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EDITORIAL:

ECONOMICS AND SURGICAL TRAINING

As in all fields today, economics has come to play an important and basic role in medicine as well. No development or meaningful setting up of teaching and training is possible without taking this into consideration. Gone are the days when discussions of money in the field of education was regarded as abhorrent and taking of payment was an abominable act.

Education and health are fields which are the wellsprings of development. No society or nation is said to be developed or civilized where these are not given due importance. However by their very nature, they are bottomless pits where the more you put in the more you have to follow up with, otherwise the precious investment goes down the drain. As resources are always limited, somewhere there has to develop a sense of economization or conservation, cutting down costs and stopping wastage. Nowhere is this more important than in the field of surgical training.

Initially the training of surgeons was almost entirely limited to "practice" on actual patients. However with the passage of time, the legal, ethical and moral considerations have proved that this method is no longer desirable. With this realization, simulation has developed both in the form of live actors and training implements like dummies etc. However such methods tend to be costly and especially dummies are very expensive. There is therefore a need for innovation for the development of alternate inexpensive and disposable methods of performing and practicing surgical skills.

Fortunately Pakistan does not lack in intelligent innovators. Many training centers in the country have developed their own skills labs where excellent training work is going on. In these labs locally produced training material is being used at a fraction of the imported material cost. One such example is the surgical skills lab at the College of Physician & Surgeons Pakistan at Karachi. The way the organizers of this lab have used simple locally made stuff has to seen to be believed. Foams, plastic, sheets, tubes, wooden templates, balloons and other such material come together to form practice pitches for skin incision closures, laparotomies, tracheostomies and many more such procedures. The cost incurred is very small and affordable by even the most financially handicap institutions, who are eager to see innovation in the field of surgical skills training.

Dr. Irshad Waheed
Professor of Surgery

PROGNOSTIC FACTORS FOR LOCOREGIONAL RECURRENCE OF BREAST CANCER

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ABSTRACT

Objectives: *To explore prognostic factors for locoregional failures among women treated for invasive breast cancer by surgery and adjuvant therapies.*

Design *Descriptive study.*

Place & Duration

The study was conducted at the Surgical Department, Bahawal Victoria Hospital (BVH), Bahawalpur with mutual cooperation of Bahawalpur Institute of Nuclear Medicine & Oncology (BINO) over a period of five years.

Patients And Methods

The study consisted of 120 women who were treated with a modified radical mastectomy (85 at BVH and 35 at various district & private hospitals) and enrolled for an adjuvant therapy. A total of 25 patients of breast cancer with node negative disease received either no adjuvant therapy or a single cycle of perioperative chemotherapy, and 95 women with node positive disease received adjuvant chemotherapy of at least 5 months duration and/or tamoxifen for at least one year. Mean follow up was 4.2 years.

Results

In women with node negative disease factors associated with increased risk of locoregional failure were vascular invasion (VI) and tumor size greater than 5 cm for premenopausal and VI for postmenopausal patients. Of the 25 patients, 6 (24%) met criteria for the high risk groups. For the node positive group of patients number of nodes and tumor grade were factors for both menopausal groups, with additional prediction provided by VI for premenopausal and tumor size for postmenopausal patients. Of the 95 patients, 34 (35.8%) met criteria for the high risk groups.

Conclusion

Locoregional recurrence is a significant problem after mastectomy alone even for some patients with node negative breast cancer, as well as after mastectomy and adjuvant treatment for some subgroups of patients with node positive disease. In addition to number of positive lymph nodes, predictors of locoregional failures include tumor related factors, such as microscopic vascular invasion, higher grade and larger size.

KEY WORDS: Breast cancer, Mastectomy, Histological grades,

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INTRODUCTION

Extensive local and regional treatment often including radiotherapy was used in the treatment of breast cancer, before the era of adjuvant systemic therapies.[1-2] The

addition of radiotherapies to surgery reduced the number of local and regional recurrences. Overviews of all radiotherapy trials indicated reduced breast cancer mortality but failed to show a significant overall survival benefit.[3]

Adjuvant systemic treatment of breast cancer improves the relapse free survival rate by reduction of local, regional and distant relapses and moderately improves survival.[4] Two randomized clinical trials from Denmark and Canada on radiotherapy together with adjuvant chemotherapy in mainly node positive premenopausal breast cancer patients[5,6] and one study from Denmark on radiotherapy with tamoxifen in postmenopausal patients[7] found improved survival in radiotherapy arms. There has been concern that the quality of the axillary surgery in the Danish study, in which an average of only seven removed lymph nodes were investigated, as well as less optimal adjuvant chemotherapy[8,9] may have contributed to a high risk of cancer remaining in the locoregional area.

Recent consensus statements have concluded that locoregional radiotherapy might be considered to improve the relapse free and possibly overall survival for some patients who are at high risk for locoregional relapse of the disease despite adjuvant systemic treatment.[10-14] Because radiotherapy is resource consuming and may be followed by severe late effects, it should be reserved for patients who are at high risk. Thus there is a need to explore the incidence of locoregional relapses after controlled surgery and in connection with systemic treatment. A publication of International Breast Study Group has showed that more effective systemic treatments reduced the risk of local and regional recurrences compared with the less effective treatments for patients with node positive disease.[15]

The aim of the present study was to expand on these results by defining risk groups for locoregional recurrence (with or without simultaneous distant failure) in patients who were treated with modified radical mastectomy and enrolled in this study for an adjuvant therapy.

PATIENTS AND METHODS

The study included 120 women of breast cancer among whom 85 were operated at BVH while 35 at various private and district hospitals and were referred to BINO for an adjuvant treatment for a period of 5 years from 1999 to 2003. The analysis was based on information collected on patients fulfilling the criteria described below. Detailed definitions for menopausal status, patient characteristics and eligibility for the study have also been described in many similar studies.[16-24] The patient's selection criteria included:

- All patients who under went modified radical mastectomy.
- The tumors of stage pathologic (p) T1, pT2 or p T3 (tumor node metastasis staging system).
- Margins of tumor resection free of tumor cells and no involvement of skin or fascia.
- At least four lymph nodes from the axilla examined.

The patients under gone breast conserving surgery, patients fulfilling the above criteria but already taking or completed an adjuvant treatment and those with distant metastasis were excluded from the study.

The individual groups of the patients selected for the study and their characteristics were as follows:

Premenopausal patients with node negative disease included 10 patients, 3 had positive family history and got six pulses of classic "FAC" protocol chemotherapy with an interval of 21 days (5-fluorouracil 500mg/m^2 iv day1 adriamycin 50 mg/m^2 iv day1 and cyclophosphamide 500mg/m2 iv day1) and the remaining patients received no further treatment. All patients received no radiotherapy.

Postmenopausal patients with node negative disease, included 15 women, 8 received a single course of perioperative chemotherapy of classic "CMF" protocol (cyclophosphamide 400mg/m^2 iv days1 and 8, methotrexate 40mg/m^2 iv days1 and 8 and 5-fluorouracil 600mg/m^2 iv days1 and 8). All patients were put on tamoxifen 20 mg daily for a period of 3 years and no patient got radiotherapy.

Premenopausal patients with node negative disease, included 55 patients, 45 received 8 pulses of 21-day classic "FAC" protocol chemotherapy while the remaining 10 patients completed 6 pulses of the same protocol chemotherapy. All patients got no radiotherapy.

Postmenopausal patients with node negative disease, enrolled 40 ladies, 30 patients received 8 pulses of 28-days courses of classic "CMF" chemotherapy along with tamoxifen 20 mg daily for a period of 3 years (women <60 years of age) while the remaining 10 patients were put on tamoxifen 20 mg daily for a period of 3 years (women >60 years of age).

A few patients enrolled during the year 2003 could not complete the advised tamoxifen course but none of the patient had taken tamoxifen at least less than one year. In this study all the patients had four or more lymph nodes examined histo-pathologically, both for node negative and node positive groups, with 50% having 8 or more nodes examined.

On the basis of the eligibility criteria of all the four groups, the information from 120 patients were used for statistical

analysis on SPSS Program with a mean follow up of 4.2 years. The following variables and categories were defined for the analysis: nodal status (0, <4 or > 4 involved nodes), tumor size (< 5 cm or > 5 cm), estrogen receptor status (negative or positive), age (< 60 or > 60 years), histological grade (1, 2, 3) and vessel invasion (yes or no). Some of these variables were missing for some of the patients. In particular estrogen receptor status, histologic grade and vessel invasion were not always known, because these variables were not required for the inclusion of patients in to the study. We included an additional category (unknown) for those variables to capture this possibility.

Because we focused on patient and disease related features, we did not include type of adjuvant systemic therapy as a variable to define risk factors. All women with node positive disease received at least 4 months of chemotherapy and/or at least 1 year of tamoxifen per randomized assignment; 80% received at least 6 months chemotherapy and/or 3 years of tamoxifen.

Locoregional recurrence was defined as a first relapse on the chest wall, the ipsilateral axilla, ipsilateral supraclavicular or infraclavicular fossa or the ipsilateral internal mammary region. Categories of sites of failure of interest were as follows: isolated locoregional recurrence (LRF) without simultaneous distant failure (DF); local recurrence with or without simultaneous distant failure (LRF + DF); and distant failure alone (DF).

LRF + DF events were used to define risk groups separately for each of the four groups of patients, as follows.

- The risk factor (variable) present in more than 80% of the patients with LRF + DF was considered to define " High risk group" for that specific clinical group.
- The factor present in 50% to 80% of the patients with recurrences was considered to define " Intermediate risk group" for that group of the patients.
- The variable present in less than 50% of the patients with LRF + DF was considered to define " Low risk group" for that clinical group.

The results were analyzed on percentage basis and the Chi square test and Pearson test were utilized to assess the P-value of each variable against the dependent variable of locoregional failure.

RESULTS

The overall characteristics of the patients for the four groups selected for the analysis has been listed in Table I.

The exact site of failure was unknown for a total of 4 deceased patients. These patients have been assigned to the "other" category for site of failure. Table II shows the observed number of patients for each of the site of failure groups considered for the analysis. In total, 40 patients experienced locoregional recurrence (with or without distant failure) as a first event. The site of failure was locoregional for 55%, supra/infraclavicular for 7.5%, axilla 12.5%, and multiple LRF regions for 5%, distant failures for 10% and other failures for 10% of the patients.

1- Premenopausal Patients With Node Negative Disease: As shown in Table III & IV, the tumor size and the microscopic vessel invasion were prognostic factors for locoregional recurrence + distant failure in this group of patients. Either the presence of vessel invasion or a large tumor contributed similarly to the increase in risk of failure and a low risk / high risk group was defined accordingly. The 30% of all the patients got failure during a mean follow up of 4.5 years in whom all 100% had their tumor size > 5cm and positive vessel invasion microscopically. The high risk factors correspond to larger tumors with vessel invasion and the low risk factors belong to smaller tumors without vessel invasion or their isolated negativity. The site of failure in this group was 33.3 % for each of the locoregional (LRF) only, local + distant failure (DF) and axillary lymph nodes (ALN) + distant failure. No patient showed isolated distant recurrence (Table II).

2- Postmenopausal Patients with Node Negative Disease: Vessel invasion and the negative Estrogen Receptor were the risk factors that significantly predicted the outcome in this group of patients (Table III & IV). The low risk group corresponded to the absence of vessel invasion and positive ER status, whereas the high risk group corresponded to the presence of vessel invasion. The 20% of the patients included in this group showed failure during the mean follow up of 3.9 years and all 100% had tumors with positive vessel invasion microscopically and negative estrogen receptor. The site of failure in this group was 33.3% each for LRF and multiple regional failures (MRF) + distant failure while in the remaining 33.3% patients the site of failure could not be find because of patient death with unknown recurrence (Table II).

3- Premenopausal Patients With Node Positive Disease
The number of positive lymph nodes, vessel invasion and the tumor grade were important prognostic factors in this group of patients. The presence of microscopic vessel invasion produced an increase risk of LRF + DF, as did the presence of a large number of positive lymph nodes and a higher tumor grade corresponding respectively 88.9%, 94.9% and 83.4% of the patients with failures as evident in Table III & IV. The 75% of all the patients with distant metastasis belonged to this group of patients

TABLE-I **SUMMARY OF PATIENT CHARACTERISTICS**

	All Patients		Premenopausal Node-Negative		Postmenopausal Node-Negative		Premenopausal Node-Positive		Postmenopausal Node-Positive	
	No	%	No	%	No	%	No	%	No	%
Total	120	100	10	100	15	100	55	100	40	100
Age, years										
< 60	110	91.7	10	100	13	86.7	55	100	32	80
> 60	10	8. 3			02	13.3			08	20
Meno. Status										
Pre	65	54	10	100			55	100	40	100
Post	55	46			15	100				
Lymph Nodes										
None	25	20.8	10	100	15	100				
< 4	25	20.8					15	27.2	10	25
> 4	70	58.4					40	72.8	30	75
Tumor Size										
< 5cm	35	29	06	60	06	40	14	25. 5	07	17.5
> 5cm	85	71	04	40	09	60	41	74. 5	33	82.5
Tumor Grade										
1	30	25.0	03	30	05	33.4	14	25. 5	06	15
2	25	20.8	02	20	03	20	15	27. 3	05	12.5
3	40	33.4	04	40	04	26.7	18	32.7	16	40
Unknown	25	20.8	01	10	03	20	08	14.5	13	32.5
ER Status										
Negative	25	20. 8	02	20	04	26.7	13	23.7	06	15
Positive	20	16.7	03	30	02	13.4	10	18.1	05	12.5
Unknown	75	62. 5	05	50	09	60	32	58.2	29	72.5
V. Invasion										
No	30	25	06	60	05	33.3	10	18.3	11	27.5
Yes	35	29	03	30	03	20	18	32.7	08	20
Unknown	55	46	01	10	07	46.7	27	49. 0	21	52.5

Meno = Menopausal *ER = Estrogen receptor* *V. Invasion = Vessel invasion*

(Table II). The site of failure was local + DF in 50%, DF in 17%, LRF in 11% and LRF + DF in 12% while the remaining patients either died without recurrences or with unknown failures (Table II).

4- Postmenopausal Patients With Node Positive Disease
The analysis for this group of patients revealed the presence of three significant prognostic factors: tumor size, the number of positive nodes and tumor grade. A large number of positive lymph nodes, a high tumor grade and a large tumor size contributed to a higher risk for LRF + DF corresponding 100%, 81.2% and 87.5% respectively for the three factors (Table III & IV). The site of recurrence was LRF & axillary lymph nodes + DF 25% each, local + DF & supra/ infraclavicular lymph nodes + DF 13% each and other sites 24% cumulatively (Table II).

DISCUSSION

In this study we used very simple way by percentage analysis of each variable to define risk groups for LRF within each of the four cohorts. This approach is not similar in spirit to the determination of risk groups using the Cox model, as it requires a large number of cases to define a risk index, which is then used to identify the groups at increasing risk of LRF ± DF events. It should be noted that for the four different data sets, the definitions of the risk groups are based on different analysis tests and thus such risk groups cannot be properly compared across patient cohorts. For such a comparison we recommend examination of various regression coefficients or cumulative incidence functions as recommended by Wallgren et al[27].

TABLE-II **SUMMARY OF FAILURES OBSERVED IN VARIOUS GROUPS**

Group	N	Failure (n) %	LRF Only (n)	LRF ± DF (n)	Local ± DF (n)	S/ILN + DF (n)	ALN + DF (n)	MRF (n)	DF Only (n)
Premenopausal Node – negative	10	3 30	1	0	1	0	1	0	0
Postmenopausal Node – negative	15	3 20	0	1	0	0	0	1	0
Premenopausal Node – positive	55	18 32.7	2	1	9	1	0	0	3
Postmenopausal Node – positive	40	16 40	4	1	2	2	4	1	1
Total with (percentage)	120 (100)	40 33. 3 (100)	7 (17.5)	3 (7. 5)	12 (30)	3 (7. 5)	5 (12.5)	2 (5)	4 (10)

N = Total no of patients n = no of failures LRF = Locoregional failure DF = Distant failure S/ILN = Supra/infraclavicular lymph nodes ALN = Axillary lymph node MRF = Multiple regional failures OF = other failures, includes deaths without recurrences and the deceased patients for whom site of recurrence was unknown.

TABLE-III **RISK FACTOR DESCRIPTIONS OBSERVED IN DIFFERENT GROUPS**

(With Respect to locoregional Failure ± Distant Failure)

Risk Factor	Premenopausal Node Negative N = 10		Postmenopausal Node Negative N = 15		Premenopausal Node Positive N = 55		Postmenopausal Node Positive N = 40	
	n	%	n	%	n	%	N	%
Total Failures	3	100	3	100	18	100	16	100
Lymph Node								
None					0		0	
< 4					1	5.5	0	
> 4					17	94.5	16	100
Tumor Size								
< 5cm	0		1	33	7	38.9	1	6.3
> 5cm	3	100	1	33	5	27.7	14	87.5
Unknown	0		1	33	6	33.4	1	6.3
Tumor Grade								
1	1	33	1	33	0		0	
2	0	33	2	67	2	11.1	1	6.3
3	0		0		15	83.4	13	81.2
Unknown	1	33	0		1	5.5	2	12.5
Vessel Invasion								
No	0		0		0		8	50
Yes	3	100	3	100	16	88.9	2	12.5
Unknown	0		0		2	11.1	6	37.5
ER Status								
Negative	0		3	100	2	11.1	2	12.5
Positive	1	33	0		6	33.4	6	37.5
Unknown	2	67	0		10	55.5	8	50.0

N = Total number of patients included in the group.
n = Total number of locoregional failures + distant failures observed during follow up.
% = Percentage of the failures (recurrences) with respect to total failures for a given variable.

TABLE-IV **PREDICTORS OF HIGH RISK PATIENTS**

(With respect to locoregional recurrence)

No	Groups	Predictor Variable	%	P value
I	Premenopausal Node negative	Tumor > 5 cm	100	0.000
		+ Vessel Invasion	100	0.001
II	Postmenopausal Node negative	Negative ER	100	0.001
		+ Vessel Invasion	100	0.008
III	Premenopausal Node positive	+ LN > 4	94.5	0.006
		High grade Tumor	83.4	0.008
		+ Vessel Invasion	88.9	0.007
IV	Postmenopausal Node positive	+ LN > 4	100	0.000
		Tumor > 5 cm	87.5	0.009
		High grade Tumor	81.2	0.021

ER = Estrogen Receptor LN = Axillary Lymph Node
% = Percentage of the patients with locoregional failure in which the given risk factor (variable) was positive.

In patients without axillary lymph node involvement, VI (pre or postmenopausal patients) and tumor size more than 5cm (premenopausal patients only) defined risk groups. Thus size of the tumor and VI might define a group of patients with axillary node negative disease who have a high risk of locoregional recurrence suggesting a reasonable ground to indicate some postoperative adjuvant treatment including radiation therapy.[14] It is evidenced by the fact that overall results according to this randomized treatment showed a reduction in LRF ± DF for patients with node negative disease who received the single cycle of CMF compared with those who received no adjuvant therapy. Additional study is required however, to determine how much the risk of LRF is reduced by adequate adjuvant systemic chemotherapy selected according to the endocrine responsiveness of the primary tumor as suggested by Goldhirsch A et al.[14]

For patients with lymph node metastasis, the number of involved nodes and histologic grade were predictors of the LRF for both pre and postmenopausal women. VI provided supplementary prognostic information for premenopausal patients and size of tumor provided supplementary prognostic value for postmenopausal women. Generally the patients with four or more involved nodes had high cumulative risk of LRF during follow up. Among patients 1-3 involved nodes, premenopausal patients with histologic grade 3, tumors with VI and postmenopausal patients with grade 3, tumors greater than 5cm also belonged to the high risk group. This reinforces the importance of accurate pathologic evaluation of the specimen, which is usually not stressed or considered important in our setup as evidenced by the fact that in more than 65% cases the ER status, more than 45% VI and in more than 25% cases the tumor grade was not known by the available data.

Currently it is general consensus that postoperative radiotherapy should be given to certain groups of patients with breast cancer who receive adjuvant systemic treatment not only with the aim of reducing the risk of LRF of the disease, but also to improve breast cancer survival.[10-14] This applies to the group of patients with four or more lymph node metastasis but there is a lack of consistent knowledge concerning the impact of other predictors of a clinical benefit such as postoperative radiotherapy.[11] The overviews of radiotherapy trials show similar proportional reductions of locoregional relapses as with systemic treatment in different treatment groups[11-14] but absolute differences rather than relative differences should guide decisions about adjuvant treatment protocols. Therefore this study was performed to explore some other prognostic factors responsible for the prediction of the disease outcome.

In our study only patients with radically removed tumors without involvement of skin or fascia were included in the trial and it required a minimum of four lymph nodes examined for the inclusion of patients. The number of lymph nodes removed has been found in some studies to be of prognostic importance for LRF, possibly as a result of understaging and perhaps of undertreatment of the axilla.[31] It has been suggested that the high frequency of LRF of some clinical trials might in fact result from less optimal surgical techniques which also result in few retrieved lymph nodes.[8]

The recently published retrospective studies explored various factors of prognostic importance for LRF.31-33 The study of Recht et al was based on approximately 2000 patients who had been treated with mastectomy and postoperative adjuvant chemotherapy. Number of lymph node metastasis, number of examined nodes, tumor size, estrogen receptor protein, menopausal status and age of the patients were analyzed and rates were based on cumulative incidence functions. In a multivariate setting, number of involved nodes, tumor size and estrogen receptor status significantly contributed to the locoregional recurrence. Katz et al[32-33] investigated about a thousand patients who had been treated with a modified radical mastectomy and received adjuvant "FEC" chemotherapy protocol but without radiotherapy. The first report focused on clinical features,[32] and the second report focused on tumor related factors.[33] A multivariate Cox regression analysis revealed that the presence of four or more involved nodes, tumor size greater than 5 cm, close or positive surgical margins or clinically or gross pathologically multicentric disease but not the presence of lymph vascular space invasion was an independent predictor of LRF. Presence of lymph vascular space invasion however was a significant predictor in the univariate analysis. All these results are in consistent to our randomized multivariate study. It is thus noteworthy that in addition to the number of involved nodes and size of the tumor, multifocal disease, invasion in skin or nipple or positive surgical margins predicted a high rate of recurrence in these studies but because of our restricted inclusion criteria for the patients none of our patients has positive margins.

It is difficult to compare the frequencies of locoregional failure among different studies. The selection and the treatment of patients vary as well as the definition of recurrences. In some studies only local relapses are scored as LRF; supraclavicular nodes are sometimes counted as distant relapses and sometimes as LRF. In our study as well as those of Recht et al[31] and Katz et al[32] relapses on the chest wall and the axilla, supra or infraclavicular fossae and internal mammary nodes were scored as LRF. Statistics may be based on a first appearance of LRF without or with coincident distant failure or on LRF appearing at any time. In our study figures are given for LRF appearing either alone or with distant failure as a first event and the statistical considerations are based on LRF as a first event with or without distant failure.

It is evident from our study that local and regional relapses constitute a therapeutic problem in breast cancer despite controlled surgery and adjuvant cytotoxic and/or endocrine treatment. Although the study about the risk factors for breast cancer in Pakistan[34] was conducted but no literature is available regarding the prognostic factors of the disease. Available studies consistently show that an increasing number of involved axillary lymph nodes also increase the risk of such failures and that the size of the tumor adds to the risk. Especially among the women with 1-3 involved nodes enrolled for any trials of prospective adjuvant treatment, there is a need to explore other possible predictors of recurrence including histological grade and vascular invasion as identified in our study.[25-26] Every effort should be carried out to exclude the category "unknown" in any predicting variable for the locoregional recurrences in future study. In our ongoing study the methodology of the predictors of locoregional failure of breast cancer in comparison with the western literature may be somewhat confusing due to small number of cases. This ambiguity is hoped to be over after our trial target achievement of thousand patients when the better reports will be available by the help of a regression hazard models[28-30] like western studies and we well be in position to predict valuable 10-year expectant survival analysis.

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MIXED DENTITION ANALYSIS FOR PAKISTANI POPULATION

NASRULLAH MENGAL, AMBREEN AFZAL

ABSTRACT

Objectives: *To examine the applicability of the Tanaka & Johnston method of prediction and to find the significant difference in Pakistani population.*

Design *Comparative cross sectional study.*

Place & Duration

The study was conducted at Karachi Medical & Dental College, Karachi, from September 2001 to September 2003.

Patients And Methods

The 300 study dental plaster casts of Pakistani subjects under the age of 21 years, who presented with complete eruption of permanent mandibular incisors, canines and premolars, as well as maxillary canines and premolars were measured. The measuring device was a modified Boley's gauge. The sampling technique was non-probability with a comparative study design. Statistical analysis was made by using SPSS version-10. Descriptive statistics was used for data presentation. Students t- test and test of linear correlation was used for testing the null hypothesis. Level significance was taken at p<0.000.

Results

The difference between the predicted widths of the canine and premolars with the Tanaka and Johnston equations and the actual widths were highly significant in the statistical sense, indicated by t test. The actual widths of the maxillary and mandibular canine and premolars showed a significant difference in size (p < 0.000) from the widths predicted by the Tanaka and Johnston method. The data illustrates the limitation of Tanaka and Johnston method when applied to our population.

Conclusion

The Tanaka and Johnston prediction method does not accurately predict the mesiodistal diameters of unerupted canines and premolars in Pakistani population.

KEY WORDS: Mixed dentition, Analysis, Method

INTRODUCTION

A large number of cases of malocclusion starting during the mixed dentition stage may be reduced in severity or even eliminated entirely by timely management. A survey of orthodontic literature for the last few years indicates increased interest in beginning orthodontic treatment during the period of mixed dentition[1]. The trend towards earlier treatment reflects better comprehension of malocclusions and their diagnosis[2].

Two recent reports are of interest to define the scope of the problem. The journal of Clinical Orthodontics survey of

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diagnosis and therapeutics noted that approximately 25% of all patients are treated in a two-phase manner3. The AAO bulletin indicated that approximately 1.3 million persons in 1992 elected orthodontic treatment. At 25% penetration, at least 30,000+patients are in a two-phase treatment program. There are only 900,000+ growing patients since adults comprise 20% to 25% of the patient population[3]. It means that at least 90% of all growing patients can be treated successfully in only one phase by starting treatment in the late mixed dentition stage of treatment-identified by the exfoliation of all deciduous teeth except the deciduous second molars or the "E"s.[4]

An important aspect of diagnosis in the mixed dentition is the determination of the tooth size-arch length relationship. Such a determination is often made prior to eruption of the permanent canines and the first and second premolar[5]. Maintaining space allows many patients to obtain good occlusion and proper growth and facial development. Determining tooth size in the mixed dentition requires accurately predicting the mesiodistal widths of the unerupted permanent premolars and canines. The mixed dentition of the arch analysis is an important criterion in determining whether the treatment plan is going to involve serial extraction, guidance of eruption, space maintenance, space regaining, or just periodic observation of the patient.

Three methods of prediction have been used: direct measurements of interrupted tooth sizes on radiographs, as recommended by Stale et al[6] and de Paula et al[7]; calculations from prediction equations and tables, as reported by Moyers[8], Tanaka and Johnston[9], and Fegusson et al[10]; and combination of radiographic measurements and prediction tables, as recommended by Hixon and Oldfather[11], Staley et al[6], and Bishara et al[11].

The Hixon and Oldfather[11] approach is considered the most accurate[12,13], but it is complex, and many find it difficult to use. The Tanaka and Johnston prediction equations and tables are widely used[14], but they were developed for white North Americans children, and it is reasonable to question their use in other populations because tooth size vary significantly between and within different racial groups1[1,14-15]. Few odontotometric data are available in the literature for African children[16]. Turner and Richardson[17]reported significant differences in mesiodistal tooth diameters in Kenyan and Irish populations. Otuyemi and Noar[16] indicated that mean mesiodistal tooth sizes for all the teeth were significantly larger in Nigerians than in their British counterparts. In the study we report our experience of this condition.

PATIENTS AND METHODS

The Samples

The dental models of the dentition of 300 Pakistani people, who presented with complete eruption of permanent mandibular incisors, canines and premolars, as well as maxillary canines and premolars, were obtained from the Orthodontic Department of Karachi Medical and
Dental College. The criteria for selection were based on complete fulfillment of the following:

(1) The patient had to be of Pakistani background for at least one Prior generation, that is, both parent had to be of Pakistani.

(2) The dental casts had to be of quality, and free of distortions.

(3) The teeth measured had to be free of restorations, fractures, or proximal caries as determined by bitewing radiographs and the dental casts.

(4)There had to be no evidence of hypoplasia or anomalous form to the teeth being measured.

(5) A maximum of 21years of age was considered to preclude any discrepancies based on significant proximal wear.

The Mesuring Device

The mesiodistal widths of teeth were obtained by measuring the greatest distance between contact points on the proximal surfaces. A modified Boley gauge with a vernier scale to read to the nearest 0.1 mm was held parallel to the occlusal surface if the tooth appeared to be in normal alignment. Otherwise, The mesiodistal crown diameter was obtained by measuring between the points where contact with the adjacent tooth would normally occur.

Teeth Measured

The teeth measured were the mandibular permanent central and lateral incisors, the maxillary and mandibular permanent canines, and the maxillary and mandibular first and second premolars. Values obtained for the right and left posterior segments were averaged so that there would be one value for the maxillary canine and premolars and one value for the mandibular canine and premolar for each value of the mandibular incisors.

Measurement Reliability

The investigator took double measurements of the mandibular incisors of 20 of the casts in the sample. The second measurements were taken after the taking of all the first measurements, so that the first measurement did not prejudice the second.

Statistical Analysis

The Tanaka and Johnston prediction method currently being used on the white population were tested on the Pakistani orthodontic patient samples. In this method, the sums of the mesiodistal widths of the four mandibular incisors were correlated with the sum of the mesiodistal diameters of the mandibular and maxillary canines and premolars for both the right and left sides in male and female subjects. The Tanaka and Johnston prediction table is given in table I.

TABLE-I TANAKA AND JOHNSTON PREDICTION TABLE

One half of the mesiodistal Width of the four lower Incisors	+10.5mm	Estimated width of mandibular canine and premolars in one quadrant
	+11.0 mm	Estimated width of maxillary canine and premolars in one quadrant

TABLE-II COMPARISON OF ACTUAL AND PREDICTED WIDTH OF MAXILLARY CANINE AND PREMOLARS

S.No	Variable	Mean	Std.Deviation	t-statistic	df	p-value
1	Actual width of maxillary canine and premolars	20.9438	1.2276	-20.230	299	<. 000
2	Predicted width of maxillary canine and premolars	22.3858	.9019			

TABLE-III COMPARISON OF ACTUAL AND PREDICTED WIDTH OF MANDIBULAR CANINE AND PREMOLARS

S.No	Variable	Mean	Std.Deviation	t-statistic	df	p-value
1	Actual width of mandibular canine and premolars	20.5523	1.3872	-19.179	299	<. 000
2	Predicted width of mandibular canine and premolars	21.9314	.8837			

Tanaka and Johnston develop a way to use the width of the lower incisors to predict the size of the unerupted canines and premolars. The method has a good accuracy. It requires neither radiographs nor reference tables (once the method is memorized), which makes it very convenient.

The difference between the predicted widths of the canine and premolars and the observed widths of the canine and premolars were tested for significance with the t test with an alpha level equal to 0.05 by using the data obtained.

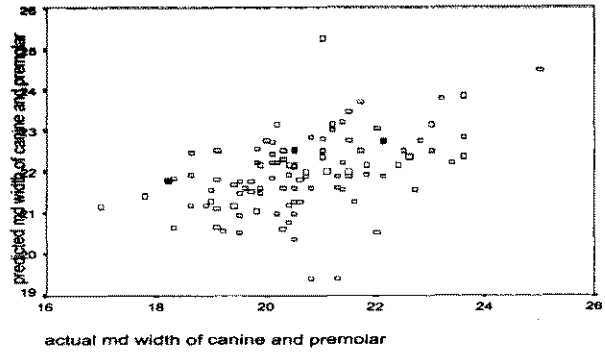

Fig1.Predicted measurements of mandibular buccal segment using Tanaka and Johnston's table versus actual measurements.

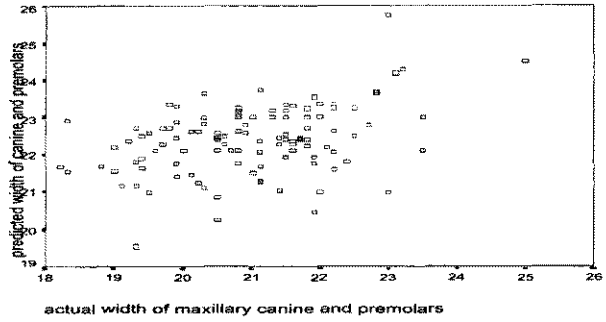

Fig 2. Predicted measurements of maxillary buccal segment using Tanaka and Johnston's table versus actual measurements.

The range, the mean and the standard deviation of the tooth groups were computed and table-1 was used clinically for prediction of tooth size in Pakistani population. The standard error of the predicted maxillary and mandibular incisors was also computed.

RESULTS

The difference between the predicted widths of the canine and premolars with the Tanaka and Johnston table and the actual widths were highly significant in the statistical sense, indicated by t test. The actual widths of the maxillary and mandibular canine and premolars showed a significant difference in size ($p < 0.000$) from the widths predicted by the Tanaka and Johnston table.

Fig 1 is a graph of the mandibular canine and premolars plotted against the predicted widths of the mandibular canine and premolars by using the Tanaka and Johnston's table. The figure reveals a significant difference in the predicted widths and that of the actual measurements. When the mesiodistal width of the canine and premolars is small, the Tanaka and Johnston table overestimates the actual size of the canine and premolars. However, when the mesiodistal width of the canine and premolar is large, the Tanaka and Johnston underestimates the actual sizes

of the canine and premolars similar findings are observed with the maxillary arch. In figure 2 the actual measurements of widths of the maxillary canine and premolar are plotted against the predicted widths of the maxillary canine and premolars by using the Tanaka and Johnston's table. The figure reveals a significant difference in the predicted widths and that of the actual measurements. When the mesiodistal width of the canine and premolars is small, the Tanaka and Johnston method overestimates the actual size of the canine and premolars. Where as, when the mesiodistal width of the canine and premolar is large, the Tanaka and Johnston underestimate the actual size of the canine and premolars: Maxillary r = 376 and Mandibular r = 475.

The mean, difference, standard deviations for two groups of the teeth measured are presented in table II for maxillary teeth and in table III for mandibular teeth.

DISCUSSION

The most important factor in the reliability of the data is characteristic of the sample. The sample could be questionable because of its size (n= 300), and the ethnic distribution among this population. However, it is an hospital based study ever done in Pakistan, and for the sexes combined, the sample size could be acceptable. Also, odontometric data collected from an adult sample can be extrapolated for children if dental attrition is minimal. The combined mesiodistal crown diameter of the canine-premolar segments and the mandibular incisors seemed relatively smaller than those of black south Africans, whose teeth are the largest of all groups, but comparable to those African American, Thai, and Hong Kong Chinese groups. Definite racial and ethnic differences in tooth size have been emphasized in several studies[11]. Descriptive statistics also showed that the mesiodistal diameters of the mandibular incisors and the maxillary and mandibular canine and premolar segments were greater in men than in women (p <000). Significant sexual dimorphism has also been noted in other studies.[5,12]

The current finding was that the t-test between the predicted widths derived from the Tanaka and Johnston method and the actual measured widths from the study casts of the Pakistani patients showed significant differences in both the maxillary and mandibular arches (p < 0.000). the linear correlation are Maxillary r = 376 and Mandibular r = 475

The different results obtained could be due to the differences in the ethnic origins of the samples, as Al-khadra[1] also found different results when applying the Tanaka and Johnston equations, method to the Saudi Arabia population.

Sharon Lee-Chan[2] et al in a mixed dentition analysis for Asian – Americans generated formulas- regression equations- that can be used clinically in tooth size predictions in much the same way as the Tanaka and Johnston equations. Specifically, significantly different regression equations were derived and simplified for the size prediction of maxillary and mandibular canines and premolars in an Asian-American population:

Maxillary: Y= 8.2 + 0.6 (X)
Mandibular: Y = 7.5 + 0.6 (X)
X =Mesiodistal width of the four mandibular incisors in millimeters
Y =Mesiodistal width of the canine and premolars in one quadrant in millimeters

Falu Diagne etal[3] in a mixed dentition analysis in a Senegalese population: Elaboration of prediction tables found that, in the maxilla, the Tanaka and Johnston method overestimated the sizes of the canine and premolars. Schirmer and Wiltshire[4] reported similar results in a population of black South Africans.

The research to date, as well as this study, supports the view that racial differences are likely to be important variables in tooth size prediction equations. The results of this study indicate that the currently popular prediction method, the Tanaka and Johnston equations, would not be as accurate when used in a Pakistani origin population. Further study with a larger sample size is indicated to confirm these findings and to draw a separate regression equation for this population.

CONCLUSION

1. The Tanaka and Johnston prediction method does not accurately predict the mesiodistal diameters of unerupted canines and premolars in Pakistani population.
2. The discrepancies observed could be the result racial diversity in the Pakistani group.
3. The accuracy of Tanaka and Johnston prediction method should be further tested in various ethnic groups in Pakistan.
4. Further study with a larger sample size is indicated to confirm these findings and to draw a separate regression equation for this population

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A CORRELATION OF CLINICAL APPEARANCE OF NASOPHARYNGEAL CARCINOMA WITH TUMOUR STAGING

NIAMATULLAH, ABDUR REHMAN

ABSTRACT

Objectives: *To correlate the clinical appearance of nasopharyngeal carcinoma with tumour staging.*

Patients And Methods

This study was conducted in the ENT department of Postgraduate Medical Institute, Lady Reading Hospital, Peshawar for the duration of seven years from March 1994 to March 2001. The number of cases in this study was ninety which include endophytic or submucosal to advanced stage tumour. Tumour staging was undertaken according to computerized tomography scan finding.

Results

The female to male ratio was 2.5:1. The age of patients was ten years to eighty five years with average of forty five years. Seventy patients (77.8%) had obvious malignant lesion.

Conclusion

Almost 25% of the patients with nasopharyngeal carcinoma had tumour which appeared inconspicuous in the post nasal space and these tended to be in patients with early tumour. Such cases have excellent prognosis if diagnosed and treated early.

KEY WORDS: Nasopharyngeal carcinoma, Clinical appearance, Prognosis

INTRODUCTION

Nasopharyngeal carcinoma is not an uncommon malignancy. The behaviour of nasopharyngeal carcinoma (NPC) is such that endophytic and submucous growth patterns are common. In a study by Sham et al[1], 13.8% of patients with NPC exhibited submucosal spread and another 51.4% exhibited occult microscopic extension which was not apparent by inspection of the post-nasal (PNS). Given such a tendency for endophytic and submucosal spread, it would be useful to know clinically if NPC remained inconspicuous in the PNS, even in late stages of the disease. It is stressed that video endoscopic examination of the nasopharynx is a valuable procedure. The aim of this study was, therefore, to correlate clinical appearance of NPC in the nasopharynx with tumour stage.

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PATIENTS AND METHODS

This study was conducted in the ENT department of Postgraduate Medical Institute, Lady Reading Hospital, Peshawar for the duration of seven years from March 1994 to March 2001. The case records and pre-radiotherapy computerized tomography (CT) scans of consecutive patients were reviewed. The tumours in the PNS were classified according to whether they appeared to be obviously malignant or not, when inspected clinically by the otolaryngologist using the posterior rhinoscopy. Lesions were classified as obviously malignant if they appeared to be grossly irregular or ulcerative. These lesions were deemed unlikely to be missed or passed off as benign by a physician inspecting the PNS. In contrast, lesions classified as not obviously malignant were those

which the otolaryngologists had difficulty in recognizing as cancerous by mere inspection. These were deemed liable to be missed or passed off as benign lesions in the post-nasal space, especially by inexperienced doctors. These included endophytic tumors, symmetrical, smooth or subtle mucosal lesions. Tumour (T) staging of the tumour[2] (Table 1), was undertaken according to the CT scan finding. The chi-squared test was used to find out whether a relationship existed between tumour appearance and T staging. Bone scan was done for secondries. Unfortunately viral studies were not available in our unit and it was too costly to send the patients to other centers.

RESULTS

A total of 90 patients were studied. Seventy patients (77.8%) had obvious malignant-looking lesions and 20 patients (22.2%) had lesions which were not obviously malignant. Tumour appearance was found to correlate with tumour staging (p=0.023) (Table 2); that is, advanced tumours usually appeared overtly malignant whereas early tumours usually did not look particularly malignant.

TABLE-I TUMOUR STAGING FOR NASOPHARYNGEAL CARCINOMA

T Stage	Clinical status
T1A	1 subsite in nasopharynx
T1B	> 1 subsite in nasopharynx
T2	Posterior nasal fossa / paranasopharynx (to C1)
T3	Paranasopharynx (from C2)/oropharynx/anterior nasal/infra temporal fossa (medial)/ethmoid sinus/bones below skull base
T4	Orbit/infra temporal fossa (lateral)/skull base/hypopharynx/intracranial / carotid sheath / crania nerve palsy / other wide involvement

TABLE-II CORRELATING TUMOUR STAGE WITH TUMOUR APPEARANCE (P=0.023, CHI-SQUARE TEST)

Clinical features	Tumour stage				Total number of cases
	1	2	3	4	
Malignant-looking	10	20	10	30	70 (77.8%)
Not malignant-looking	03	05	02	10	20 (22.2%)

DISCUSSION

Although endophytic growth and submucosal spread is common in NPC, this study revealed a tendency for advanced tumours to appear as clinically malignant-looking lesions in the PNS, whereas early tumours tended to appear innocent. These findings have important clinical implications. Nasopharyngeal carcinoma (NPC), has a distinctive epidemiological pattern. Its incidence among Chinese and other south east Asian is about 10 to 50 time higher than that of other countries.

Patients with advanced tumours may present to the neurologist with cranial nerve deficits. In the local context, such patients are often sent to the otolaryngologist for a PNS evaluation to exclude NPC. In the past, it was unclear how the tumour was likely to look in the PNS, given the tendency for endophytic growth. This study revealed that the PNS was more likely to show an obvious malignant-looking tumour. This information would contribute to the decision-making process as to whether to proceed to further investigation specifically to exclude NPC in such patients.

The results of this study also highlights that mass screening programmes, involving inspection of the PNS to detect an early NPC, are likely to pose difficulties. The appearances of a normal PNS have many variations. The frequent presence of normal lympho-epithelium results in masses or irregularities and can make the differentiation between an early tumour and a normal variant, very difficult[3]. This is particularly so in screening programmes where patients may not have the alerting symptoms or signs of NPC to assist the clinician in decision making.

NPC carries an excellent prognosis if treated early. However, it has been observed that patients with NPC often present late for treatment[4], presumably because the PNS is often not examined due to its relative inaccessibility and difficulty in examination. It has been argued that the solution for early diagnosis is to train primary care physicians how to examine the PNS properly[5]. In the light of the results of the present study, this issue ought to be looked at more closely.

Assessment of the PNS to detect NPC can be difficult, particularly to the primary health physicians who generally does not have much experience in examining and managing NPC patients. Firstly, PNS examination using the mirror is notoriously difficult, especially in those with sensitive throats, and the view obtained is often limited. It takes considerable training and practice before the technique of PNS examination can be learned. An alternative approach is the use of the endoscope, but this may not be readily accessible to primary physicians. Secondly, as pointed out earlier, the wide ranges of normality of the PNS and the frequent subtle signs of early NPC in the PNS can make the detection of early tumours very difficult, even to an experienced otolaryngologist. It would be reasonable, therefore, to assume that the more experience one has in examining the PNS and managing NPC, the less the likelihood of

missing a NPC, particularly if it was an early tumour. The argument that primary care physicians who are better trained in the technique of PNS examination are more likely to diagnose NPC earlier, may not necessarily be true. On the contrary, it can be argued that the risk of missed or delayed diagnosis of early NPC may be increased, as these are the ones most likely to appear inconspicuous or innocuous in the PNS. It would be more prudent to focus on educating primary care physicians on the clinical presentations and behaviour of NPC and to encourage them to refer patients suspected of having NPC for early specialist advice[6].

CONCLUSION

Nearly 25%, half of the patients with NPC had tumours which appeared inconspicuous or innocuous in the PNS and these tended to be in patients with early tumours. Patients with advanced disease tended to have tumours which appeared obviously malignant in the PNS, although there is a tendency for NPC to have submucosal spread and endophytic growth.

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LAPAROSCOPY IN THE EVALUATION OF IMPALPABLE TESTES

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ABSTRACT

Objectives: *To examine the role of laparoscopy in the evaluation of the non – palpable testes.*

Design *A descriptive study.*

Setting

The study was conducted in the Department of Pediatric Surgery, Dow Medical College & Civil Hospital Karachi, some of the private hospitals from July 1997 to July 2003 & Pediatric Surgical unit B, National Institute of Child Health, Karachi, from January 2001 to July 2003.

Patients And Methods

All the patients with impalpable testes had ultrasound examination & were evaluated laparoscopically.

Results

Twenty patients with 25 impalpable testes were seen during the study period. Ultrasound examination was inconclusive in all cases. Laparoscopic examination was helpful in the diagnosis of presence or absence of impalpable testes in all cases.

Conclusion

Laparoscopy is a safe reliable and effective method for the evaluation of impalpable testes.

KEY WORDS: Impalpable testis, Laparoscopy, Ultrasound

INTRODUCTION

Undescended testis has an incidence of 0.8% to 2% and 11-20% of these are non-palpable.[1] Management of impalpable testes poses a diagnostic and therapeutic challenge to all pediatric surgeons. Different diagnostic techniques such as ultrasound, computerized tomography, MRI, selective testicular arteriography and venography have all been utilized to locate the testis with non specific reliability[2-7]. However, now a days, laparoscopy has been widely used as a diagnostic tool for locating an impalpable testis or proving its absence with reliability and accuracy[8,9].

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In this study we present our experience of laparoscopy in the evaluation of impalpable testes.

PATIENTS & METHODS

All the patients with impalpable testes seen in the department of Pediatric Surgery, Dow Medical College & Civil Hospital Karachi & some of the private hospitals during July 1997 to July 2003 and Pediatric Surgical unit B, National Institute of Child Health, Karachi from Jan 2001 to July 2003 were included in this study. Every patient was examined at least twice and in most of the cases by two different consultants. All the patients had ultrasound examination. One of our patients already had CT scan before being referred to us. All the patients were subjected to laparoscopy for evaluation of the non palpable testes.

PROCEDURE

All patients underwent laparoscopy under general anesthesia. Each patient was re examined after induction of anesthesia to determine if the testes were palpable. All patients were catheterized with 10 Fr feeding tube to decompress urinary bladder & feeding tube was removed at the end of surgery. With the patients in the Trendelenburg position , an umbilical skin crease incision was made including linea alba and a 10mm Hasson blunt trocar was inserted into the peritoneum under direct vision . A purse string suture applied around the port including both linea alba and peritoneum. The peritoneal cavity was insufflated with CO2 (pressure 10-12 mm Hg.). Intraperitoneal examination for a unilateral non palpable testis began with examination of normal contra lateral internal inguinal ring. Anatomical orientation was facilitated by noting intraperitoneal landmarks such as medial umbilical ligament (obliterated umbilical arteries), median umbilical ligament (urachal remnant), spermatic vessels, vas deferens, and external iliac vessels. Additional maneuvers such as putting pressure on the external inguinal ring, pulling the scrotum, assisted in the identification of the internal inguinal ring. The contra lateral inguinal ring was examined in search of testis or vas and vessels. The three likely findings at laparoscopy for non palpable testis are

1. Blind ending vessels above the internal ring.
2. Cord structures (vas & spermatic vessel leash) entering the internal ring indicating a testis or remnant in the groin.
3. An intra-abdominal testis.

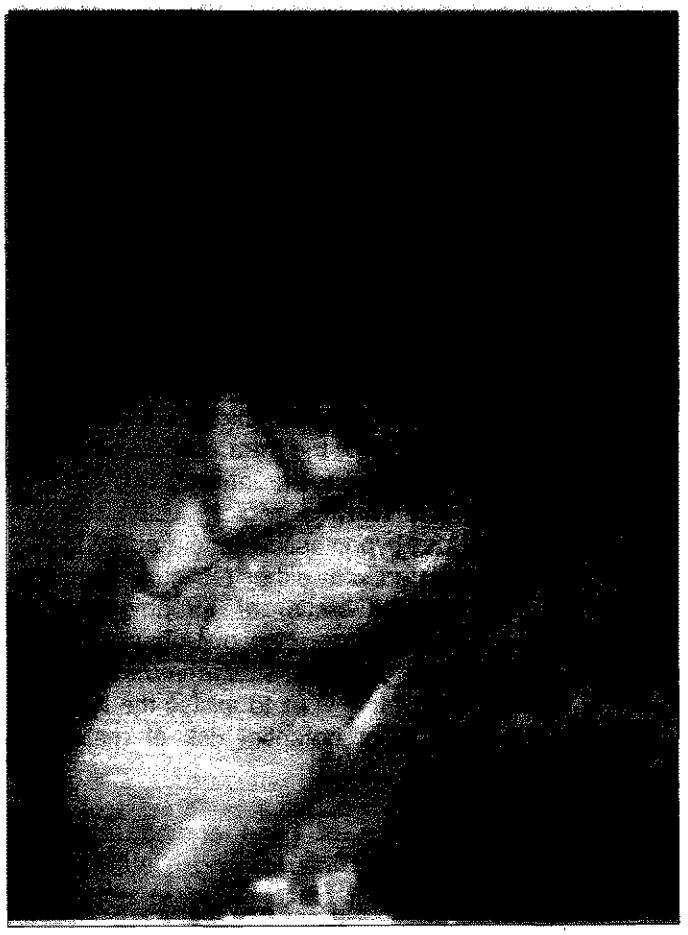
At the completion of the procedure the abdomen was again inspected to rule out any injury. CO2 was then allowed to flow out of abdomen & the linea alba and skin were closed with absorbable suture.

RESULTS

Twenty patients with 25 impalpable testes underwent laparoscopy. Age ranged from 2 years to 10 years. Maximum number of patients were between ages 4-6 years. Fifteen patients had unilateral and 5 bilateral impalpable testes. Ultrasound examination failed to locate testes in all the patients and CT scan in one patient was inconclusive to locate impalpable testis. The laparoscopic findings were as follow:

Nineteen testes were intra-abdominal (Fig-I), 3 were found near the deep ring. In 2 patients vas and hypoplastic vessels were seen entering the internal ring, while blind ending vessels were seen in one case (vanishing testis). We could not recognize PMDS anomaly in one patient laparoscopically. In another patient we could not recognize persistent Mullerian duct syndrome (PMDS) with transverse testicular ectopia (TTE) laparoscopically. In this patient there was a high index of suspicion (strong family history) for PMDS and TTE.

FIG-I LAPAROSCOPIC VIEW OF INTRA-ABDOMINAL TESTIS.



Inguinal exploration revealed atrophic testes in two patients in whom vas and vessels were seen entering the deep ring. No further surgical exploration was done in patient with blind ending vessels (vanishing testis). Postoperative complications were seen in 2 patients. One patient developed port site hematoma, which was drained and other had subcutaneous emphysema which was managed conservatively.

DISCUSSION

Management of impalpable testes remains a diagnostic as well as a therapeutic challenge. Several diagnostic modalities have been used to identify the impalpable testes. These include hormonal evaluation, ultrasonography, computed tomography, magnetic resonance imaging as well as more invasive procedures such as venography, arteriography, laparoscopy and even surgical exploration.[9,10]

In this series, we used two modalities for locating the testis: ultrasonography and laparoscopy. Ultrasound, which is non invasive and does not exposes the patient to

radiations, has been reported to have some success in picking up intra-canalicular normal testes but has very poor results in identifying intra abdominal testes[2-4]. In our cases ultrasound failed to recognize any intra-abdominal testis and even intra-canalicular atrophic testes were missed.

Since Cortesi described the use of laparoscopy for the evaluation of nonpalpable testes in 1976[11], several authors have reported on accuracy of laparoscopy in localizing the impalpable testis or in diagnosing the vanishing testis syndrome without an abdominal exploration. The accuracy of laparoscopy in locating a testis or proving its absence ranges from 88-100% in various series[8,9,12,13]. Despite its embryological origin at the inferior renal pole, majority of the intra abdominal testes are found in the pelvis or near the internal ring[2]. In this study 22 testes were in this region. Laparoscopic observation of vas and hypoplastic vessels entering the internal ring is associated with either testicular absence (intra-canalicular vanished testis) or atrophic testis / epididymal remnant which was also our observation in two cases. The need for groin exploration in these cases has been questioned but it is wise to excise the atrophic testicular tissue in view of potential risk of malignant changes.[7,14]

Laparoscopic identification of blind ending testicular vessels prior to entering the internal ring is sufficient to diagnose a vanishing testis, which requires no further exploration. In our series, there was only one patient with an absent testis. This is lower than the reported incidence, where up to 59% unilateral and 5% of bilateral impalpable testes were due to vanishing testicular syndrome.[2,15,16] Thus we are able to diagnose presence or absence of testes correctly in 100% of cases.

Complications following laparoscopy and technical failure are invariably related to Veress needle closed puncture technique which should be avoided in children[13,16-20]. Although the open Hasson blunt trocar insertion technique has its advantages over the blind insertion of Veress needle but blunt bowel injury has been reported with Hasson technique[21]. In this series we did not encounter any major complication from this technique.

We conclude that laparoscopy in the evaluation of the impalpable testis has proven to be safe and accurate. It permits the planning of further management (orchidopexy or orchidectomy) or indeed avoids extensive exploration for an absent testis when blind ending vessels are seen.

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AN EXPERIENCE OF INTRACRANIAL MENINGIOMA

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ABSTRACT

Meningiomas are benign tumours of brain. Surgical removal including resection of involved bone and dura is curative in 90 percent of cases. However complete removal may entail unwarranted risk if the tumour involve or is adjacent to venous sinuses or neural structure. Thirty three cases of meningiomas were treated in the Department of Neurosurgery, Bolan Medical College,Quetta from 1992 to 2002. There were 5 perioperative deaths. Nineteen patients underwent complete tumour removal while in 14 patients subtotal or decompressive surgery was performed. Pre and postoperative neurological status of patients was rated accorted to Karnofsky rating scale. Six patients had karnofsky rating scale below 70 preoperatively. The average survival time with good quality of life was 8.5 years. The preoperative clinical condition, size of tumour, age and location and postoperative complications affected the overall outcome and quality of life. Four patients develop recurrence of tumour.

KEY WORDS: Brain tumour, Meningioma.

INTRODUCTION

Meningiomas are benign tumours of brain. They arise from the arachnoid cap cells and constitutes 15-20 percent of all intracranial tumours[1]. The tumour location and proximity to vital structures are directly associated with symptoms and prognosis[2]. The rate of tumour growth and the pattern of growth also affect the overall outcome[3]. Meningiomas of the cranial base can grow to compress the brainstem and occasionally narrow the proximal intracranial vessels[4]. These tumours rarely metastasize, Numerous reports on observed and expected survival associated with this tumours have been published, while quality of life has received little attention[5]. This study reports on the morbidity, mortality and quality of life after surgery in patients having intracranial meningiomas.

PATIENTS AND METHODS

This study comprised of 33 patients diagnosed and treated in the Department of Neurosurgery Bolan Medical College, Quetta from 1992 to 2002. There were 22 male patients. Age ranged was 8-65 years. Location of the origin of meningiomas is shown in table I. Four patients were diagnosed having meningioma after radioisotope scanning and operated before the CT era (before 1995). One of them had percutaneous carotid angiogram in the department.

The quality of survival was assessed both pre and postoperatively and graded according to the Karnofsky6 rating scale. Six out of 33 patients failed to achieve a karnofsky rating scale of 70 preoperatively. Altogether 37 craniotomies were performed in 33 patients. Two patients with large petroclival and posterior convexity tumours were operated in two stages. Two patients underwent second craniotomy after tumor recurrence. One patient had parasagittal while the second had olfactory groove meningioma. Both were operated within one year of recurrence though with apparently gross tumour removal during the first craniotomy.

Gross total removal was achieved in 57 percent of cases (19 cases). This included all convexity and olfactory groove, 2 tentorial, 3 sphenoid ridge, 3 parasaggital and one suprasellar meningioma. In the remaining patients(14,43%) subtotal or surgical decompression of the tumours was carried out. Post operative complications are given in table II.

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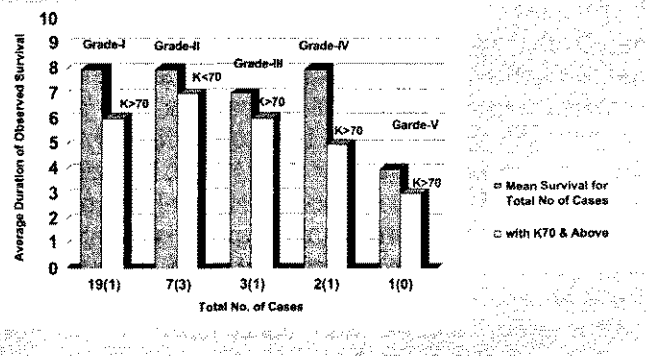
TABLE I SITE OF TUMOUR WITH RELATION TO SEX

Parasagittal/falx	3	2	5	15
Convexity	5	3	8	24
Sphenoid ridge	6	3	9	28
Olfactory groove	2	1	3	9
Tuberculum sellae	0	1	1	3
Tentorial	3	0	3	9
Petroclival	2	1	3	9
Posterior fossa	1	0	1	3

TABLE II POST OPERATIVE COMPLICATIONS

Complications	No. of Cases
Wound infection	3
Neurological deficit	0
Transient hemiparesis	1
Persistent hemiparesis	0
Transient dysphasia	1
Post op status epilepticus	3
Facial nerve paresis	1
Post op CSF leak	2
Post op hemorrhage	1
Pneumonia	2
TOTAL	14

FIG. I THE EFFECT OF DEGREE OF INITIAL TUMOR REMOVAL ON SURVIVAL TIME



Radiotherapy was offered to two patients only due to incomplete tumour removal. The remaining 11 patients refused radiation therapy. Of these patients with posterior fossa tumour presented with recurrence of symptoms but later on refused rexploration.

RESULTS

In this series 28(84%) patients survived. There were 5, perioperative deaths. The average duration of observed survival with satisfactory quality of life was 8.5 years in the majority of cases (78 percent) with Karnofsky score of 70 or above. Six patients never achieved Karnofsky score of 70 preoperatively. Their scoring did not improve after surgery. Three of them were blind and remained blind after surgery. One had petrous meningioma with 5th, 7th and 8 cranial nerve palsy. We removed tumour partially with no improvement in cranial nerve functions. She survived but is living with support. Two patients had large sphenoid wing meningioma and were decompressed relieving headache but survived with hemiparesis and moribund as they were before surgery. One of these patients died after 4 years of surgery due to some other medical problem.

Patients with convexity, olfactory groove, sphenoid ridge and parasagittal achieved a longer duration of good quality life than those of posterior fossa and suprasellar meningiomas. Two patients with enplaque posterior fossa and petrous Meningiomas underwent incomplete tumour removal. Post operatively visual acuity improved in two of these patients.

Patients with complete tumour excision achieved longer observed survival time with better quality of life (57 percent versus 43 percent of cases). Tumour were divided into three groups according to their size. Giant Meningioma 7cm or more (8 cases), meningioma between 4-7cm (11 cases) with remaining 13 patients having 4.5 cm (14 cases). Interestingly there was no major difference in the survival rates between the tumours of varying size (Fig.I). One of the most important determining factor for postoperative survival was the preoperative clinical condition of the patient.

The diagnosis of tumour recurrence was made when the radiological findings confirmed clinical suspicion of symptomatic recurrence. Two patients presented with recurrent symptoms of their disease. One had parasagittal tomour while the second one was operated for olfactory groove meningioma, both were reoperated. Patient with parasagittal meningioma had post operative CSF leak after surgery and died of meningitis later on, while patient with olfactory groove meningioma survived with acceptable quality of life.

DISCUSSION

The prognosis for patients with intracranial meningiomas depends on many factors including preoperative clinical conditions of the patients, age, size of the tumour degree of removal, location, histology, and various therapeutic modalities including radiotherapy. Mccarty and Taylor[7] reviewed 682 craniotomies and found a one month postoperative mortality rate of 5.1 percent. This figure has significantly reduced in the recent literature due to availability of modern diagnostic and therapeutic facilities[3,6]. In our series, 3 patients died in the pre CT period while two died in the post CT period, with a total mortality of 15 percent. This was partly due to non availability of operating microscope in the earlier days and partly due to very large size of meningiomas (larger than 8 cm). In our series, the average duration of acceptable quality of life was 8.5 years. Out of 6 patients who had Karnofsky score below 70, 4 improved their Karnofsky

score above 70 and are still with acceptable quality for more than 8 years. The important predicting factors in the patients' outcome in our series have been, preoperative clinical condition, age, size and location of tumour.

Postoperative seizures also affected the outcome in our series. One patient died of status epilepticus while one who did not take epileptic drug postoperatively, detiorated and recovered later. Tumour removal should be as radical as possible if it does not warrant any additional neurological deficit or compromise the quality of life. In Simpson detailed analysis, 9 percent of the tumors reccured after removal of tumour totally with excision of dura. In our series 57 percent(19 cases) had complete removal with their dural partial tumour removal and only 2 presented with recurrence of tumour clinically and radiologically.

Meningiomas involving the cavernous sinus are difficult lesions to treat because of their potential morbidity. Using life table survival analysis the series from Massachusetts General hospital showed recurrence or prognosis rates for parasellar and sphenoid ridge meningiomas to be 19 and 34 percent respectively for 5 years[5]. Mirimanoff[8] et al found that the extent of resection and the location of tumour were the factors most associated with recurrence. They obtained a 28 percent complete resection in sphenoid ridge meningiomas and a 57 percent complete removal in parasellar meningiomas. In our series 3 out of 9 patients had complete removal of sphenoid ridge meningiomas. However none of the above patients have yet presented with recurrence of symptoms, though they are on continuous follow up. When tumour involves the sagittal sinus, with complete obliteration of sinus, complete resection may be possible. But more commonly, the tumour partially obstructs the sinus thereby preventing complete tumour resection. Surgical occlusion of middle and posterior 1/3rd of superior sagittal sinus results in brain edema and hemorrhagic venous infarcton. Subdural resection of these tumours is associated with high probability of recurrence. On the other hand Mahmood et al[9] found an 8 percent recurrence rate even after total resection of parasagittal meningioma. Chan and Thompson[10] reported a 23 percent recurrence rate after surgery for 80 of patients with parasagittal meningiomas, including a 13 percent recurrence rate when a Simpson grade 1 resection was performed. Before CT era, Back and Dewindt[11] presented their findings of a similar rate after a grade 1 resection for parasagittal meningiomas. This rose to 21 percent with grade 11 resection and was even higher for grade 111 and 1V resections. In our series out of 5 patients with parasagitttal meningiomas, 3 had total excision (grade 1) while 2 had grade 11 tumour removal. One with grade tumour removal presented with symptomatic recurrence after one year of surgery and was reoperated.

In the 30 year review presented by Giombini et al[12] resection of parasagittal meningiomas was associated with a mortality rate of 7.3 percent and a neurological morbidity of 24 percent in survivors at 5 years. 47 percent of survivors were not fit for employment. Recurrences were frequent after incomplete excision. Sachsenheimer and Bimmler[13] performed a quality life assessment for a series of patients who had undergone meningioma resection(43 had parasagittal tumour) and found a 80 percent incidence of postoperative depression.

Mirimanoff et al[8] addressed to the probability of second operation 5,10,15 years after a first meningioma subtotal resection as 25,44 and 84 percent respectively. Conda et al[14] reported a 70 percent rate of tumour progression within 10 years after subtotal resection when postoperative radiation was withheld. When radiotherapy was administered to subtotally resected meningiomas, Taylor et al[15] improved the 10 year local control rate from 18 to 82 percent. Nevertheless 18 percent of the patients developed tumour growth despite external beam fractionated irradiation.

To conclude, appropriate goals for meningiomas surgery include long term control and maintenance or improvement of neurological functions. This can be achieved by continue improvements in operative techniques, and intraoperative neurophysiological monitoring which have enabled safe and complete removal of the majority of intracranial meningiomas, However tumours located at the base of skull and those involving the cavernous sinus still pose difficulty in radical excision and total excision of the tumours located at these locations and is not without additional morbidity and mortality. Since meningiomas grow very slowly, we recommend partial/incomplete excision of tumours at these areas if not possible to excise completely to avoid neurovascular injuries and development of additional morbidity.

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ANAESTHETIC TECHNIQUE IN PAEDIATRIC PATIENTS WITH ANKYLOSED TEMPOROMANDIBULAR JOINT

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ABSTRACT

This study was carried out to evaluate the anaesthesia technique in 50 cases of severe trismus because of ankylosed temporo-mandibular joint. Patients managed successfully between years 1999-2002 are reported. A technique for securing the airway by blind nasal intubation, a combination of halothane, oxygen and nitrous oxide through a facemask and ventilation through a nasopharyngeal airway or nasotracheal tube was used. Increments of propofol mixed with lignocaine plain 2% were used to obtain adequate depth of anaesthesia.The technique was studied to find out the difficulties and failure rate in achieving the nasotracheal intubation. By applying gentleness in manipulation and patience, airway was secured in 1-3 attempts. Tube position was confirmed by chest auscultation and capnography. Only ten patients (20 %) could be intubated in first attempt, while thirty patients (60%) could be intubated in second attempt and remaining ten (20%) in third attempt. There was no failure, no patient required preoperative tracheostomy. Adequate mouth opening was achieved in 100% cases at the end of surgery. Although we achieved a 100% success in intubation on multiple attempts, the expertise is definitely required. However the need of a fiberoptic laryngoscope cannot be overlooked.

KEY WORDS: Anaesthesia technique, Ankylosed temporomandibular joint, Nasotracheal intubation.

INTRODUCTION

Temporomandibular joints are highly specialized bilateral joints comprising an articulation between the cranium and mandible. The articulating complexes of bone carry the teeth, the morphology and position of which exert considerable influence upon the movements of the joint[1]. The articular surfaces are covered with a vascular fibrous tissue rather than hyaline cartilage. Its ankylosis is an unusual problem. It starts insidiously after some trauma. In an overpopulated country with large families, the child with trismus gets noticed only when he or she couldn't bite off and masticate solid food. The management of the airway prior to intubation of the trachea is difficult challenge in a child who is not likely to allow the airway to be secured while awake[2]. in this study we describe our experience of this condition in paediatric population.

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PATIENTS AND METHODS

Fifty patients were included in this study who had temporomandibular joint ankylosis (TMJA). They were anaesthetized between year 1999 and 2002 in our hospital. None of them were intubated in a routine manner with formal laryngoscopy.

Our study included patients whose trismus was too severe to allow laryngoscopy. They were seen two to three times preoperatively to establish a good rapport and explain the anaesthetic procedure to them. The general condition, associated problems such as malnutrition, upper respiratory tract infection, and additional problems of the airway such as sleep apnoea, snoring and preference for sleeping on any particular side were noted. The inter-incisor, distance (Table I) and the ability of the tip of the Magill's and nasal forceps to go through it was assessed. Mobility of head and neck and intensity of breath sounds through each nostril were noted. The airway was assessed with anteroposterior and lateral

TABLE I **INTER- INCISOR DISTANCE**

Total number of patients = 50	
Distance	*No*
3mm	12
4mm	13
5mm	08
6mm	07
7mm	05
8mm	05

radiographs of the head and neck. The respiratory tract infection was treated with antibiotics, bronchodilators and chest physiotherapy etc.

ECG monitoring, oximetery and capnography were ensured during the procedure. Anaesthesia was induced with oxygen and halothane by a face mask in sitting position as per the patient's preference, however very soon the patient was put on to the supine position. They were observed for severe respiratory obstruction, which was relieved, by an immediate and a little advancement of portex polar preformed tracheal tube (North nasal 6.0mm ID) being used as nasopharyngeal airway initially till a good PECO2-- curve reappeared besides no change in the PaO2 readings which was continuously being monitored .

Injection propofol, 25 mg increments mixed with lignocaine plain 2% was given intravenously alongwith oxygen / nitrous oxide and halothane inhalation. Gentle blind nasal intubation with the head in sniffing position was attempted while adequate depth of anesthesia had been achieved. If this was unsuccessful, two more attempts were made while observing reservoir bag movements, listening to the breath sounds, rotating the tube and advancing during inspiration with cephalad traction. The Sp0 2 and PEC02 curve through the nasal tube remained normal during the several attempts at intubation. when the trachea was intubated bilateral chest auscultation and end tidal carbon dioxide tracing confirmed the position of the tube.

In view of the extreme risk of difficult intubation, spontaneous ventilation was retained with nitrous oxide, oxygen and halothane 1.5-2%. Surgery was started with bupivacaine 2.5% infiltration at operative site. Once the mouth could be opened atracurium0.5mg/kg, midazolam 0.05mg/kg, nalbuphine 0.05mg/kg were added and the ventilation control achieved. At the end of surgery which resulted in excellent mouth opening patient was extubated when fully awake.

RESULTS

In this study of 50 patients, 25 were male. The Age ranged from 3 to 12 years. Sleep disturbance was present in 20 patients while 24 could not lie supine. Ten patients (20 %) were intubated in first attempt, thirty (60%) in second and remaining ten (20%) in third attempt. There was no failure, no patient required preoperative tracheostomy.. Adequate mouth opening was achieved in 100% cases at the end of surgery. All patients were extubated when awake, however only two patients required postoperative tracheostomy in immediate postoperative period by virtue of extreme difficulty in maintaining the airway and risk of aspiration and choking. Nasopharyngeal airway was left in place to ease out breathing till fully conscious. All patients were nursed in lateral head down position initially and then in semi sitting position. Post operative analgesia was provided by use of injectable NSAIDS. No narcotic was used to avoid respiratory depression and obstruction in immediate postoperative period.

DISCUSSION

The causes of TMJA may be congenital (forceps delivery), trauma, infection and idiopathic. Unusual causes include rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, fibrodysplasia ossificants progressiva, infectious diseases such as measles, pseudoankylosis after supratentorial craniotomy[1-4] etc. Younger patients have greater tendency towards reankylosis.

The difficult intubation in TMJA in children results from severe trismus, associated mandibular hypoplasia with unequal growth of two halves of mandible, reduced mandibular space with overcrowding of soft tissues, a maxillary overbite and/or hypoplasia. The ankylosis may be within or external to the joint. The fusion at the articular level may be fibrous or bony in nature. When the fusion occurs during the growth of the mandible, varying degrees of facial deformity results. Since the child grows with the facial asymmetry, the position of the larynx may be altered.

In TMJA the limitation of movements is such that even the hinge movement is affected, so direct laryngoscopy is impossible. Since the attachment of the lateral pterygoid muscle to the condyle and meniscus may also be altered, the patient presents with limited protrusion and diminished excursion, as well as trismus[5].

There are no predictors of difficult intubation such as Mallampatti sign[6], Patils's sign[7] Wilson's criteria[8], etc., in pediatrics. We had no established standards at different

ages for comparison and sensible interpretation of thyromental distance. Mallampatti sign was obviously difficult to elicit. Our main guide was the shadow of the airway. The problems to TMJA are superimposed on the usual difficulties of pediatric airway[9,10]. Blind nasal intubation, achieving intubations over a wire passed retrograde from trachea fiberoptic laryngoscopy or tracheostomy are described alternatives for securing the airway[5,11,12] Fiberoptic laryngoscopy and intubation, the ideal alternative, is not without difficulties, is quite expensive and a variety of sizes are needed in pediatrics. Fiberoptic scopes from 2.2mm outer diameter onwards would be necessary for passing through the 3-6 mm inner diameter tubes, used in our patients. Larger sizes with a suction channel would be preferred wherever possible. With our financial restraints, procuring scopes of various sizes is impossible. That leaves us only with alternative of blind nasal intubation, which, even in expert hands, has a high possibility of failure, trauma and bleeding because of the distorted soft tissue anatomy. The tube can be obstructed by any of nine points around the larynx, such as the two halves of vallecula between the epiglottis and cords or between the true and false cords in the vestibule, two para laryngeal and pharyngeal spaces or pass into the esophagus. The tip of the tube was in the valleculas on repeated occasions. To enter the larynx, the tube has to traverse an initially anterior and then an inferoanterior angle. To guide the tube through these changing angles by remotely controlling the other end of the tube is difficult. Blind nasal intubation is not an art; it is everytime a new experience, needs patience, gentleness of handling and manipulation of airways. Use of inhalational anesthetic with propofol alongwith lignocaine 2% in incremental doses up to 50 mg helps to suppress the reflex response and reflex laryngospasm and to achieve adequate depth of anesthesia. Arrangements for securing surgical airway should be at hand.

The semiblind technique has been described, is modification of blind nasal intubation. At no time is any attempt made to see the larynx. A tongue depressor and fibreoptic light source, which are easily available in all operating theatres, allow some vision to determine the correct direction for the tube. This reduces the time taken, chances of trauma and failure. Magill's forceps correct the wrong angle of the tube by placing its tip away from obstructions, as near to the glottis opening as possible. The fiberoptic light source is bright enough to illuminate the back of the throat. Use of topical anaesthesia and superior laryngeal nerve block allow the invasive manipulations for blind intubation and the later semiblind attempts at lighter planes of anesthesia. The Physiological reflex responses to airway instrumentation are obtunded; nasopharyngeal insufflation of an oxygen rich mixture of inhalational anesthetics improves safety even in patients with extreme difficult airway.
Sevoflurane is an attractive choice for deep inhalational induction while halothane remains a cheap alternative where sevoflurane is not available. Isoflurane is likely to be more transient with the risk of the patient waking up. The infiltration of bupivacaine for surgery ensures a very light plane of anaesthesia and postoperative comfort without recourse to sedative analgesics. This, together with spontaneous ventilation gives us theoretical safety in case of any accidental extubation intraoperatively. These small details assume importance in situations where small problems can lead to a catastrophe in difficult patients.

In conclusion, patients with TMJA pose a difficult airway that requires careful planning. The use of combined general, local and topical anaesthesia offers considerable advantage in these children with severe trismus. Surgical airway expert team should be standing by alert. Although we could achieve a 100% success in intubation on multiple attempts where the expertise is the main factor of success. However the need of a fiberoptic laryngoscope cannot be overlooked which remains the only acceptable option in difficult and failing desperate situations where expertise is again definitely required to be successful.

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PAEDIATRIC UROLITHIASIS AS A CAUSE OF CHRONIC RENAL FAILURE

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ABSTRACT

Objectives: *To study the clinical presentation of chronic renal failure (CRF) due to urolithiasis.*

Type of Study

Descriptive study

Place & Duration Study

The study was conducted at National Institute of Child Health, Karachi from January 2002 to June 2002.

Patients And Methods

Inclusion criteria: (1) Presence of features of CRF, (2) Creatinine clearance less than 25%. This was measured by using Schwartz formula.

Creatinine clearance = $\frac{\text{Height in cm} \times 0.55}{\text{Serum creatinine}}$

All patients under went detailed history and clinical examination. Radioimaging was performed in all cases.

Results

Total number of patients was 50. Males were 44(88%). Most common cause of CRF was bilateral renal stone. Common presenting symptoms were anemia (90%) and growth retardation (80%). Significant number of patients were hypertensive. Surgery was done to remove stone in 25 cases. Most common type of stone removed was calcium oxalate (48%).

Conclusion

Early detection and prompt treatment of renal stone can prevent progress to CRF and its sequale ERSD,

KEY WORDS: Urolithiasis, Chronic renal failure, Child

INTRODUCTION

Paediatric urolithiasis is endemic in our part of the world. It is a common urological problem in children. It consistutes about 13% of all admissions to Renal unit. Urolithiasis is a preventable cause of chronic renal failure (CRF). Stone disease can be prevented by variety of treatment regimens. Paediatric urolithiasis show male predominance and 90% stones are found in the kidneys or ureters.[1] Chronic renal failure is defined as progressive irreversible loss of renal function and may range in severity from mild renal insufficiency to end stage renal disease (ESRD).[2] In this study we describe our experience of this apparently benign condition in children.

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PATIENTS AND METHODS

A total number of 50 cases with CRF due to urolithiasis were included in this study and followed up for six months Age ranged from 1-12 years. Male to female ratio was 8:2. 50% had positive family history of stone disease. (Table.I) History of patients regarding all relevant information and clinical examination were recorded on specially designed performa. Routine and specific investigations for diagnosis were done. Radio imaging (x-ray, ultrasound KUB and IVP) of kidney, ureter and urinary bladder were the main stay of diagnosis and assessment.

TABLE I AGE AND SEX DISTRIBUTION (N = 50)

Male	Female	Age	Total
07	01	< 3 years	08
17	03	3 - 5 years	20
09	02	6 - 10 years	11
11	---	> 10 years	11

RESULTS

Out of 50 patients of CRF the most common cause was bilateral renal stones (50%) followed by ureteric stone (30%) and both renal and ureteric stones 20%. Apart from obstruction and urinary tract infection poor socioeconomic status, diet rich in rice and cereals, low in protein, neglect and delay in diagnosis and treatment lead to the development of CRF in these patients. 50% of patient had positive family history of stone disease and 60% of these patients had bilateral stones and 80% had associated urinary tract infection (UTI). E.coli was the commonest organism involved. Twenty-five children underwent surgery for removal of stones.

Many patients had more than one clinical presentations. The most common presentation was anaemia (90%), followed by growth retardation (80%) Symptoms related to urinary tract infection hematuria (60%), hypertension and renal osteodystrophy (40%) were also present. However they usually presented with sign and symptoms of uremia. (Table.II)

TABLE II CLINICAL PRESENTATION (N=50)

Sign and Symptom	Number	Percentage
Anaemia	45	90%
Growth Retardation	40	80%
Urinary complaints	40	80%
Family H/O Stone disease	25	50%
H/O Passing stone	10	20%
Renal osteodystrophy	20	40%
Hypertension	20	40%

The initial management of these patients required peritoneal dialysis along with medical management of CRF. Patient who presented with hydronephrosis and pyonephrosis, percutaneous nephrostomy was the main stay of treatment. Open surgery was done to provide definitive management. Stone analysis showed calcium oxalate stone (48%), urates 20%, mixed 12% and uric acid 8%.

DISCUSSION

In most developing countries urolithiasis is a major cause of CRF. Pakistan lies in what is referred to as "stone belt" stretching from Egypt through Iran, Pakistan India and Thailand to Indonesia.[2-3] In Pakistan 12% admissions to nephrological unit are for renal failure from calculous disease.[3] Our patients came from all parts of the Sindh province. Majority of the patients were referred from remote basic health units. Most of the patients were between 3-10 years. Most of the workers from stone belt countries and our country had reported similar findings.[4-5]

In our experience there is a preponderance of male patients; this observation is also seen in western world and also in developing countries.[7]

The commonest clinical presentation was anaemia (90% of cases) followed by growth retardation (80%). 50% of patients have positive family history of stone disease and this has been reported by other workers[8] 80% of patients had associated urinary tract infection E.coli was the commonest organism involved. Correlation of this organism with calculous disease is uncertain. Hematuria and abdominal pain were 3rd most common symptoms. Hypertension and renal osteodystrophy was seen in 40% of cases. 25 children under went surgery for removal of stones.

Like the rest of the world, Pakistan has its share of urinary problems and more so in the form of calculous disease leading to CRF and ESRD. It causes more suffering from renal damage than any other renal problem. The consequences of calculous disease in children are serious and only early detection may prevent the loss of nephrons. The awareness of urolithiasis a complex problem that effect paediatric patients, is important for paediatrician, paediatric urologist and paediatric nephrologist. Every effort should be made to stabilize the renal function by removing the obstruction and infection by early recognition of this preventable problem.

CONCLUSION

Urolithiasis is a preventable and treatable cause of CRF. Early and appropriate management before and after the development of CRF may prevent or delay the progress to ESRD. In our study 65% of patients had good recovery of renal function because of provision of treatment by paediatric nephrologist and paediatric surgeon under one roof.

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HORMONE REPLACEMENT THERAPY: ACCEPTANCE AND COMPLIANCE

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ABSTRACT

A quasi-experimental study carried out at Abbasi Shaheed hospital over a period of 14 months, from January2003. Fifty menopausal women presenting with post menopausal symptoms were given hormone replacement therapy .The benefits of therapy in short term use were studied and the satisfaction and compliance were observed. Mean age of women in study was 57.3 years. Hormone therapy when given in short term showed good response in improvement of symptoms. Hot flushes disappeared in 91% and 86% of depressed patient came with a feeling of well being. The main problem identified was in the compliance of patients due to return of regular bleed (45%) and fear of cancer (30%). The study suggested that to improve a woman's quality of life, more emphasis should be given to the counseling and use of non- bleeding HRT.

KEY WORDS: HRT, Post menopausal symptoms, Compliance

INTRODUCTION

Hormone replacement therapy (HRT), although a much controversial issue; is still regarded an important component of preventive health care for post-menopausal women. HRT has come a long way since the days of Brown Sequard who in Paris in 1893, was reported to have prescribed two sheep's ovaries in a sandwich of bread for the treatment of hot flushes, followed by injection of ovarian extracts in 1897[1]. In recent years, HRT has increasingly been promoted for its long term benefits as preventive care for osteoporosis. Nevertheless, its primary use continued to be short term for relief of early menopausal symptoms such as hot flushes, night sweats. Vasomotor, psychological and genitourinary complains are real sufferings for these women and badly effect not only the quality of life but also day to day activity; not forgetting the impact of them on the rest of the family. Although the studies in breast carcinoma in women using estrogen and progesterone replacement therapy suggest an increase incidence of cancer in estrogen users[2] the work and research is still going on; and newer regimen are found. Scientist maintains that, if used differently it can still help to protect against neurological and cardiovascular diseases[3]. In Italy after the WHO report, the sale and prescription of tissue specific Tibolone has increased many folds. Tibolone is a tissue specific drug with weak estrogenic activity, has no effect on breast tissues and works without stimulating the endometrium where its effects are mainly progestronic[4]. Whether estrogen or Tibolone, continuance is perhaps the biggest obstacle in the optimal effectiveness. Motivating patients to continue HRT long term is challenging but even in short term the record of compliance is discouraging and studies suggest within two years after starting a hormone regimen 80% of women stop it[5]. The aim and object of our study was to observe the benefits of HRT in short term use and to access the satisfaction and compliance of patients with different types of HRT.

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PATIENTS AND METHODS

This quasi experimental study was carried in the Gynae. Unit III of Abbasi Shaheed Hospital, Karachi from January 2003 to February 2004. Sample included 50 post menopausal women with menopausal symptoms and with no contraindications for HRT. Sampling was done on purposive, non-probability sampling technique. The menopausal symptoms of vasomotor, psychological and urogenital entity were included. An informed consent was taken. Bleeding (combined estrogen progestin) and non bleeding (tibolone) HRT were given for one year. The choice was made according to the patients' wishes and presence and absence of uterus. 20 patients were given a bleeding type of HRT and 30 a non bleeding type. Follow-

up was done at bi- monthly interval and at each visit a questionnaire was filled and effectiveness of treatment evaluated in terms of improvement of symptoms. Compliance and satisfaction of patients were observed. The main outcome measures were "satisfied or not", compliance and "improvement in symptoms". The dependent variables were same as above. The independent variables included age of patient and type of HRT. Data was analysed statistically and percentages used to evaluate the result.

RESULTS

Fifty patients were given HRT and the mean age was 57.3 years (table 1). 17 (34%) were not satisfied and the main reason was return of monthly bleed that was present in 60% (table 2).

The effectiveness of HRT in short term use was very significant as shown in table 3. The most common complaints were hot flushes which markedly improved in 91% of cases. The vasomotor symptoms of night sweat showed 90% excellent result. In patients with depression, 86% reported to have a feeing of well being. The main problem was compliance of patients, 78% stopped taking medicine within six months. The major reason was the return of the monthly bleed followed by fear of breast cancer. The side effects were minimal and therapy was well tolerated. In almost all of those who stopped therapy the symptoms recurred.

DISCUSSION

TABLE I AGE DISTRIBUTION

Age at presentation (years)	No. of patients (N=50)
51 to 55	10
56 to 60	32
61 to 65	08

TABLE II PATIENTS SATISFACTION TO TREATMENT

Type of HRT	Satisfied N=33 (66%)	Not satisfied N=17 (34%)
Non Bleeding HRT	25 (83%)	05 (17%)
Bleeding HRT	08 (40%)	12 (60%)

TABLE III IMPROVEMENT IN SYMPTOMS AFTER USING HRT.

Response	Hot Flushes (N=35)	Night Sweats (N=20)	Anxiety (N=20)	Depression (N=30)	Irritability (N=38)	Vaginal Dryness (N=5)	Urinary Symptoms (N=8)
Excellent	32 (91%)	18 (90%)	20 (40%)	26 (86%)	30 (79%)	04 (80%)	5 (62.5%)
Better	02 (5.7%)	02 (10%)	13 (65%)	04 (14%)	06 (16%)	01 (20%)	02 (25%)
No response	01 (3.3)	00	00	00	06 (5%)	00	01 (12.5%)

Menopause is not life threatening but for most women interferes with the quality of life. Less than 25% of the women experience a symptom free menopausal transition and over 25 % suffer severe symptoms[6]. These symptoms although effects the women but the entire family is involved. The depression and easy to be angry and hot flushes which is usually expressed by patients as sudden episodes of fever, are distressing. The use of HRT is not very popular not only among patients but the physicians are also hesitant in prescribing and motivating. As a result a large number of these ladies are continuously suffering. Hot flushes and other menopausal symptom usually do not recur after 2 years. Our study supports the evidences available which strongly suggest that the benefits of HRT significantly out weighs its risks for menopausal women particularly in the short term[7]. It is a loss that so many patients discontinue the hormone therapy before giving it a chance to work properly. The idea of genuine replacement therapy with short and long term therapeutic benefits is understood by very few. In this study a high proportion of patients were satisfied but the main reason of poor compliance was return of bleeding. HRT not necessarily means estrogen replacement always as new therapies are constantly in progress. Drugs like Serm and Tibolone have been available, Tibolone is a non-bleeding HRT. It is tissue specific gonadomimetic and can be offered to such patients and similarly Serm is used for long term prevention from osteoporosis. Although with estrogen the incidence of breast cancer increased in HRT users as compared to non users, but depending on the duration of therapy which was after five years or more[8].

The results of this study are comparable to the international studies that show 58% of patients stopped HRT and 20% did not return after first visit[9]. The need is to educate our patients, give them the right information and to ensure that they continue the therapy. In this region, to let the patients improve their quality of life, a shared decision should be made jointly by patients and doctors and not simply be imposed on them. In view of our religious temperament of women in that age, a non-bleeding HRT should be preferred with explanation about the early break through. Hand outs and reading materials should be given to them. Women's personal values, expectation and believes should be listened and clarified only then we can have greater compliance.

In conclusion the gynecologist must be well aware about recent HRT trend to give accurate information to the women about her health status. With this knowledge she must also be equipped with materials to give a clear picture of the effects of HRT and the impacts in terms of development of illness and quality of life.

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EXTERNAL ABDOMINAL HERNIAS

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ABSTRACT

Objectives: *To document our experience of external abdominal hernias at Rahim Yar Khan*

Design *A descriptive study.*

Place & Duration

This study was conducted in Surgical Unit-II of Sheikh Zayed Hospital, Rahim Yar Khan from May, 2002 to August, 2002.

Patients And Methods

All patients admitted with the diagnosis of external abdominal hernia were registered for the study. History, Clinical presentation and relevant investigation were recorded.

Results

Commonest type of external abdominal hernia was the inguinal hernia (65%). Second commonest was paraumbilical hernia (16%). Third in series was incisional hernia (8%). Remaining varieties, in descending order were umbilical (5%), ventral (3%), epigastric (2%) and fatty hernia of linea alba (1%).

Conclusion

Most of the findings were similar to those found in other parts of the country except that in our study no adult male suffered from ventral, epigastric or umbilical hernia. Complications were very low and no case of femoral hernia was seen.

KEY WORDS: External abdominal hernia, Epidemiology

INTRODUCTION

The word hernia is a Latin term that means rupture of a portion of a structure[1]. Weakness of the abdominal wall, congenital or acquired in origin, results in the inability to contain the visceral contents of the abdominal cavity within their normal confines. Hernia is a common condition afflicting both the sexes, and all age groups. The external abdominal hernias are the most frequent form[2]. Epidemiological studies regarding incidence of external abdominal hernia have been conducted in various parts of the country[3-12]. We are presenting a similar study from Rahim Yar Khan, Punjab.

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PATIENTS AND METHODS

This study was conducted in Surgical Unit-II of Sheikh Zayed Hospital, Rahim Yar Khan from May, 2002 to August, 2002. Inclusion criterion was every case admitted in this unit with the diagnosis of external abdominal hernia. Apart from the clinical examination of the patients, their heights and body weights were also recorded to find out any relationship between the body weights and the causation of external abdominal hernia.

RESULTS

A total of 100 cases of external abdominal hernia were registered for the analysis. These were 70 males. We divided our patients with reference to age, broadly, into two groups, children (up to the age of 14 years) and adults. Age range in our series was from 1 month to 75

years. Adult cases were 70 and children, 30. Types of external abdominal hernia in descending order of frequency are given in table.I

TABLE-I EXTERNAL ABDOMINAL HERNIAS

Adult = 70	Children = 30		
Types of Hernia	Males	Females	Total
Inguinal	61	04	65
Paraumbilical	03	13	16
Incisional	03	05	08
Umbilical	02	03	05
Ventral	0	03	03
Epigastric	0	02	02
F.H. of L.A	01	0	01
Total	70	30	100

Inguinal hernia was the most common (65% of total). All the 40 adult cases were males. Youngest patient was a female child of two months who suffered from left inguinal hernia and the oldest, of 75 years. One suffered from bilateral direct inguinal hernia and the other right direct inguinal hernia. In 40 adult cases, 21 had indirect inguinal hernia, 13 on right side and 8 on left side while 18 patients had direct inguinal hernia, 7 on right side, 4 on left side and 7 were bilateral. Only one patient was having combined variety i.e. indirect as well as direct inguinal hernia and that also on right side. In all 25 children, (Female-4) inguinal hernia was of indirect type, 19 on right side and 6 on left side.

Paraumbilical hernia was the second common external abdominal hernia in our series (16%). In adults 13 cases were females and 02 males. The only child who suffered from paraumbilical hernia was a boy of 4 months and he was having supraumbilical hernia. In 15 adult cases 10 were supraumbilical, 3 were infraumbilical and 2 were having combined variety i.e. supraumbilical as well as infraumbilical. Age range in adults was from 25-50 years.

In our series third group was of incisional hernia (8%). All these cases were adults. No child suffered from incisional hernia. Out of these 8 cases, 3 were males and 5 females. In males, one had repair of stab wound on anterior abdominal wall, second had left pyelolithotomy and the third had developed incisional hernia at the site of colostomy closure. In females, two had undergone laparotomy through right paramedian incision, one underwent abdominal hysterectomy and another C-section through lower midline incision and fifth one had cholecystectomy through right subcostal incision.

There were 5 cases of umbilical hernia, 4 were children and one was an adult female. In 4 children, 2 were males and 2 were females. Age distribution was from 1 month to 01 year. There were 3 adult females of 22, 35 and 40 years with ventral hernia. There were 2 females patients of 30 and 60 years with epigastric hernia. There was only one case who was an adult male with fatty hernia of linea alba.

Out of 46 male adults, 28 were underweight and 12 were overweight. Out of 24 female adults 2 were overweight. Out of 24 male children, 14 were underweight, 06 were overweight and only 04 were of normal weight while out of 06 female children, 05 were underweight, no one was overweight and only 01 was of normal weight.

DISCUSSION

Highest prevalence of inguinal hernia amongst external abdominal hernia is a universal truth. Amongst children 5.71% girls had inguinal hernia in our study while this figure ranged from 4.19% to 9.7%. Preponderance of inguinal hernia on the right side is documented by several local series[6,10]. Incidence of bilateral inguinal hernia was 10.77% in our study while it was 21% from Nawabshah[13]. Obstructed hernia was met with in only 02 cases. These 02 cases were of inguinal hernia and that also only in males. No female with any type of external abdominal hernia presented with any complication.

Percentage of incisional hernia amongst women was 20.83% while this figure is 26% from Nawabshah[13]. Male to female ratio was 3:5 while this ratio has been reported as 1.7:1 from Nawabshah[9], 1:3 from Karachi[5] and 3:4 from Lahore[12].

In this series umbilical hernia in female constituted 10% while this percentage is 15.18% from Nawabshah[13]. In children, male to female ratio is equal in our study while this ratio is 2:1 from Nawabshah[7]. In our study no epigastric hernia was found in males but preponderance of males amongst epigastric hernia cases was reported from Nawabshah[7] in the ratio of 18 males to 14 females.

No femoral hernia was detected in our series while 08% incidence of femoral hernia in females has been reported from Nawabshah[13].

CONCLUSION

Most of the findings in our study are in harmony with those of other studies conducted in various parts of the country with the striking differences as follows:

- No male adult suffered from ventral, epigastric or umbilical hernia.
- Complication rate was very low and no female patient with any type of external abdominal hernia presented with any complication.
- No case of femoral hernia was seen.

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TRENDS OF DELIVERY IN PATIENTS WITH PREVIOUS ONE CAESAREAN SECTION

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ABSTRACT

Objective of the study was to monitor the mode of delivery in patients with previous one Caesarean section. This study was carried out at Services hospital on five hundred patients with previous one Caesarean section (CS) over a period of ten months. Out of 500 patients 211 had repeat elective Caesarean section, while 289 were selected for trial of labour. Out of these patients two thirds achieved vaginal delivery (VBAC). The overall Caesarean section rate was 57.6% and VBAC rate was 42.4%. It was thus concluded that repeat Caesarean section could be avoided in well selected patients with low morbidity

KEY WORDS: VBAC, Caesarean section

INTRODUCTION

Caesarean section rate all over the world is increasing. A major reason for this increase in the number is the fact that more and more women are presenting with previous Caesarean sections. Many of these women end up having a repeat Caesarean section, mostly due to fear of rupture of the uterus. A Caesarean birth implies greater maternal and fetal morbidity, longer hospital stay and greater expenditure.

In the absence of a recurring indication one previous lower segment Caesarean section no longer dictates an elective repeat C-section. The American College of Obstetricians & Gynaecologists perceives vaginal birth after Caesarean section as a major strategy in reducing the proportion of caesarean births and has formally endorsed a policy of trial of labour under most circumstances[1]. Current medical evidence indicates that 60-80% of women can achieve a vaginal delivery following a previous lower segment Caesarean section.[2,3,4,5,6] Despite a plethora of published articles indicating that a vaginal delivery following one previous lower segment Caesarean section is associated with a low risk of adverse sequelae, only 19.5% of women in United States, 13.3% of women in Scotland and 5.7% of women in Norway deliver vaginally after a Caesarean section. In Sweden, vaginal birth after Caesarean section is more common, with 53% of women delivering vaginally after previous one Caesarean section.

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VBAC is considered safe in carefully selected pregnant of women. Patients who undergo safe vaginal birth after CS experience fewer blood transfusions, fewer post partum infections, shorter hospital stay and generally no increase in perinatal mortality.[7-8]

The high Caesarean section rate begins with high frequency of primary Caesarean section. Therefore a concentrated effort should be made to decrease the primary rate.[9] In year 2000, of all births in the United States, 23% were Caesarean, 37.5% of which were repeat Caesarean births. Approximately 60% of Caesarean births were elective repeat Caesarean sections.[10] The objective of present study is to document the mode of delivery in patients with previous one Caesarean section at our institute.

PATIENTS AND METHODS

It was a descriptive study carried out in the Department of Obstetrics and Gynaecology at Services hospital Lahore unit two on five hundred patients with previous one Caesarean section. The study period was from July 2001 to May 2002. The vaginal birth after Caesarean delivery was calculated with a denominator equal to the number of all women who gave birth after a previous Caesarean delivery including those who were not candidates for a trial of labour[11]. At 36 weeks of gestation, the patient was evaluated for giving the trial of labour. The patient's wishes were taken into consideration before decision making. If the patient did not go in to spontaneous labour till 40 weeks, re-evaluation was done and decision for induction of labour taken.

Patients selected for vaginal delivery had a non recurrent cause of previous Caesarean, prior Caesarean not in rural area, previous lower segment Caesarean section and no postoperative infection. In the current pregnancy average size of baby with cephalic presentation, engagement of the fetal head and adequacy of the pelvis were criteria for selection for vaginal delivery. In addition facility for one to one fetal monitoring and Caesarean section within half an hour of decision were ensured.

Elective Caesarean section was performed on patients with prior Classical Caesarean section, previous caesarean section at remote area, history of postoperative infection, malpresentations, medical disorders of pregnancy such as PIH, diabetes mellitus and obvious cephalopelvic disproportion

RESULTS

Total number of planned vaginal deliveries during the study period was 3120. This included 500 patients will previous one CS. Out of these repeat elective CS was performed in 211 cases while 289 were selected for trial of labor (TOL). Out of 289 who underwent TOL, 212 delivered vaginally while repeat emergency CS was performed in 77 (26%) cases. Outcome of vaginal deliveries after repeat one CS is given in table I

TABLE I VAGINAL DELIVERIES WITH PREVIOUS 1 CS

	Number	%
Vaginal deliveries	212	
Spontaneous	185	87.3%
Induced	27	12.7%
• Single prostin	20	
• Two prostin	7	

Fetal and maternal complications are given in table II.

TABLE II FETAL AND MATERNAL COMPLICATIONS

Neonatal	Number & Cause	Maternal	No. & Cause
Mortality	01 CHD	Mortality	00
Morbidity	12	Morbidity	01 PPH

DISCUSSION

In this study 289 (57%) out of 500 women with prior Caesarean section were selected for trial of labour. Two thirds of these women delivered vaginally but out of the total 500, repeat C/S rate was 58% (both elective and emergency) and 42% women delivered vaginally. Therefore although the vaginal delivery rate in patients selected for trial of labour was good but on initial assessment almost 50% patients had a repeat elective CS. Repeat Caesarean section can be avoided in well selected patients for vaginal delivery with low morbidity.

An audit of 197 patients with previous one CS was undertaken by Singh T et al over one year period to determine rates of vaginal deliveries and main indications for repeat Caesarean deliveries. Trial of labour was attempted in 51.3% of women, of whom 65.3% had successful vaginal delivery, VBAC was however successful in only 33.5% of women[12]. This low rate was due to a large number of repeat elective CS. The results of this study match closely the results of the current study. In another study on 468 women, with a prior scar during 1986 – 1999 at the Akashi Municipal hospital, trial of labour was attempted on 322 women and successful VBAC achieved in 77.8%.[13]

In a retrospective cohort study at the division of Maternal-Fetal medicine at the University of California from 1997 – 2000, a total of 1516 subjects underwent VBAC and success rate were 79.5%[14] In another study in California, at Cedars Sinai Medical Center in 1995, only 61.4% of attempted VBAC out of 314 8 were successful.[15] Similarly a retrospective review of records of 310 consecutive women from JICHI medical school hospital in a 6 year period elective CS was carried out on 31%. VBAC attempted on 69%, successful VBAC was achieved in 43% women.[16]

All these studies reflect that the obstetricians should offer the option of trial of labour, because more than one half of women with previous one CS might have successful vaginal delivery, and maternal mortality rates do not differ between women undergoing trial of labour and repeat elective Caesarean delivery. The answer seems to lie in reducing the primary CS rate, rigorous auditing of units CS rates, change in attitude of doctors, midwives and patients towards VBAC.

In a survey of practice in New Zealand and Australia, the consensus of practice was to offer VBAC as an option and induce labour if needed. VBAC is preferred in a level 2 or 3 hospital with an anesthetist, neonatologist and an operating theatre available within 30 minutes of decision. The use of continuous electronic fetal heart monitoring and intravenous access is recommended.[17]

CONCLUSION

Repeat Caesarean section can be avoided in well selected patients for vaginal delivery with low morbidity. A key strategy to reduce Caesarean section rates is to promote vaginal birth as an alternative to elective repeat Caesarean deliveries. Strategies to improve VBAC rates include educating women for risks of complications and benefits of VBAC, ensuring careful selection of VBAC candidates, developing guidelines for management of labour and educating health care providers about reducing VBAC risks.

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OSTEOMALACIA IN FEMALES

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ABSTRACT

This is a descriptive study conducted in Orthopaedic unit 1, Civil Hospital Karachi from January 2000 to December 2003. Two hundred female patients were included in this series of which 128 were unmarried, 52 were multipara having more than 5 children. 128 were students. Main presenting symptoms were waddling gait and generalized body pain. Serum calcium was low in 60 patients, serum alkaline phosphatase level was elevated in all cases, serum phosphorus was below normal in 108 patients, serum P.T.H. was elevated in 108 patients. Serum vitamin D2 level was decreased in 140 patients. Loosers zone was main radiological finding noted in 130 cases

KEY WORDS: Pseudo fractures, Multipara, Hypovitaminosis D

INTRODUCTION

Osteomalacia is a metabolic bone disease, although rare in western world, is prevalent in South Asian countries despite abundant sunlight[1]. It results from inadequate or delayed mineralization of osteoid in mature cortical and spongy bone[2]. Osteomalacia is characterized by abnormal quantities of osteoid coating the surfaces of trabeculae and lining the haversian canals in the cortex. There is an abnormally high ratio of osteoid to mineralized bone[3]. Human produces Vit.D in their skin following exposure to ultraviolet light, present in the sunrays. It is then hydroxylated by the liver to form 25OHD. It is then further hydroxylated by the kidney as needed to form the physiologically active form of the hormone 1, $25(OH)_2D$.

The disease is characterized by generalized body pain, especially around hip, muscle weakness, difficulty in walking (waddling gait), low or lower normal serum calcium, hypophosphatemia, increased serum alkaline phosphatase, hypovitaminosis D and pseudo fractures (looser zone). Biopsy taken from iliac crest shows presence of osteoid volume greater than 10%, osteoid width greater than 15 microns and delayed mineralization assessed by double tetracycline labeling[4]. In this study we present our experience of management of these patients.

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PATIENT AND METHOD

This is a descriptive, study conducted in Orthopaedic O.P.D. Unit 1 Civil hospital Karachi from January 2000 to December 2003. Two hundred female patients were included in this study. Patients suffering from pre-existing diseases like renal disease or patients taking medicines like steroids, antiepileptic drugs, which can cause osteomalacia, were not included in this study.

RESULTS

Out of 200 patients 128 were unmarried and 128 were between 15 to 20 years of age. Out of 72 married women, 52 patients were having 5 or more children. 128 patients were students, 72 patients were housewives. Main presenting symptoms were waddling gait and generalized body pain. In 32 patients backache was the only presenting symptom.

Serum calcium level was normal or near normal in most of the cases (n-140), while in 108 patients serum phosphorus was below normal. Serum alkaline phosphatase was elevated in all patients. In 60 patients serum parathormone level was normal and in 140 patients it was elevated.

Serum vit D level was decreased in 160 patients and in 40 patients level was within normal limit. In 140 patients 24 hours urine calcium was below normal limit. In 120 patients there was hyperphosphaturia (24 hours) and in 80 patients it was within normal range.

Pseudofracture (loosers zone) was the main radiological finding noted in 130 patients. In 70 patients it was seen in femoral neck, in 30 patients only pubic rami were involved and in 25 patients pubic rami and femoral neck were involved. In 3 patients loosers zone was seen in pubic rami and in proximal femur just below the lesser trochanter. In 2 patients fibula was also involved along with femoral neck. Generalized osteopenia was seen in all cases. Biopsy was done in 40 patients where diagnosis was not established by routine investigations. In 32 patients biopsy confirmed the diagnosis. Biopsy was taken from iliac crest.

DISCUSSION

Despite abundance of sunlight, osteomalacia is prevalent in Southeast Asia[1]. Awumey-FM et al has reported that vit. D level was low in Asian immigrants in USA as compared to Caucasians, so Asians are at high risk for developing osteomalacia[5]. In dark skinned women there is reduced production of vit.D from skin, may be due to skin pigmentation[6]. In our series disease was common in Memon and Pushto speaking communities. Memons usually live in flats, where sunlight is very poor and Memon girls are usually students of Deeni Madarsah and strict pardah observing. Pushto speaking patients were mostly married and having 5 or more than 5 children and wearing veils. These patients do not observe family planning methods.

In our series loosers zone was present in 130 patients where as Reginato et al has reported loosers zone in 7 patients out of 26 cases. In our series hypovitaminoses D was present in 160 patients whereas Reginato et al has reported in 5 patients out of 26 cases, whereas Plotnikoff has noted hypovitaminosis D in 93% of patients suffering from nonspecific musculoskeletal pain[8]. It was observed in this series that there was no correlation between serum calcium, serum alkaline phosphatase and serum P.T.H level.

It is important to note that the disease is much more common in our society than we thought. This could be due to low level of serum vit. D level, poor nutrition, high birth rate, strict pardah observation and wearing heavy viels. We can prevent this disease by proper nutrition, and dietary supplementation of vit. D. For adults 200 i.u. (5 microgram) of vit .D dietary allowance may prevent the disease in the absence of sunlight. Total body sun exposure easily provides the equivalent of 250 microgram (10,000 i.u) vit. D per day.

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EPIDIDYMAL ABNORMALITIES ASSOCIATED WITH UNDESCENDED TESTIS

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ABSTRACT

Objectives: *To identify and record the number and type of epididymal abnormalities (EA) associated with undescended testis and its correlation with the location of the testis.*

Design *Descriptive study.*

Place & Duration

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Patients And Methods

All patients with undescended testis operated in this unit from September. 1997 to October 2003 were included. Clinical data & surgical findings were recorded. A new method of classification for the anomalies was employed to make comparison between various studies easy and meaningful.

Results

A total of 107 testes in 97 patients were operated. Epididymal anomalies were found with 37 testes. Obstructive anomalies were found with 19 testes and non obstructive anomalies were found with 18 testes. Obstructive anomalies were more frequent with the testes located high up in the inguinal canal or intra-abdominally.

Conclusion

Undescended testes that are non-palpable and located high up are more likely to have associated epididymal anomalies causing obstruction to the sperm conducting pathway.

KEY WORDS: Epididymal anomalies, Undescended testis

INTRODUCTION

The association of epididymal anomalies (EA) with undescended testis (UT) has long been known[1,2]. These anomalies are considered to be one of the important factors affecting prospects for fertility of these patients as adults[3,4,7].There are studies reporting infertility after successful orchidopexy, with good testicular histology even in unilateral UT, with obstruction to sperm conducting pathways as a possible cause[4].

On the other hand reports published during the last decade have shown percutaneous & microsurgical sperm extraction techniques combined with In-vitro fertilization have resulted in successful pregnancies when applied to azoospermic men with congenital bilateral atresia of vas deference[5].

This study was conducted to identify & record the number and type of epididymal abnormalities (EA) associated with UT & its correlation with the location of the testis.

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PATIENTS AND METHODS

A total of 107 undescended testes (UD) in 97 patients operated in our department from September 1997 to October 2003 were included in the study. Operative findings like the size & location of the UT were observed and effort was made to identify the presence & type of epididymal anomaly.

A simple & practical classification of EA was employed which has the added advantage of predictive value for prospects of fertility in the future (table I & fig 1)

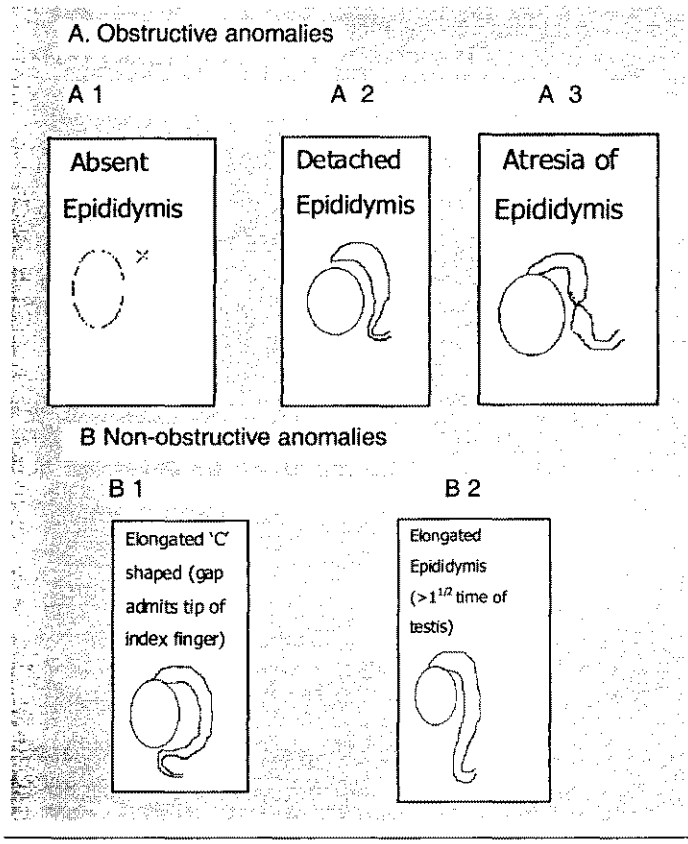
RESULTS

A total of 107 testes in 97 patients were studied. 81 were unilateral & in 16 patients UT were bilateral. Out of the bilateral cases, 31 testes were operated (1 patient did not turn up for the second orchidopexy). EA were found with 37 testes (29% of the testes).

TABLE-I CLASSIFICATION OF EPIDIDYMAL ABNORMALITIES

A	OBSTRUCTIVE ANOMALIES	B	ON-OBSTRUCTIVE ANOMALIES (B)
A1	Absence of Epididymis	B1	Elongated 'C' shaped Epididymis (gap between the testis & epididymis admits tip of index finger)
A2	Detached head or flimsy attachment of epididymis with the testis	B2	Elongated epididymis (Epididymis extending 1 & half times or more below the testis)
A3	Atresia of epididymis (any visible atretic segment)		

FIG. 1 CLASSIFICATION OF EPIDIDYMAL ABNORMALITIES



Obstructive anomalies were found in 19 patients (51% of anomalies), out of these one (2.7%) was absence of epididymis and this testis was located above the deep ring. Detached epididymis or flimsy attachment was found with 15 testes (40.5% of anomalies). Out of these 2 were found above the deep inguinal ring, 10 were intra-canalicular & 3 in the superficial inguinal pouch. Atresia of epididymis was present with 3 testes (8.1% of anomalies), 1 was at the deep ring & 2 were intra-canalicular.

Non obstructive anomalies were found with 18 testes (48.6% of anomalies), out of these 2 were at the deep ring, 4 were intra-canalicular &. 12 testes were found in the superficial Inguinal pouch, (only the testes where the gap between the testis & epididymis admitted the tip of the index finger were included in the "Long C shaped" category, many testes with lesser degree of separation were not classified as abnormal) Table II.

TABLE-II RELATIONSHIP BETWEEN EPIDIDYMAL ANOMALIES & LOCATION OF UNDESCENDED TESTES (37 TESTES)

TYPE OF ANOMALY	LOCATION
OBSTRUCTIVE ANOMALIES 19 (51.4% of anomalies)	
Absent Epididymis (1 testis)	Above deep ring
Detached Epididymal head Or flimsy attachment (15 testes)	2 at deep ring 10 intra-canalicular 3 at superficial pouch
Atresia of Epididymis (3 testes)	1 at DR, 2 intra-canalicular
NON OBSTRUCTIVE ANOMALIES 18 (48.6% of anomalies)	
Elongated 'C' shaped or uncoiled Epididymis (18 testes)	12 at superficial pouch 4 intra-canalicular 2 at deep ring

TABLE-II INCIDENCE OF EA REPORTED BY OTHER AUTHORS COMPARED WITH THIS SERIES

AUTHOR & Ref. No.	YEAR	NO.OF TESTES OPERATED	NO. OF ANOMALIES	OBSTRUCTIVE/ NON-OBSTRUCTED
Marshal et al (2)	1979	38	15	4/6
Mollaeian et al (8)	1987-92	652	235	152/83
Koff et al (10)	1990	82	65	25/40
This series	1997-2003	107	37	19/18

DISCUSSION

The association between undescended testis & epididymal abnormalities was reported as early as 1947[1]. Since then sporadic reports have appeared shedding light on incidence & type of anomalies. The relationship between severity of the anomaly & the level of arrest of testicular descent has also been highlighted[6-7]. A higher incidence of obstructive EA have been have been reported in the cryptorchid testes[7] and the findings of this study are in agreement with other reports (Table III).

One aspect which has not received due attention is an agreement upon a generally accepted classification for EA. A number of different methods have been used by various authors making comparison between the studies difficult[2,4,8], so much so that epididymal configuration described as abnormal 'elongated' or 'uncoiled' by some authors[5], has been described as a common feature in 85% of normally descended testes explored for reasons other than UT [9].

While the implications of 'obstructive anomalies' are obvious, the significance of 'non-obstructive anomalies remain unknown. These have been suspected to be associated with sperm maturation & transport problems[8] & cases of epididymal immaturity have been described in the literature[10].

The above discussion highlights the importance of careful observation & recording of EA at the time of orchidopexy, especially in testes that are found within or above the inguinal canal. This observation along with appearance & size of the testis supported by histology can identify a subgroup of patients who if found azoospermic in later life, can be helped by testicular or epididymal sperm extraction & in-vitro fertilization techniques.

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ISCHIOPAGUS TRIPUS CONJOINED TWINS

A CASE REPORT

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ABSTRACT

Conjoined twins are one of the rarest congenital anomalies. We present a case of Ischiopagus tripus conjoined twins. The twins were fused at abdomen and pelvis, having two well formed lower limbs and one abnormal lower limb. There was only a single fused pelvis and only one set of well formed male external genitalia and absent anal opening. Anoplasty was done for imperforate anus and later on surgical separation attempted.

KEY WORDS: - Conjoined twins, Ischiopagus, Imperforate anus.

INTRODUCTION

Conjoined twins are some of the most challenging patients faced by the Paediatric surgeons[1]. They occur one in every 50000 to 200000 live births[2,3]. Despite extensive preoperative investigations precise definition of the conjoined anatomy is often only possible at surgery[4]. Ischiopagus twins, constituting approximately 9% of all conjoined twins, are believed to arise from union in the cloacal membrane, sharing the perineum, bony pelvis and the lower abdomen[5], with three limbs (tripus) or four limbs (tetrapus). A significant number of conjoined twins are malformed.

CASE HISTORY

Full term conjoined babies weighing jointly 5.5Kgs, were brought to our unit. One baby was complete having well formed head, neck, thorax, abdomen and all the four limbs. This baby was termed Twin I. The 2nd baby termed parasite was fused on the left side of the lower part of the abdomen of twin I. It had complete head, neck, thorax, two upper limbs, upper abdomen and a single lower limb that was attached on the (R) posterolateral aspect of the common pelvis of the twins. (Fig. I). Single umbilical cord was attached at the center of the conjoined abdomen. The perineal examination revealed single perineum with absence of anal opening. Genital examination showed well formed single set of normal external gentalia.

Fig I: Ischiopagus twins

CVS & CNS examinations were normal. Further investigations showed low type of imperforate anus, single bony pelvis with fusion of vertebral columns. There was single liver with two kidneys but single urinary bladder.

After resuscitation, the patients underwent surgery for imperforate anus. Anoplasty was done and their intestinal obstruction relieved (Fig II). At the age of one month, definitive surgical separation was done. Each twin was

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anesthetized separately by two teams of anesthesiologists. At operation the twin II was found to have separate heart, lungs and diaphragm. The abdomen contained separate stomach and only short small intestine, which was fused with terminal ileum of the twin I. The twins were found to have single normal liver and single spleen. The twin I had stomach, small and large intestine up to rectum. There were two kidneys and one urinary bladder. The spine of the twin II was fused with the pelvic bones of the twin I. The parasite was separated but died. The defect on the side wall of twin I was repaired by utilizing the diaphragm and attached skin of the twin II. Postoperatively the twin I developed acute respiratory failure and died on the following day after surgery.

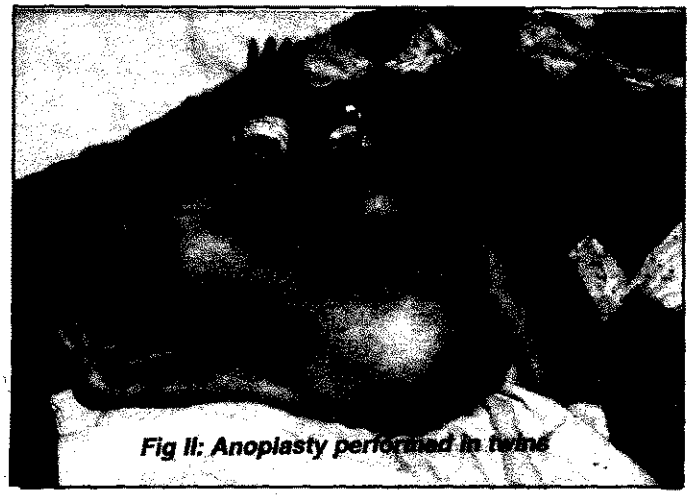

Fig II: Anoplasty performed in twins

DISCUSSION

It is important to report every case of duplication because the collective analysis of a larger series may add information to our knowledge of the mechanisms operating in the earliest stage of human development[6]. The exact etiology of conjoined twining is not known, but the formation of these anomalies is currently believed to be related to incomplete cleavage of the embryo at approximately two week gestation[8].The simplified classification[9] of different types of typical conjoined twins on the basis of ventral (anterior) and dorsal (posterior) union includes

A)Ventral; (1)Cephalopagus (2) Thoracopagus (3) Omphalopagus (4) Ischiopagus (5) Parapagus.

B)Dorsal: (1) Craniopagus (2) Pygopagus (3) Rachipagus.

Ischiopagus twins are united ventrally from the umbilicus down to a large conjoined pelvis with two sacrums and two symphyses pubis. The external genitalia and anus are always involved and there are four arms and four legs.

Although there are numerous accounts of separation of conjoined twins in the literature[11], the unique technical problems they present justify individual description. Despite genetic identity the internal anatomy of conjoined twins frequently shows discordant anomalies[4]. Typical cases of ischiopagus have union in the perineum, the pelvis and the lower abdominal wall[5]. The present case under study belongs to typical variety of ischiopagus twins. In this case the Twin II was incomplete and presumed to be unable to survive after separation and the parents were aware of this fact. This facilitated the surgical separation to salvage the pelvic organs and the distal spinal cord of Twin I.

Approximately 6% of fusions extend from the umbilical area to include the lower trunk and pelvis with three limbs (Tripus) as was our case or four limbs (Tetrapus)[8]. The bodies usually line along a long axis and the heads lie polar. The foregut and the proximal midgut are separated but it is fused from the level of Meckel's diverticulum and the distal midgut and hindgut are common and end in a single anus, as was in our case. Genital fusion is also common as in our patient. Kidneys and bladders are usually separate. The pelvic cavity fused to corresponding sites on the other twin constituting a single pelvic cavity. Each bladder receives two ureters, one from each twin. However, a rare complex variant has been reported where there was a single bladder with one kidney in each twin, this phenomenon of one kidney from each twin was also present in our patient under study. The common rectum is in the centre of the pelvic cavity and the internal genitalia are on either side. Vascular abnormalities of the common iliac vessels may be present, if there is single limb on one side with two on other side. This single limb may have severe skeletal abnormalities and thus functionally useless, as was present in our patient. The abdominal wall has normal muscles but the two recti of each twin are widely separated at the lower half to gain attachment to the pubic bones located laterally. These patients have single anus and rectum which may be imperforate, our patient was also imperforated. The pelvic floor musculature is fused along a raphe extending from one pubic symphysis to the other[12].

The present case under study belongs to the typical variety of ischiopagus tripus twins. In this case the TwinII was incomplete and presumed to be unable to survive after separation and the parents were also aware of this fact, which facilitated the surgical separation.

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CONGENITAL MIDLINE CERVICAL CLEFT

A CASE REPORT

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ABSTRACT

Here in we present a case of Cervical mid line cleft to illustrate its clinical picture, the embryology and the surgical treatment.

KEY WORDS: - Cervical cleft, Branchial anomalies,

INTRODUCTION

Congenital midline cervical cleft is a rare developmental anomaly of the ventral neck. Less than 100 cases have been reported in literature till 1997 and none from Pakistan[1]. It characteristically occurs in the midline ventral neck and consists of a cephalad skin tag, a mucosal surface and a caudal sinus . Embryologically it has no relationship to the thyroglossal apparatus. The abnormality is of cosmetic importance and the preferred operative correction requires complete excision of the cleft with its underlying fibrous cord and closure with multiple Z plasties[2]. Herein we report our experience of one such lesion.

CASE REPORT

A 4 months old baby girl was brought with the history of mucoid discharge from small midline defect on the ventral aspect of neck since birth. She had no other associated congenital defect. Family history of facial deformity such as cleft lip or palate or of thyroid disease was negative. On examination the lesion consisted of a cephalad skin tag, a mucosal surface and a caudal sinus in the midline of ventral neck between the chin and suprasternal notch. It was approximately 3 cm long and 1 cm wide. Sinogram of the lesion showed a blind tract going behind sternum. The patient was treated surgically and the cleft with its underlying fibrous cord that was attached with sternum excised. The vertical wound was closed with multiple Z plasties. On histological examination the cleft was partly lined by keratinized stratified epithelium with sebaceous gland and partly by non- keratinized stratified squamous epithelium. Underlying the epithelium were small collection of seromucous salivary glands. Surrounding tissue was densely fibrocollagenous and richly supplied with blood vessels. The post- operative course was uneventful. Patient is on follow up.

DISCUSSION

Congenital cervical midline cleft is a rare anomaly that is part of a continuum of morphogenetic defects that may occur in the anterior neck. Developmentally midline cervical clefts represent failure of the branchial arches to fuse in the midline. In the normal embryology, the branchial arches grow medially and merge in a cephalad to caudal direction. Prior to fusing mesodermal tissue migrate between the arches, pushing ectoderm out wards to flatten the ventral furrow[3].

Several mechanisms have been proposed to explain the pathogenesis of midline cervical cleft. Pressure of the pericardial roof on the most distal branchial arches and vascular anomalies may both result in necrosis and scaring with subsequent cleft deformity[2,3]. Failure of the mesenchyme to penetrate the midline or poor interaction between mesoderm and ectoderm may also preclude normal fusion[4].

It is a sporadic disorder with a predilection for white females. There is an associated submucosal fibrous cord

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which is occasionally tethered to the mandible and/ or sternum causing neck contracture. It has been associated with a spectrum of midline anomalies related to branchial arches including a median cleft of lower lip, mandible or clefts of tongue and rarely cystic lesions of lung. Our patient had none of these[5]. Midline clefts of the lower lip, mandible, tongue, and neck are rare congenital deformities and are classified as facial cleft no. 30 by Tessier[6].

The preferred operative correction requires complete excision of cleft with its underlying fibrous cord and closure with multiple Z plasties[1]. We performed same procedure in our patient. The possibility of recurrence after Z plasty, during the follow up emphasizes the importance of regional hypoplasia in certain cases and may require tissue supplementation. Our patient is on regular follow up so as to detect early any such happening.

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GALL BLADDER TUBERCULOSIS

A CASE REPORT

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ABSTRACT

Tuberculosis of the gallbladder (GBTB) is so rare that only about 50 cases have been reported to date. Most of these cases are diagnosed only on histological examination after cholecystectomy. Gallbladder tuberculosis may also be associated with tuberculosis of other organs. A case of gallbladder tuberculosis with associated tuberculous omentitis is being reported here.

KEY WORDS: - Gallbladder, Tuberculosis.

CASE REPORT

An 80-year old man presented with mild right upper quadrant abdominal pain of six months duration. The pain exacerbated off and on. Clinical examination of the patient revealed a mildly tender right hypochondrium. No mass or enlarged viscus was palpable. Ultrasonography of abdomen revealed a contracted gallbladder containing multiple calculi. Chest X-ray was suggestive of chronic obstructive airway disease (COAD). His hemoglobin was 12.6 gm/dl and total leukocyte count was 5.6x109/L. Neutrophils were 65% while lymphocytes were 30%. Blood glucose levels and liver function tests were within normal limits. Hepatitis B surface antigen and anti-HCV antibodies were negative. Peroperatively, gallbladder was seen to be contracted and had thickened walls. Its serosal surface was granular. The greater omentum and mesentery were studded with nodules. No spread was seen into the gallbladder fossa or into the liver. Lymph node of Lund and those in the mesentery were enlarged. Gallbladder contained multiple small calculi. The resected gallbladder and a biopsy of greater omentum were sent for histopathology, which revealed gallbladder tuberculosis with caseating granulomas, as well as tuberculous omentitis. Patient is on anti-tuberculosis therapy and is improving steadily.

DISCUSSION

The normal gallbladder is highly resistant to tubercular infection. Although tuberculosis is common in the developing and the underdeveloped parts of the world, only about 50 cases of gallbladder tuberculosis (GBTB) have been reported in the literature so far[1,2]. Presence of inhibitory factors in the bile is reported to be responsible for this special resistance[1]. The presence of an underlying pathology in the form of cholelithiasis or cystic duct obstruction is said to be essential for the development of gallbladder tuberculosis[2].

Four types of GBTB have been described: miliary tuberculosis in children with ulcerating tubercles in the gallbladder; GBTB in association with severe generalized tuberculosis; isolated GBTB; and gallbladder involvement in association with tuberculosis in other intra- peritoneal organs[3]. The fourth group is said to be the commonest type. Our case belonged to this type because of the presence of tuberculosis in the omentum and mesentery. The route of infection in GBTB can be canalicular, lymphatic or hematogenous[1,4].

The clinical presentation is often vague and non-specific. Anorexia, fever, weight loss, abdominal pain, diarrhoea with or without jaundice have been described[1,2,4]. It is difficult if not impossible to diagnose GBTB preoperatively. Imaging morphology of GBTB has rarely been described. Gallbladder with abnormally thickened walls with underlying cholelithiasis has been described in the available literature. Gulati et al have described the CT scan image of gallbladder tuberculosis as multiloculated, thick walled gallbladder[3]. Jain et al have reported a case wherein the gallbladder was enlarged with thickened walls, presence of gallstones and an intraluminal mass simulating a gallbladder carcinoma[5]. A dilated gallbladder with a large stone located in the neck simulating acute

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cholecystitis has also been reported[6]. Presence of features like portal and mesenteric lymphadenopathy, mesenteric thickening and ascites favour the diagnosis of tuberculosis[5-6]. In our case, peroperative findings were suggestive of a tumour and the diagnosis was made on histopathology.

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SQUAMOUS CELL CARCINOMA FOOT ARISING IN DEEP MYCOSIS (CHROMOMYCOSIS)

A CASE REPORT

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ABSTRACT

Cutaneous squamous cell carcinoma (SCC) is the second most common form of skin cancer and frequently arises on the sun-exposed skin of middle-aged and elderly individuals. Involvement of feet is not very common and tumour over dorsal surface of the foot is even rare. It may arise in setting of pre existing chronic granulomatous disorders. We describe an old man who developed SCC on the dorsum of the foot secondary to chronic lesions of deep mycosis.

KEY WORDS: - Skin cancers, Squamous cell carcinoma, Chromomycosis.

INTRODUCTION:

SCC of skin is a malignant tumor of the most abundant epidermal cells (keratinocytes). It is much more common in areas with a high incidence of sun exposure. SCC is common in whites and rare in African Americans[1]. Here in we describe a case of SCC arising in deep mycosis lesion.

CASE REPORT

An 87 years old male. presented with a large foul smelling, fungating and suppurative growth over dorsum of left foot. The lesion started about 25 years ago as a small soft nodule which slowly increased in size to involve most part of the dorsal surface of the foot and transformed into a verrucuous and crusted plaque in about two decades time. The lesion remained largely asymptomatic throughout until during last one year, when it increased in size rather rapidly to involve the ankle region and lower part of the leg and he also started complaining of pain in the lesion. During last two months it became more suppurative and foul smelling. There was no history of similar lesions else where over the body and the patient did not loose any significant weight during this period. Some times in the past the lesion was diagnosed as of deep fungal infection (chromoblastomycosis) for which he received systemic antifungal (itraconazole) irregularly and the response to treatment was not satisfactory.

On examination a large fungating and verrucous growth with fairly well defined margins and having hard crusts and few ulcers over the surface was seen involving dorsal aspect of the left foot, ankle region and extending up to the lower part of the leg but sparing all the toes. (Fig.I). Inguinal lymph nodes were not appreciably enlarged on either side. Laboratory investigations including blood

Fig I: Verrucuous and crusted growth over dorsum of foot and anterolateral aspect of lower leg.

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complete picture, serum urea, creatinine, electrolytes, liver function tests, ultrasound of abdomen and pelvis and chest x-ray were all with in normal limits. X-ray of left foot did not show any underlying bone involvement. Considering the previous diagnosis of deep mycosis he was started on oral antibiotic (cefadroxil 500 mg bid) and antifungal (itraconazole 200mg bid). There was no improvement in 3-4 weeks. An incisional biopsy was performed and tissue was sent for histopathological studies. On histological analysis it turned out to be well differentiated squamous cell carcinoma. Subsequently thorough surgical shaving of the lesion was done under general anaesthesia and patient was sent to oncology department for radiation therapy.

DISCUSSION

Cutaneous SCC frequently arises on the sun-exposed skin of middle-aged and elderly individuals, but to find SCC on sites, which are not exposed to sun is by no means rare[1-3]. When it occurs on feet it is mostly seen on plantar aspect[4]. It may present with a variety of primary morphologies with or without associated symptoms[3]. This morphological variation is mostly seen when it occurs as a complication of long-standing chronic granulomas such as venereal granuloma, syphilis, lupus vulgaris, leprosy, lupus erythematosis, chronic ulcers, osteomyelits sinuses, old burn scar, sand hideradenitis suppurativa or when it complicates scarring dermatoses such as poikiloderma congenitale, dystrophic epidermolysis bullosa and porokeratosis of Mibelli. Subcutaneous fungal infections that have rarely been reported in association with SCC include chromoblastomycosis, lobomycosis and yalohyphomycosis[2,3,5]. Our case is one of such rare occurrence where a long standing deep fungal infection was complicated into a malignant skin tumour. Exact mechanism of developing SCC in various chronic granulomatous diseases in unknown. Emergence of a growth-activated immunophenotype may be a possible cause in such cases[6].

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PORT SITE METASTASIS BY EXFOLIATED CELLS FROM OCCULT CHOLANGIOCARCINOMA

A CASE REPORT

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ABSTRACT

A forty years old man presented with port site metastasis after laparoscopic cholecystectomy for benign disease from an occult cholangiocarcinoma (Klatskin's tumour). After diagnosis the patient was referred to hepatobiliary unit for further treatment.

KEY WORDS: Port site, Metastasis, Occult cholangiocacinoma.

INTRODUCTION:

Laparoscopic cholecystectomy has become the standard surgical procedure in the treatment of symptomatic gall stones. But it is necessary to take into account some problems and risks that can arise from this technique. One of the most dangerous risks is port site metastasis[1]. Laparoscopic cholecystectomy is the most commonly performed procedure among laparoscopic interventions. Port site metastasis following laparoscopic cholecystectomy with unsuspected gall bladder carcinoma is a serious problem. But luckily it is a rare phenomenon on reviewing the literature[2]. Herein we report the first case of port site metastasis from occult cholangiocarcinoma

CASE REPORT

A forty year old man underwent laparoscopic cholecystectomy for symptomatic gall stones. The histological report of removed gall bladder was benign. The patient presented with a nodule at port site one year after the cholecystectomy. The nodule was removed and histopathology revealed adenocarcinoma. Histopathological review of the removed gallbladder again revealed a benign result. All investigations for diagnosis of primary remained equivocal. The patient again presented with obstructive jaundice three months after removal of the nodule. Investigations (CT Scan and ERCP) revealed a nodule at hilum of biliary ducts causing obstruction at that level with dilatation of intrahepatic bilary ducts. Brush cytology revealed hilar cholangiocarcinoma. This case illustrates that exfoliated cells of bile duct tumour metastasized by transluminal route and caused port site metastasis after laparoscopic cholecystectomy. The patient is referred to hepatobiliary surgeon for further treatment.

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DISCUSSION

Port site metastasis is a well known complication of laparoscopic intervention for malignant cases. But port site recurrence of occult malignancies following laparoscopic procedures for benign condtion is a rare phenomenon in current existing world literature. Port site implantation after diagnostic laparoscopy for upper GI malignancy is uncommon and does not seem to be different from open incision site recurrence, and occurs in the setting of advanced disease. Therefore, the risk of port site recurrence cannot be used as an argument against laparoscopy in upper GI malignancy.[3]

Pathogenesis and means of prevention of port site metastasis after dealing the malignant cases are still unclear. Probably free cancer cells appear to attach the port sites after CO2 pneumoperitoneum and these are associated with the development of port site metastasis[4]. A multifactorial mechanism may be responsible, in which

the key factors could be a long operative procedure, the high pressure pneumoperitoneum, tumoral manipulation during dissection and forced extraction of unprotected specimen[5]. Under CO2 pneumoperitoneum, exogenous hyaluronic acid increased the frequency and weight of port site metastasis in a murine model. Hyaluronic acid secreted from mesothelial cells may be associated with the formation of port site metastasis after laparoscopic surgery for cancer under pneumoperitoneum.[6] Preventive measures in suspected malignant cases may be: use of gasless laparoscopy, slow deflation, trocar site wash out, wound site protector, and use of specimen bags[7]. One study suggested that tumor implantation after laparoscopic surgery and port-site metastasis might be prevented by the intraperitoneal or systemic administration of cytotoxic agents. Further studies are needed to determine whether these findings can be applied to clinical practice[8].

Laparoscopy with carbon dioxide insufflation seems to stimulate the growth of dormant tumour cells into overt liver metastass. Gasless laparoscopy on the other hand may have a protective effect against metastatic disease in the liver. The promoting and inhibiting effects of laparoscopic procedures on growth of liver metastases need further evaluation[9] . A full laparotomy incision promotes greater tumour growth than does carbon dioxide pneumoperitoneum. Surgical manipulation stimulates local tumour spread more than the establishment of a carbon dioxide pneumoperitoneum[10]. Treatment includes port site excision with control of the primary tumour. Port site metastasis after laparoscopic procedures for benign diseases is rare in the literature. Only few cases are reported of occult carcinoma metastasising to port sites. One case was port site metastasis after cholecystectomy for benign disease from occult pancreatic tumour[11]. Another case of post cholecystectomy port site metastasis was reported from occult adenocarcinoma of ascending colon[12]. Another presented case was a port site adenocarcinoma with undiagnosed primary in spite of the all investigations[13]. Our case is first ever presented case of port site metastasis from occult Klatskin's tumour.

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