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Editorial:

OF FISHY BENEFITS...

I am prompted to write on this topic of hot research and historic enigma, for a variety of reasons, not the least of which being the adage 'Prevention is better than cure'.

In recent decades, the world has witnessed shifting pattern of diseases, with an upsurge of metabolic, heart ailments and neoplasia. In Pakistan too, diseases like Diabetes, Hypertension, Hyperlipidemias and heart attacks have registered a manifold increase with crippling complications. We are a developing nation with a low per capita income and our resources for health care are both meager and feeble; hence, the need for preventive medicine cannot be over emphasized. Therefore these few lines on the benefits of taking 'good fats' through our diet – or at least supplementing medicinally, for their proven benefits.

As most of us are aware, fats may be good – or bad. The best fats – or oils
(as they are liquid at room temperature) are the so called 'essential fatty acids', (EFA's) which are polyunsaturated and grouped into two families – the Omega-3 and Omega-6 EFA. The main sources of Omega-6 acids are vegetable oils e.g. Soya and corn oil, while Omega-3 acids are rich in walnut oil, flax seed oil and fatty fish. The most beneficial and active of all these are eicosapentanoicacid (EPA) and docosahexenoic acid (DHA), abundantly found in fatty fish and fish oils.

The minor differences in their structure confer on them different actions in the body. While the metabolic products of Omega-6 EFA promote inflammation, blood clotting and tumor growth, the Omega-3 acids have entirely opposite actions. The Omega-6 acids are implicated in the higher incidence of heart disease, hypertension, diabetes, obesity and probably cancer.

The changes in our dietary habits over the time along with lifestyle changes, have altered the ratio of Omega-6: Omega-3 EFA in our bodies closer to 20:1. This is in contrast to a ratio of 1:1, that our ancestors had enjoyed.

It was observed that Eskimos consumed a diet very high in fats and yet had a very low incidence of heart disease and arthritis. Research revealed that two oils used abundantly by the them were EPA and DHA. It is now established that they play a crucial role in the prevention of atherosclerosis, depression and cancer. The supplementation of these oils is also effective in the treatment of diseases like rheumatoid arthritis, ulcerative colitis, diabetes and even Alzheimer's disease. The daily requirements have also been worked out which is about 650 mg for EHA and DHA. Saturated fat intake should not exceed 8% of the total calorie intake. Low levels of DHA have been linked to low serotinin levels, which in turn is associated with depression, suicidal tendencies, violence and memory loss (Alzheimer's disease). An Italian study on 11,000 heart attacks survivors showed reduced risk for another heart attack, stroke or death with fish oil supplements. An adequate intake of EPA & DHA is especially important during pregnancy and lactation for the baby itself is unable to synthesize them. The easiest way and additional benefits were observed in amounts greater than 5 G/day. They have been used for as long as 7 years safely. Another factor to consider is that low quality oils may be unstable or admixed with mercury, pesticides or other pollutants. High quality oils can be stabilized of impervious to light packing and supplemented with vitamin E, individually.

It should be remembered that fish oils and cod-liver oils as generally believed are not the same, although the latter is a very good source of vitamin A and D, but does not contain EPA and DHA. On the contrary fish oils contain little vitamin A and D. It is now recognized that fish oil supplementation tends to lower vitamin E levels in the body. Hence, it is wise to use 200 mg/day of synthetic vitamin E (equivalent to about 100 IU of natural μ-tocopherol) to counteract this effect.

M. AZHAR CHAUDHRY

ISOFLURANE VERSUS HALOTHANE FOR INDUCTION AND MAINTENANCE OF ANAESTHESIA IN CHILDREN

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ABSTRACT:
Forty un-premedicated children undergoing adenoidectomy and myringotomy were randomly assigned to receive inhalation induction with either isoflurane or halothane and nitrous oxide in oxygen (60/40) via a facemask. Tracheal intubation was performed without any muscle relaxant. Anaesthesia was continued with volatile anaesthetic, adjusted to maintain heart rate and blood pressure within ± 20% of initial values. Our objective was to compare the recovery characteristics of isoflurane and halothane for anaesthesia in the age group of children between 1-3 years. Recovery was evaluated using a modified Aldrette score, a Pain/Discomfort scale and by measuring recovery end-points.

Emergence and interaction occurred significantly earlier after isoflurane than halothane though discharge times were similar. More children in the isoflurane group achieved full Aldrette scores within the first 45 min after anaesthesia; although this group suffered more discomfort during the first 10 minutes. The amount of postoperative analgesic administered was higher and the first dose was required earlier in the isoflurane group. Postoperative vomiting was more common with halothane, the side effects in the two groups were otherwise similar in the recovery room and in the ward

KEY WORDS: Anesthesia, Paediatric, Anesthetics, Isoflurane, Halothane

INTRODUCTION

Isoflurane is a volatile anesthetic with a low blood-gas partition coefficient and a pungent ethereal odour[1]. Isoflurane induction is a little unpleasant and maintenance characteristics appear to be similar to or slightly better than those of halothane and most of the studies have demonstrated its superior recovery characteristics. However, recent attention has been focused on the practical advantages if any of isolfurane over halothane.

Though early recovery is more rapid with the former, discharge times has not been different. Moreover, post-operative agitation and excitement appear to be more common after isoflurane anaesthesia.[2] Differences in the design of the studies could affect their outcome as recovery from anaesthesia can be influenced by the dose of anaesthetic, age of the patient, pre-medication and opioid in treatment. We therefore attempted to determine the recovery characteristics of isoflurane and halothane in a specifically defined age group of 1-3 year of un-pre-medicated children under-going a similar type of surgery and standardized anaesthetic administration.[3]

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PATIENTS AND METHODS

This study was approved by the institutional research board and written consent was obtained prior to anaesthesia. Forty children were randomly allocated by use of a computer-generated table to receive either isoflurane or halothane for induction of anaesthesia. The children were aged 1-3 year, ASA physical status 1 or 2, and were scheduled for adenoidectomy with or without myringotomy.

No sedative pre-medication was used. The parent(s) accompanied the child into the operating room. Pre-induction heart rate, non-invasive arterial pressure and oxygen saturation were recorded. Inhalational anaesthesia was induced via a facemask with either isoflurane or halothane and nitrous oxide in oxygen (60/40) using a Bain circuit with a fresh gas flow of 6 L/min.[4,5] As soon as consciousness was lost, an intravenous cannula was inserted[6] and a solution of 4.3%

dextrose in 1/5th NaCl was started at 3-5 ml/kg/hour according to age and weight. When induction was complete (small pupils with central gaze), tracheal intubation was accomplished without any muscle relaxant. After tracheal intubation, anaesthesia was continued with 1 MAC of the inhaled anaesthetic (0.76% halothane or 1.2% isoflurane).[7,8] Nitrous oxide and oxygen were administered at the same 60/40 concentrations. The end-tidal concentration of the inhalational anaesthetic was measured continuously from the elbow connector of the tracheal tube. Ventilation was controlled to maintain normocapnia and the fresh gas flow was kept high enough to prevent re-breathing. The inspired concentration of the inhalational anaesthetic was adjusted according to the response of the patient to surgery (e.g. movement, tearing, swallowing) while attempting to keep the heart rate and arterial pressure within ± 20% of the initial values.

Standard monitoring arterial blood pressure, heart rate and oxygen saturation was done throughout anaeshtesia. Immediately after tracheal intoubation, intravenous tramodal 1 mg/kg body weight was given. End-tidal anaesthetic concentrations were recorded during anaesthesia and the age-adjusted MAC-value calculated. After completion of surgery, the inhalational anaesthetic was discontinued and 100% oxygen delivered. The oropharynx was suctioned and extubation performed when spontaneous breathing established.

In the recovery room, heart rate, arterial pressure and oxygen saturation were monitored until the child was fully awake.[2] The parents of the child were allowed into the recovery room once the child had regained consciousness. Recovery of all the children was evaluated by the same trained recovery nurse, who was blinded to the anaesthetic method used. The rate of recovery was assessed using a modified Aldrette score (Table-I) and the behaviour of the child using a modified Pain/Discomfort scale (Table-II). If the sum of the Pain/Discomfort scale at any evaluation point exceeded 3, the child was regarded as suffering from post-anaesthetic excitement. Evaluation of the Aldrette and Pain/Discomfort scores was performed every 5 min after cessation of anaesthesia for the first hour, then every half hour from the next 4 hours.
In addition, pre-determined recovery end-points were measured:

- Time to emergence (spontaneous eye opening to non-painful stimuli).
- Time to interaction (responding to the nurse or parent).
- Time at achieving full points on the modified Aldrette score,
- Time to ambulation according to age,
- Time taken to achieve the criteria for discharge.

Adverse events in the recovery room were noted. Intravenous tramadol in increments of 5 mg was administered intravenously for postoperative analgesia at the discretion of the recovery nurse. The total amount given and the time to the first dose were recorded.

TABLE-I THE MODIFIED ALDRETTE SCORE

VARIABLE	SCORE
Activity	
❑ Not moving	0
❑ Non-purposeful movement	1
❑ Moving limbs purposefully	2
Respiration	
❑ Apnoeic/needs maintenance	0
❑ Shallow or limited	1
❑ Deep breathing or coughing	2
Consciousness	
❑ Unresponsive	0
❑ Responding to stimuli	1
❑ Fully awake	2
O_2 saturation	
❑ < 90%	0
❑ 90–94%	1
❑ >95%	2

TABLE-II THE PAIN/DISCOMFORT SCALE

VARIABLE	SCORE
Crying	
❑ Not crying	0
❑ Responding to comforting	1
❑ Not responding to comforting	2
Moving	
❑ None	0
❑ Restless	1
❑ Thrashing	2
Agitation	
❑ Asleep or calm	0
❑ Mild agitation	1
❑ Severe agitation/hysteric	2

Statistical comparisons were made with Student t test, and the Chi-square or Fisher's exact test, as appropriate. A p value 0.05 was considered statistical significant. The sample size was determined on the assumption that the incidence of post-anaesthetic excitement after isoflurane would be twice that following halothane. With an estimated incidence of 60% for the isoflurane group, a sample size of 19 patients would be sufficient to detect this difference.

RESULTS

The two study groups were comparable in age, weight, duration of surgery and anaesthesia (Table-III). The age-adjusted end-tidal MAC-values and doses of anaesthetic during anaesthesia did not differ between the groups and the dose of intravenous tramadol was similar. Children in the isoflurane group during the first 30 min after anaesthesia (p 0.05), although the discharge time did not differ from the halothane group.

Vomiting in the recovery room was more common with halothane than isoflurane (P 0.01). Bleeding from the surgical site occurred in two patients with halothane, delaying discharge, otherwise adverse events did not differ between the groups (Table IV).

TABLE-III ISOFLURANE AND HALOTHANE IN PAEDIATRIC ANAESTHESIA

Patient' characteristics and age adjusted MAC concentrations during anaesthesia. Results are expressed as mean (SD). No significant differences between groups.

	Halothane (n=20)	Isoflurane (n=20)
❑ Age (year)	1.9 (0.5)	1.7 (0.3)
❑ Weight (kg)	12.0 (1.4)	11.7 (1.7)
❑ Duration of surgery (min)	21 (7)	22 (7)
❑ Duration of anaesthesia (min)	27 (6)	28 (8)
❑ Anaesthetic concentrations:		
1. Maintenance	0.90 (0.3)	0.80 (0.1)
2. End of surgery	0.86 (0.3)	0.80 (0.1)

MAC: minimum alveolar concentration

TABLE-IV ADVERSE EVENTS IN THE RECOVERY ROOM NUMBER (%)

	Halothane	Isoflurane
❑ Analgesic treatment	19 (95)	20 (100)
❑ Vomiting	6(30)*	2 (10)
❑ Post-anaesthetic excitement	7 (35)	11 (55)
❑ Laryngospasm	2(10)	1 (5)
❑ Bleeding from surgical site	1(5)	0

* P>0.05 between groups (Chi-square test)

After isoflurane anaesthesia, children were in more discomfort during the first 10 min after anaesthesia, while those in the halothane group scored higher on the Pain/Discomfort scale at 30 min after anaesthesia. Time to administering the first intravenous dose of tramadol was significantly shorter in the isoflurane group (4 min) compared to the halothane group (12 min). Also, the total analgesic dose was higher in the isoflurane group than in the halothane group.

In the ward, recovery was similar in both groups. Of the children who vomited in the recovery room one from each group also vomited in the ward. The total incidence of vomiting during the first 24 hour after anaesthesia was 30% and 10% in the halothane and isoflurane groups, respectively.

DISCUSSION

Our hypothesis that differences in recovery would be small after isoflurane and halothane anaesthesia in children 1-3 year was not confirmed. Early recovery was significantly more rapid after isoflurane although discharge times were similar with both the agents. In addition, children in the isoflurane group were in more discomfort upon awakening and required more analgesics at an earlier stage. These findings are in accordance with earlier studies in children of varying age where recovery with halothane was delayed during the first 20-30 min after anaesthesia[3] but did not subsequently differ. In the present study, the children belonged to a limited age group undergoing a similar type of surgery. In addition, no sedative premedication or intraoperative opioids were used. In this way we attempted to minimize any potential factors affecting the time to recovery. We expected recovery times to be similar because of the young age of the children. The more rapid recovery with isoflurane is consistent with the lower solubility of isoflurane [1,2] than halothane[2,4] resulting in faster elimination of the anaesthetic from blood (a-elimination) after its discontinuation.[10,11] However, the solubility of the anaesthetic determines the effect of age on recovery. The solubility of halothane in blood and tissues decreases with younger age.[12] In contrast, age has little effect on the solubility of isoflurane in blood. It could thus be postulated that younger the child, the less impact on the solubility of the anaesthetic would have on recovery, thus reducing the differences between isoflurane and halothane. However, the dose of the anaesthetic also correlates with recovery.[13] We attempted to deliver an equipotent dose of the anaesthetics by restricting their concentration during maintenance at 1 MAC, when haemodynamically possible. Nitrous oxide decreases the MAC of halothane more (60% than that of isoflurane (24%).[14] In consequence, children in the halothane group would have been at a deeper level of anaesthesia at the end of surgery, which could help to explain the slower awakening. Differences in anaesthetic doses between studies may explain the disparity in emergence times after discontinuation of the anaesthetic. In addition, tapering of the anaesthetics towards the end of surgery was not done in our study and consequently higher concentrations that needed may have been delivered at the end of anaesthesia. Despite of more rapid emergence and earlier recovery, isoflurane did not provide earlier discharge in our study population. The time of discharge can be influenced by many factors, e.g. the administration of postoperative opioids, nausea and vomiting, and by discharge criteria. In our study, postoperative tramadol was used more often with isoflurane. This possibly counteracted its benefit of more rapid recovery by increasing postoperative sedation and consequently delaying discharge in some of the children. Differences in adverse events were small in the recovery room and the ward. Both the agents caused minimal airway complications postoperatively. A lower incidence of vomiting (10%) in the recovery room occurred with isoflurane than with halothane (30%), which is also consistent with the previous studies. The Pain/ Discomfort scores were higher during the first 5-10 min after anaesthesia in the isoflurane than with halothane (30%), which is consistent with previous studies. The Pain/ Discomfort scores were higher during the first 5-10 min after anaesthesia in the isoflurane group. Also, more children suffered from post-anaesthetic excitement after

isoflurane (55%) than after halothane (35%), although this did not reach statistical significance. Similar findings have been reported in several previous studies. Pain may have been a contributing factor, as i/v tramadol at the dose of 1 mg/ kg body weight may not have provided adequate analgesia at the time of awakening in some children. However, young age has also been shown to predispose to postoperative agitation or delirium, the effect being more pronounced after isoflurane anaesthesia. Recently, the benefits of isoflurane over halothane have been questioned. The induction and maintenance characteristics of isoflurane and halothane during a short anaesthetic can be indistinguishable to a blinded anaesthetist. In addition, isoflurane does not necessarily provide more rapid recovery or decrease length of stay in the operating room. On the other hand, provided that the quality of recovery of the two agents is similar, a delayed early recovery is not necessarily a disadvantage.[5,16] After surgery requiring postoperative analgesia with no possibility of regional block or intraoperative opioids, a child may even benefit from a slightly delayed recovery. In view of our findings, halothane may be a worthy alternative to isoflurane for short-lasting procedures in these situations.

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RUPTURED UTERUS : A THREE YEARS STUDY

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ABSTRACT:

A prospective observational study was carried out on all the patients admitted with ruptured uterus at Gynae unit III, Abbasi Shaheed Hospital, Karachi from January 1999 to December 2001 to study the prevalence, aetiology, management, maternal and foetal outcome of uterine rupture.

Out of the total of 3036 deliveries during the study period, there were twenty three cases of ruptured uterus giving an incidence of 1 in 132 deliveries or 0.75%. Injudicious use of oxytocin, obstructed labour and previous caesarean scars (39.13%) were associated factors . Uterine rupture had significant association with low socioeconomic status, lack of antenatal care, high parity and maternal age more than 35 years. Anterior wall of the uterus was the commonest site affected (78.26%). Caesarean hysterectomy was done in 9 patients (39.13%) and in 9 (39.13%) repair of ruptured uterus with tubal ligation was done. In 2 patients (8.69%) repair without tubal ligation was carried out. Maternal mortality was 17.39% and perinatal mortality was 78.26%.

KEY WORDS: Rupture uterus , Maternal mortality , Perinatal mortality.

INTRODUCTION

Rupture of the gravid uterus is one of the major causes of maternal and perinatal mortality.[1,2] While considering uterine rupture, it is important to differentiate scar separation or dehiscence from frank uterine rupture[3]. A scar dehiscence refers to opening of previous myometrial incision with the overlying visceral peritoneum intact. Expulsion of foetus and haemorrhage does not occur in these cases. Such defects may remain asymptomatic and are diagnosed only at laparotomy / Caesarean section.[4] On the other hand, with frank uterine rupture, the uterine contents are expelled either partially or completely in the peritoneal cavity accompanied by variable haemorrhage, acute maternal haemodynamic changes, abdominal pain, and often foetal demise.[5,6] This can be associated with previous scar or may develop spontaneously in an intact uterus. This type of rupture is more commonly seen in developing countries. This is usually restricted to multipara but injudicious use of oxytocin may lead to rupture in women with low parity. Most ruptures occur during labour, however a classical scar or a scar involved in placenta percreta may rupture during pregnancy. Uncommonly rupture may result secondary to abdominal trauma or prior uterine surgery other than Caesarean section.[6] The most common manifestation of scar separation was found to be a prolonged foetal heart rate deceleration.[7] A high perinatal mortality is associated with complete foetal extrusion.[8]

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PATIENTS AND METHODS

A prospective observational study was conducted in Gynae Unit III of Abbasi Shaheed Hospital from January 1999 up to December 2001.

There were 3036 deliveries during the study period. Twentythree patients of ruptured uterus were admitted giving an incidence of 1 in 132 or 0.75%.

The patients were initially assessed in labour ward where a detailed pertinent history was obtained from patients / attendants including a detailed obstetric, past medical and surgical histories. Diagnosis was made after general condition was assessed, abdominal and pelvic

examination were carried out, necessary investigations were advised, senior obstetrician and anaesthetist were informed and resusciation started. At laparotomy the options of repair of ruptured uterus with or without tubal ligation or caesarean hysterectomy were made according to the severity of damage to the uterus and the parity of the patients.

RESULTS

Twentythree patients with ruptured uterus were admitted during the three years period of study. Out of these 23 patients, 19 (82.60%) were more than 35 years of age. Ninteen patients (82.6%) were grand-multiparas. All belonged to low socio-economic status and none were "booked" anywhere. All gave history of certain injections given intramuscularly by "dais" (traditional birth attendants) in order to augment labour . Nineteen (82.60%) patients were full term pregnant, one (4.34%) was 28 weeks pregnant and three (13.04%) were postpartum giving history of difficult delivery conducted by dais. The risk factors for uterine rupture are shown in Table-I. There was not a single case associated with placenta percreta or obstetrical manipulation in hospital. The clinical presentation of patients with rupture uterus are shown in Table II.

TABLE-I RISK FACTORS FOR UTERINE RUPTURE

RISK FACTORS	No. OF PATIENTS	PECENTAGE
Obstructed Labour	14	60.86 %
Injudicious Oxytocin Usage	14	60.86 %
Previous Caesarean Scar	9	39.13 %
Foetal Weight	19	83.60 %

TABLE-II CLINICAL PRESENTATION

SYMPTOM	No. OF PATIENTS	PERCENTAGE
Abdominal Pain	20	86.95 %
Bleeding per vaginum	20	86.95 %
Shock	15	65.21 %
Postpartum haemorrhage	3	13.04 %

TABLE-III SITE OF RUPTURE

SITE	No. OF PATIENTS	PERCENTAGE
ANTERIOR WALL		
Scar dehiscence	9	39.13%
Lower uterine segment	6	26.08%
Upper & lower segment	3	13.04%
POSTERIOR WALL		
Uterus along with posterior vaginal fornix & posterior part of cervix	1	4.35%
LATERAL UTERINE WALL		
Alongwith lateral vaginal fornix	1	4.35%
UNDETERMINED	3	13.04 %

The type of rupture which predominates is complete, involving the anterior wall of the uterus (n=19). Four cases of partial rupture were due to dehiscence of previous caesserean scar. They were diagnosed at the time of operation (Table III). As most of our patients had completed their families, therefore in those where repair was possible (n=9), it was combined with tubal ligation. In 2 cases only repair was done as they had no live issue . Caesarean hysterectomy was done in 9 (39.13%).

There was a maternal mortality of 17.39% (n=4). Three died within an hour of arrival as they failed to respond to resuscitation and were in irreversible shock and one died in the immediate post operative period due to disseminated intravascular coagulation (DIC). The maternal morbidity included pyrexia in 11 patients (47.82%), paralytic ileus in 13 patients (56.52%), disseminated intravascular coagulation in one (4.34%) , acute renal failure in one (4.34%), deep venous thrombosis in one (4.34%). Three (13.04%) of our patients developed abdominal wound dehiscence. One patient developed complete burst abdomen (she was a an Afghan refugee diagnosed case of tuberculosis) and two developed partial wound dehiscence upto the rectus. Vesciovaginal fistula developed in one patient on the 11th post operative day.

Regarding the perinatal mortality five foetuses were born alive (four with partial scar dehiscence and one of the woman who came with post partum haemorrhage). Eighteen (78.26%) of the fetuses were fresh stillbirths. The birth weight of 19 foetuses (82.60%) were more than 3.5 kg and 20 of the babies were male.

DISCUSSION

In our study the frequency of ruptured uterus was 0.75% which is higher than in the developed countries where spontaneous uterine rupture is not seen and it is only the previous uterine scars either the obstetrical or gynaecological that gives way.[4,9] The incidence of uterine rupture is higher in Nigeria amounting to 1:74[10] deliveries and the main risk factors identified are same as seen in our study.[11] One of the studies conducted in Pakistan from Quetta quotes an incidence of 0.44% of the total deliveries.w[12] The major cause of uterine rupture seems to be spontaneous in an intact uterus in a study conduct a JPMC.[13] However in developed countries spontaneous uterine rupture is rare. The over all incidence is 0.3/1000 deliveries. The rate of partial rupture to complete rupture is 2:1 in developed countries[9] but in our study the ratio is 1:5.

This higher incidence seen in our study is due to the fact that our hospital is a tertiary care hospital and the only one in the area which deals with such emergency. Majority are the cases of spontaneous complete rupture[13]

which would have been prevented by appropriate antenatal care or an early referral to the hospital if labour failed to progress. The higher incidence is seen in under previleged class which stays away from the hospital and seeks the advise of 'dais'. These 'dais' are in turn very keen of using oxytocic drugs in heavy doses intramuscularly and referring only when internal manipulation to deliver the foetus fails. The other highest incidence was noted in those with previous caesarean sections. Only two of our patients had 2 or 3 caesareans prior to rupture, the rest seven developed rupture after one caesarean section. This again points to lack of counseling on the part of the health professionals. One of our patient with previous 3 caesarean sections remained unbooked and went to some clinic with intrauterine death at 28 weeks gestation where she was induced by oxytocin and then developed rupture.

Site of rupture in 3 cases remained undetermined as the patients died within one hour of arrival but history of oxytocic injections and internal manipulation was available . In 2 patients the involvement of lateral uterine wall along with lateral vaginal fornix and that with rupture of posterior wall and posterior fornix indicative of internal manipulation performed by 'dais'.

We performed Caesarean hysterectomy / repair with tubal ligation in 18 of our patients (78.26%) because all had completed their families. In two of our patients we did repair without tubal ligation as one was primigravida who had developed rupture the other although was third gravida but had no live issue

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PRESENTATION AND OUTCOME OF SURGICAL RESECTION OF COLORECTAL CARCINOMA

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ABSTRACT:
This study is a review of 100 cases of colorectal carcinoma (Ca) who underwent therapeutic or palliative resection at Surgical Unit-I, Liaquat Medical College Hospital Jamshoro from January 1995 to December 1999. Most patients were 50 years of age. Male to female ratio was 1:8:1 Rectum had the highest number of cases i.e. 70% and descending colon had the lowest i.e.2.4%. In rectum lower 3rd was involved in 75% of cases, upper third in 20% and middle third in 10% of cases. Intestinal obstruction was encountered in left sided colon (sigmoid colon 70% descending colon 10%), followed by carcinoma caecum 10% and rectum 10%. Duke's A were 15%, Duke's B were 30%, Duke's C were 55% and Duke's D (liver metastasis) were 5%.

Curative resection was our objective for Duke's A and Duke's B cancers depending upon the site, extent and fitness of the patients. Mean postoperative stay in the hospital was 10 days. Operative mortality was 2% in elective cases. Postoperative follow up for 2- years was 30%, with local recurrence of 10%.

Key Words: Colorectal carcinoma; Curative resection.

INTRODUCTION

Colorectal carcinoma is the commonest GIT cancer. The mean age of presentation of colorectal carcinoma is 55-years. It is extremely rare in children and has poor prognosis. Colorectal carcinoma is common in men, after carcinoma lung. In women it is second only to breast cancer as a cause of cancer related deaths.[1] Carcinoma rectum is more common in males than females.

The common presentations include rectal bleeding, change of bowel habits and abdominal pain. A significant proportion of patients are first seen with acute symptoms reflecting obstruction or perforation of gut. Definite diagnosis is made on endoscopy and biopsy.

The aim of this study was to find out the number, presentation and outcome of surgical resection in local population.

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PATIENTS AND METHODS

Hundred cases of colorectal carcinomas were managed in the department of Surgery Unit-1 at Liaquat Medical College Jamshoro and City Branch Hyderabad from January 1995 to December 1999. The parameters examined were age, sex clinical features, investigations, spread of the disease and the different surgical options. Rectal examination, sigmoidoscopy and barium enema were the main diagnostic methods and colonoscopy was performed where indicated. X-ray chest, LFTs, abdominal ultrasonography and CT scanning were also used for assessing spread of the disease locally and systemically.

Surgical options varied depending upon the site of tumour, extent of the disease, fitness of patient, emergency or elective presentations at the time of admission. Once properly investigated a two-day preoperative bowel preparation was carried out in all the patients with prophylactic antibiotics at the time of induction following elective admissions. No patient received neo-adjuvant chemotherapy or radiotherapy. In

all the patients, surgery remained the main sheet anchor treatment. Curative resection is defined as operation in which whole of the tumor is excised with no evidence of residual disease. All the patients were referred to the oncology department after the stitches were removed.

RESULTS

Hundred cases were admitted in our unit. The highest number of cases were between 51-60 years of age. It was rare in children but we had 2 cases of carcinoma rectum in children of 13-years and 15-year with fixity to bowel tissue (Table I). In our study male to female ratio was 2:1 from rural areas as compared to 1:8:1 from urban areas. Carcinoma rectum accounted for 65% followed by carcinoma caecum 17%, carcinoma sigmoid 10%, carcinoma transverse colon 5%, carcinoma descending colon 3% (Table II).

TABLE-I AGE RELATION IN ACCORDANCE TO SITE IN PATIENTS WITH COLORECTAL CARCINOMA

SITE	11-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	>60 yrs
Carcinoma rectum	2	4	10	29	20
Carcinoma sigmoid	--	--	1	2	7
Carcinoma caecum	--	--	--	2	7
Carcinoma transverse colon	--	--	--	2	3
Carcinoma descending colon	--	--	--	1	2
Total	2	4	11	36	47

TABLE-II SEX DISTRIBUTION ACCORDING TO SITE

SITE	Males	Females	Total	Ratio
Ca rectum	36	29	65	1:8:1.2
Ca caecum	9	8	17	1.1:1
Ca sigmoid colon	6	4	10	3:2
Ca transverse colon	3	2	5	3:2
Ca descending colon	2	1	3	2:1
Total	56	44	100	1.6:1.4

Adenocarcinoma was the commonest type 95%, followed by mucinous 3% and adenosquamous 2%. Clinical presentation in order of frequency was altered bowel habits, recent loss of weight, tenesmus, bleeding per rectum, intestinal obstruction and mass abdomen (Figure -I).

Complete evaluation including family history was asked. All the patients underwent digital per rectal examination. 90% of the patients were diagnosed with barium enema and endoscopic examination with biopsy. Two patients had multiple polyps of colon but there was no family history of such lesion. Colonoscopy and CT scan were also done to determine the metastasis and for fitness of the patient for surgery.

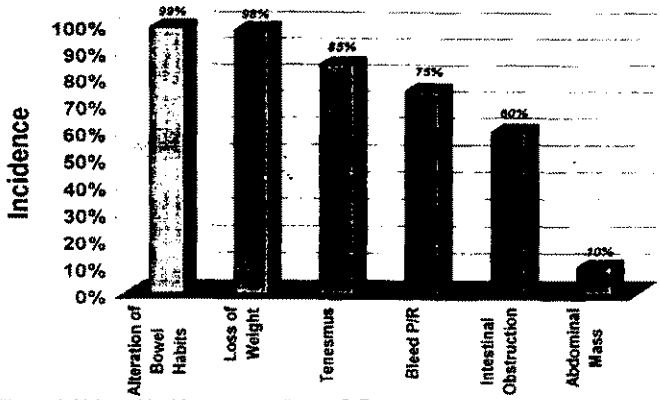

Figure I: Value of incidence according to C.F.

In ca rectum Duke's C was 55% followed by Duke's B 30%, Duke's A 15%. In gross appearance ulcerative type was the predominant feature followed by fungating, cauliflower and annular stenosing types (Table No.III). Adenocarcinoma remained the main pathological finding up to 95%. For lower rectal and low middle tumours, a radical form of abdomino-perenial excision (APR) was carried out in fairly mobile growths. Final decision was carried out during laparotomy. All the patients fully consented for possible colostomy before operation. A total number of 9 cases were operated for APR. One patient died on the10th postoperative day.

TABLE-III GROSS APPEARANCE ACCORDING TO SITE

SITE	Ulcerative	Fungating	Annular Stenosing
Ca rectum	37	10	10
Ca sigmoid colon	2	1	4
Ca caecum & ascending Colon	3	9	5
Ca transverse colon	1	3	1

Anterior resection with sphincter saving procedures was carried out in 20 patients A diversion colostomy was performed in the remaining cases for carcinoma rectum with frozen pelvis involving adjacent structures. Sigmoid carcinomas with obstruction were mostly treated in emergency with Hartmann's colostomy (90%). Carcinoma caecum was treated with hemicolectomy or ileo-transverse colic anastomosis procedures where the resection was very difficult.

Wound and chest infections were the main complications in 20 patients. Anastomotic leak was seen in 12 patients. Preoperative deaths were 6.5% in emergency cases and

ABDOMINAL TUBERCULOSIS: A REVIEW OF 68 CASES

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ABSTRACT:

To evaluate the varied presentation morbidity and mortality of intestinal tuberculosis the record of 68 patients presenting with symptoms and signs of intestinal obstruction or peritonitis, over a period of four years, at Sandeman Provincial Teaching Hospital Quetta was reviewed. All the patients were diagnosed on exploration and with histopathological confirmation . The mean age was 37.8% and male to female ratio was 1:2.

The patients who had primary intestinal tuberculosis were 85.2%. The majority (55.8%) had single or multiple strictures involving the distal ileum and ileocaecal region. 32.3% of the cases were found to had mass in the ileocaecal region. Perforation was noticed in 8 (11.7%) cases. All the patients underwent surgical exploration. Mortality was 2.9%. Major postoperative complications occurred in 10.2% of patients. All the patients received anti-tubercular therapy for a period of 12 months. The followup record of 51 patients was available and they were doing well till the last visit.

Key Words: Abdominal tuberculosis, Presentation, Morbidity, Mortality

INTRODUCTION

Tuberculosis is on of the oldest diseases known to the mankind. John Hunter in 1786 described the features of abdominal tuberculosis, when he said, "I have seen the whole intestine adhering to the peritoneum seemingly from a scrofulous cause and having scrofulous tumours. The symptoms were tightness of the belly without pain and constipation".[1]

Although abdominal tuberculosis is now a less common disease in developed countries because of improved standards of living and health awareness programs. It is still found in many developing countries with increasing incidence. Abdominal tuberculosis remains a major health problem in the developing countries especially the Africa and Asia.

Abdominal tuberculosis may present clinically as an acute abdomen, either due to gastrointestinal obstruction, perforation, or may resemble acute appendicitis or appendicular mass. The diagnosis may be clinical; but it is confirmed at laparotomy. On the other hand, tubercular peritonitis is more insidious and gradual in onset with vague complaints of fever, abdominal pain, weight loss, change in bowel habits or with acute peritonitis. The diagnosis is usually made after laparoscopy or exploration of abdomen. Traditionally the treatment has been conservative in the absence of complications. Surgery is indicated with the onset of complication including obstruction of small or large gut, fistula formation, perforation with localized or generalized peritonitis or haemorrhage.[3]

PATIENTS AND METHODS

Sixty eight patients were managed surgically in the Department of Surgery, Bolan Medical College Complex over a period of four years from April 1997 to May 2001. The criteria for diagnosis of intestinal tuberculosis were operative findings, positive histology, demonstration of acid fast bacilli and response to antituberculous drugs.

Patients with normal chest x-rays were considered to have primary intestinal tuberculosis. Barium meal follow through studies were performed in 18 patients who presented with subacute bowel obstruction. Mantoux test was performed in 22 patients and was positive in only 14. All the patients underwent surgical exploration. Post operatively all the patients were given antituberculous drugs for one year.

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RESULTS

Age range of patients with intestinal tuberculosis was 18-64 years with a mean age of 37.8 years. The male: female ratio was 1 : 2. Out of sixty-eight patients, 85.2% were considered to have primary intestinal tuberculosis and ten (14.8%) with positive chest x-ray finding were labelled as secondary tuberculosis.

Forty three patients (63.3%) presented with symptoms and signs of subacute intestinal obstruction; while 17 (25%) presented with symptoms and signs of acute intestinal obstruction. Eight (11.7%) patients presented with symptoms and signs of peritonitis. The duration of symptoms prior to admission varied widely between 3 days to one year (table I).

TABLE-I SYMPTOMS/SIGNS AT THE TIME OF ADMISSION

Symptoms/signs	No. of patients
Abdominal pain	68 (100%)
Constipation	54 (79.4%)
Abdominal distension	60 (88.2%)
Nausea/vomiting	50 (73.5%)
Tenderness	48 (70.5%)
Fever	36 (52.9%)
Weight loss	28 (41.1%)
Abdominal mass	14 (20.5%)
Diarrhoea	8 (11.76%)
Night sweats	6 (8.8%)

E.S.R. was raised in 58 patients (85.2%). Montoux test was positive in 14 patients out of 22. Plain x-rays abdomen revealed distended bowel loops and air fluid levels in 58 patients. Barium meal follow through studies were performed in 18 patients and showed narrow lumen of the distal ileum and ileocaecal region. Ultrasonography performed in 18 patients revealed mass in right lower quadrant in 12 patients with free fluid in abdominal cavity.

All the 68 patients underwent exploration of abdomen and revealed the findings given in table II.

TABLE-II OPERATIVE FINDINGS

Findings	No. of patients
1. Strictures	38
-Single	20
-Multiple	18
2. Mass Ileocaecal region	22
3. Perforation	8
- Ileocaecal region	5
- Terminal Ileum	3

The most common site of involvement was distal ileum in 45 patients (66.2%). In 23 patients (33.8%) ileocaecal region was involved. No patient of colonic involvement alone was found. The jejunum was also involved along with the ileum in 7 patients (10.2%).
Surgical procedures performed are shown in table III.

TABLE-III SURGICAL PROCEDURES

Surgical Procedure	No. of patients
Resection of ileum (10-30 cm) and End to end anastomosis	18 (26.47%)
Limited right hemicolectomy and ileocolic anastomosis	17 (25 %)
Right hemicolectony and end ileostomy	5 (7.35%)
Stricturoplasty	15 (22.05%)
Loop ileostomy	13 (19.11%)

In all the 68 patients surgical specimens were subjected to histopathology which confirmed the presence of typical granulomas and caseation suggestive of tuberculosis. All the patients remained admitted in the hospital for 5-20 days with an average stay of 10 days. The mortality rate was 2.9%. Major postoperative complications occurred in 7 patients (10.2%); in the form of residual abscesses in 5 patients and wound dehiscence in two. Minor complications occurred in the form of atelectasis and wounds sepsis in 15 patients (22%). Seventeen patients were lost during followup. Fifty one patients completed the criteria of followup. All these patients have shown progressive improvement and were found asymptomatic during follow up.

DISCUSSION

Abdominal tuberculosis is commonly seen in young adults, but can occur at any age. The mean age of 37.8 years in the present study reflects this observation. In the present series of 68 patients, male to female ratio was 1:2. It has been shown in many studies that the disease occurs equally or more commonly in females in developing countries, while it is more common in males in the western countries.[4] Abdomen is the common site of extrapulmonary tuberculosis. Preoperative diagnosis of abdominal tuberculosis is difficult. In areas and population where the tuberculosis is uncommon, the diagnosis is often missed and where tuberculosis is common, it is often overdiagnosed.[5] Abdominal tuberculosis can affect the gastrointestinal tract, peritoneum, lymph nodes of the small bowel or solid viscera (e.g. liver, spleen and pancreas). The gastrointestinal tract is involved in 66-75% of patients with abdominal tuberculosis[6]. The distal ileum and ileocaecal region are the most common sites, followed by the jejunum and colon7. In the present study 60.2% of the lesions were found in the distal ileum, while ileocaecal region was involved in 39.8%; which is in conformity with the studies conducted in our and other developing countries.[8,9] Clinically, abdominal tuberculosis

manifests most often as chronic abdominal pain associated with systemtic symptoms, subacute or chronic intestinal obstruction or rarely as an acute abdomen due to intestinal perforation.[10]

In the present study, majority of patients (88.3%) presented with symptoms and signs of intestinal obstruction and 11.7% presented with acute abdomen (peritonitis) as a result of bowel perforation, which is consistent with the published results in our and other developing countries.[2,3,7] The highest incidence of bowel obstruction in patients with abdominal tuberculosis has been in the Indo-Pak subcontinent.[11,12,13]

Abdominal pain, nausea, vomiting, constipation, abdominal distension and fever were found to be the most common presenting symptoms in this study, which is in agreement with other published series.[3,7,14] The high prevalance of primary intestinal tuberculosis in the present series is in accordance with most of the other studies conducted in developing countries.[4,7] While studies from USA and UK show secondary tuberculosis being more common.[1,5] Abdominal tuberculosis is a disease, which has no characteristics clinical features from which a firm clinical diagnosis can be made and even after thorough investigations, the diagnosis may be elusive. A high index of suspicion is required to enable a correct diagnosis. Confirmation of the diagnosis is essential prior to the administration of anti-tuberculous treatment in view of the potential risks of such treatment and the possibility of alternative diagnosis like lymphoma or malignancy with different prognostic implications. A laparotomy is probably the most reliable way to establish the diagnosis by taking biopsy and correcting the pathology. Nowadays laparoscopy is the procedure of choice.[3,16] In the present study in 17 patients (22.5%) with single or 2-3 strictures away from each other, stricturoplasty was carried out with promising results. In 13 patients (19.1%) with either peritonitis or severely inflammed bowel, loop ileostomy was performed. In the present series all the patients were presented anti-tuberculous treatment for 12 months, as most of the series recommend 12 months chemotherapy for intestinal tuberculosis.[17,18] A study from India has shown beneficial results with short course chemotherapy.[19] The low mortality rate of 2.9% reflects better preoperative management and good surgical decision making especially in selection of various operative procedures.

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SINGLE STAGE REPAIR OF ANTERIOR PENILE HYPOSPADIAS

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MAZHAR RAFI, NABILA TALAT, MUHAMMAD AFZAL SHEIKH

ABSTRACT:
The objective of this study was to evaluate the outcome of modified Mathieu's urethroplasty in anterior Hypospadias. It is a retrospective analysis of 74 cases managed from January 2000 to April 2002 in the Department of Paediatric Surgery, Mayo Hospital, Lahore. There was very low rate of urethrocutaneous fistula, meatal stenosis and retrusion of meatus. The results are consistent with other international studies and confirm this as the preferred procedure for anterior hypospadias.

Key words:- *Urethroplasty, Hypospadias, Results.*

INTRODUCTION

Hypospadias is an alteration in the formation of the urethra in which the urinary meatus lies in an abnormal position in the ventral part of the penis.[1] It is present one in 300 births. The most frequent variety is anterior hypospadias (49%) while in 21% meatus is in mid urethra and in 30% it is posterior.[2] Chordee is almost always present in cases of mid and posterior hypospadias while it is not very common in anterior variety. Various procedures for different kinds of hypospadias have been devised. The objective of therapy is to reconstruct a straight penis with a meatus as close as possible to the normal site with the ultimate goal of allowing a forward directed stream and normal coitus.

The present study is regarding anterior penile hypospadias with no or minimum chordee. Bouisson[3] first introduced the concept of using a perimeatal based flap in 1860 and later Bevan[4] documented it in 1917. Mathieu[5] popularized the technique in 1932 for anterior penile hypospadias. In 1994 'modified Mathieu was introduced by Retic and colleagues.[6] Purpose of our study was to see the results of modified Mathieu technique by using dartos flap in addition to the perimeatal based flap.

PATIENTS AND METHODS:

From January 2000 to April 2002, 78 cases of anterior penile hypospadias were dealt in the Department of Paediatric Surgery Mayo Hospital, Lahore. Four cases were excluded from study due to previous surgery and chordee. Hypospadias was coronal in 10, subcoronal in 20 and distal penile in 44 children. Chordee was absent in these patients. In all 74 patients, single stage modified Mathieu repair was done. The technique is described below.

A holding suture was placed in the glans penis to aid in traction of the phallus. The urethral meatus was dilated to provide an adequate meatal calibar. Feeding tube according to the size of the phallus was put in to the bladder as a stent and diversion. A flap of perimeatal skin was raised from tissue proximal and adjacent to the meatus, taking care to preserve the vascular subcutaneous tissue. The mean length of the perimeatal based flap was 12 mm (range 10 to 15 mm). The mean width was 8mm. Parallel incisions were made on either side of the glanular groove, developing the lateral glans wings. Two suture closures were made on either side of the flap extending the meatus to the tip of the glans. Suturing was done with 4/0 catgut. Dartos tissue flap was harvested from the dorsal penile skin and repositioned over the neourethra as a second layer of coverage. At this stage a modification was devised by using the dartos flap. The flap was divided into two equal halves and repositioned over the neourethra (Fig. 1,2,). Divided dartos flap is easy to rotate from dorsal to ventral surface. Glans penis was closed in two layers. Reduntant skin was excised. Proper skin coverage was given and urethral stent was secured for 7 days. Broad spectrum antibiotic was given for the same period.

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Figure I: Divided dartos flaps have been shown (Modified Mathieu urethroplasty)

Figure II: Divided dartos flaps have been transposed on ventral surface to cover the perimeatal based flap. (Modified Mathieu urethroplasty)

RESULTS

From January 2000 to April 2002, 74 cases of anterior Hypospadias were operated. The age range at the time of surgery was 1-14 years. Thirty patients were < 5 years, 35 between 5-10 years and 9 > 10 years at the time of surgery. Ten patients presented with coronal, 20 with subcoronal and 44 with distal penile hypospadias. Early and late complications are shown in table I. Two patients developed haemorrhage post operatively. Pressure dressing was applied and haemorrhage stoped. Five patients got infection. A few skin stitches were removed, and pus was drained. Daily dressing and change of antibiotic proved fruitful in healing. Stent blockage occurred in four patients. In three cases flushing of the catheter was done but in one flushing failed and the stent was removed. Accidental dislodgement of stent occurred in two patients. Four patients developed urethrocutaneous fistulae. In three patients infection and in one ischemia was the most probable cause. Fistulae were sucessfully repaired in three patients. Two patients developed retrusion of meatus and one meatal stenosis. Patient with meatal stenosis responded to dilatation. A complete straightening and meatus at the tip of glans was achieved along with conical glans in all patients.

DISCUSSION

Various one stage surgical procedures have been devised for anterior hypospadias world wide, including meatal advancement glanoplasty incorporated (MAGPI), Mathieu, modified Mathieu, Mustarde, Onlay island prepetual flap and tubularized Snodgrass urethroplasty.[7] Modified Mathieu in which vascular dartos flap is used to cover the suture line is most acceptable procedure through out the world due to its safety with respect to cosmetic and functional results.[8]

Rafael Alvarado et al performed modified Mathieu repair in 61 patients. 14 (22.9%) were of coronal while 44 (72%) of subcoronal variety.[9] They did not have any patient with distal penile hypospadias. Twenty (26.9%) of 74 patients in our series developed complications which were minor. These complications did not affect ultimate outcome. Four (5.4%) patients developed urethrocutaneous fistula, 3 due to infection and one due to ischemic necrosis of flap. Our results can be compared

TABLE-I

COMPLICATIONS	NO. OF PATIENTS	%
Early		
Mild haemorrhage	2	2.7
Infection	5	6.7
Stent blockage	4	5.4
Stent dislodgement	2	2.7
Late:		
Retrusion of meatus	2	2.7
Fistula	4	5.4
Meatal stenosis	1	1.3

with international results. Hayashi Y et al have shown 19% complication rate in their 16 patients.[10] De Jong TP et al have given a study of 20 patients in which they performed modified Mathieu's urethroplasty. Complications in the group of 20 patients consisted of 1 fistula, 2 meatal stenosis and one wound infection. Brueziere J has shown 10% fistula rate in his study.[12] Minevich et al performed modified Mathieu in 202 patients. One developed meatal retraction and 2 urethrocutaneous fistula.[13]

The main cause of urethrocutaneous fistula in current study was infection. We did successful multilayered closure of fistulae. Meatal stenosis responded to dilatation while meatal retrusion was managed by meatoplasty and meatal advancement.

CONCLUSION:

Modified Mathieu repair gives excellent cosmetic and functional results, with meatus at the tip, and conical shaped glans . Due to use of dartos flap from the dorsal penile skin to cover the suture line as a second layer, fistula rate was decreased to minimum.

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AN AUDIT OF CHOLECYSTECTOMY SPECIMENS

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ABSTRACT:
A study was carried out in the Department of Surgery, Liaquat Medical Hospital, Jamshoro (LMCH), Jamshoro / Hyderabad between February 1993 and January 1996 on 188 patients (148 females and 40 males) with symptomatic gallbladder disease in whom cholecystectomy was performed for symptomatic gall bladder disease. The specimens were subjected to histopathology. The presence of atypical epithelial changes like hyperplasia, dysplasia, metaplasia and carcinoma-in-situ were looked for and recorded. Fifteen patients were diagnosed to have carcinoma gallbladder (Ca GB). In thirteen cases Ca GB was associated with gallstones. In four of the thirteen carcinomas in this series (30.7%), metaplasia and dysplasia were found adjacent to the tumour. Hyperplasia, dysplasia, metaplasia and carcinoma-in-situ were found in 32 % of gallbladders removed for gallstones.

Key words:- *Carcinoma gallbladder, Aetiology, Histo-pathology.*

INTRODUCTION

Gallbladder cancer is the most frequent carcinoma of the biliary tract and the fifth commonest carcinoma of the alimentary tract.[1,2] It is a tumour of the elderly, ninety-one per cent of the patients who develop the cancer are 50 years of age or older. The tumour has striking genetic, racial and geographic characteristics. Females outnumber males by a ratio of 3.4: 1. At present no definite aetiology of gallbladder cancer exists. However, a strong association between cholelithiasis and gallbladder cancer exists supporting the speculation about the causal role of gallstones in gallbladder cancer.[3,4]

Carcinoma of the gallbladder is a highly malignant tumour with a poor 5-year survival rate.[5,6] This is because the symptoms of gallbladder cancer are non-specific resulting in the tumour being discovered either incidentally or at a stage too advanced for any type of curative surgery.[7] In addition, neither the physical signs nor the laboratory tests are specific. Despite increasingly aggressive surgical resection, no improvement in survival has occurred in the last 30 years. It has been realized that early diagnosis is important because a curative treatment can then be offered to the patients with immense improvement in the outlook. There are reports of gallbladder carcinoma arising in areas of hyperplasia, metaplasia and dysplasia.

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This study was carried out with a two-pronged target. One to find out gallbladder carcinoma in cholecystectomy specimens removed for symptomatic gallbladder disease and secondly, to identify the nature and distribution of the pre-neoplastic changes of the gallbladder epithelium in such specimens.

PATIENTS AND METHODS

A total of one hundred and eighty eight patients who underwent cholecystectomy in the Surgical Unit-I, Liaquat Medical College Hospital (LMCH), Jamshoro / Hyderabad between February 1993 and January 1996 were included in this study.

The patients who were diagnosed to have either acute cholecystitis or frank malignancy (n=8) on the basis of clinical evaluation were excluded from the study. Patients who were either unfit for surgery or refused surgery (n=74) were also excluded. In all, 188 patients with gallbladder diseases underwent elective cholecystectomy and were included in the study.

After excision, each gallbladder was opened and emptied. Presence of stone(s), if found was recorded. Thickness of the gallbladder wall, gross appearance of the mucosa (roughness or inflammation) and presence of any polyp were recorded. Any lesions suspicious of being malignant were looked for. The specimens removed were sent for histopathological assessment.

The presence of the following epithelial changes were looked for and recorded: hyperplasia, dysplasia., metaplasia and carcinoma-in-situ. The distribution of these epithelial changes (focal and/or patchy) in the gallbladder, their number location and extension were recorded and analyzed in relation to the sex and age of the patient. The extension of each lesion was expressed as a ratio between the number of sections showing the epithelial change and the total number of sections examined. Where cancer was detected, the extension of cancer extension and lymph node metastasis and hepatic extension were studied where the tissues were removed under suspicion of malignancy. Preneoplastic changes in the vicinity of the cancer were also recorded. Finally, the clinical and operative findings and the pathologist's opinion along with the surgeon's evaluation of the overall condition were recorded on a proforma. The data was reviewed and conclusions were drawn.

RESULTS

Of the 188 patients who underwent cholecystectomy for gallbladder disease, 148 were females and 40 males with a female to male ratio of 3.7: 1. The mean age was 47 years (range 20 – 74 years). Pathological examination of the 188 specimens showed carcinoma gallbladder in thirteen (6.9 per cent) , benign polyps in three (1.5 per cent) and acute cholecystitis in seven (3.7 per cent) . In the remaining 165 (87.7 per cent) patients, histopathology showed chronic cholelithiasis (Table-I).

One hundred and sixty-eight patients (89.3 per cent) of the total 188 patients who underwent surgery in this series had a preoperative diagnosis of cholelithiasis. There were 135 females (age range 20-70 years, mean age 44 years) and 33 males (age range 35-74 years, mean age 52 years). In one patient, no stones were found. She had a tumour mass that was erroneously diagnosed preoperatively as a single gallstone. Fifty-four patients with cholelithiasis (32 per cent) had evidence of atypical lesions in the form of hyperplasia, dysplasia, metaplasia and carcinoma in situ. There was only a single type of lesion throughout the gallbladder in twelve patients while forty-two patients had more than one lesion in the same specimen. Of the 188 patients, twenty underwent cholecystectomy for acalculous cholecystitis. There were thirteen females and seven males. Malignancy was found in only one patient (5 per cent). Two patients (10 per cent) had acute cholecystitis whereas evidence of chronic cholecystitis was found in seventeen (85 per cent). Atypical lesions were found in only two (10 per cent) cases. Total of thirteen cases (6.91 %) of carcinoma gallbladder were found in this study. Eleven (84.6 %) had associated gallstones whereas two (15.4 %) had no associated gallstones.

TABLE-I HISTOPATHOLOGICAL DIAGNOSIS IN PATIENTS UNDERGOING CHOLECYSTECTOMY (N=188)

Diagnosis	Total patients	Male	Female
Cholelithiasis with chronic cholecystitis	148	30	118
Cholelithiasis with carcinoma	11	1	10
Cholelithiasis with benign polyps	03	-	03
Cholelithiasis with acute cholecystitis	05	02	03
Acalculus chronic cholecystitis	17	06	11
Acalculus acute cholecystitis	02	01	01
Carcinoma without gallstones	02	-	02

DISCUSSION

Gallbladder carcinoma is a rare cancer with a poor prognosis. Most patients die within one year.[8] A correct preoperative diagnosis is rare. The tumour is identified when it is in an advanced stage with little hope of cure.[9] This is partly because the symptoms are non-specific and partly because neither the physical findings nor the laboratory tests are specific. This lays stress on identification of preneoplastic lesions in the gallbladders removed for presumed benign diseases.

Higher incidence of gallbladder malignancy amongst the females was found with a female to male ratio of 3.4:1. This correlates well with observations made by others showing a ratio of 2-5:1.[2, 9-11] The highest number of carcinoma was found in the sixth decade with 38 per cent of malignancies found in this age group. The second highest number was found in the seventh decade, contributing to 30.8 per cent of cancers. This was in contrast to the western population where the incidence is highest in the seventh decade. Our observation is supported by Kumar et al. who also show a higher incidence of cancer in the sixth decade amongst the Indian population.[12] We don't know the exact reason for this difference but it could be attributed to ethnic, genetic or environmental factors. The younger composition of our population and lower life expectancy of the society could also be a contributory factor.

Thirteen of the 188 patients (6.91 %) had carcinoma gallbladder in this study. Eleven (84.6 %) had associated gallstones. Approximately 4-5 times higher risk of gallbladder cancer is reported in patients with gallstones than in patients without gallstones.[11, 13, 14] So strong is the relationship between the two diseases that timely surgery of symptomatic cholelithiasis is important in the prevention of gallbladder cancer especially in the patients above 50 years of age.[17, 18] But should gallbladders be

removed for asymptomatic gallstones: remaina controversial. The increasing use of laparoscopic surgery in many countries has led to prophylactic cholecystectomy for asymptomatic gallstones would definitely lower the incidence and mortality rates for this lethal disease. But where open surgery for gallbladder is still in vogue especially in developing countries like Pakistan, this practice cannot be justified. Moreover, the cancer occurs at such older age that prophylactic removal of a stone-containing gallbladder is not an appropriate measure for the prevention of gallbladder cancer.[8] Some authorities however justify prophylactic cholecycystectomy in the presence of other risk factors associated with gallbladder cancer like female gender, age, cigarette smoking and postmenopausal status.[15]

Severe chronic cholecystitis is associated with acceleration of epithelial cell turnover. Studies have confirmed similar cell proliferative activity in the background mucosa of gallbladder cancer.[19] It has been hypothesised that in long standing cases these areas of hyperplasia progress to higher grade i.e. metaplasia and carcinoma-in-situ.[20] This is supported by the fact that eighty per cent of invasive gallbladder carcinomas are associated with some degree of dysplasia in their vicinity. In our series, metaplasia and dysplasia were found adjacent to the carcinoma in four of the thirteen cases (30.7 per cent).

It is questionable if chronic irritation caused by long-standing gallstones a predisposing cause for these atypical changes that lead to cancer gallbladder. Thirty two per cent of gallbladders removed for cholelithiasis showed the evidence of atypical changes on histopathology in this series. Daurte et al. has reported these lesions in 96.9 % cases, the highest ever incidence of these precursor changes.[20] Roa et al., however, has reported an incidence of ten per cent.[21] The wide difference in the incidence of these atypical changes in different studies could be attributed to the difference in the technique of sampling and the number of sections examined. We found an array of precursor lesions in our series. These included hyperplasia (32 %), metaplasia (76 %), dysplasia (14 %) and carcinoma-in-situ (1.7 %). Albores-Saavedra et al. after examining 200 gallbladders, found hyperplasia in 83 per cent cases, atypical hyperplasia in 13.5 per cent cases and carcinoma-in-situ in 3.5 per cent cases.[22]

The exact relationship of aging and metaplastic changes has not been established and many studies report that metaplastic changes may not be the consequence of aging or time of evolution of gallstones.[20] Others however suggest that the incidence increases mildly with the age.[23] We found a higher number of these precursor lesions in the elderly patients and in those with long standing gallstones.

CONCLUSION

We conclude that the gallbladder cancer is present mostly in females especially those with long-standing gallstone disease of the gallbladder. However, it could not be established if patients with long-standing gallstones are more liable to develop cancer. A more detailed study is required to establish this hypothesis.

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

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

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

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PRE-EMPTIVE ANALGESIA WITH LOCAL ANAESTHETIC FOR CAESAREAN SECTION

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ABSTRACT:
A case control prospective randomized study was carried out at Military Hospital Rawalpindi to see the pre-emptive analgesic effects of bilateral ilioinguinal nerve block with 0.5% bupivacaine on postoperative pain in 40 patients, who had caesarean section with Pfannensteil incision under general anaesthesia. Patients received nerve block just before the application of skin stitches. Pain assessment was done on a linear visual analogue scale. The pre-emptive analgesia was achieved for almost twelve hours in 80% of the patients during immediate postoperative period. The results were compared with a control group of sixty patients and the standard duration of action of the drug. It is concluded that by putting in the bilateral ilioinguinal nerve block pre-emptive analgesia achieved remained time limited related to the duration of action of the drug.

Key words:- *Pre-emptive analgesia. Ilioinguinal nerve block. Bupivacaine.*

INTRODUCTION

Pain can be defined as unpleasant sensory and emotional experience associated with actual or potential tissue damage[1] Pain tolerance is a variable behaviour influenced by social, cultural, individual and ethnic factors. Relief of pain has always been a concern of mankind for both therapeutic and humanitarian reasons. The excitability of the dorsal horn cells occur in the central nervous system[2] which is a physiological response to the tissue injury and contributes to the post operative pain. Pre-emptive analgesia technique is presumed to reduce such excitability and may lead to reduction in post operative pain[3] by carry over of the analgesic effects during the postoperative period. Fear of the opioids addiction, ventilatory depression and postoperative vomiting has often lead to undertreatment[4] of postoperative pain. To avoid these problems and on request of certain patients who had bad experience of pain after the previous caesarean sections, ilio inguinal nerve block was chosen as a pre emptive analgesia technique for the postoperative pain. As the extradural analgesia technique used for pre-emptive analgesia[5] has a possible disadvantage of sympathetic and motor block accompanying the sensory block and the bilateral ilioinguinal nerve block usually does not produce such autonomic side effects, so this technique was preferred. The aim of the present study is to examine the time limited pre-emptive analgesic effect of the relatively longest acting local anaesthetic bupivacaine, while using a bilateral ilionguinal nerve block technique in patients who underwent caesarean section under general anaesthesia.

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PATIENTS AND METHODS

One hundred patients of comparable age, weight and height (Table-I) who underwent elective caesarean section with a Pfannensteil incision under general anaesthesia were studied, An informed consent was obtained. Patients were allocated randomly into two groups to receive ilioinguinal nerve block (group NB, n=40) and a control group (group C, n=60) who received no local anaesthetics for post operative pain.

TABLE-I PATIENT'S DEMOGRAPHIC DATA PRESENTED AS MEAN (SD)

Parameters	Nerve block (NB group,n = 40)	Control (C-group,n = 60)
Height; cm	154.96(3.4)	156.10 (2.91)
Weight; kg	62.82 (1.94)	64.46 (2.87)
Age; years	24.02 (4.10)	26.75 (3.49)

Before operation all the patients were shown a visual analogue scale (VAS).[6] A 10 cm horizontal line was used and were instructed about the completion of the scale (VAS, 0 cm=no pain, 10cm= worst possible pain), related to the degree of pain every four hours, in the postoperative period upto 24 hours after surgery. They were also instructed to demand analgesics as and when needed. Anaesthesia was induced with sodium thiopentone and tracheal tube was placed under suxamethonium. Anaesthesia was maintained with 50% nitrous oxide in oxygen and 0.5% halothane. Pethedine 60 mg was injected to all the patients soon after the umbilical cord had been cut, pancuronium bromide was used to achieve muscle relaxation. All the ilio-inguinal nerve blocks were performed just before the skin was stiched, while the patients were still under the effects of general anaesthesia. A 10 ml disposable syringe was used, and according to the standard technique[7] i.e. about 2 cm medial to the anterior superior iliac spine and deep to the external oblique aponeurosis, 10 ml of 0.5% bupivacaine on each side was injected. Halothane was turned off after the nerve block injection had been given, the skin stitches were completed under the residual effect of the halothane, nitrous oxide and oxygen mixture. To complete the visual analogue scale during the first 24 hours after surgery, every patient was asked about the intensity of pain every 4 hours. Those getting a response to mark the linear visual analogue scale were not aware of the treatment the patient had received.

RESULTS:

It was observed that only eight i.e.20% patients who received nerve block (NB) had demanded subsequent analgesia at eight hours and 28{70%} of these patients had requested for supplements of analgesia, by 12 hours and another four (4) 10% patients demanded systemic analgesics by 16 hours of the initial nerve block. By addition of the 70% and 10% patients a total of 80% patients were observed pain free for 12 hours on the average whereas all the patients in the control group, requested analgesics supplements within first 4 hours. These patients were given injection diclofenac sodium 75 mg i/m within an hour, as a standard analgesia.

It was observed that the pre-emptive analgesia achieved by bilateral ilioinguinal nerve block was time limited, on the average for 12 hours. The blood pressure and heart rate remained absolutely sable particularly in hypertensive patients. It was also seen that these patients woke up early as compared to the ones from the control group, as the halothane was turned off immediately on completion of the nerve block injection.

DISCUSSION:

Various methods of pain relief have been used, e.g. psychological and related methods, pharmacological methods, which include use of narcotics, local anaesthetics, non steroidal anti-inflamatiry drugs, inhalation of analgesic gas mixtures. Local anaesthetics, have been used as nerve blocks, regional local analgesia postoperative extradural analgesia, and subcutaneous infiltration of local anaesthetics, which avoids the side effects of opioids and provides extremely good analgesia to an area of the body no larger than the source of pain. Cryoanalgesia of individual nerves, acupuncture and physical methods, which include massage and physiotherapy, short wave diathermy, transcutaneous electrical nerve stimulation have also been tried with variable results.

Recent trends of patient controlled analgesia[8] have revolutionized the post operative pain, but expensive equipment is required in addition to the risk of theft of drug and tampering with the PCA device. As the regional techniques are one of the most accepted and popular pharmacological ways to releive pain, these are commonly being practiced as a combined approach with general anaesthesia so as to achieve the beneficial effects on hemodynamics, respiratory functions, intestinal motility and postoperative stress of pain.[9] These beneficial effects in anaesthetized adult patients have been widely debated with couter arguments.[10] In this study nerve block has been given in an anaesthetized patients where it is not without the risk of complications.[17] There is a very little work done on pre-emptive analgesia with local anaesthetics by producing an ilioinguinal nerve block in patients having has a caesarean section with a Pfannensteil incision, under general anaesthesia. Most of the work done on pre-emptive analgesia by blocking the ilioinguinal nerve with bupivacaine has been for the herniorrhaphy.[11,12]

It is clear from this study that carry over of the analgesic effects of the drug in the postoperative period has been successfully achieved but for limited duration. It appears that although bupivacaine provided excellent analgesia but it remained limited related to the duration of action of the drug.[13,14] The quality of analgesia and cost effectiveness of the drug is a main benefit but the expertise is required to practice this technique, that too is limited to caesarean section done with a Pfannensteil incision. A widely acceptable method[15] of measuring the pain has been used here, which is the subjective assessment of pain indicated on the visual analogue scale, thereby it is seen that the duration of being pain free by virtue of carry over of the analgesic effect of bupivacaine in the post operative period is up to 12 hours in 80% patients, which proves the pre-emptive analgesic effect related to the duration of action of the drug.[16] Our results are consistent with Tverskoy and colleagues[10] who demonstrated a better postoperative analgesia

although did not address the pre-emptive effect of the drug, and the studies published by Pasqualucci and colleagues who demonstrated pre-emptiva analgesia with bupivacaine. Similarly our results, that ilioinguinal nerve block provided a pre-emptive postoperative analgesia are consistent with the results reported by Woolf, Taverskoy and Bunting etal.[3,11,17] who have demonstrated pre-emptive analgesia by ilioinguinal nerve block after caesarean section. As an additional benefit, (to be published as a separate study) patients remained quite comfortable during the immediate post operative period with consequently stable pulse and blood pressure, and they woke up early as compared to the patients from the control group because of an early termination of the halothane after the completion of the ilioinguinal nerve block.

It has been seen from various studies that in actual practice most of the anaesthetists performed regional blocks under general anaesthesia and the same was practiced during this study, although serious complications are rare, they can still be easily linked to needles and drugs[18] however it is concluded, from our study that the bilateral ilioinguinal nerve block did provide a pre-emptive analgesia but for a limited duration[3,11,13] related to the duration of action of the bupivacaine.

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AN EXPERIENCE OF SPINAL ANAESTHESIA VERSUS GENERAL ANAESTHESIA IN SEVERE PRE-ECLAMPTIC PATIENTS UNDERGOING LOWER SEGMENT CAESAREAN SECTION

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ABSTRACT:
This randomized study compared spinal versus general anaesthesia in 200 patients undergoing lower segment Caesarean section (LSCS) in pre-ecalmptics patients as regards hemodynamic stability, recovery, post-operative morbidity and mortality. Hundred patients in each group were given spinal and general anaesthesia. In general anaesthesia group even after proper anaesthetic doses, the rise during laryngoscopy was seen in 63% of the patients, delayed recovery in 26% cases, nausea and vomiting in 15% cases, difficult itubation in 12% cases and postoperative mortality was 10%. In spinal anaesthesia group, hypotension less than 100mmHg was observed in 9% patients and less than 60mmHg in 2% of the patients. Technical failure to perform the block was encountred in 2% of the patients. The morbidity and mortality was quite low with spinal as compared with general anaestheisa. We found that the spinal anaesthesia was rather safe, cost effective and results are satisfactory but needs more expertise.

KEY WORDS: Caesarean section, Pre-eclampsia, Spinal anaesthesia, General anaesthesia

INTRODUCTION

Anaesthetic management of LSCS in pre-eclamptic patients is really a challenege for the anaesthetist. Pregnancy induced hypertension (PIH) is a multi-system disorder characterized by widespread increased capillary permeability and generalized vasoconstriction. It can affect the maternal brain, kidney, liver, coagulation and heart. There is an elevation in the thromboxane to prostacyclin ratio leading to increased vasoconstriction and platelet activation. Reversal of this state is thought to be possible with the use of low dose aspirin.

Incidence of compliction with general anaesthesia in severely pre-eclamptic patients include hypertension during laryngoscopy, intra-operative hypertension, difficult intubation, pulmonary edema, delayed recovery, risk of aspiration pneumonitis and higer morbidity and mortality. With spinal anaestheisa there is increased incidence of hyprotension. Spinal anaestheisa when compared with general anaesthesia have its own advantage and disadvantage. The aim of present study was to compare the two techniques with regards to intra-operative haemodynamics stability, recovery, postoperative complication morbidity and mortality.

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PATIENTS AND METHODS

This study was approved by the institutional research board and written consent was obtained prior to anaesthesia. Selection criteria was framed that those patients whose prothrombin time was more than 1.5 of normal and platelet count<70000 were exluded from the spinal anaesthesia group.

Patients were randomly assigned to either group A as spinal anasthesia group or group B as general anaesthesia group. Total number of patients included in this study was 200. Hundred patients in each group with severe pre-eclampsia were given the spinal anaesthesia and 100 patients were given the general anaesthesia (Table-I).

TABLE-I DEMOGRAPHIC DATA

	Spinal group	G/A group
Number	100	100
Age	25+3	25 ±4
Weight	68 ±7.6	64 ± 6.5
Height	161 ± 4.2	160 ± 5.0

For general anaesthesia group, standard technique was adopted for induction and maintenance in every patient. Injection lignocaine 2% was given intravenously to group B at the dose of 1 mg/kg body weight to blunt the pressor response at the time of laryngoscopy and intubation. Injection thiopentone 4-5mg/kg and suxamethonium 100mg were given to intubate the patient and maintained with Forane 0.75% or halothane 0.5% with nitrous nitrous oxide plus oxygen, 50/50 before delivery and nitrous oxide plus oxygen 60/40. Injection nalbuphine 4mg IV was given soon after delivery and 20mg IM to every patient for immediate postoperative analgesia.

For spinal anaestheisa, 16 G IV canula passed and patients were preloaded with 10% Haesteril 500ml. Spinal anaesthesia was performed under aseptic condition in right lateral position using pencil point needle 27G with introducer and injection bupivacaine 0.5% isobaric 2.0 – 2.5ml was injected into the subarachnoid space at the level of L3-4 to get the desire level of the block (T5-6). The patient was then positioned in supine position with left lateral tilt by putting a edge under right buttock to prevent aortocaval compression. The block height was tested at 3 min interval and surgery was only started when anaesthesia to light touch has reached T5-6 dermatomal level.

Continuous monitoring of ECG, blood pressure, oxygen saturation and respiratory rate was carried out. All the parameters were noted pre-induction or pre-spinal time and then after every minute for first 5 minutes after spinal subarachnoid injection or following tracheal intubation, then after every 5 minutes during the operation till the end of anaesthesia. In the recovery room and ICU patients were continously monitored using NIBP monitor, pulse oximeter, ECG monitor, end tidal CO_2 analyzer and urine output and readings recorded one hourly till their discharge from recovery / or ICU.

STATISTICAL ANALYSIS

Parametric data was compared using one way analysis of variance. Complications were analyzed using either chi-squire or fisher's exact test. $P<0.05$ was considered statistically significant.

RESULTS

In general anaesthesia group, even after giving the proper anaesthetic doses and lignocaine 2% to blunt the pressor response, the rise in blood pressure at larygoscopy was noted in 63% patients. The rise in BP was >20% of the preinduction level which was quite significant (Table-II). 12% of the cases had difficult intubation. Out of 100 patients 39 patients were shifted to ICU with endotracheal tube and put on ventilator. Out of 39 patients 10 patients expired. Mortality was 10%. Out of 10 patients 6 patients had resistant pulmonary edema and heart failure and 4 patients died of intra cerebral hemorrhage and extensive brain damage (Table-III).

In spinal anaesthesia group, only 2 patients had technical failure to perform the block due to excessive edema and and 2 patients went into acute hypotension BP was <60mmHg. They were resuscitated with aggressive fluid therapy. IV ephedrine and temporary respiratory support.

TABLE-II RESULT OF GENERAL ANAESTHESIA

Systolic Arterial Pressure	↑> 20% of-Induction At Intubation	63%
Systolic Arterial Pressure	↑> 20% of pre-Induction overall	75%
Systolic Arterial Pressure	↓> 20% of Pre-Induction	7%

TABLE-III MORTALITY

	Spinal group	G/A group
Pulmonary Oedema & Heart Failure	Nil	6 %
Intra cerebral bleed	Nil	4 %
Total	Nil	10 %

TABLE-IV RESULT OF SPINAL ANAESTHESIA

Systolic Arterial Pressure	↓20% Of Pre - Spinal Level	38%
Systolic Arterial Pressure	↓< 100mmhg	9%
Systolic Arterial Pressure	↓< 60mmhg	2%
Systolic Arterial Pressure	↓< 20%	51%
Systolic Arterial Pressure	↑> 20%Of Pre - Spinal. Level	0%

Both were resuscitated properly. No patients expired after spinal anaesthesia. It was noted that drop in BP was in 38% of patients >20% of pre spinal level. In 9% of patients BP dropped below 100mmHg (Table-IV). There was nausea and vomiting in 3% of patients.

DISCUSSION

There was more incidence of hypotension after spinal anaesthesia which was 38%. The decrease was more than 20% of the pre spinal BP but the decreased in BP <100mmHg was only in 9% patients. The decrease in SAP is less on an absolute scale but more on a percentile basis with PIH at Caesarean section under spinal that in normotensive patients[1]. The hypotension was prevented by aggressive fluid therapy, IV ephedrine and temporary respiratory support. We used 10% Haesteril 500ml for preloading because there was already excessive edema in these patients. Haesteril decrease the incidence of and severity of spinal induced hypotension more than preloading with one litre lactated Ringer's solution.[2] Excessive fluid administration may precipitate life-threatening pulmonary oedema, aggravated by the underlying pulmonary capillary leak.

The nature of complications following general anaesthesia were more serious which lead to even higher rate of mortality whereas following spinal anaesthesia, it was less serious and easily manageable.[3] Knouchik et al even used spinal anaesthesia in HELLP syndrome, in patients with pre-eclampsia / eclampsia and there was no maternal death.[4] General anaesthesia has no place in this debate. Being a technique, best for specific or exceptional circumstances in the elective setting, subarachnoid block is the gold standard technique for surgical anaesthesia for both elective and urgent c/section. It is uniformly accepted that general anaesthesia is less desirable than spinal anaesthesia for both maternal and fetal reasons.[5] and has substantial increase in maternal mortality as evident in Table-V from several countries including UK and the USA.[6]

TABLE-V COMPARISON OF COMPLICATIONS

	Spinal	G/A
Difficult Intubation	Nil	12%
Pulmonary Oedema	Nil	13%
Delayed Recovery	Nil	26%
Post op IPPV	Nil	39%
Nausea / Vomiting	3 %	15%
Technical Difficulty	15%	Nil
Technical Failure	2 %	Nil

In general anaesthesia group we used IV ligocaine 2% in a dose of 1 mg/kg to attenuate the pressor response at laryngoscopy and intubation.[7] The average increase in SAP at intubation was in 63% of patients which is 20% above the pre induction level and Connell H et al.[8] studied the patient receiving standard anaesthetic, designed to control the potential dangerous reflex cardiovascular instability associated with larygoscopy. The avearge increase in SAP was 56mmHg following laryngoscopy. According to Ahmed et al commonest complications during anaesthesia were rise in BP in 68%, difficult intubation in 25% cases, pulmonary edema 12.8%, delayed recovery and mortality 4.3%. In our study the rise of BP in 63% of patients at the time of intubation and overall rise in SAP was 75% which contributed towards ultimate morbidity and mortality. Other untoward effects were delayed recovery in 26% of patients, pulmonary oedema in 13%, difficult intubation in 12% and mortality in 10% of the cases.[9] while in spinal anaesthesia group there was no mortality.

The morbidity and mortality was quite low with spinal anaesthesia when compared with general anaesthesia. We found that spinal anaesthesia is rather safer and cost effective in severely pre-eclamptic patients.[10] The cost of spinal anaesthesia being half that of general anaesthesia.

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AN UPDATE ON CHANGING PATTERNS OF ANTIBIOTIC SENSITIVITY OF VIBRIO CHOLERAE EIT OR SEROTYPE OGAWA FROM RAWALPINDI ISLAMABAD REGION

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ABSTRACT:
The editor biotype of Vibrio cholerae has caused outbreaks of cholera throughout South East Asia. V.cholerae EIT or serotype Ogawa is consistently being isolated every summer for the last one decade at Children's Hospital, Pakistan Institute of Medical Sciences, Islamabad. The sensitivity of 212 isolates of Vibrio cholerae EIT or serotype Ogawa was carried out on Mueller Hinton agar by Kirby Bauer method and traced from 1994 to 1999. It was observed that the resistance of the organism to the commonly used anti-cholera drugs is on the increase rapidly and nalidixic acid was the best choice, showing 100% sensitivity till 1998. The results of 1999 have abruptly shown resistance of 61% to this drug, hence limiting the choices and pointing towards the need of looking for new antibiotic for this organism.

Key words:- *Drug resistance, Antibiotic sensitivity, Vibrio cholerae*

INTRODUCTION

Cholera has smoldered in an endemic fashion on the Indian sub-continent for centuries. There are references to deaths due to dehydrating diarrhea dating back to Hippocrates and Sanskrit writings.[1] Gercia del Huerto, a Portuguese physician at Goa, India, described epidemic cholera in 1563. John Snow, a London based physician, proved the mode of transaction of cholerae by water in 1849. In 1883, Robert Koch successfully isolated the cholera vibrio from the intestinal discharge of cholera patients and proved conclusively that it was the agent of the disease.[2]

The first long distance spread of cholera to Europe and the America began in 1817 and by the early 20th century, six waves of cholera had spread across the world in devastating epidemic fashion. Since then, until 1960's the disease contracted, remaining present only in southern Asia. In 1961, the "EIT or" biotype (distinguished from classic biotypes by the production of hemolysins) re-emerged to produce a major epidemic in the Philippines[3] and to initiate a seventh global epidemic. Since then this biotype has spread across Asia[4] the Middle East, Africa[5] and more recently, part of Europe.

There are several characteristics of the EIT or strain that upon it a high degree of "epidemic virulence" allowing it to spread across the world as previous strains have done. First, the ratio of cases to carriers is much less than in cholera due to classic biotypes (1:30-100 for EIT or Vs 1:2-4 for classic biotypes.[6] Second the duration of carriage after infection is longer for the EIT or strain than the classic strain. Third, the EIT or strain survives for longer periods in the extra intestinal environment. Between 1969 and 1974, EIT or replaced the classic strains in the heartland of endemic cholera, the Ganges river delta of India.[8]

In Pakistan, the endemicity of Vibrio cholerae is not known but workers reported both in children and adults sporadic cases of gastroenteritis due to Vibrio cholerae in 1998 and 1990 from Rawalpindi and Islamabad area.[9,10,11] Isolation rate has gone up suddenly since 1994 at Children's Hospital, Pakistan Institute of Medical Sciences, Islamabad. From 1994 onwards, the trend is on an increase.

Oral rehydration salts treat mild cases of gastroenteritis in Pakistan and severe cases by antibiotics but mostly without proper bacteriological support. The pattern of

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antibiotic resistance is ever changing and there is always a need to test the commonly used antibiotics, results of which serve as a guideline for the treatment. In this study antibiotic sensitivity pattern of Vibrio cholerae isolated from 1994-1999 have been studied.

MATERIALS AND METHODS

The faecal specimens from patients suffering from gastroenteritis were collected. The stool samples were cultured on MacConkey agar, salmonella shigella agar (S.S agar), thiosulphate citrate bile salt sucrose agar (TCBS agar) and incubated at 37 C for 18-24 hours. The organism were studied for clonal morphology, gram staining, motility and biochemical tests using API 20 E. The isolates showing the characters of Vibrio cholerae were subjected to serotyping by slide agglutination method using specific antisera polyvalent 01, laba and Ogawa. Kirby Bauer Method on Mueller Hinton agar studied 21s isolates for their susceptibility to ampicillin, cotrmoxazole, nalidixic acid, tetracycline, doxycycline, chloramphenicol, ofloxacin, ciprofloxacin, and erythromycin, A.T.C.C. 25922 E.coli was used as control organism in this study.

RESULTS

A total of 212 isolates of Vibrio cholerae EIT or serotype Ogawa isolated from diarrhoeal stool specimen cultured during a period of 1994-99 were included in this study. The distribution of these isolates from children of both sexes upto the age of 12 years is shown in Table-I. The susceptibility (percentage resistance) pattern of 212 strains of Vibrio cholerae EIT or serotype Ogawa isolated from 1994-99 is shown in Table-II.

TABLE-I YEAR, SEX AND AGE WISE DISTRIBUTION OF VIBRIO CHOLERAE EIT OR OGAWA. (N=212)

Year	Male	Female	0-1 Mon	1Mon-1 Yr.	1-12 Yrs	Total
1994	38	26	01	02	61	64
1995	22	24	--	02	44	46
1996	12	04	--	04	12	16
1997	12	06	--	--	18	18
1998	12	08	--	02	18	20
1999	20	24	--	04	44	48

TABLE-II COMPARISON OF SUSCEPTIBILITY (PERCENTAGE RESISTANCE) PATTERN OF VIBRIO CHOLERAE EIT OR OGAWA. (N=212)

Year	1994	1995	1996	1997	1998	1999
No. of Isolates	(64)	(46)	(16)	(18)	(20)	(48)
Antibiotics						
Ampicillin	7%	99%	97%	100%	100%	100%
Cotrimoxazole	96%	100%	100%	100%	100%	100%
Nalidixic Acid	0%	0%	0%	0%	0%	61%
Tetracycline	93%	95%	95%	100%	100%	100%
Doxycycline	0%	0%	0%	0%	0%	0%
Chloramphenicol	57%	57%	50%	100%	80%	62%
Ofloxacin	0%	0%	0%	0%	0%	0%
Ciprofloxacin	0%	0%	0%	0%	0%	0%
Erythromycin	NT	NT	NT	04%	03%	0%

NT=Not Tested

DISCUSSION

Cholera is persisting but has reemerged in the form of summer outbreaks in our region as evident by the findings of this study. Majority of the organisms is Vibrio cholerae EIT or serotype 01 biotype Ogawa, showing definite seasonal pattern of isolation. There are simple reports by other workers of the region.[9,10,11,12] Majority of our patients is in the age group between 1-12 years[9] Table 1). Cholera being a water-borne disease is keeping its existence in this country due to low standards of hygiene including poor sewage disposal and lack of clean drinking water facilities.

Antibiotic sensitivity pattern of Vibrio cholerae EIT or serotype Ogawa has shown gradual but consistent change towards resistance to certain antibiotics. Over the last six years almost 100% of these strains have acquired resistance to ampicillin, tetracycline and co-trimoxazole. Resistance to chloramphenicol is varying between 50 to 100%. These findings are consistent with other studies[11, 12,13,14] but different form studies in North India[15] who 1997 reported majority of their strains sensitive to tetracycline and co-trimoxazole.

Nalidixic acid, one of the quinolones which has served as the drug of choice till 1998[12] because of 100% sensitivity of the isolates to this drug has abruptly shown 61% resistance pattern in 1999 summer, at our centre. Other workers of the area have observed similar findings in this year (verbal communication). Hence this change has limited further the antibiotic choices for the treatment of cholera. New antibiotics have already been looked into with reference to their in vitro results and clinical efficiency, like fluroquinolone, doxycline and erythromycin.[15,16] These studies have shown best results with ciprofluxacin followed by erythromycin. In vitro doxycycline susceptibilities are not useful indicator of the in vivo efficacy.[15,16] All our isolates are 100% sensitive to doxycycline but its clinical use is limited by difference in vitro and in vivo efficacy[15] and non-availability of this drug in syrup form in this region. To fluoroquinolonins (ciprofloxacin) though all our isolates are sensitive but its use is controversial in children because of its side effects on cartiliges. Erythromycin is the new hopeful choice because of its easy availability, favorable sensitivity (100% sensitivity of our isolates), low cost and favorable clinical experience of other workers.[15,16]

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CARDIAC CHANGES IN CHRONIC RENAL FAILURE

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ABSTRACT:
This study was carried out for eight month from March 2001 to determine association between cardiovascular status and end-stage renal disease. Twenty-five patients (15 males and 10 females) between the age group of 15-75 years were included in the study. A detailed renal profile and cardiac evaluation was done, clinically as well as investigation including electrocardiogram and echocardiography were performed. The common cardiac changes detected in these patients with end-stage renal failure were hypertension 70%, left ventricular dysfunction 56%, coronary artery disease 40%, arrhythmias 16%, pericardial involvement 10%, uremic cardiomyopathy 4% and endocarditis 1% (mostly due to vascular access). The common risks factors for cardiovascular disease in general population and specific to patients with end-stage renal disease patients are discussed.

KEY WORDS: End-stage renal disease, Hypertension, Coronary artery disease, Cardiomyopathy.

INTRODUCTION

Chronic renal failure (CRF) is defined as progressive and irreversible loss of renal function. Its clinical presentation varies from patient to patient as it depends on the magnitude and rapidity with which the reduction of renal mass occurs. The main clinical features with which chronic renal failure usually manifests are:

- Hematological abnormalities: mainly anemia (hallmark of CRF), and bleeding tendencies.
- Cardiac changes: most commonly hypertension, left ventricular failure, arrhythmias, atherosclerosis, pericarditis, and rarely uremic cardiomyopathy.
- Renal osteodystrophy.
- Central nervous system changes: uremic encephalopathy, peripheral neuropathy, muscle wasting, cerebrovascular accidents and sometimes uremic flaps.

Cardiovascular involvement is one of the most common clinical presentations of patients with CRF. The poor prognosis of patients with CRF is mainly due to the high incidence of cardiovascular diseases, which accounts for almost 50% of the deaths.[1] Twenty percent of these deaths are due to acute myocardial infarction. The risk is highest in elderly patients and in diabetics.[2] A high prevalence of atherosclerotic lesions and accelerated arterial stiffening contributes to this high cardiovascular mortality.[3] In addition to traditional risk factors, a number of uremia-specific factors contribute to coronary atherosclerosis and myocardial ischaemia.[4]

Hypertension is generally considered to play an important role in the pathogenesis of loss of renal function of patients with CRF. Until the 1980s diastolic pressure was assumed to be the most relevant haemodynamic parameter as a predictor of the prognosis of the disease, but epidemiological studies have led to the recognition of elevated systolic blood pressure a risk factor as important as high diastolic blood pressure.[5] Certain studies would even indicate that systolic blood pressure is a more relevant predictor of prognosis than diastolic blood pressure, in particular with respect to the risk of stroke.[6] According to modern definitions expressed in the JNC-VI.[7] and 1999 WHO/ISH-Guidelines.[8] ISH (isolated systolic hypertension) is now defined as BP>140/<90 mmHg.

The development of isolated systolic hypertension (ISH) is a great risk factor for the progression and deterioration of stable renal functions with increasing age in patients with CRF. In these patients there is increasing arterial stiffness caused by structural and functional changes in the vascular wall, affecting collagen, extra cellular protein matrix and elastin resulting in intimal thickening and fibrosis. This reduction in arterial compliance decreases the function of

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the arteries. The renal vessels are more affected in patients of CRF, leading to renal function and deterioration progression of the renal disease to end-stage particularly in elderly patients. Thus, ISH is a very important risk factor. It is also characterized by a widened pulse pressure. It has been recognized as an important entity, which requires consistent treatment. Apart from advices for lifestyle modification, drug treatment is required in majority of the patients. The data so far available indicates that low-dose thiazide diuretics and slow, long-acting calcium antagonists are drugs of first choice. A slow reduction of systolic pressure in elderly patients is mandatory. A target level of systolic blood pressure around 140 mmHg seems desirable. Newer drugs such as ACE-inhibitors, AT_1-blockers are effective but large scale data concerning their protective effects are not available. The aldosterone antagonists and nitrates may reduce arterial stiffness but these drugs need further evaluation.

The current reports suggest that cardiomyopathy predisposes to heart failure in chronic uremia. Our definition of cardiac failure is clinical. There is always a possibility that the constellation of clinical findings constituting this definition could be due to salt and water overload, as opposed to an intrinsic cardiac abnormality. It is also possible that some of the associations between anaemia and the different cardiac abnormalities partially reflect more severe degrees of fluid overload. The heart failure has been shown repeatedly to be associated with a high mortality rate in end stage renal disease patients.[9]

PATIENTS AND METHODS

This eight months' prospective study was carried out at the Department of Nephrology, Jinnah Postgraduate Medical Centre, Karachi, starting from March 2001 with a followup of eight months. Twenty-five patients, 15 males and 10 females suffering from CRF with various aetiologies are included. A clinical assessment was undertaken to detect the presence of cardiovascular disease. The data collected monthly included regular blood pressure monitoring, haemoglobin, serum creatinine, blood urea nitrogen, serum electrolytes, blood sugar, serum calcium, inorganic phosphorus and 24 hours urine for creatinine clearance.

Radioisotope renal scans x-ray chest and x-rays of the bones were done in all the patients. X-ray chest to see the heart size and other cardiac abnormality like pericardial effusion, cardiomyopathy, unfolding of aorta and pulmonary oedema. Electrocardiogram to see ischaemic changes, arrhythmias, effecting long-standing hypertension, low voltage in cases of pericarditis, pericardial effusion, and cardio-myopathy. Echocardiography was performed in all patients to study the changes in the pericardium, left ventricular mass and function. Left ventricular cavity was also calculated along with the ejection fraction.

RESULTS

The main causes of CRF were diabetic nephropathy 30%, chronic glomerulonephritis 25%, hypertensive nephropathy 20%, chronic pyelonephritis 15%, polycystic kidneys 5%, tubulointerstitial disease in 5% of patients.

The important cardiac changes observed are shown in Table-I.

TABLE-I CARDIAC CHANGES

Hypertension	72%
Left ventricular dysfunction	56%
Ischaemic heart disease	40%
Arrhythmias	16%
Pericarditis	10%
Uremic cardiomyopathy	4%
Endocarditis	1%

DISCUSSION

Cardiovascular disease is the major cause of morbidity and mortality in patients with end-stage renal disease. Dialysis patients have an age-adjusted death rate estimated to be 3.5 times higher than that of the general population.[10] The uremic state is itself associated with specific additional cardiovascular risk factors, which can contribute to the development and progression of cardiovascular disease. The important risk factor is volume overload with subsequent hypertension.[11] The end-stage renal disease patients are likely to be exposed to hypertension for several years and long-term hypertension can cause cardiac failure with consequent reduction in blood pressure. In the present study 72% patients were found to be suffering from hypertension. The data from various studies suggest that hypertension plays a major role in determining cardiac damage in dialysis patients, as it does in the general population via left ventricular hypertrophy (LVH). This predisposes the patient to ischaemic cardiac damage by reducing coronary reserve and capillary density.[12] The impairment of coronary perfusion in a hypertrophied heart may be catastrophic, resulting not only in regional impairment of left ventricular contraction but also in left ventricular dilatation, thus perpetuating a vicious circle leading to progressively altered left ventricular systolic dysfunction.

Anaemia.[13] hallmark of CRF is an important determinant of cardiac hypertrophy. This is a frequent finding in uremic patients. Diminished left ventricular capillary supply in renal failure with severe anemia increases the critical oxygen diffusion distance in the hypertrophied myocardium, thus predisposing it to ischaemia and subsequent failure. The other important cardiac risk factors specific to patients with end-stage renal disease is disturbance of calcium-phosphorus metabolism, dyslipidaemia and possibly accumulation of metabolic

products like advanced glycation end-products (AGE), asymmetric dimethyl arginine (ADMA), homocysteine, chronic inflammation and hypercatabolism.[14,15]

The heart failure has been shown repeatedly to be associated with a high mortality rate in end-stage renal disease patients.[16] Coronary artery disease (CAD) is the most frequent complication in patients undergoing chronic haemodialysis. In patients treated with haemodialysis or peritoneal dialysis, the prevalence of coronary artery disease is approximately 40% and the risk for death from a cardiovascular event is 20-fold greater in these patients than in general population.[17]

Inspite of these cardiovascular diseases carry high morbidity and mortality in patients with end-stage renal disease. Recent developments are encouraging, suggesting that an improvement of outcome may be possible, which warrants further common effort of nephrologists, casrdiologists, and cardiovascular surgeons.

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Review Article

SECONDARY BONE GRAFTING OF ALVEOLAR CLEFTS

NASREEN AMANAT

ABSTRACT:
Secondary alveolar bone grafting of the cleft palate has been in practice for over 30 years to correct aesthetic, functional and occlusal defects which reportedly occur due to interference with the growth centres of the facial skeleton. The purpose of this article is to review and evaluate the current role, and the success rate of this procedure and of any modifications that may be adopted.

Key words:- *Cleft palate, Secondary repair, Alveolar bone grafting.*

INTRODUCTION

Treatment of patients with cleft of lip and palate involves multi-disciplinary approach. The controversy regarding timing of repair and the type of repair of the deformities associated with the cleft lip and palate still exists, although it is now generally accepted that the repair is done in stages so as to minimize interference with the growth centers.

At the time of primary surgery most surgeons would attempt a soft tissue closure of the cleft alveolus or leave it untouched.[1] Soft tissue repair of the lip and alveolus draws the edges of the maxillary arch. Formation of scar tissue after repair of the palate causes further inhibitory effect on maxillary growth. Bone grafting of the alveolus at the time of lip repair or before eruption of deciduous dentition was introduced in 1955.[2,3] The aims of the primary bone grafting was:

1. To prevent collapse of maxillary arches which occurs due to surgery.
2. To enhance the potential of normal dental and skeletal development.
3. To provide support for alar bases and to eliminate nasal deformity.

Following its introduction, primary bone grafting was done at many centres and the initial reports were encouraging.[4,5,6,7] Amidst and despite all these reports, warnings against primary bone grafting were beginning to sound. In view of the intermediate and long term reports it became increasingly apparent that children treated with primary and early secondary bone grafting showed unacceptable underdevelopment of the facial skeleton. Maxillary growth was inhibited in all the planes with adverse effect on facial propotions.[8,9,10,11] Attenuation of maxillary growth was believed to be due to:

a. Extensive mobilization of the soft tissue at the time of primary surgery leading to formation of excessive scar which inhibits growth by tethering.

b. Disturbance of vomero-maxillary and pre-maxillary sutures where the active growth occurs by sutural and appositional bone deposition up till the age of 8-9 years.

c. Evident inability of the graft to integrate and to respond to the physiological and functional stimuli affecting surrounding bone so that the teeth did not migrate and erupt spontaneously into the grafted area leading to attenuation of anterior vertical maxillary height.

d. In adition to inhibiting maxillary bone growth, primary bone grafting did not prevent the collapse of the maxillary arch. Following these reports primary bone grafting has been abandoned by most centres.[12,13] There are at least two centres[14,15,16] where primary bone grafting is still being practiced. Their results have been questioned[17] stressing that "advocates of an-unproved method must demonstrate its advantages over other methods".

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Secondary bone grafting of alveolar cleft was introduced to overcome the drawback of primary bone grafting and the functional and esthetic problems of un-grafted clefts. This procedure was described and advocated simultaneously by more than one team.[18,19,20] It was, however, popularized by Abyholm et al.[20] who credited Boyne and Sands for the biologic and scientific basis of this procedure.

OBJECTIVES OF SECONDARY ALVEOLAR BONE GRAFTING

1. To stabilize the premaxilla, specially in bilateral cleft cases.[19,22,23]
2. To close fistulae and eliminate mucosal recesses.[21,22,24]
3. To allow eruption of teeth into the cleft and to achieve orthodontic movement of the teeth adjacent to the cleft site so as to obtain a non prosthodontic dental rehabilitation.[20,24,25]
4. To provide firm bony support to the alar bases and to eliminate nasal asymmetry.[19,20,21,22,23]
5. To consolidate the maxilla so as to facilitate secondary corrective surgery.[23]
6. To facilitate final prosthetic restoration by improving the vestibular soft tissue relationship.[21,25]

SURGICAL TECHNIQUE (AFTER ABYHOLM ET AL, 1981)

Two teams operate simultaneously; one harvests the cancellous bone graft while the other operates upon the cleft area so that a minimum time period lapses between harvesting the graft and transferring it to the recipient site.

While the graft is being harvested, the area immediately adjacent to the cleft is infiltrated with 2% lignocaine with 1:200,000 adrenaline for haemostasis. After waiting for a few minutes a buccal incision is made along the gingival margins on either sides of the cleft. The incision along the gingival border embraces one tooth, usually a central incisor on the medial side. This incision is joined with a vertical medial incision. Distally the incision is extended to include the most distal erupted tooth. Vertical incisions are also placed around the cleft margins (fig.1). A buccal mucoperiosteal flap is elevated and buccal and palatal mucoperiosteum is carefully dissected from each other and from the nasal mucosa. Excessive soft tissue is dissected away and if an oro-nasal fistula is present then the nasal floor is repaired by suture (fig.2) or lined with xenoderm in case of mucosal deficiency. Every effort is made to avoid damage to the thin bone covering adjacent dental roots. The defect is then firmly packed with harvested cancellous bone.

The periosteum on the undersurface of the buccal flap is incised to relieve the tension. Occasionally it might be necessary to place a distal vertical releasing incision, extending into the buccal sulcus. The buccal flaps are sutured together and to the palatal mucosa over the alveolar crest with polypropylene and vicryl polyglycolic sutures (fig.3).

GRAFT MATERIAL AND DONOR SITE

Cancellous autogenous bone graft is almost exclusively favoured by most surgeons. Donor sites advocated for obtaining the cancellous bone mesh are: Tibia.[25,26,27,28,29,30]

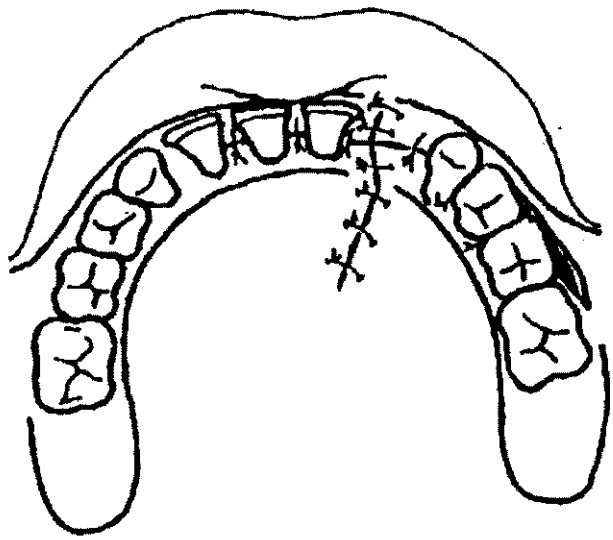

Figure I: Incisions made along the margins of cleft alveolus. Buccal and palatal flaps elevated.

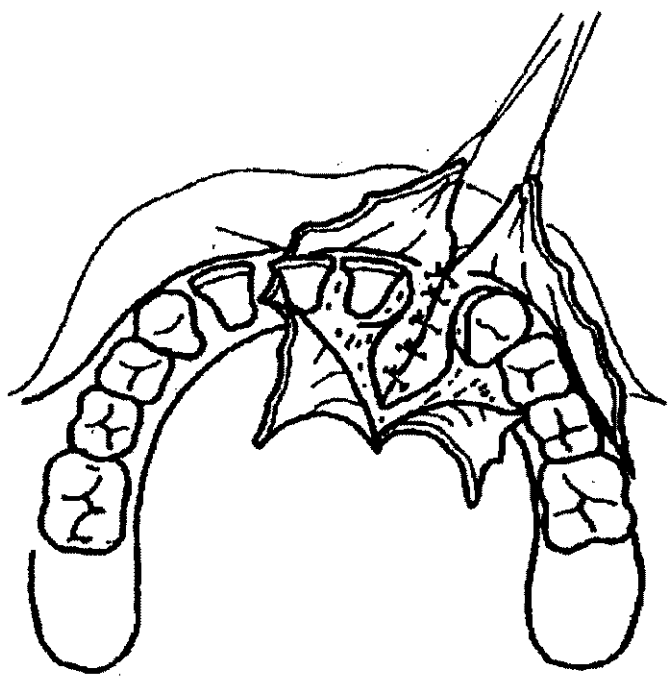

Figure II: Nasal floor repaired. Cancellous bone mesh is packed in the cleft after repair of nasal floor.

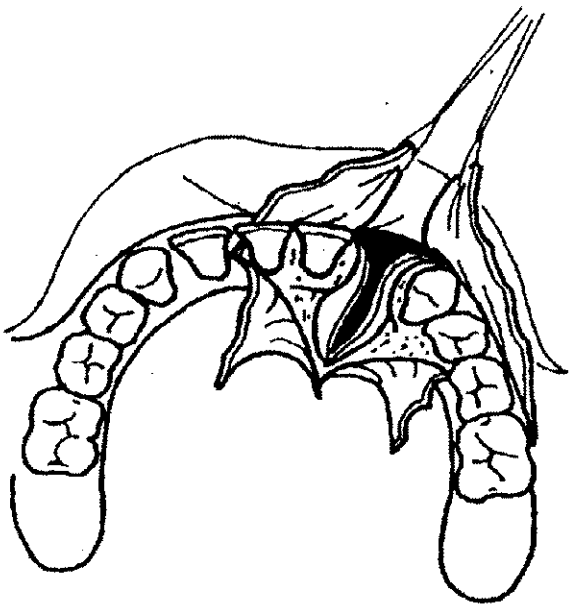

Figure III: Buccal and palatal flaps sutured to achieve closure.

ilium.[20,21,22,23,31,32,33] rib.[34,35] calvarium.[28,35,36] and chin or mandibular symphysis.[32,34,37]

Several arguments have been offered in support and against these donor sites[38] and researchers have also demonstrated that there is no long term difference between cancellous bone from ilium, tibia or mandibular symphysis.[32,33,37] The overwhelming preference of surgeons nevertheless, remains the anterior crest of iliac bone, since this donor site ensures abundant source of cancellous bone.

The least favoured donor site is the rib as the cortico-cancellous bone from this site tends to undergo resorption.[34] Certain amount of donor site morbidity associated with ilium after bone harvesting remains an area of concern.[39] The post operative pain, prolonged hospitalization and immobilization can be minimized by harvesting the bone graft from the ilium with a closed osteotomy using a cylindrical Shepard Osteotome[38] or by percutaneous harvesting of bone graft using Craig Bone Biopsy Needle.[30]

Peroperative bupivacaine at the iliac donor site is reported to significantly delay onset of post-operative pain, and to promote earlier ambulation thereby reducing hospitalization time.[39]

Recent research advocating use of composite intra-membranous bone graft mixed with demineralized bone matrix[40] and bone morphogenetic protein mixed with autogenous particulate cancellous bone have reported promising results.[41]

The success of the secondary alveolar bone graft is evaluated by:

a. The eruption and migration of teeth in the grafted area.
b. The marginal bone levels.

Type I, Inter-dental septum height: Normal.
Type II, Inter-dental septum height less than normal but more than _ normal height.

Type I and II bone levels represent satisfactory alveolar bone height. Based upon the above cited criteria the success rate quoted by various centers is 76%- 91%.[32,42,43,44]

COMPLICATIONS: (Recipient site)

1. Graft resorption:
   Although wound dehiscence and sequestration at the ridge is not infrequent[45,46,47] the incidence of such occurances and complete graft resorption appears to increase with age probably because healing potential is adversely affected by increasing age.[21,25,46]
   The other causes of graft resorption are:

a) Infection:

1. Local infection that is caries, gingivitis and periodontitis. It is recommended that local infection be controlled prior to undertaking secondary alveolar bone grafting.[21,22,23]
2. If the nasal floor is deficient, seepage of the nasal contents into the grafted site can lead to infection. This leads to a greater incidence of eventual resorption of the graft.[25,46,47]

b) Inadequate blood supply:

i. Inadequate blood supply to the grafted area due to scarring from previous surgeries predisposes to graft failure.
ii. Extensive palatal flap may compromise blood supply to the grafted site jeopardizing the success of alveoloplasty.[47]

2. Retention of canine:

Failure of the Canine to erupt into the grafted space occurs in 6%-20% of most reported series.[31,32,48,49] It is now universally accepted that best results are obtained when bone grafting is done prior to eruption of the canine, between 8-12 years of age.[10,21,22] At the upper age limit of 18 years[21,22,23] the possibility of achieving optimal results is reduced.

Retention of canine is attributed to the following facts:

a) Mucobuccal and mucolabial flaps as opposed to the recommended mucogingival flaps, do not conform to the anatomy of the alveolar ridge. These flaps persist as soft and reddish tissue which present a resilient obstacle to the erupting tooth.[23,48,49]

b) Trauma to the attachment apparatus during surgical procedure leads to necrosis of the periodontal membrane followed by resorption and ankylosis of the tooth.[50,51]

3. Root resorption:

This is a serious complication, which can lead to tooth loss. In secondary alveolar bone grafting external root resorption of the canine has been reported more often as opposed to the external root resorption of lateral incisors. This complication appears to be directly related to trauma of the periodontal membrane during surgery. It has also been reported that:

a) The cancellous bone marrow cells from the iliac crest have a potential to induce external root resorption.[51,52]

b) The epithelial and endothelial cells of the periodontal membrane produce protease inhibitors, which protect the root surface from osteoclastic activity of the bone cells.[54]

Incidence of resorption and ankylosis is reduced if cancellous bone from the jaw,[52,53,54,55] or lyophilized bone[52,53] is placed adjacent to the denuded root surface before packing the cleft with fresh iliac crest cancellous bone.

CONCLUSION

Secondary alveolar bone grafting is a simple and reliable technique and has become an integral part of the comprehensive management of cleft lip and palate. The basic philosophy and technique as practiced nowadays remain essentially the same, with the focus shifting to reducing the associated post-operative discomfort and hospitalization time. Timing of the procedure is essential for the success of the graft; Bone grafting of the cleft alveolus is described in terms of chronological age i.e. 8-12 years; it is the dental age that the surgeon also take into accounts; which is before the eruption of canine and when the root is formed about two thirds of its length and the canine is not clinically visible in the oral cavity. Secondary alveoloplasty done up till 18 years of age will not yield optimal results but is nevertheless done to eliminate oro-nasal fistulae, mucosal recesses and to improve nasal asymmetry. Also important for the success of the graft is the repair of deficient nasal floor and minimal disruption of blood flow to the recipient site. Autogenous cancellous bone from anterior iliac crest remains the graft material of choice although other preferences have been reported with promising results.

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FISHING AN UNUSUAL TRACHEO-BRONCHIAL FOREIGN BODY

CASE REPORT

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NOOR A SHEIKH, M. ANWAR, M. UMAR

ABSTRACT:
We are presenting case of 8 years old female child who inhaled a large rounded bead and developed sever respiratory distress and cyanosis. Attempts at retrieval of foreign body by rigid bronchoscopy using the alligator, peanut and biopsy forceps failed due to the smooth rounded nature of foreign body. In desperation an attempt was made to fish out the foreign body by hooking with the hypodermic needle mounted on the alligator biopsy forceps. Luckily it worked and the foreign body was retrieved easily. Although the procedure may not look very fancy but it definitely saved the life of a child.

Key words:- *Tracheo-bronchial, Foreign bodies*

INTRODUCTION

Airway foreign bodies are common cause of serious morbidly and at times mortality in children. Successful retrieval of airway foreign bodies requires expert hands, good anaesthetic support and availability of proper equipment. Rounded foreign bodies are especially difficult to remove as the ordinary forceps can not hold them properly. These have been retrieved by using fogarty catheter, dormia basket, small biopsy forceps etc. Here in we report our innovation of an instrument for retrieval of smooth foreign body.

CASE REPORT

An 8 years old female child accidently aspirated a large rounded bead and became cyanosed. At examination the child was in severe respiratory distress and deeply cyanosed. After placement of a good size I/V line she was immediately rushed to the operating theatre and bronchoscopy was performed with a rigid scope. A large piece of rounded bead was found impacted in the right main bronchus that was partially occluding the left main stem bronchus. Several attempts were made to hold the foreign body by various forceps including peanut, Alligator and biopsy forceps but all failed. A hole was visible through the bead but smaller biopsy forceps were not available which could be passed through the hole. Fogarty catheter was also not available at that time. Parents had brought a bead of similar size with them. Due to the serious respiratory insufficiency it was not possible to leave the patient without removal of foreign body. In desperation an idea came to fish out the foreign body using a curved hypodermic needle. This was first attempted on the bead brought by the parents and worked. The same technique was attempted on the patient. A 24 G hypodermic needle was curved back near the end to about 165 degree and then held with the Alligator forceps (fig. I). It was then guided through the hole in the bead through which it went with a little resistance. Once through the hole, it engaged the bead and was retrieved carefully along with the bead without significant resistance. The child immediately regained her tissue saturation. She had an uneventful post operative recovery and did not show any signs of neurological damage.

DISCUSSION:

Removal of tracheobronchial foreign bodies is an art and is a safe procedure in careful hands with few complications.[1] Safe removal of tracheobronchial foreign bodies also needs availability of proper instruments, trained

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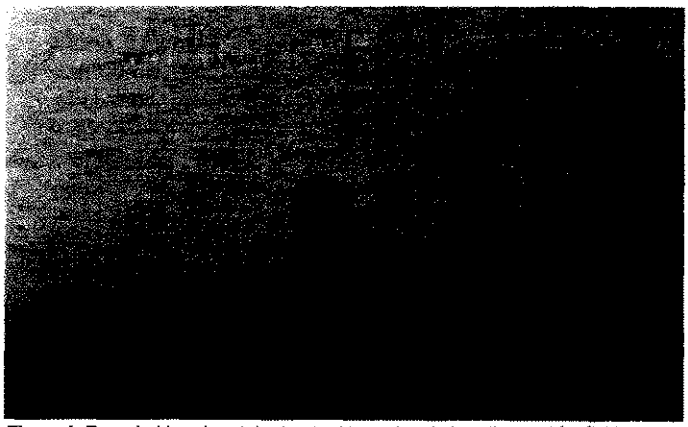

Figure I: Rounded bead and the hooked hypodermic beedle used for fishing

anaesthetist and above all constant monitoring of vital signs. Most foreign bodies are retrieved with rigid scope.[2] Some centres have also shown good results with flexible scope.[3] Common foreign bodies like betel nut, peanut, whistle and other metallic and plastic foreign bodies can easily be retrieved with the standard forceps. In difficult situations foreign bodies have been removed even by dormia basket[4] and after laser fragmentation of foreign bodies.[5] Some metallic foreign bodies have also been retrieved by using magnetic tips.[6] Rounded foreign bodies pose a real problem as they are slippery and thus cannot be grasped by these forceps.[7] To overcome this problem several techniques have been used.[8] A Fogarty catheter can be passed beyond the foreign body and foreign body can be retrieved after inflation of the balloon.[9] Similarly very small biopsy forceps can be guided through a hole if present in the foreign body which can then be removed by opening the forceps beyond the FB. Intravascular wire loop snare has also been used for retrieval of such foreign bodies.[10] Some time however even with the best available facilities and instruments foreign bodies may be difficult to remove and open surgical extraction may be necessary for removal of distal foreign bodies.

Unfortunately even with the Fogarty catheter there may be problems. There have been several reports where the tip of the Fogarty catheter or the balloon broke away and caused another foreign body.[11,12] Another problem in our setup is non availability of small and appropriate size Fogarty catheters at the time of need especially in odd hours. In these situations fishing a foreign body with the curved hypodermic needle may be a handy approach to remove the difficult foreign bodies with a hole in the centre. There is however a danger of breaking away of the tip of the needle if too much force is applied for extraction of foreign body and similarly if the needle tip is not properly bent it may damage the mucosa by its sharp end during retrieval of foreign body. Therefore this procedure has to be done only by the experience bronchoscopist and shall only be used in desperate situations when conventional forceps and equipment has failed in retrieval of foreign body. The most important requirement however for centres where bronchoscopy is performed as a routine procedure is to have appropriate forceps of different size and shape for unusual foreign bodies.

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MACROGLOSSIA SECONDARY TO LYMPHANGIOMA

CASE REPORT

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ABSTRACT:
Lymphangioma is not an uncommon condition in paediatric age group but tongue as its primary location leading to macroglossia is a rare lesion. In this case report we describe our experience of macroglossia secondary to lymphangioma of tongue involving its anterior 2/3rd in a three year old child. Wedge resection of involved part was done. Post operative course was uneventful. The child is on regular follow up.

Key words:- *Macroglossia, lymphangioma, orthodontics*

INTRODUCTION

Macroglossia is associated with many congenital lesions like Beckwith-Wiedmann syndrome, Pierre Robin syndrome etc.[1] In these condition tongue is relatively or primary involved. Macroglossia may occur secondary to various lesions like lymphangioma, hemangioma etc.[2] In this case report we describe a patient in whom macroglossia occurred secondary to lymphangioma with brief review of issues in the management of these patients.

CASE REPORT

A Three years old male child presented with enlarged tongue which was noticed at birth. Since then it has gradually increased in size. Patient can take liquid diet but it is not possible for him to chew and masticate because of macroglossia. There was continuous drooling of saliva with foul odour. Patient was unable to comprehend and was in a miserable condition. Clinically child was anemic with hemoglobin of 7.5 gm%. Tongue was found diffusely enlarged in its anterior part. Vesicles were present over the tongue Figure-1. Lower jaw was protruded forward Figure-2. Clinically diagnosis of lymphangioma of tongue was made. Blood transfusion was given. Oral hygiene was advised. Child was operated electively. Endotracheal intubation was difficult because of difficulty in visualizing laryngo-pharynx. The tongue was forcibly pulled out of mouth to introduce laryngoscope. ETT was then passed through nasotracheal route. Throat was packed with roll gauze. On closed examination of tongue under GA, it was found that the lesion was limited to anterior 2/3rd of the tongue. Tongue was grasped at its tip and pulled out of mouth so that posterior part could be examined easily. Two lateral stay sutures were applied through full thickness of tongue from its middle on each side. A wedge resection of anterior 2/3rd of tongue was performed removing almost whole of the lesion. The residual tongue was approximated in midline with polyglycolic sutures. After confirming haemostasis throat pack was removed. Post operative recovery was uneventful. Patient did not experience any difficulty in breathing. In fact he was more comfortable Figure-3. Mouth wash outs were started from next morning. Liquid diet was allowed orally after 48 hours and patient was discharged home on 3rd post operative day. Biopsy report was that of lymhangioma infiltrating whole of the resected specimen.

In follow up period child looked comfortable but as protrusion of lower jaw was present he was unable to close his mouth properly. Tongue was mobile and he also stared eating solid food. He was advised to see orthodontic specialist and speech therapist so that further management with regards to open bite and speech could be planned. He was also advised to come for follow up every 6 months to detect any recurrence of original pathology.

DISCUSSION

Lymphangioma is the malformation of lymphatic system. It results when lymphatic sacs do not acquire communication with central channels. The accumulation of lymphatic fluid then results in these lesions. In areas with loose surrounding tissues it forms large spaces and are called

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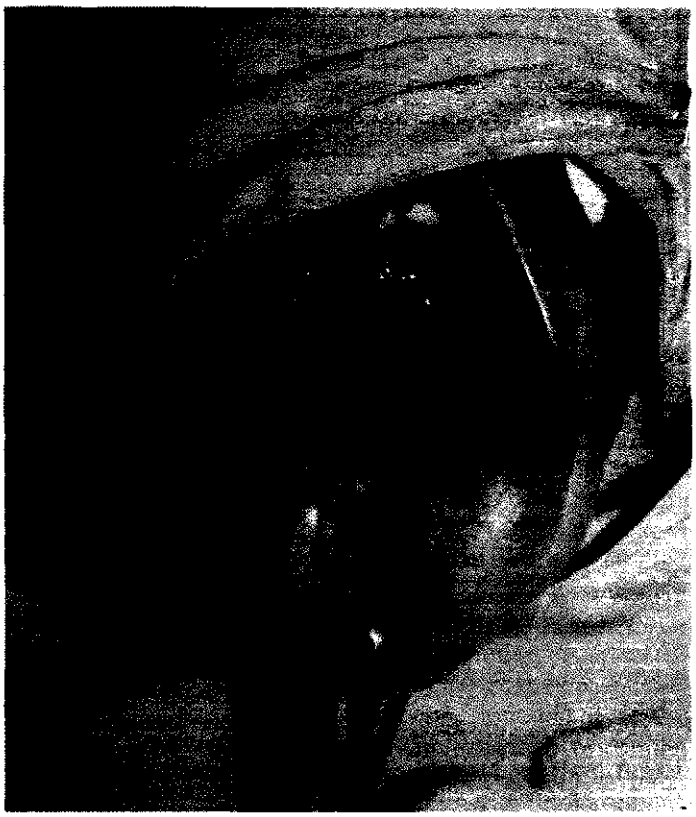

Figure-I: Enlarged tongue pulled out of mouth. Lymph vesicles can be appreciated.

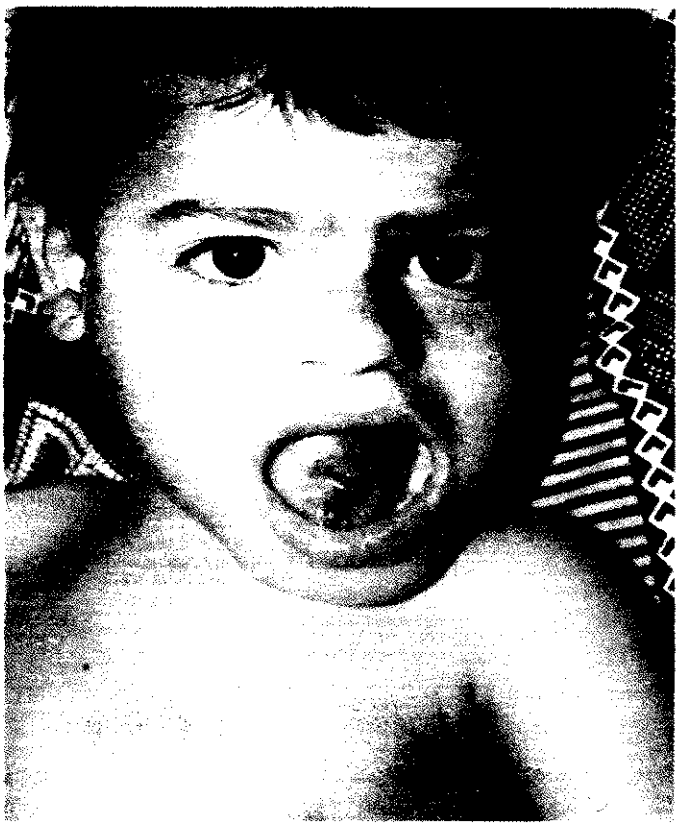

Figure-III: Same patient in immediate post operative period.

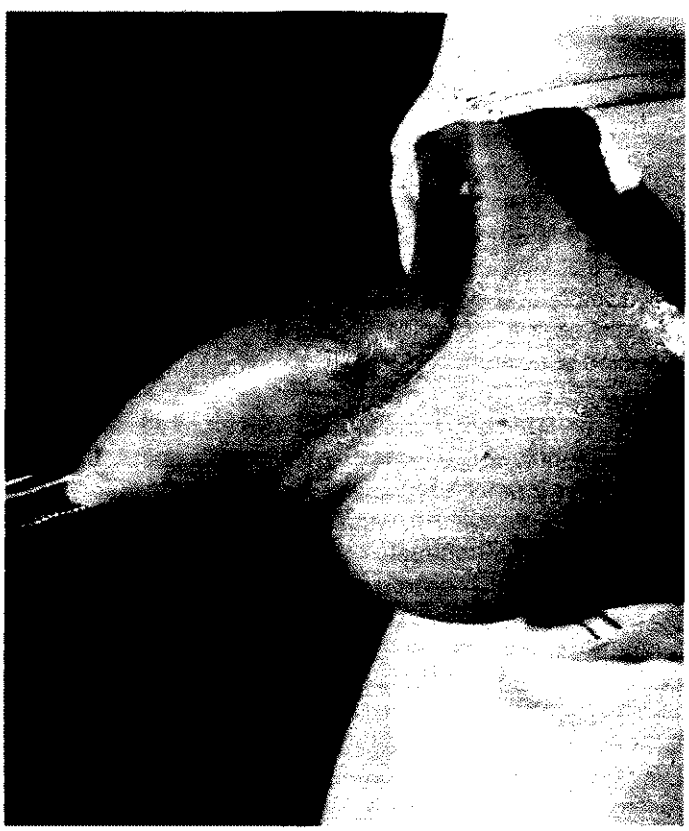

Figure-II: Enlarged mandible in relation to upper jaw and macroglossia.

cystic hygroma while in areas like muscles and tongue where tight tissue compartments are present lesion occurs in form of vesicles and are called lymphangiomas.[3]

Congenital macroglossia secondary to lymphangioma is a relatively uncommon condition characterized by enlargement of tongue disproportionate to dentoalveolar structures.[4] The important consideration in management of macroglossia is preservation of mobility and sensation of tongue.[5] Various techniques have been described including radiofrequency.[6] We elect to choose wedge resection of anterior 2/3rd of the tongue as described by Upadhaya. The important and foremost step is the use of a haemostatic cum traction suture placed at the root of tongue. Its advantage is less blood loss with controlled excision due presence of these stay sutures.[7]

Long term dentoskeletal disturbances are associated with enlarged tongue due to mechanical reasons. Mandibular protrusion and open persists following partial resection of anterior tongue. Such changes have been reported with Beckwith-Wiedmann syndrome also.[8] Orthodontic treatment with tongue reduction can be effective.[9] In our patient we expect that mandibular enlargement over period of time will get proportionate to his upper jaw and his appearance will become cosmetically more acceptable. For this purpose he is advised to consult faciomaxillary surgeon and orthodontist regularly.

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