargement like adenomas, simple multinodular or colloid goiters, recurrent goiters, thyroid carcinomas and thyroiditis.[8] RLN palsy also depends upon the experience of operating surgeon.[9] It also depends upon the size of thyroid gland and volume of thyroid tissue resected.[10]

The aim of this study was to detect overall rate of recurrent laryngeal nerve palsy, and to evaluate various factors contributing to increased incidence of recurrent laryngeal nerve palsy.

PATIENTS AND METHODS

This prospective study was carried out during a period of 6 years from Jan 1995 to Dec 2000 in Surgical unit-II

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Liaquat Medical College Hospital Jamshoro. A total no. of 205 patients with enlargement of thyroid presented during this period. There were 177 females and 28 males with male to female ratio of 1:6.3. They were of 12-76 years of age (mean age 33 years). They underwent through clinical examination and investigations.

On the basis of clinical examination and investigations, it was found that 51 patients (24.87%) were having unilateral solitary nodule, while 154 patients (75.12%) were having involvement of both lobes either diffuse or multinodular. The incidence of different thyroid diseases in these 205 patients is shown in Table I.

TABLE-I INCIDENCE OF DIFFERENT THYROID DISEASES IN 250 PATIENTS WITH THYROID ENLARGEMENT

S. No.	Presentation	No. of Cases	%
1	Simple multinoduler goiter	112	54.63%
2	Non-Toxic solitary nodule	47	22.93%
3	Toxic Solitary nodule	4	1.95%
4	Carcinoma thyroid	13	6.34%
5	Toxic Multinodular goiter	9	4.39%
6	Diffuse Toxic Goiter	7	3.40%
7	Thyroid Cysts	8	3.90%
8	Recurrent Goiter	3	1.46%
9	Hashimoto's Thyroiditis	2	0.97%
	Total:	**205**	**100%**

Out of these 205 patients, 170 patients (146 female, 24 males) had gone through surgical process. 35 patients were not operated as three of them did not require surgery (when the cyst had completely disappeared after aspiration) and 32 patients had presence of other systemic diseases making them high risk for surgery and anaesthesia.

Various types of surgical procedures were performed on 170 patients (Table – II).

TABLE-II VARIOUS TYPES OF OPERATIONS PERFORMED

S. No.	Presentation	No. of Cases	%
1	Subtotal Thyroidectomy	115	67.64%
2	Near total Thyroidectomy	5	2.94%
3	Lobectomy	31	18.23%
4	Excision of nodule	15	8.82%
5	Debulking of tumour with biopsies	4	2.35%
	Total:	170	100%

The size of thyroid swelling was measured before operation and weight of thyroid tissue removed during operation measured. On the basis of these findings, patients were divided into three categories:

- Those having swellings 01 – 03 cms in diameter and weight of thyroid tissue removed up to 50 gms.
- Patients having swellings 3 – 5 cms in diameter and weight of thyroid tissues removed ranging between 50 -150 gms.
- Patient having swellings with diameter more than 5 cms and weight of thyroid tissue removed more than 150 gms.

During this study the diameter of smallest swelling was 1.5 cm and minimum weight 18 gms, while the largest swelling undergoing operation was 8 x 10 cms in size and weight 768 gms.

The post operative complications were noted, specially recurrent laryngeal nerve palsy. All patients had direct laryngoscopy on operation table immediately after removing the endotracheal tube and any post operative hoarseness of voice whether temporary or permanent was noted. In cases where symptoms persisted indirect laryngoscopy was done by ENT surgeon 2- 4 months after operation.

RESULTS

Among 170 patient who underwent thyroid surgery, there was alteration of voice suggestive of recurrent laryngeal nerve palsy in 16 patients (9.4%). It was transient in 08 cases (4.7%) and permanent in 08 cases (4.7%). However it very much depended upon the experience of surgeon, type of thyroid disease and size of thyroid gland and weight of thyroid tissue removed (Table III).

In 65 patients surgeons searched to identify the recurrent larynges nerve, while in remaining 105 patient no attempt was made to search for recurrent laryngeal nerve. In first group 6 patients (9.23%) developed RLN palsy while in second group 10 patients (9.52%) developed RLN palsy.

DISCUSSION

Thyroid surgery is associated with quite a few complications. The overall incidence of RLN palsy (temporary or permanent) was 9.4%. It was transient in 4.7% and permanent in 4.7%. The incidence appears to be higher as compared to various studies.[11-33]

The reason for increased incidence could be because the study was done at random, including all cases of thyroid enlargement. While majority of the studies mentioned above have been performed in benign nontoxic conditions. The other reason could be that the patients in our setup present very late with very large thyroid glands, while in developed countries patients are educated and aware of the disease. They seek medical advice at an early stage when the goiter is relatively small in size. The size of thyroid gland and weight of thyroid tissue removed have a definite influence on the rate of RLN palsy. This fact is very well emphasized by Mouton Barret R et al.[10]

TABLE-III **INCIDENCE OF RLN PALSY IN VARIOUS TYPES OF THYROID DISEASES WITH RELATION TO WEIGHT OF THYROID TISSUE REMOVED**

1. Non-Toxic multinodular goiter
2. Carcinoma thyroid.
3. Solitary nodule(Solid)
4. Thyroid cysts
5. Toxic goiter.
6. Hashimoto's thyroiditis
7. Recurrent goiter.
8. Total

a) Total no. of patients b) No. of patients with RLN palsy c) Percentage

Weight of Thyroid Tissue Removed	1			2			3			4			5			6			7			8		
	a	b	c	a	b	c	A	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
< 50 gms	31	1	3.22	2	-	-	27	-	-	3	-	-	1	-	-	-	-	-	1	-	-	65	1	1.54
50-150 gms	61	5	8.2	6	3	50	11	1	9.1	2	-	-	1	1	100	1	-	-	1	-	-	83	10	12.05
> 150 gms	18	3	16.66	-	-	-	-	-	-	-	-	-	2	1	50	1	-	-	1	1	100	22	5	22.7
Total	110	9	8.18	8	3	37.5	38	1	2.6	5	-	-	4	2	50	2	-	-	3	1	33.33	170	16	9.4

In our study there is a very strong correlation between the size of thyroid and the weight of thyroid tissue removed and the rate of RLN palsy. In this study the incidence of RLN palsy in patients with weight of thyroid tissue removed < 50 gms was only 1.54%, while in patients with weight of thyroid tissue between 50-150 gms it is 12.05% and in patients with weight of thyroid > 150 gms it is 22.7%.

It is further evident from this study that the rate of RLN palsy is much lower in solitary nodules whether solid or cystic. In this group there only one case of transient RLN palsy out of 43 patients (2.3%), while the rates were much higher in carcinoma thyroid (37.5%), toxic goiters (50%) and recurrent goiters (33.3%). Thus the type of disease has also got great influence on the incidence of RLN palsy. This is very much in correlation to the study by Calik. A et al. In their study they divided all cases into two groups. Group I included 805 with nodular colloidal goiter and adenomas. Group II consisted of remaining 62 patients (25 with recurrence of goiter, 21 with thyroid malignancy and 16 with thyroiditis). While the overall complication rate was 11.3% (93 cases) in Group I, it was 20.9% (13 cases) in Group II. In another study by al Fakhri. N et al, 4.3% of patients (5/116 patients) developed RLN palsy after operation. Post operative nerve palsy was mainly found after extensive resection (2/33 near total resection) or operations of recurrent goiter (2/6 re-operations) and rarely after routine operations (1/70 sub total resections).[27]

The incidence of RLN palsy also depends upon the experience of the surgeon.[8,9] This is very much evident in our study. The overall incidence of RLN palsy operated by consultants (through many of these cases were of carcinoma thyroid, recurrent goiters, thyroiditis or toxic goiters) is 7.62%. In contrast the incidence is 13.2% in patients operated by residents independently. Though there was only one case of carcinoma thyroid and one toxic goiter, the size of thyroid gland was on average smaller as compared to operated by the consultants. The rate in cases operated by residents under supervision of consultants is 8.33%, which is close to the rate among consultants.

Many surgeon advocate that the recurrent laryngeal nerves should be identified to prevent their damage.[4,20,34,35] However on the other hand there is a school of thought that no benefit is gained from routine dissection of laryngeal nerves during operations on thyroid gland and there is no difference in incidence whether the nerve is identified or not.[7,15] In our study there was no significant difference in patients in which RLN was searched and identified and in patients in which no attempt was made to search RLN.

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TUBERCULOUS CERVICAL LYMPHADENOPATHY

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ABSTRACT:
To ascertain the prevalence of tuberculous lymphadenopathy among the patients of cervical lymphadenopathy this study was carried out from Jan 1995 to December 1999 at Department of Surgery, Sandeman (Prov.) Hospital, Quetta. A total of 151 patient included in this study had no previous diagnosis. The commonest age group (28.7%) was between 11-20 years. They were all biopsied by open surgical method. The youngest patient was 2 year old and the oldest 80 years. Male patients 84 (55.6%) had slight predominance over female 67 (44.3%). The prevalence of tuberculosis was 56 per 100 patients which showed that tuberculosis is one of the major cause of cervical lymphadenopathy with atypical presentation in our population.

KEY WORDS: Cervical lymph node, Tuberculosis, Open Biopsy.

INTRODUCTION

Tuberculosis could be traced back to Neolithic man. Tuberculous bones have been found in Egyptian mummies as early as 5000 B.C. Chinese literature "Laoping" and Indian Rigvedas Yakshama of 3000 B.C mention this white scourage.[1] The term tuberculosis was first used by Gaspard Leurent Bayb (1774-1816) who pointed out the nature of scrofula glands and described the relationship between pulmonary tuberculosis and other organs.[2] Tuberculosis is today one of the major health problems all over the world. It infects about one third of world's population and kills about 3 million people each year.[3] Inflammatory and immune reaction are the most common cause of lymphadenopathy that are self limiting.[4] Infection entering through the teeth, tonsils or adenoid involves the upper cervical (Jugulo diagastric) nodes, whereas involvement of lower cervical supraclavicular node indicates infection coming from the apex of lung. Generalized lymphadenopathy indicates miliary tuberculosis.[5] The differential diagnosis of enlarged cervical lymph nodes includes bacterial, mycobacterial and viral infections, granulomatous condition such as sarcoidosis, primary and secondary involvement in lymphoma and metastatic neoplasm from breast and lung. Sometime uncommon condition like sinus histiocytosis, eosinophilic granuloma, Kimura's disease and Kikuches disease.[6] are seen.

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Sonography differentiates tuberculosis and metastatic lymph node by their shape, odema of surrounding structure, soft tissue homogeneity, intranodal cystic necrosis, matting and posterior enhancement.[7] Colour doppler sonography is used for differentiating between malignant and tuberculous lymph node.[8] In tuberculous high abnormal vascular pattern i.e. absent hilar vascularity, deformed radial pattern absent multi focality and peripheral vascularity are seen, which is also seen in malignant lymph node.[8] These tests need expertise and more advancement to pick up the diagnosis.

Lymph nodes are biopsied when lymphadenopathy does not resolve after several weeks and a specific diagnosis is not established by other means.[9] Cervical lymph nodes are more likely to be informative in case of generalized lymphadenopathy, deeper nodes show diagnostic feature.[10]

The aim of this study was to see the prevalence of tuberculosis among the patients having cervical lymphadenopathy.

PATIENTS AND METHODS

This prospective study was conducted at Department of Surgery, Sandeman (Prov.) Hospital, Quetta during the period January 1995 to December 1999. Both male and female patients presenting with cervical lymphadenopathy, regardless of their age, were included. Patients were selected through outpatient department and those referred from medical units. Patients who

fulfilled the following criteria were included:

- Cervical lymphadenopathy which were not diagnosed by history, clinical examination and non invasive techniques.
- Those cases in which diagnosis was inconclusive by FNAC.
- Cervical lymphadenopathy not responding even after two weeks of chemotherapy and was progressive in nature.
- Undiagnosed lymph node enlargement.
- Single large diagnosed lymph node for patient's psyche and cosmetic reason.

Those patients were excluded from this study where the cause of cervical lymphadenopathy was established or when they were not willing.

RESULTS

A total of 151 patients with cervical lymphadenopathy were selected for open cervical lymph node biopsy from January 1995 to December 1999. The most common age group found involved in our study was between 11-20 years, the youngest being 2 years old and the oldest 80 years. The sex distribution revealed 84 (55.6%) male and 67 (44.3%) females.

The commonest lesion observed was tuberculoses in 86 (56%) patients, followed by reactive hyperplasia 34 (22.5 %) patients, Non-Hodgkin lymphoma 11 (7.3%) patients, metastatic 7 (4.6%) patients, Hodgkin lymphoma 7 (4.6%) patients and one case of each myeloid leukemia, sinus histiocytosis and moderately differentiated squamous cell carcinoma.

DISCUSSION

Tuberculosis is the single most cause of death[3] and about 5-10 million infection cases are reported each year.[11] Tuberculosis presents with its typical manifestation but sometime atypical presentation with only cervical lymphadenopathy is presented. Dandapat documented tuberculosis as the commonest cause of lymphadenopathy with female predominance.[12]

The probability of determining the cause by biopsy can be as high as 60%.[13] The use of FNAC as a diagnostic method has been highly controversial, both amongst pathologists and clinicians. It has high false negative rates, false positive results and high percentage of inadequate or unsatisfactory samples.[16] In a study conducted in Pathology Department Punjab Medical College, Faisalabad by Amin. D et al, a correct diagnosis in 165 cases out of 190 was suggested by cytology as tuberculous lymphadenitis. In 25 cases in which false positive diagnosis of chronic reactive lymphadenitis was made. Positive predictive value for tuberculosis is 90%.[15] In our study of 151 patients with cervical lymphadenopathy 86 (56.9%) had tuberculosis. In a study by Abdullah. P-421 (50.9%) patients out of 826 had tuberculosis.[16] Most of the patient presented were in 11-20 years of age while in study of Abdullah. P. the most prominent age group was 21-30 years.[16] In Pakistan tuberculosis infection is generalized and widespread. The two national surveys of 1961-62 and 1974-78 revealed almost a similar tuberculosis infection rate of 80% in age group 20-29 years.[11] The sex distribution in our series was 87 (55.6%) male and 67 (44.3%) female while in study by Abdullah. P males were 432 (52.3%) and females 394 (47.6%).[16] The prevalence of tuberculosis among the patients with cervical lymphadenopathy was 56 per 100 patients in our series.

Based upon this study cervical lymph node biopsy is an effective, easy and economical method for diagnosis of tuberculosis. The highest incidence of the diseases in the age group 11-20 years. The disease is common in male population. In case of cervical lymphadenitis tuberculosis is the most important differential diagnosis. Lymph node biopsy should be made in all suspected case before the start of definitive chemotherapy. Lymph node biopsy also help in establishing the diagnosis of unusual presentation of different diseases.

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WOUNDS OF HEEL NEVER HEAL IN DIABETICS

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ABSTRACT:

A comparative study of 56 patients with foot ulcers was carried out from February 2000 to June 2000, at Surgical Unit II, Bahawal Victoria Hospital, Bahawalpur to assess the difference in outcome of heel and non-heel ulcers in diabetics. The patients were divided into two groups: Group A- patients with heel ulcers and Group B- patients having ulcers anywhere other than on heels. Feet in both the groups were graded according to Meggitt-Wagner classification. Patients with evidence of primary vascular disease were excluded. All the patients were X-rayed for bony involvement. Proper glycaemic control with proper antibiotic cover was ensured and results of interventions were recorded and analysed.

Most of the patients who fulfilled the inclusion criteria (35 in group A and 21 in group B) did not know about the mode of initial lesion. Those with history of trauma were 25.7% in group A and 19% in group B. In group A, 51.4% patients had deep ulcers as compared to 42.80% patients of the same grade in group B. Although gangrene was more common in group B, these patients underwent relatively less interventions. The percentages of below and above the knee amputations were higher in group A. The single mortality also occurred in a patient with heel ulcer. Mean duration of hospital stay was 27.3 and 16.6 days in group A and B respectively.

KEY WORDS: Heel ulcers, Amputations, Diabetes mellitus, Complications.

INTRODUCTION

Diabetes Mellitus is the most common non-communicable disease worldwide with increased mortality and morbidity.[1] Diabetes is increasingly being recognized as an important cause of morbidity and mortality in developing communities,[2] due mainly to the associated chronic complications, both specific microvascular and non-specific macrovascular.[1] The disease is of interest to the surgeon, largely because of its complications at the time of diagnosis.[3] Peripheral neuropathy is one of the most common complication of diabetes[4-8] in western countries and may manifest as loss of sensation in feet. It is an important factor in the pathogenesis of foot ulcers, which can progress to infection, necrosis, gangrene, loss of limb or even death.[9] Foot ulcers are the most common cause of hospital admissions among diabetic patients, accounting for 20% of all hospitalizations.[10]

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Diabetic foot has major medical, social and economic consequences,[10] resulting in longer hospital stay than all other complications of diabetes.[11,12] Presentation of foot problems in diabetics is variable, ranging from cellulitis, abscess and ulcer to gangrene. Surgical management depends on the presentation and varies from minor debridement, incision and drainage to amputation.[13] Amputations are 15 times more common among diabetics[10] and the best predictor of lower limb amputation is a history of previous foot ulcer, the presence of neuropathy or peripheral vascular disease and poor glycaemic control.[13]

PATIENTS AND METHODS

A total of 56 diabetic men and women who presented from 01.02.2000 to 31.06.2001 in Surgical Unit II of Bahawal Victoria Hospital, Bahawalpur, were included in this comparative study. To qualify for the inclusion, patients had to have a random plasma glucose level of > 11.1 mmol/L or a fasting plasma glucose level of >7.0 mmol/L

and a foot ulcer. They were divided into two groups: Group A consisting of patients who presented with heel ulcers and Group B with patients who had ulcers anywhere on foot other than heel. Feet in the both groups were graded according to Meggitt-Wagner classification of Diabetic foot (Table I).

TABLE-I MEGGITT-WAGNER CLASSIFICATION OF DIABETIC FOOT ULCERS

GRADE	FEATURE
Grade0	High-risk foot; no ulcer
Grade1	Superficial ulcer, skin deep
Grade2	Deep ulcer, usually with infection / cellulitis; No bony involvement
Grade3	Osteomyelitis
Grade4	Localized gangrene (toe, forefoot or heel)
Grade5	Gangrene of entire foot

Patients with an evidence of primary vascular disease were excluded. All patients were X-rayed for any bony involvement. Types of organism isolated from foot lesions were also recorded. Proper glycaemic control with antibiotic cover was ensured and results of interventions were recorded. Both the groups were analysed and occurrence of amputations was recorded separately. All data was analysed and processed by using SPSS (version 8.0) software.

RESULTS

Fifty-six patients fulfilled the inclusion criteria, their baseline characteristics are given in Table II.

TABLE-II BASELINE CHARACTERISTICS

Feature	Group A	Group B
Sex (M/F)	24/11 (Ratio 2.18:1.0)	12/9 (Ratio 1.33:1.00)
Mean Age	55.1 years	49.3 years
Mean duration of hospital stay	27.3 days	16.6 days
Anti-diabetics		
- Oral	9	5
- Irregular insulin	4	2
- Regular Insulin	1	1
- No treatment	21	13
Previously diagnosed	18 (51.4%)	11 (52.3%)
Newly diagnosed	17 (48.6%)	10 (47.6%)
Previous history of ulcers	21 (60%)	12 (57.1%)
Bony involvement on X-rays	5	2
Side of involvement		
- Right	23 (65.7%)	14 (66.7%)
- Left	16 (34.3%)	7 (33.3%)
Positive: Pus culture & sensitivity	89%	83%
Mortality	1	0

Many of the patients (31.4% in Group A and 28.6% in Group B) did not know about the initial mode of their lesion. Those with history of trauma were 25.7% in Group A and 19.0% in Group B (Table III).

TABLE-III MODE OF PRESENTATION

Mode of initial injury	Group A			Group B		
	Patients	%	p-value	Patients	%	p-value
Trauma	9	25.7	0.001	4	19.0	0.001
Spontaneous Infection	4	11.4	0.002	6	28.6	0.001
Neuropathy	4	11.4	0.02	2	9.5	0.02
Callosities	2	5.7	0.02	1	4.8	0.05
Cracked skin	2	5.7	0.02	1	4.8	0.02
Fungal Infection	2	5.7	0.05	0	0	0.001
Eczema	1	2.9	0.01	1	4.8	0.07
Not known	11	31.4	0.001	6	28.6	0.004

In Group A, most patients (51.4%) had deep ulcers (grade 2,3) as compared to the patients (42.8%) of the same grade in Group B. Surprisingly, incidence of gangrene (grade 4,5) was 22.9% in Group A while it was 23.8% in Group B (Table IV).

TABLE-IV INTERVENTIONS

Grade	Group A			Group B		
	Patients	%	p-value	Patients	%	p-value
0	6	17.1	0.001	4	19	0.001
1	3	8.6	0.001	3	14.3	0.005
2	7	20	0.005	5	23.8	0.001
3	11	31.4	0.003	4	19	0.001
4	5	14.3	0.012	3	14.3	0.005
5	3	8.6		2	9.5	0.01

Although percentage of surgical intervention and amputation was high in both groups, the patients of Group A underwent less interventions (73.8% in Group A versus 66.7% in Group B) (p-value <0.001). Surprisingly percentage of below knee and above knee amputations were higher in Group A (51.4% & 38.1% respectively) (p-value <0.005). Obviously amputation of one or more toes was not included either in below knee or above knee amputations.

DISCUSSION

Relationship between glycaemic control and diabetic complications remains unclear. Studies of genetic factors, including HLA-type etc. suggest that there is a genetic component in developing the complications of diabetes.[14] There is a paucity of information in many local communities regarding complications and management.[2] Wound healing abnormalities in diabetics result from several causes.[15] A high incidence of infections occurs in diabetics with poor glycaemic control. Among the reasons are decreased local and systemic host resistance. Defective phagocytosis, killing of bacteria and decreased migration of inflammatory cells into the site of tissue injury are features of diabetic state.[15] Diabetic ulcers are commonly seen on lower extremities. The diabetics become insensate on weight bearing areas and other vulnerable sites on lower extremities. These ulcers are

related to diabetic neuropathy or microangiopathy.[15] Microvascular dysfunction, unique to diabetes, is considered a separate risk factor for foot ulcers.[16]

Foot ulcers will affect 15% of diabetics during life[17,18] which result from trauma in the presence of neuropathy.[10] The feet do not ulcerate spontaneously, but minor trauma may be sufficient to initiate ulceration. Infection is not a primary cause of foot lesions, but occurs as a secondary phenomenon following ulceration of protective epidermis. Altered proprioception and small muscle wasting, in the presence of limited joint mobility leads to altered loading under the feet during standing and walking. A patient with insensitivity and high pressures is at high risk of neuropathic ulceration.[10]

In our study, we divided the diabetics into two groups: 63% of the patients had initially heel ulcers and most of them were male. The age difference in both groups indicates that the development of heel ulcers was more common in slightly older patients (Table I), 31.4 of these did not know about the cause of their heel ulcers and only one fourth gave the history of trauma. The two findings of trauma and neuropathy are significant in development of heel ulcers in diabetics. To suggest heel ulcers are related to diabetes, vascular disease, trauma etc. is an over-simplification. It is more likely a combination of multiple factors.[19] The thickened basement membrane is believed to impair migration of leukocytes as well as blood flow through capillaries. These changes and an impaired neurogenic vasodilatory response, result in an inability to achieve a normal hyperaemic response needed after injury and increase the risk of infection.[20,21] Sensorimotor neuropathy leads to diminished sensations as well as small muscle atrophy in the intrinsic muscles of foot. A change in weight bearing and diminished sensation, together with ischaemia and microvascular dysfunction, leads to higher morbidity and mortality rates, secondary to poor wound healing. Studies have reported decreased wound healing, increased morbidity and amputation rates associated with diabetic foot ulcers.[21-25]

Also evident from our study is the higher occurrence of deep ulcers (grade 2,3) in patients with heel ulcer (Figure I). Although the rate of gangrene was greater in group B, the rate of below-knee amputations was surprisingly much higher in heel ulcers (37.1% & 14.3% in group A versus 28.6% ands 9.5% in group B, respectively (p-value <0.001). Various studies on mice have demonstrated that topical application of insulin and administration of vitamin A, improves would healing in diabetic mice.[26,27] Peripheral neuropathy and ischaemia combined with un-recognized repetitive trauma (e.g. ill-fitting shoes, unrecognized injury, ingrown toenail) lead to foot ulceration.[28] Non-healing ulcers lead to amputation 85% of the time.[17,30] Upto 50% of patients who had an amputation require another within 5 years.[30] More than half of the diabetics, who develop a foot lesion subsequently develop contrlateral lesion within 2 years and about half of them require amputation.[23,31]

Figure1: A longstanding deep heel ulcer

In our study, 60% of patients with heel ulcers had previous history of foot lesion/ulcer. Most had ulcers on right heel. The duration of hospital stay was longer in patients with heel ulcers (27.3 days versus 16.6 days). However, the total management cost was not taken in account. The single mortality was due to widespread gangrene of lower limb as the patient refused the early above-knee amputation. This also necessitates the early and effective treatment for heel ulcers. Of utmost importance is an assessment of patient's medical management of diabetes.[28] Patients with non-limb threatening infection can be treated with oral antibiotics. Patients with limb-threatening infection should be hospitalized and receive appropriate wound care (including sharp debridement) along with I/V amtonoptocs.[28] The limitations of our study were firstly the unavailability of data to compare with the results and secondly the type of micro-organism involved and foot deformity were not taken in account. In one study comparing the outcome of heel ulcers in diabetics and non-diabetics also showed that patients with heel ulcers had a higher number of interventions performed, higher rate of amputation and a higher mortality rate than heel ulcers in non-diabetics. Although heel ulcers are less frequent than forefoot ulcers, higher expenses, more interventions and higher mortality rates are associated with heel ulcers.[32] Patients with known peripheral neuropathy or high risk foot conditions (e.g. hammer toe, Charcot's foot, bunions or calluses, foot deformities etc.) should be examined at every visit. The examination should include an assessment of integrity of skin, vascular status, foot structures and foot sensations.[33,34] If wound is not on a weight-bearing surface, any repetitive trauma should be relieved and treated conventionally for 2-4 weeks to reassess the healing process.[35]

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DIAGNOSTIC VALUE OF ULTRASOUND IN BLUNT ABDOMINAL TRAUMA

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ABSTRACT:
Blunt abdominal trauma is one of the commonest injuries. In order to evaluate the diagnostic value of ultrasound in such patients, a prospective study was carried out from July 1998 to June 2001 in patients admitted to emergency ward, Nishtar Hospital Multan on emergency-on-call days of Surgical Unit III (twice a week). All the adult patients (over the age of 12 years) with blunt abdominal trauma, without associated injuries were included in the study.

Males below the age of 40 were the most common victim (90%) of this injury The most common cause of this injury was road traffic accident (80%). Timely diagnosis of the nature of intra-abdominal injury is essential to reduce the mortality and morbidity in such patients. Among the various diagnostic modalities currently used, in majority of the main public hospitals, ultrasonography proved to be very helpful in the correct diagnosis of the abdominal organ, injuries with diagnostic accuracy of 98%.

KEY WORDS: Blunt Abdominal Trauma, Ultrasonography.

INTRODUCTION

Trauma is a leading cause of death in younger age group (<40 years of age)[1,2] due to high speed automobiles. Blunt abdominal trauma is one of the commonest injuries in civilian population, mostly due to road traffic accidents.

PATIENTS AND METHODS

This is a prospective study of 120 adult (above 12 years of age) patients admitted to casualty ward, Nishtar hospital Multan on emergency on-call days (twice a week) of surgical unit III, from July 1998 to June 2001. Patients of either sex with blunt abdominal trauma and without associated injuries were included in the study.

After admission, detailed history, clinical examination and necessary conservative treatment such as analgesic, I.V. fluids, antibiotic, record of vital signs and intake output records were made.

The investigations included, complete blood and urine examination, blood grouping and cross-matching, serum electrolytes and radiograph of chest and abdomen in standing position and ultrasound examination. Patients were managed according to the nature of injury.

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RESULTS

Most of the patients in this study i.e. 96 out of 120 (80%) were below the age of 40, only 24 (20%) were above 40 years of age and with 90% males (108) and 10% females (12 only). Road traffic accident was the most common cause of injury causing blunt abdominal trauma in 90 out of 120 (75%) patients, other causes included machinery injury 24 (20%) and fall from height 6 (5%).

In all these patients, complete blood and urine were examined, 40% of the patients had hemoglobin below 10 gm/dl and 16% had RBCS in their urine. Plain radiology of these patients in erect position revealed gas under right dome of diaphragm in 30 patients (25%) and ground glass appearance in 24 (20%) while in 66 patients (55%) radiological examination was equivocal.

Four quadrants peritoneal aspiration revealed either blood or fluid in 70% of these patients.

All patients in the study had ultrasound examination. The findings are given in Table I.

TABLE-I NATURE OF INJURY AS SHOWN BY ULTRASOUND EXAMINATION (N=120)

S. NO.	ORGAN INJURED	NO. OF PATIENTS
1.	Spleen	28
2.	Liver	12
3.	Kidney	12
4.	Urinary bladder	8
5.	Ruptured diaphragm	8
6.	Stomach	4
7.	Small intestine	16
8.	Retroperitoneal haematoma	8
9.	Normal ultrasound	24

Multiple organs injuries were detected in 12 patients i.e. spleen and duodenum in 4, liver and small gut in 4 and stomach and diaphragm in 4 patients.

Exploratory laparotomy confirmed the lesions detected in all the patients with positive ultrasound findings (i.e. 96 out of 120). Among the 24 patients with normal ultrasound findings, 8 patients were operated who showed signs of internal hemorrhage like pallor, coldness of extremities, thready pulse and low blood pressure despite adequate resuscitation. Four of these patients had injury to the left renal pedicle and another four had injury to the pancreas. Rest of the patients with normal ultrasound results were managed conservatively with good outcome.

DISCUSSION

Trauma is more common in young persons and still remains a challenge due to significant morbidity and mortality which can be reduced with improved trauma care.[3] Although careful physical examination in an injured patient is helpful in diagnosis of the nature of injury but is usually inadequate to detect the organ injured in blunt abdominal trauma.[4] The incidence of blunt abdominal trauma has increased as there is increase in high speed automobiles accidents.[1] This fact is also confirmed in this study; cause of blunt abdominal trauma is road traffic accidents in 90% cases. The victims of trauma are mostly younger age persons between 3rd and 4th decades of life and 96 patients (80%) in this study were below the age of 40 years; this result is the same as reported by Ong-CL, Png DL, et al,[1] and Barlon TG, Weissmon AM.[2] Another study conducted by Abbas MK, Gondal KM; et al3 shows 66% of the patients with blunt abdominal trauma between 11 and 30 years of age.

Ninety percent of our patients were males but in the western literature, males-females ratio is of 3:1. This is due to the fact that females western have more outdoor activities than our females. In blunt trauma solid organs are affected more than the hollow visceras.[5]

The different diagnostic procedures used for management of these patients include plain x-ray abdomen, four quadrant peritoneal aspiration, ultrasonography and radiography of the abdomen in erect position. Ultrasound is becoming the most popular and accurate scanning method to detect intra-abdominal injuries in blunt trauma patients. It is highly sensitive, complication free, non-invasive and cost effective method of initial evaluation in such patients.[6,7,8,9] Ultrasonography is the most commonly used diagnostic method in blunt abdominal trauma.[10] This study shows that in 96 out of 120 patients (80%), the ultrasonography picked up the injuries later confined at laparotomy. This observation is approximately the same in reported by other authors.[10,11,12]

The findings reported in other international studies show the diagnostic accuracy rate of ultrasound in patients with blunt abdominal trauma between 88-98%.[13,14,15,16,17] In our study the diagnostic accuracy rate is found to be 98%.

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AETIOLOGY AND OUTCOME OF PAEDIATRIC BURNS

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ABSTRACT:
Burns is a common injury in children with life long imprints on the personality as a result of its sequelae. A one-year study was conducted in the Burns Unit of Department of Paediatric Surgery, National Institute of Child Health, Karachi to find out the aetiology and outcome of paediatric burns in terms of mortality.

Patients with burn injuries admitted From January to December 1999, were 198 (108 male and 90 female). Majority of these were between 2 – 5 years of age (n=85). In almost 62% of cases TBSA burnt was less than 30%. Scald burn was the commonest type of burn injury (n=112). In flame burn more than 50% of cases had more than 30% TBSA involvement. In cases of scald burn the mode of injury in majority of cases was spillage of hot liquid (89/112). Majority of accidents occurred in home environment (n=178), kitchen being the most common place. Eighty patients received inadequate treatment at some other facility before being referred to us. Most of the patients (n=123) came to emergency room after 6 hours of accident. Pseudomonas was the commonest organism isolated (41%) followed by staph aureus. Complications occurred in significant number of cases and infective complications predominated (n=82). Seventy deaths (35.3%) occurred in this series and most of them were in children under two years of age (20/52 - 38.2%). Mortality was slightly more in patients with flame burns (38/86) and those with more than 30% TBSA involvement (44/76, 57.8%).

Preventive measures could have avoided these accidents. In this regard mass education can help in reducing the incidence. For proper management there is a need of establishing specialized burns unit at each district headquarter level.

KEY WORDS: Burns, Children, Mortality.

INTRODUCTION

Burn wounds are common cause of injury related to disability and permanent disfigurement in childhood . No other form of trauma causes such physiologic and psychological injury as the burn trauma.[1] Majority of burn injuries sustained by children occur at home as a result of an accident.[2] National Institute of Child Health, Karachi, a tertiary care hospital, has a Burns unit that is the only facility in this region of the country in public sector providing treatment to paediatric burns victims. This study was planned to look into causes of paediatric burns and outcome in terms of mortality also assessed.

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PATIENTS AND METHODS

A prospective study was conducted in Burn unit at Department of Pediatric surgery, National Institute of Child Health, Karachi. Study lasted over a period of one year from January 1999 to December 1999. Patients with acute thermal burn admitted to the unit were included in this study. The data related to the patients was collected on a proforma that included age, sex, cause of burn, time of injury, treatment received elsewhere, time lapse, site of accident, associated injuries etc.

RESULTS

There were 108 male (54.5%) and 90 female patients. Most commonly children between 2 - 5 years (n - 85) were involved. The age and gender of the patients is given in

Fig I. Average size of burn was 31.23% (Fig. II). Scald was the most common cause of burn with male predomination. Common source and mode of scald burn was spillage of hot water (Fig. III). Majority (83%) of burn accidents occurred in domestic setting and kitchen was the common place (178/198). Most of the patients reached our facility after six hours of accident (123/198). Prior to hospital admission some patients received incomplete treatment at different hospital and clinics. Complications are shown in fig. IV. In our study pseudomonas was the commonest organisms isolated followed by Staph. Aureus.

Fig. I: Age and Gender

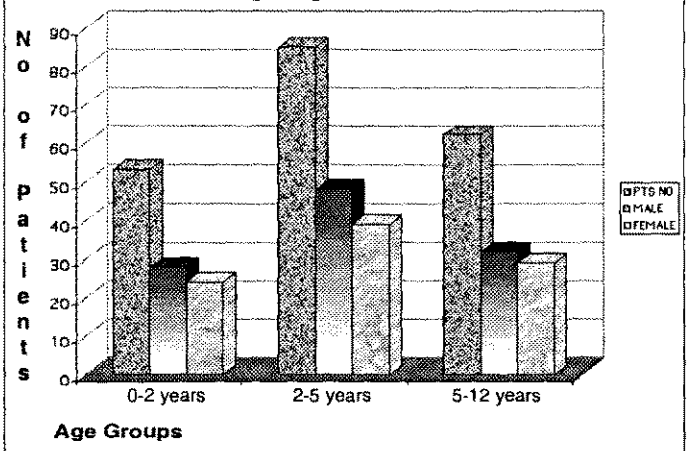


Fig. II: Burn Size and Type

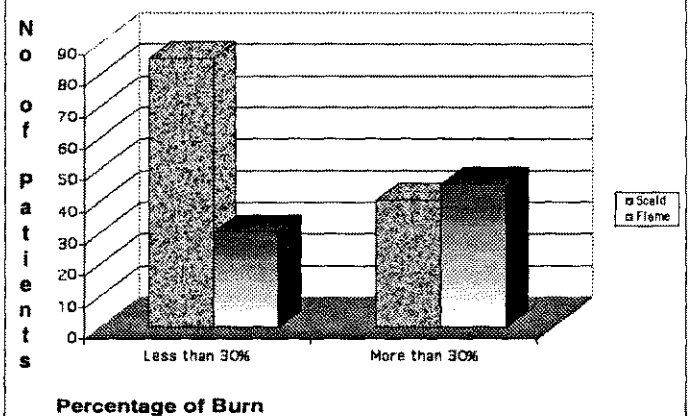


Fig. III: Place of Accident, Activity and type of Burn

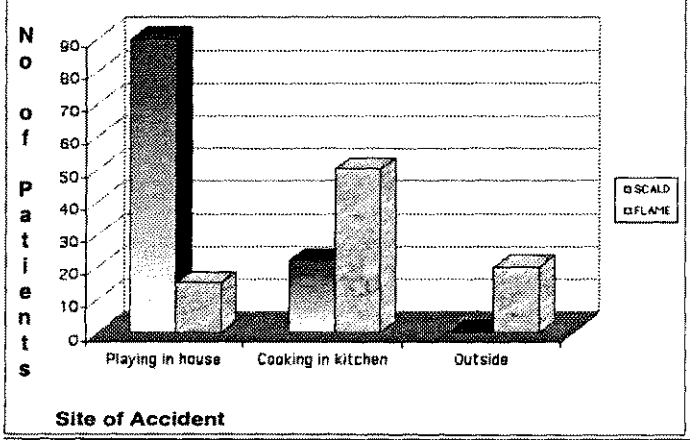
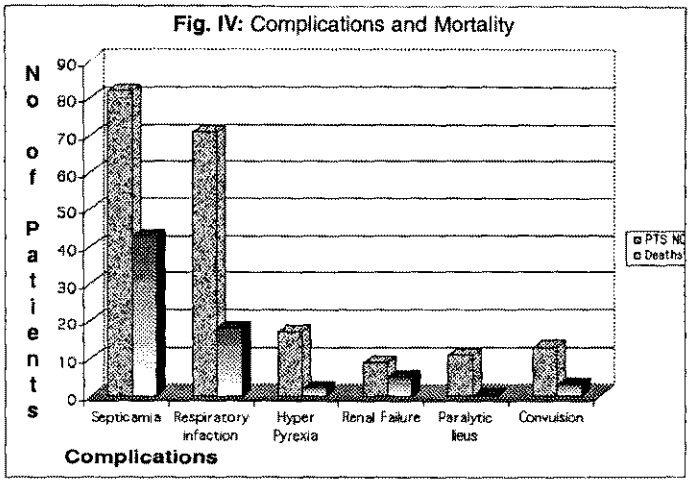


Fig. IV: Complications and Mortality



Seventy deaths (35.3%) occurred in this series and most of them were in children under two years of age (20/52 - 38.2%). Mortality was slightly more in patient with flame burns (38/86) and in those with more than 30% TBSA involvement (44/76, 57.8%, Fig.V, VI)

Fig. V: Mortality Related to Age and Type of Burn

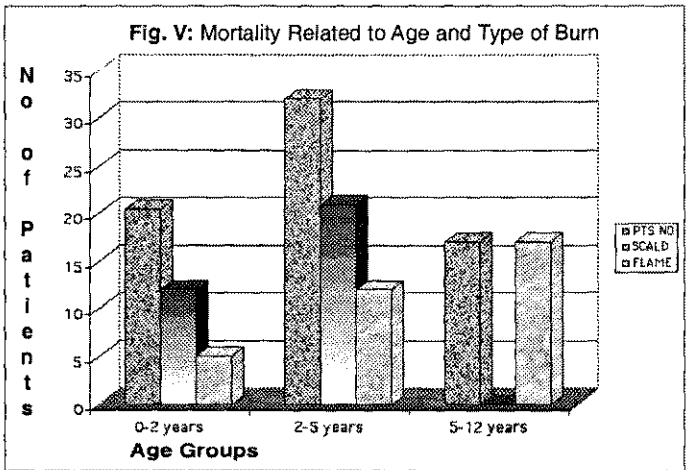
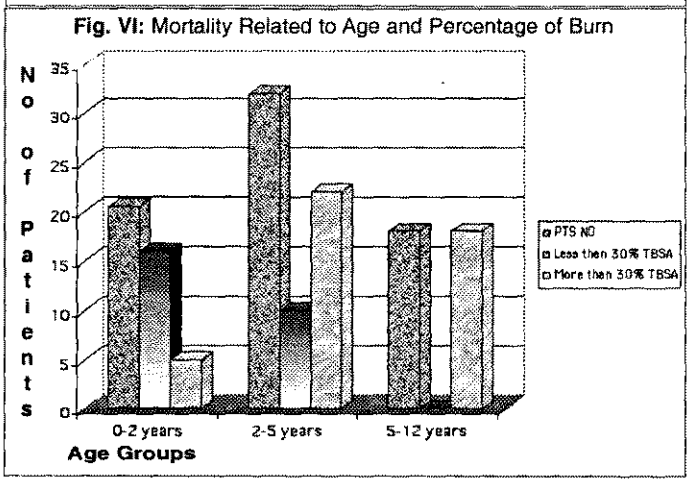


Fig. VI: Mortality Related to Age and Percentage of Burn



DISCUSSION

Burns has been one of the commonest accidental injuries in children and one of the major problems in our country. Its etiology has remained the same throughout the world but mode of injury varies.[3] Majority of the burns seen in

this study were accidental and unfortunately, almost all of them were preventable. Several factors have been identified with an increased vulnerability to burn injury in the underdeveloped countries. Factors like substandard housing, overcrowding, low income, lack of education, ignorance and child abuse contribute significantly to thermal injuries.[4]

The age category with highest frequency of burn injuries is in accordance with other studies. The age range was from 3 week to 12 years with slight male predominance. All groups of children are more or less equally affected. The children between 2 to 5 years are slightly on higher side, because of their inherent attitude of inquisitiveness. They pull / push and dip into pans of hot fluid thus sustaining scald injuries. In other studies from Pakistan high frequency of burn accidents occurred in domestic settings. In our study kitchen was the most notorious site for accident as found in other studies.[5]

In our study in contrast to European studies socio-cultural difference may also be an important reason. In developed countries running hot tap water is commonest cause in scald injuries.[6] In our study no incidence recorded due to running hot tap water because availability of geezer is limited in the population. Majority of the population use hot water container for their multiple purpose such as washing, bathing cleaning etc. and these hot container most of the time placed open in airy space which usually is front yard or living room and children are not prohibited from playing around it. Large family size is also a risk factor in these accidents. In our set up when both parents go to work and the house is mainly left to the eldest child These accidents occur most commonly. Ignorance and literacy were two other major factors predisposing such incidents.

Scald injuries were the commonest (56.5%) cause of burn injuries in our study. The depth of burn remained in between 1st and 2nd degree. This study coincides with other studies in that the commonest burn injury related to toddlers is scald compared to other type of burn injuries. In scald injuries the mean burn surface area was 38% +/- 2%.. Among scald injuries spill, out numbered immersion in our studies as compared to developed countries.[3]

Consistent with other studies flame injury is responsible for the majority of full thickness injuries and carry the highest morbidity and mortality. Frequency of flame is more common in age of more than five years. Flame burns were significantly larger than scald in both groups in terms of number and related complications. The flammability of clothing is dependent on several factors. Ideally all fabric in market should be flame retardant. According to western literature such restriction for children's night-clothes has reduced the severity of injuries.[7] In our study cotton and cotton blends were commonly worn at time of accident. These are highly flammable.

It is difficult to predict the prognosis of a patient with burn, but review of the literature indicates that a point has reached where children with less than 30% TBSA burn has obtained 90% chances of survival as a productive member of society. According to literature the survival rate would not have been 100% in children with burn wound more than 50 %TBSA. We found that increase in burn area led to high mortality among children. In total 70 deaths occurred of which those belonging to less than 30% group were 26 while rest of patients belonged to group B having 44 fatalities. This observation is in consistence with other studies. Most of the children aged less than five years had high risk of death independent of burn size is also found in present study. There is no significant gender difference with respect to mortality.[8,9]

The factors observed in relation with high mortality are.

- Early deaths occurring in first two to three days were due to shock leading to acute renal failure and factor responsible was late referral.
- High mortality associated with flame burns is because of two reasons: initial deaths in our patients were due to respiratory failure and late deaths were due to sepsis.
- Sepsis is another factor that prolongs morbidity and is associated with significant mortality.
- Pneumonia is one of the commonest causes of death in burns patient. Many of these are related to invasive wound infection but air borne route is also a common mode of spread.

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INJECTION SCLEROTHERAPY USING 5% PHENOL IN ALMOND OIL IN THE TREATMENT OF PARTIAL RECTAL PROLAPSE IN CHILDREN

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ABSTRACT:
Seventy-four children aged 6 months to 9 years, with partial prolapse of rectum presented at Surgical Unit-II, Liaquat Medical College Hospital Jamshoro, over a period of five years from January 1996 to December 2000. There were 44 males and 30 females, with male to female ratio of 1.47:1. They were initially treated conservatively and 52 patients (70%) were cured on conservative treatment alone. Remaining 22 patients (30%) were subjected to injection sclerotherapy using 5% phenol in almond oil through proctoscope into rectal submucosa. The cure rate after first injection was 72.73% and after 2nd and 3rd injection was 86.36%. Only 03 patients out of these 22 (13.64%) were ultimately recommended surgery. Overall patients requiring surgery were 03 out of 74 (4%). It is recommended that partial rectal prolapse in children should initially be treated conservatively. When this fails, injection sclerotherapy using 5% phenol in almond oil is a safe, inexpensive and easily available treatment. Surgery should only be considered in those patients, in which injection sclerotherapy fails.

KEY WORDS: Partial Rectal Prolapse, Treatment.

INTRODUCTION

The descent of rectum through the anal canal is of two types: partial and complete prolapse. Prolapse involving the mucous membrane alone is called incomplete or partial. When the entire thickness of rectal wall descends, the prolapse is termed complete. In partial prolapse the mucous membrane and submucosa of rectum protrude outside the anus for approximately 1-4 cms. Rectal prolapse is rare in industrialized countries,[1] but is relatively common in developing countries like Pakistan. While prolapse can occur at any time,

incomplete prolapse is more common in children and complete prolapse is a feature of the very elderly.[1] No abnormality may be detected on preliminary examination but the prolapse may be precipitated by inserting a suppository and putting the child on a pot. In other children the prolapse may be visible at the time of initial examination. Predisposing factors are increased intra abdominal pressure, diarrhoeal and neoplastic diseases, malnutrition and conditions predisposing to pelvic floor weakness.[2]

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The mucosal prolapse seen in very young children is a self-limiting disease, provided that a regular habit of defection can be established and straining of the constipated child alleviated.[2] Treatment is mainly conservative. The simplest, less invasive yet highly effective approach appears to be injection with a sclerosing agent.[1] Surgical intervention is occasionally required for rectal prolapse.[3]

The aim of this study was to find out efficacy of injection Sclerotherapy using 5% phenol in almond oil in partial rectal prolapse in children under 10 years of age.

PATIENTS AND METHODS

This study was conducted over a period of 05 years from January 1996 to December 2000. All patients under 10 years of age presenting in OPD of Surgical Unit-II, Liaquat Medical College Hospital, Jamshoro were included in the study. All 74 children (44 males, 30 females) aged 6 months to 9 years, presented with a history of partial rectal prolapse. Male to female ratio was 1.47:1. At the time of initial presentation prolapse was visible in 32 patients, while remaining patients demonstrated either by having given a suppository or sitting in squatting position

and straining. Rectal polyp was excluded by digital rectal examination. In 54 patients (73%) there was history of diarrhoea, which alone was the most common predisposing factor. These 74 children were initially treated conservatively, which included digital reduction of prolapse back in place, strapping of buttocks together after defecation and antidiarrhoeal agents. Seven patients had history of constipation and straining and were given laxatives. Of these 52 out of total 74 (70%) patients recovered within two weeks. Twenty-two patients in whom symptoms persisted and who failed to respond on conservative methods ever after 04 weeks, injection sclerotherapy was considered. The sclerosing agent used was 5% phenol in almond oil. Prior to injection patients were given glycerin suppositories so as to clean rectum. The injection was given under general anaesthesia. The child was placed in left lateral position.

The prolapse was either already reduced under general anesthesia or reduced back manually and through child size prostoscope 5% phenol in almond oil was injected into rectal submucosa. 21G spinal needle with 10 cc disposable syringe were used. Sclerosant (8-10 cc) was injected circumferentially, given at 3-4 places with about 2-2.5 cc of sclerosant at each place. The children were followedup for 02 weeks and if required procedure repeated. All 22 patients were followed for 01-06 months.

RESULTS

Among 22 children in whom 5% phenol in almond oil was injected to treat partial rectal prolapse, 16 (72.73%) were cured after Ist injection. There was no history of prolapse when they visited 02 weeks after the injection. They were followed for 01-04 months and showed no recurrence of symptoms. In remaining six patients, the procedure was repeated on next operation list after this followup. Thus in these six patients procedure was repeated about 21-27 days after the Ist injection. These patients were again followedup after 02 weeks. Three patients improved. Cure rate after 2nd injection was 19/22 (86.36%). Three patients did not recover, though in one patient there was reduction in size of prolapse. This patient was injected 3rd time but there was no further response and in followup of about 6 months after Ist visit, the prolapse was of almost same size as it was in the beginning. In remaining two patients who showed to improvement after two injections, 3rd injection was not given. Thus failure rate was 3/22 (13.64%). These three patients were advised surgery.

DISCUSSION

Partial rectal prolapse in children is a common problem in our society. It may be the result of malnutrition and diarrhoea, which are quite common in our children. The disease itself is not life threatening but is disturbing for parents. Hence they seek medical advice at an early stage. The treatment is mainly conservative and is directed at the underlying cause. The parents should be reassured that the disease is not life threatening and in most patients conservative treatment will be effective. In our study 52/74 (70%) responded completely to conservative method. Patients who do not respond to conservative methods, injection sclerotherapy should be considered next.[4] Sclerotherapy of mucosal rectal prolapse is much less expensive than conventional surgery.[5] Different sclerosing agents are available, such as 5% phenol in almond oil, DW50%, ethanolamine oleate, 25% saline. Some surgeons have used fibrin adhesive percutaneous injection for this purpose.[6] In this study we used 5% phenol in almond oil in all 22 patients. It is easily available and inexpensive. Two techniques have been described for injection:[4] In one submucosa at the apex of prolapse is injected circularly, so as to form a raised ring and upto 10 ml of solution can be injected. A similar injection is made at the base of the prolapse. If the prolapse cannot be brought down, the injections are given through a proctoscope. The success rate after Ist injection was 72.73% and after 2nd and 3rd injections was 86.36%. The results are quite satisfactory when compared to results mentioned in literature. Chan-WK et al in their study mentioned 64% cure rate after one injection, 76% after two injections and 84% after 3 injections.[7] They recommended injection sclerotherapy as the first line treatment of rectal prolapse after failure of conservative measures. Piloni-V et al mentioned a success rate of 57% only.[5] Ibanez-V et al using fibrin adhesive percutaneous injection showed a cure rate of 75%.[6] In our study only 3 out of 74 patients (4%) were advised surgery. Surgery should be considered only when conservative treatment and injection sclerotherapy fails.

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REPRODUCTIVE HEALTH PROFILE IN RURAL POPULATION

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ABSTRACT:
A survey was conducted in May 1999 to assess the status of reproductive health practices in the rural population of district Kasur. A total of 1,634 women were interviewed besides traditional birth attendants (TBAs) and lady health visitors (LHVs). Three quarter of women were illiterate and two thirds were married by the age of 19 years. Eighty six percent delivered at home. Most of the TBAs were illiterate and had no training, while all the LHVs were educated and had had training. This difference in education and training was reflected by their attitudes towards handling of complications. The referral rate by traditional birth attendants was only 2.3% that was much less than lady health visitors who refer quite often depending on the gravity of the situation.

Pakistan is a populous country with annual growth rate of 2.8% and the vast majority living in rural areas. Illiteracy, tradition and attitudes contribute to prevailing situation.

KEY WORDS: Reproductive health, Rural population.

INTRODUCTION

During the past century, there has been tremendous progress all over the world in all scientific fields. The developing countries too have had their share of this change seen in Urban areas, but the scenario in the rural areas is unfortunately not much different from what it was at the beginning of the last century. In Pakistan two thirds of the population is in the rural areas and little of the progress has trickled down to this vast majority, especially in the health sector. Traditions and attitudes are additional factors responsible for the prevailing situation. Rural people still live in areas without clean water supply in as many as 21% and lack basic sanitation facilities in 67%.[1,2,3]

According to estimates of 1998 census, Pakistan has a population of around 140 million with population growth rate of 2.8%.[4] The contraceptive prevalence rate is 18% with a total fertility rate of 5.08%.[5] The ensuing school enrolment is poor leading to poor literacy rate.[6,7] Women have a literacy rate of 16% as against 35% for men. Similarly the literacy rate for urban population is 47.1% compared to 17.3% for rural population. Its important to note that the literacy rate for urban women is more than five times the rate for rural women (7.3%).[8] The Maternal mortality ratio of Pakistan stands at a minimum of 340 per 100,000 live births.[9] Most of the maternal deaths occur because of haemorrhage, in addition to hypertension, infection and obstructed labour.[10,11] Poor communications, delays in decision-making, provision of transport and delayed help in health facilities are the factors responsible in many deaths.

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PATIENTS AND METHODS

A survey of rural population was carried out to assess the attitudes and practices of women. The survey also dealt with gathering information about the two cadres of health care providers who differed in knowledge and training, i.e., the traditional birth attendants (TBAs) and lady health visitors (LHVs).

The study was carried out in May 1999 in a population of 385,670 served by three rural health centres of district Kasur. The selection criteria were women between the ages of 15 and 50 years who had a minimum of one child.

A total of 1,634 women were interviewed. As many as possible, TBAs and LHVs of the area were also interviewed. Three questionnaires were prepared for this purpose, one each for women, TBAs and LHVs. The questionnaires were filled by interviews with the three groups and responses were tabulated.

RESULTS

It was seen that 76.7% of population was illiterate and 65% females got married by the age of 19 (Tables I-III). The rural population relies heavily on the traditional birth attendants and home confinements are a wide practice. Birth attendants at home were delivering 26% of rural female population (Table IV). The induced abortion rate was 3.2%. Formal training was received by only 9.3% of birth attendants. Some had acquired the skill from one generation to the other. In contrast all the lady health visitors were trained in the government sector. The referral rate for complications by the traditional birth attendants was 2.3% only while the lady health visitors referred more often depending on the gravity of the situation(Table IV, V).

TABLE-I LITERACY RATE

Level of education	Number (n)	Percentage (%)
Illiterate	1253	76.7
Primary	189	11.6
Middle	70	4.3
Matric	61	3.7
Intermediate or above	61	3.7

TABLE-II AGE AT MARRIAGE

Age	Number (n)	Percentage (%)
I0-13	134	8.2
15-19	1062	65
20-24	438	26.8

TABLE-III CONDUCT OF LAST DELIVERY

Personnel	Number (n)	Percentage (%)
TBA	1415	86.6%
LHV	52	3.2%
Doctor	167	10.2%

TABLE-IV TRADITIONAL BIRTH ATTENDANTS (129)

Formal education n(%)	Training level n(%)	Referral of complications n(%)
Illiterate 106(82.2)	Formal 12 (9.3)	Referred 03 (2.3)
Primary 23(17.8)	Informal 20(15.5)	No referral 126(97.7)
	No training 97(75.2)	

TABLE-V LADY HEALTH VISITORS (14)

n(%)	Training level n(%)	Referral of complications n(%)
Illiterate None	Formal 14(100)	Referred 126(97.7)
Matric 7(50)	Informal None	No referral 03(2.3)
F.A/F.Sc 7(50)	No training None	

DISCUSSION

Our rural population is traditionally a conservative society. Many women are purdah observing, living in a joint family system and tend to stay at home most of the time. Most of these women have confinement by local health care providers. The means of communication are poor with meagre or no roads, poor transportation facilities and minimal telecommunication. Sanitation is poor and there is a general lack of awareness, more so regarding women's health.

It was seen that majority of the population was illiterate; two-thirds of the adult female population was married by the age of nineteen. The rural population relied heavily on the traditional birth attendants and home confinements are a wide practice. Birth attendants at home were delivering 86% of rural population. Even in the city of Lahore, a study carried out in late eighties showed that more than 70% deliveries were conducted at home.[12,13,14] In the study only 10.2% deliveries were conducted by doctors and according to a report on Pakistan, only 13.4% of the total female population used health facilities for delivery and only 10.5% deliveries occur at health facilities in the province of Punjab.

In the study the induced abortion rate was only 3.2%, even less than the city average, which was rather surprising. This could be either because the rate was genuinely low due to religious constraints or that many women were not candid enough to accept the fact that they had had abortions.[15] According to a study by SOGP, abortions are responsible for at least 11% of the total maternal mortality in Pakistan.[16]

On comparing the two cadres of health providers, birth attendants and lady health visitors, it was seen that the birth attendants were mostly illiterate, only 17.8% were educated till primary school and their training was practically non-existent. Most acquired the skill from one generation to the other. In contrast all the lady health visitors were educated, half of them till intermediate. They had all received formal training in the government sector for at least one year but mostly for three years.

This difference in education and training was reflected by their attitudes towards handling of complications. The referral rate by traditional birth attendants was only 2.3%

that was much less than lady health visitors who refer quite often depending on the gravity of the situation. The role of training of lady health visitors is therefore very significant and cannot be overemphasized. As already seen training affects the attitudes of health providers.[17] Therefore there is need for training and supporting the health providers. Rural health needs to be made community oriented and driven.[18]

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A STUDY OF FLOUVOUXAMINE IN HOSPITAL OUT PATIENTS WITH MAJOR DEPRESSIVE ILLNESS

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ABSTRACT:
A non-comparative study was carried out at the Department of Psychiatry, Chandka Medical College Hospital, Larkana from October 2000 to February 2001. Forty patients between the ages 18 to 60 years, who met the inclusion criteria were registered. Twenty-eight patients completed the study while 12 patients were lost to followup.

KEY WORDS: Major depressive illness, flouvouxamine, efficacy.

INTRODUCTION

Depression is the most common affective disorder. It is a feeling of sadness and misery, usually accompanied by lowered self-esteem ranging from feeling of inadequacy and incompetence to a full-blown delusion that the patient is evil and responsible for many of the world's ills. The delusions distinguish psychotic from situational depression (i.e. excessive sadness related to a true environmental event).[1] At any one time five to fifteen percent of persons of any age, sex or race, living in the community show some symptoms of depression while one to two percent meet the criteria for major depression.[2] Previously depression was regarded as a disorder of middle aged or elderly persons, but now adolescents and young adults are increasingly getting depressed and seeking treatment.[3] It is believed that depression is associated with increased morbidity and mortality, impaired functions, substantially prolonged disability and an economic loss associated with depression, the disease remains under recognized and majority of the patients do not receive adequate and appropriate treatment by primary care physicians.[4]

The importance of the role of serotonin in affective disorders is now widely accepted. Studies carried on different selective serotonin reuptake inhibitors suggest efficacy nearly equal to the older tricyclics but markedly decreased side effects principally due to a reduction in anti- cholinergic side effects commonly encountered with tricyclics. SSRIs may therefore justifiably be the preferred treatment in a variety of depressed patients.

Flouvouxamine offers greater efficacy in patients than older drugs, either in relief of symptoms or in prevention of suicide. On the other hand, there has also been no substantiation for the scare early in their use that suicide risk might actually be increased. The main advantage of flouvouxamine is its lack of antimuscrinic adverse effects. Lack of adverse effects can indirectly also permit in increased efficacy, since the maximum tolerated dose in a patient is less likely to be limited by the undesired anti muscarinic effects. While in theory a selective agent should not have new adverse effects, absent from the older less selective agents, idiosyncratic reaction can occur. Symptoms in psychiatric patients are particularly difficult to evaluate.

PURPOSE OF STUDY

The purpose of this study was to verify the efficacy, safety and tolerance of flouvouxamine to identify dose related sub-groups of patient's responsive and non-responsive to flouvouxamine therapy or at any special risk or adverse effects and to observe the impact of flouvouxamine on quality of life.

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PATIENTS AND METHODS

An open non-comparative study of flouvouxamine hospital out patients with major depression was conducted in the Department of the Psychiatry, Chandka Medical College Hospital, Larkana, from October 2000 to February 2001. Roughly 300 patients are consulting the department every week, which include new and old patients, follow-ups, attendees of special clinics and day-to-day emergency.[5] Patients who fulfilled the inclusion criteria were selected as following:

❖ Patient over the age of 18 years who gave informed consent in accordance with declaration of Helsinki.[6]

❖ Patients attending psychiatric OPD and satisfying the DSM IV criteria for major depression[7] presenting with a minimum score of 18 on the Hamilton rating scale for depression[8] at the time of study entry.

Those excluded from the study were:

- Pregnant, lactating and females of child bearing potentials who were not using adequate contraception or intended to become pregnant within six months of the study entry.
- Patients likely to receive treatment with additional psychotherapeutic agents except occasional use of chloral hydrate or benzodiazepienes, ECT or intensive psychotherapy during the course of study.
- Patients receiving tricyclic antidepressant within one week of study entry or MAOI, lithium, reserpine and alpha methyl dopa two weeks prior to study entry or any other antidepressant therapy or who received 5-HT antagonist treatments (Pizotifen for migraine) or substances carrying serotonergic properties like fenfluramine concurrent with the study.
- Patients who received a 5-HT uptake inhibitor treatment in the four weeks prior to the study.
- Patients whose depression was secondary to other forms of psychiatric illness or organic disease patients.
- Patients with history of severe allergies or unknown hypersensitivity to flouvouxamine or with significant hepatic or renal impairment.
- Patients with history of alcoholism, drug abuse and suicidal risks.

Forty patients between the ages of eighteen and sixty years were registered. Twentyeight (70.0%) patients completed the study successfully and twelve (30%) patients were lost to followup. After entering the study complete demographically data, physical examination including height and weight, relevant base line parameter were assessed. In order to assess quantitative efficacy of flouvouxamine, the Hamilton Psychiatric Rating scale for depression and Clinical Global Improvement (CGI) Scale were administered during the ten-week trial. At the entry visit (visit 1) all the patients received 100mg of flouvouxamine in two divided daily dosages that continued unchanged for four weeks. However, at the end of week one visit (visit 2) patients were asked to come fortnightly and concurrent medication and side effects were noted. At the week 4 dosages of medicines were increased if necessary. At the end of the tenth week the study was discontinued. However, the study medication was made available on a named patient basis when continuation was considered by investigator to be clinically indicated. At the end of the study global assessment was carried out on HAMD for Depression and Clinical Global Improvement along with complete physical examinations.(Table I).

TABLE-I IMPROVEMENT IN HAMILTON PSYCHIATRIC RATING SCALE FOR DEPRESSION FROM BASELINE TO THE END OF THE STUDY

Visits	No. of patients	Mean score
Base line	28	20.7
Week 2	28	16.8
Week 4	28	13.4
Week 6	28	11.7
Week 8	28	8.9
Week 10	28	6.1

RESULTS

Twenty-two (78.5%) of 28 patients who completed the study were males and six (21.5%) were females. Twenty-four (86.7%) were between 18 to 45 years of age (mean age 34.7 years). Mean weight was 61.5 kg, mean height was 161 cms in both sexes. The majority of patients population had a depressive illness for more than 32 weeks. Majority (52%) of the patients inducted in the study were drug naives. Those who were previously on anti depressant therapy, tricycles were the commonest (58%) drug received followed by fluoxetine, sertraline, trazodone and mianserin.

Common somatic symptoms recorded during the past two weeks included headache (30%), G.I.T disturbances including dyspepsia, vomiting symptoms including dyspepsia and vomiting (15%). Anxiety (3%), and insomnia (2%). 40% patients did not have any adverse effects. (Table II).

TABLE-II ADVERSE EVENTS

Adverse events	No. of incidence	Severe	Moderate	Mild
Headache	2	-	2	-
G.I.T. symptoms	1	-	-	1
Anxiety	1	-	-	1
Insomnia	2	-	-	2
Miscellaneous	1	-	-	1

In the evaluable patients analysis, there was significant improvement seen from base line in HAMD Rating Scale and CGI for depression as shown in table. The overall evaluation of efficacy (based on criteria given) in 28 patients was as follows: Excellent / Good – 22 (78.5%), Fair – 4 (14.2%) and Poor – 2 (7.14%).

Majority (71.4%) pf patients showed therapeutic response within dose of 100 to 150mg/day, while 8 (28.6%) patients required 250mg/day to achieve response. (Table III).

TABLE-III IMPROVEMENT IN SEVERITY OF ILLNESS FROM BASELINE TO THE END OF THE STUDY

Severity of illness	Baseline	Week 2	Week 4	Week 6	Week 8	Week 10
Normal, not at all ill	-	-	-	-	-	2
Borderline, mentally ill	-	1	2	2	5	16
Mildly ill	-	4	8	15	18	8
Moderately ill	18	20	18	11	5	2
Markedly ill	10	3	-	-	-	-
Severely ill	-	-	-	-	-	-

Most of the patients tolerated the drug well. Side effects were only mild to moderate. Interestingly, no patients had to be withdrawn from the study due to adverse effects or tolerance problem. (Table IV).

TABLE-IV CLINICAL GLOBAL IMPROVEMENT FROM WEEK 2 TO THE END OF THE STUDY.

Global improvement	Week 2	Week 4	Week 6	Week 8	Week 10
Very much improved	-	-	-	1	5
Much improved	8	14	20	24	20
Minimally improved	14	13	8	3	3
No change	6	1	-	-	-

DISCUSSION

At present several anti-depressants are being marketed as SSRIs with no relevance to their molecular structure. However, their identity lies with reference to clinical psychopharmacology. In this context, Flouvouxamine in the dose of 100mg/day has been found effective in initiating the response. Using this dose as a marker, it could be increased to 200mg/day to enhance desired effects.

Anti-depressants have critical disadvantages in term of side-effects profile. Preferred usage of drugs by therapist depends on safety profile of an antidepressant in a particular patient. At times side effect can be exploited by way of result desired by patients, for example, very little or no change in weight caused by Flouvouxamine may give a choice in both under or over weight. Relative absence of side effects may make it the anti-depressant of first choice in patient who have tendency to grumble and show nervousness on experiencing even slight form of side effects when advised a conventional anti-depressant. One of the patients in this study was suffering from double depression (dysthymia and major depressive code). He was extremely sensitive to side effects, having been exposed to various type antidepressants. It was initially planned to treat him only with psychotherapy. Eventually, when he was inducted in this study, he showed remarkable improvement. This study confirmed that Flouvouxamine is well tolerated at recommended dose of 100mg to 200mg per day.

Reports of serotonin syndrome[9] in the literature pose a serious question with reference to early detection. This challenge can be met with by introducing checklist devising rating scales to identify high-risk individuals. Nevertheless, flouvouxamine remains the drug of choice by virtue of relative absence of side effects, cardio selectivity and minimal dosage required to treat even otherwise treatment refractory cases.[10]

Depression continues to remain a mystery more so in view of its socioeconomic and inter-personal deficits. Early detection and quick treatment of an otherwise pessimistic population is warranted. This challenge can be met by treating such cases with an antidepressant having minimal side effects and quick response. Flouvouxamine fits well into dream, to improve the quality of life.

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PERFORATED GALL BLADDER A CASE REPORT

AIJAZ AHMED MEMON

ABSTRACT:
Surgical complications of typhoid fever, like paralytic ileus or ileal perforation, are more common than those of Paratyphoid. Cholecystitis is also a frequent complication of this illness, but perforated gall bladder is rare. A case of perforated gall bladder due to typhoid is being reported here.

KEY WORDS: Gall bladder perforation, Complication, Typhoid.

CASE REPORT

A 22-year old male presented with fever for 20 days and abdominal pain/ vomiting for 15 days. Fever was of continuous type that became high grade at night, not associated with rigors and relieved by taking medicines. He also developed gripping abdominal pain and vomiting on and off, five days after the start of fever. Medicines from local doctor did not relieve his symptoms completely. His abdominal pain gradually became worse and ultimately he was admitted to hospital.

On examination he looked ill, wasted and dehydrated. There was tenderness more marked in the right upper abdomen with some degree of peritonism mostly on the right side of the abdomen. An initial diagnosis of small bowel perforation due to typhoid fever was made. Laboratory investigations showed a positive Widal test. Abdominal X-rays were not helpful towards the diagnosis. An ultrasound examination of abdomen showed fluid in the right subhepatic area, suggesting a diagnosis of perforated duodenal ulcer.

After resuscitation exploratory laparotomy was performed and bile was found in the right upper abdomen, further the gall bladder was found ruptured at the fundus. Cholecystectomy and peritoneal lavage with saline was performed and abdomen closed after leaving a drain in the right subhepatic space. Postoperatively the patient recovered smoothly.

DISCUSSION

Complications due to typhoid are more common, particularly paralytic ileus and ileal perforation, than complications due to paratyphoid. Cholecystitis and perforation of large intestine are well known complications of paratyphoid. Perforation of gall bladder is a rare complication and is not mentioned in the list of complications of typhoid and paratyphoid in most books of Medicine. Searching through the literature (Medline and Extramed) for last ten years there was only one reported case of perforated gall bladder associated with Salmonella Javiana infection.[2]

The clinical diagnosis of perforated gall bladder and other rare complications of paratyphoid can possibly be made through proper evaluation of history, clinical examination, investigations and considering the rarity in the differential diagnosis.

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PERFORATED DUODENAL ULCER A CASE REPORT

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ABSTRACT:
Perforation of duodenum is a known complication of duodenal ulcer. In most patients, either a previous history of dyspepsia is available or patients are known cases of duodenal ulcer. Herein we report a case of perforated duodenal ulcer.

KEY WORDS: Duodenal ulcer, perforation

INTRODUCTION

A 43 years old male was brought in emergency department of CMH Bahawalpur with complaint of severe abdominal pain for 4 hours, allied with a swelling in the right inguinal region. The patient was lying listlessly and gave a history of right reducible inguinal hernia for the last 3 years.

On the basis of history, an obstructed right inguinal hernia was suspected. The clinical examination however was quite contrary. His abdomen was held rigid and was drawn in. There was a swelling in right inguinal area. On palpation, the abdomen was tender and rigid in the epigastrium and right hypochondrium. There was a positive release sign in the right hypochondrium and right iliac fossa. The hernial sac was vacuous of any viscera and appeared to be filled with fluid. A provisional diagnosis of perforated duodenal ulcer was made, inspite the fact that he had no antecedent history of dyspepsia or epigastric pain and was a non-smoker.

His BP was 110/90 mmHg and pule rate was 100/min. Laboratory examination revealed Hb of 12.0 gm% and TLC of 12500/cmm. X-Ray chest revealed gas crescent under the diaphragm. Ultrasound revealed fluid in the pelvis.

Patient was resuscitated and emergency laparotomy was performed. A clearly punched out ulcer was seen in the anterior wall of the first part of duodenum, with bile stained fluid in the pelvis, which had also transgressed into the preformed hernial sac on the right side. The ulcer was closed with vicryl and Gordon patching was done. Peritoneal toilet with closure of the mouth of the hernia transabdominally was carried out. The patient made good postoperative recovery and discharged with H2 receptors blockers for 8 weeks and advised followup fortnightly in surgical OPD, CMH, Bahawalpur.

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DISCUSSION

Duodenal ulcer is a lingering recurrent disease. The absolute prevalence of this disease is not known, however the estimated effected population is between 6-15%. Perforation of duodenal ulcer occurs in 10-14% cases and in 75% cases it occurs in the anterior duodenal wall. About 70% recurrent perforation rate is seen in the dearth of any treatment in 5 years following the first episode of perforation. Helicobacter Pylori has been implicated as the most assiduous factor present in the patients who perforate.[1] Timely clinical diagnosis is necessary to avoid fatal outcome, which is high in late cases of perforated duodenal ulcers. Surgical intervention has recently been surpassed by laparoscopic closure which has given excellent results. It is now the first choice in most centres, with a morbidity of only 9% and mortality rate of only 4%.[2] In places where laparoscopic facilities are not available, prompt surgical exploration with primary closure of the perforation followed by H2 receptors blockers is the treatment of choice.[3] Insertion of postoperative drains has been found to be both unnecessary and ineffective, especially if omental patching has been done.[4] In many advanced centres

laparoscopic transparietal vagatomy is been carried out as the definite treatment for perforated duodenal ulcer, as it is simple and avoids the complications of partial selective vagotomy.[5] In recurrent symptoms, use of triple drug regimen to eradicate H. Pylori effectively and omeprazole has been recommended, with a remission rate of as much as 78% in two weeks.[6]

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OLFACTORY NEUROBLASTOMA A CASE REPORT

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ABSTRACT:
A case of a 8 year old female who presented with a polipoidal mass protruding from the nose and oral cavity and a malar swelling is reported. The patient had experienced nose bleeds for several months. The diagnosis of olfactory neuroblastoma was established on histopathology, which revealed presence of small round cells forming pseudo-rosette. The patient was treated by surgical resection followed by radiotherapy and is well on the 12th month followup.

KEY WORDS: Olfactory, neuroblastoma malignant tumor

INTRODUCTION

Olfactory neuroblastoma or esthesioneuroblastoma is a rare malignant tumor of the sinonasal region. It probably arises from the olfactory placode.[1] The tumor mainly affects adults but has also been reported in children. It has a similar incidence in males and females and is rare in black races. The tumor may present with symptoms due to compression, involvement of adjacent structures or metastasis. Nasal obstruction and epistaxis are the most common symptoms.[2] Rhinorrheoea, epiphora and anosmia or parosmia are other presenting symptoms. Headache, diplopia or a malar mass indicates invasion of base of the skull. Local aggressiveness is the usual behaviour but distant metastasis occur in 20% cases, mainly to lymph nodes and lungs.[3] Histologically the tumor is composed of small round cells which express neuroendocrine markers such as neuron-specific enolase, PGP 9.5, synaptophysin and chromagranin A1. Electron microscopy reveals the presence of neurosecretory granules and the tumor cells may stain positively for catecolamines and dopamine B-hydroxylase. The prognosis is determined by the extent of disease at the time of initial presentation. Treatment includes surgery, supplemented by radiothereapy and chemotherapy.[4] The five year survival rate is superior to 50%.[5]

CASE REPORT

An 8 year old female patient from Hyderabad Sindh, presented with a painless massive swelling involving the left side of face and a polypoidal mass protruding from the nose and oral cavity (Fig.1). On examination a friable red fungating mass was seen protruding from the left nostril and the oral cavity. The surface of the tumor was necrotic and covered with blood clots. There was a foul smelling bloody discharge from the nasal cavity. The swelling on the left cheek measured 10x8 cms involving the maxilla. It was soft in consistency, non tender and fluctuant. A similar swelling measuring 5x5 cms. was seen on the left zygomatic region. Regional lymph nodes were not enlarged. There was ocular hypertelorism but ocular movements were not restricted.

Investigations carried out included complete blood counts and urinalysis which were normal, expect for the haemoglobin level of 5gm. Liver and renal function tests were within normal limits. Chest radiograph (abdomen) were normal. CT scan showed heterogenous enhancing mass with multiple cystic areas involving left side of the face causing extensive bony destruction with extension into the paranasal sinuses, oral and nasal cavities. The tumor mass was extending into the nasopharynx and pushing the orbital content s of the left side (Fig.2). Biopsy was consistent with olfactory neuroblastoma showing round to oval cells with hyperchromatic nuclei and scantly cytoplasm separated by highly vascularized fibrous tissue. Pseudorosette formation was also seen.

The patient was operated in two stages, in the first stage a wide surgical excision was performed through a lip splitting Weber Ferguson incision and the growth was excised from maxilla, infra orbital region and the nasal cavity. The growth from the zygomatic area was removed after 4 weeks. The patient was advised radiothereapy two weeks after surgery.

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An obturator was placed over the palatal defect which was produced by the removal of the hard palate. The patient was followed regularly at two weekly intervals. At 12 months post surgical followup the patient was free of local recurrence and no sign of distant metastasis.

DISCUSSION

Olfactory neuroepithelioma (Olfactory neuroblastoma, or esthesioneuroblastoma) is an uncommon malignant tumor arising in the olfactory epithelium. It was first described by Berger et al. in 1924. More than 250 cases have been reported in literature. The tumor appears as a pink or brown friable mass with a gritty texture causing nasal obstruction and recurrent epistaxis. The growth is locally aggressive with occasional metastasis to the regional lymph nodes, lungs and bones. The tumor can invade the frontal lobes, best delineated by CT scanning, but extension into cerebrospinal fluid is rare. A case associated with Cushing's syndrome has been described.[6]

Histologically the tumor comprises of small round cells in a neurofibrillary matrix with pseudorosette formation and rarely true rosettes. These tumors may produce vasoactive hormones and urinary assays of the metabolites, dopamine and 3-methoxy-4-hydroxymandelic acid have been used to monitor recurrence. Kadish staging system[7] may be helpful for determining the prognosis and treatment of patients:

Stage A- Tumor confined to the nasal cavity.
Stage B- Tumor in nasal cavity extending to paranasal sinus.
Stage C- Tumor extending to orbit, base of skull, cranial cavity or with cervical/distant metastasis.

Most tumors present in an advanced stage with the extensive local invasion to permit complete surgical removal. Combined treatment modalities are usually adopted. Wide surgical excision with craniofacial resection in combination with radiation therapy has improved therapeutic results.[8] Five year survival rate is 60-70% with surgery and radiotherapy alone. Aesthesioneuroblastoma is also a chemoresponsive tumor and systemic chemotherapy is recommended for stage C tumors.

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