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Ethical Issues in Clinical Practice: Are We Prepared To Meet The Challenges

In present time research is progressing at a very fast pace. The fictional stories and characters, that at one time considered to be illusions, are now distinct possibility. With DNA coding, in vitro fertilization, cloning, stem cell therapy, hybrid embryo formation etc a whole new era is opened up. With this upsurge in technology, a new set of challenges have emerged. Ethical issues are at the top of the list. The boom in technology has put us at a dilemma, where on one hand we have to think of benefits to human race while on other hand there are ever increasing challenges of misuse of technology and its impact of human race.

In many countries the issues are taken up seriously and debated well to address ethical and legal aspects of the research. Many laws are enforced in these countries to protect the rights of individuals and prevent victimization of vulnerable groups of the community like poor, females, illiterate etc so as gain a balance at least, for time being. In our country medical community is not aware of many such challenges. The philosophers, religious scholars in this background can not be blamed as they look forward to medical community to provide them some guidance on the subject. It is therefore important that we should start looking into potential threats that our society may face in future and prepare ourselves to meet these challenges. Gestational surrogacy, for example in India is legalized but most of us in Pakistan do not even know what it is. The people from rich countries are looking for women who could act as surrogate mothers. This in a way is labeled "uterus for rent". It is mostly the poor women who are to bear the thrust.[1] The ethical issues most of which pertain to psychology of gestational mother and baby born out of this contract, are yet to be investigated. Religion has its own implications in more traditional societies. In Israel surrogacy is legalized but with many restrictions. The law there has also incorporated religious views as well.[2] Recently, permission has been granted by British government for creating hybrid embryos with mixing of human and animal genome of course with some restrictions.[3] The purpose of creation of human animal embryo is to develop treatment of diseases like Parkinsonism and Alzheimer's disease.

Formal teaching of bioethics has been recognized by many quarters and curriculum is being designed and taught at various universities and institutes to address these issues. For creating awareness among whole of the medical community a host of workshops, conferences and symposia are to be planned. This will definitely promote practice of ethics in our clinical routines. It will also help in devising ethical and research policies so that no body could suffer and norms of communities and nations are also preserved.

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RADIOGRAPHIC MORPHOMETRY OF THE OSTEOPOROTIC FEMUR: COMPARISON WITH DENSITOMETRY

MUKHTIAR AHMED MEMON, SABA SOHAIL, AKHTAR AHMED*

ABSTRACT

Object: *To determine the accuracy of radiographic morphometry i.e. grading of osteoporosis on plain x-rays of femur (Singh index) compared with bone densitometry by dual energy x-ray absorptiometry (DEXA) in post menopausal females.*

Design: *Comparative, analytical study.*

Duration & Place of Study: *From May 2004 to June 2005 at Radiology Department, Dow University of Health Sciences (DUHS), and Civil Hospital Karachi (CHK) in collaboration with Osteoporosis Diagnostic Clinic, Karachi.*

Patients and Methods: *Post menopausal females referred for evaluation of clinically suspected osteoporosis by both plain x-rays and DEXA were included in the study. Those with history of previous trauma or radiation, other systemic disease with bony component, advanced degenerative disease, metastatic disease and bony metallic implants or prosthesis, were excluded. A standardized system of grading skeletal osteoporosis on plain x-rays of femur/pelvis (Singh index grades 1-6) was exercised. Bone mineral density and T-score were determined on DEXA. Sensitivity and specificity of each assessed was determined against the gold standard T-score.*

Results: *There were 98 patients in all with mean age of 59+/- 6.5 years and mean post menopausal interval of 9.66+/- 6.52 years. The predominant distribution was, 26.5% in grade 6 and 31% in grade 3. Nineteen had normal T-score (>-1), 49 were osteopenic (T- score between -1.00 and -2.5) and 30 were osteoporotic with T-score below -2.5. For grade 3 and below, the sensitivity and specificity of Singh index (SI) were 55% and 84% respectively. For SI grades 4 and above, the values were 44% and 97 % respectively.*

Conclusion: *Singh index or radiographic morphometry grading of osteoporosis is fairly accurate for advanced osteoporosis with high specificity. The sensitivity is low requiring use of bone densitometry for early detection.*

Key words: *Singh index, Osteoporosis, Bone mineral density, Dual energy x-ray absorptiometry, Radiographic morphometry*

INTRODUCTION:

Osteoporosis literally means poverty of bone. Pathologically it leads to thin and sparse trabeculae in the spongiosa bone with porosity and diminution of cortex. The most characteristic clinical, pathologic and radiographic features are seen in the vertebral column, proximal femur and short tubular bones of appendicular skeleton. The main clinical harbinger is the increased liability of osteoporotic bones to fracture.[1] Fractures of either the spi

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nal column of the femur can be particularly crippling for the aged. Lower the bone density greater is the fracture risk.[2] Early diagnosis is therefore mandatory so that the progress of disease may be halted by intervention. Apart from the biochemical features arising out of bone loss, the main diagnostic criteria rests on demonstration of reduced bone mass particularly the trabecular bone. The various methods utilized for this purpose include radiography, radiographic photo densitometry and absorptiometry,[3-5] quantitative computed tomography of the spine,[6] single or double photon absorptiometry techniques,[6,7] double energy x-ray absorptiometry[8] (DEXA), broad band ultrasound[9,10] and quantitative MRI.[11]

Among this very widely available range, radiographic morphometry and DEXA are the most commonly used. The former has universal application in resource limited setting due to low cost, easy availability and low radiation dose. The latter is currently regarded as the gold standard for objective assessment of bone mineral density (BMD). Age and gender adjusted BMD values are expressed as percentiles (Z-) or standard deviation (T-) scores which provide an estimate of future risk. But it requires significant capital investment, trained operators and is not portable. In short the main disadvantages are cost, installation, maintenance and affordability. Therefore, plain x-rays are still the norm of practice.

In 1970, Singh et al suggested a simple grading system for osteoporosis using a standard hip x-ray based on bone structure rather than bone quantity.[12] Until the wider and affordable availability of DEXA, this simple grading method needs to be evaluated against the gold standard for practical application in the local physico-social environs. The aim of this study was to determine the accuracy of Singh's index as compared with DEXA T-score in diagnosing osteoporosis.

PATIENTS AND METHODS:

The comparative study was conducted at Radiology Department, DUHS/CHK, in collaboration with Osteoporosis Diagnostic Clinic Karachi from May 2004 to June 2005. The inclusion criteria were post menopausal females referred for radiology workup of osteoporosis at both study centers having been advised both the tests at these specific places by the referring clinician. This was done to avoid any ethical or financial conflicts. Exclusion criteria were females with history of trauma or radiation, other systemic disease with bony component, advanced degenerative disease, metastatic disease and bony metallic implants or prosthesis. After the informed consent to enter the study, patient's demographics, risk factors and age as stated by patient, were recorded.

A frontal radiograph of optimum quality (defined as one showing visible trabecular pattern in femoral neck) was obtained on well calibrated 800 mA x-ray machine with standard focal film distance of 100 cm and 15degrees internal rotation at hip joint. DEXA scan was performed on Hologic QDR 1000 with standard technique. BMD was calculated from left femoral neck for study purpose apart from the routine measurements from other standard sites.

Singh's index was applied by the three observers as follows:[12]

Grade 6- All the normal trabecular groups are visible and the upper end of the femur seems completely occupied by cancellous bone.

Grade 5- Accentuation of the principal compressive and tensile trabeculae, Ward's triangle prominent.

Grade 4- Principal tensile trabeculae reduced in number but still visible.

Grade 3- Break in continuity of the principal tensile trabeculae opposite the greater trochanter.

Grade 2- Only the principal compressive trabeculae prominent, the others have been resorbed more or less completely.

Grade 1- Even the principal compressive trabeculae are markedly reduced in number and no longer prominent.

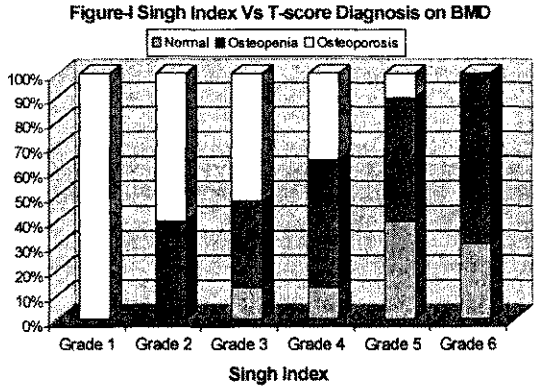
DEXA scores as defined by WHO were taken as the gold standard as </= - 2.5= osteoporosis, -1.0 to -2.5= osteopenia and >-1.0 as normal.[1] Sensitivity and specificity were calculated assuming SI grade 3 and below as osteoporosis against T-score of <-2.5. It was also determined against the normal and osteopenic grades by comparing the same T score against SI grades 4 and above. Variables were calculated into frequency percentages, means and standard deviations as applicable.

RESULTS:

There were 98 patients with mean age of 59+/- 6.5 years and mean post menopausal interval of 9.66+/- 6.52 years. Exact calcium intake could not be recalled by any one. Regular physical exercise was reported by 11 (12%). Regarding Singh Index grading 26 (26.5%) were in grade 6, 10 (10.2%) in grade 5, 23 (23.4%) in grade 4, 31 (31.6%) in grade 3, 5 (5%) in grade 2 and 03 (3%) in grade 1. There was wide distribution of grades in all ages and other predisposing factors so that a well defined trend could not be detected.

With reference to T score, 19 patients had score >-1.0 that was normal, 49 were osteopenic with T score between -1.0 and -2.5, and 30 patients had osteoporosis with scores below -2.5. Figure 1 shows the SI grades versus T-score diagnosis. Assuming SI grade 3 or below as cut off, the sensitivity was 55% and specificity was 84%. Taking SI grade 4 as cut off, specificity was improved to 97% and sensitivity still dropped to 44%.

Figure-I Singh Index Vs T-score Diagnosis on BMD



DISCUSSION:

Osteoporosis is the commonest bone disease in humans of either gender.[13] Diagnosis of osteoporosis is simple using more precise and accurate methods like DEXA. However the availability of the method is very much limited and also costly as compared to other techniques like conventional radiography. However it enables future fracture risk which is a big advantage.[14] Singh et al devised an index based on the trabecular pattern in the upper end of femur and found a good correlation between histological osteopenia grading of iliac crest biopsies and trabecular pattern grading of contralateral hip x-rays [12]. Theoretically this technique has several advantages e.g. anatomically the upper end of the femur is a choice site for the study of osteoporosis, the method is technically simple and the grading is based on the bone structure rather than bone quality. Singh Index is a diagnostic classification and can be used as a method of estimating the degree of osteopenia in situations where the facility of DEXA is not available.

Masud et al in a large study (n=1003) showed a clear significant correlation between the Singh Index grades and the DXA measured bone mineral density of the femoral neck as well as other areas of the proximal femur and the lumbar spine.[15] Koot et al in a relatively smaller study however concluded that there was no correlation between Singh Index and bone mineral density.[16] The evidence therefore is conflicting. We have found that the Singh index correlates well in the extreme grades i.e. Grade 6 and Grade 1 with the diagnosis of osteoporosis based on the T-score classification of WHO. However the correlation between the remaining 4 grades (2-5) was not good.

When the cut off level for osteoporosis diagnosis taken as grade 3 and grade 4 on Singh Index, the sensitivity decreased however the specificity increased significantly. When the fracture threshold of T-score greater than -2.0 was taken as a cut-off point on BMD evaluation the sensitivity and specificity values changed. The specificity decreased and the sensitivity increased. Again when the cut-off value for osteoporosis diagnosis on Singh Index were changed from grade 3 to grade 4 the sensitivity and specificity values also changed. The optimal values were when the fracture threshold and the grade 4 were used. Masud et al in their study also used the same factors however their sensitivity figures were quite low (35%) as compared to ours (77%).[15]

The specificity was relatively higher in their study (90%) as compared to our figures (78%). The present data also supports the observation that the Singh Index method of diagnosing osteopenia has a low sensitivity but a relatively high specificity if a criterion is used where only Singh Index grades 1-3 are considered "abnormal". Singh Index grade 6 and 5 are thought to show normal bone histologically and are found

in a normal population, whereas grades 1-3 represent stages of osteopenia. Grade 4 is ambiguous and may either be due to mild mineral loss or be within normal limits in small-framed subjects.[15] In the original description of the Singh Index grades, histologically grade 4 was considered to be borderline between normal and osteoporotic subjects.[12] Relative risk is the best indicator of the strength of the relationship between a risk factor (in this case, low bone mass or density) and an outcome (fracture).

Majority of investigators have evaluated Singh Index against the relative risk of hip fracture.[17,18] As all patients with prior history of fracture were already excluded and no follow up data was recorded, this evaluation was not possible. Hubesch et al found a good correlation of Singh Index with DEXA measured BMD in a group of 18 male patients with suspected osteoporosis, there was poor correlation in 98 females with suspected osteoporosis and in a group of 40 control subjects.[19] As only postmenopausal females were included in this study the findings of the above study could not be verified. The limitations of the conventional radiograph include the quality of image and consistency in the quality.

The general predictors for femoral bone status in American women have been identified as advancing age, low body weight, less exercise and smoking.[20] Only 11 out of the current study subjects were having any regular exercise (brisk walking) apart from their routine daily chores. This series comprised post menopausal females. About half of this age group is supposed to be osteopenic with T scores at femoral neck between -1.0 and 12.5.[21] The frequency in this series was the same i.e. exactly half (49 out of 98) were osteopenic and osteoporotic as per above mentioned criteria. This indicates that the probable risk factors in the local population are probably the same as elsewhere. Osteoporosis is associated with decreased bone strength as a result of decreased bone density and altered quality.[22] The Singh Index may be useful as an independent indicator of bone strength. Gluer et al suggested that a combination of the Singh Index, femoral neck and shaft cortex thickness and trochanteric region width can predict hip fracture at least as strongly as femoral neck bone density.[23]

CONCLUSIONS:

The predictive value of Singh index is high for obvious cases, however the important group of patient with T-score between -1 to -2.5 (osteopenic patients) can not be differentiated. The method has low sensitivity but reasonable specificity in diagnosing low bone mass. It can be used as a screening tool in situation where bone mineral density facilities are limited and any subject with a low Singh Index grade (4 or less) should be considered for evaluation by Dual Energy X-ray Absorptiometry. Caution should be used in classifying individual patients because of the wide overlap of bone mineral density between the grades.

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SURGICAL MANAGEMENT OF TETHERED SPINAL CORD SYNDROME: AN ANALYSIS OF 248 CASES.

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ABSTRACT

Objective: *To define the presentation, exact mechanism, and surgical treatment of tethered spinal cord syndrome (TSCS) with particular emphasis on timing of surgery and outcome.*

Study Design: *Analytical study.*

Place & Duration of Study: *Department of Neurosurgery, Jinnah Postgraduate Medical Centre (JPMC) from January 2001 to December 2006.*

Patients & Methods: *A total of 248 patients were included in this study who presented for treatment between 6 days and 32 years of age with a median age of 6.5 months. One hundred patients presented before the age of 6 months. Most common complaint was cosmetic defect/swelling on their back (n 156). Sixty-six patients had urinary incontinence, 35 patients had deformed or weak leg and 15 had ulcers on their feet.*

Results: *There were 172 female and 76 male patients. The most frequent tethering lesions were lipoma in 156, un-repaired myelomeningocele in 15, post repair myelomeningocele in 18, hypertrichosis in 17, spilt cord malformation in 10, tight filum terminate in 15, dermal sinus or dimple with stalk in 12, sacral agenesis in 3 and appendage with stalk in 2 patients. Out of 100 operated before 6 months of age, only 2 patients returned back with incontinence of urine and required un-tethering again. Improvement of symptoms at 6 months after surgery was noted in 78% patients operated after 6 months of age. Stabilization of symptoms was achieved in 8 patients having adult age at time of surgery. Minimum follow up was two years in 210 and maximum of 4 years in 17 surgically treated patients with stable neurological condition.*

Conclusions: *Best outcome is achieved after complete un-tethering of cord at younger age. To avoid irreversible neurological damage, early diagnosis and repair is recommended. The symptoms most resistant to surgical treatment were orthopedic abnormalities where as bladder dysfunction and motor weaknesses were amendable to surgical therapy.*

Key words: *Tethered spinal cord, Lipo-myelomeningocele, Spilt cord malformation, Spinal dysraphism.*

INTRODUCTION

Virchow in 1875, was the first to coin the term spina bifida occulta and provided additional awareness regarding the concept that the spinal cord can be congenitally fixed or tethered, at one point, leading to progressive neurological and urologic dysfunction and orthopedic abnormalities. Since then various reports were published advocating prophylactic and early surgery of specific congenital anoma

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lies that tethered the spinal cord.[1,2] After 1980s with advancement of imaging technology like CT scan and MRI the scientific investigators begin to elucidate patho-physiology and mechanism that have been described to include short or thickened filum terminals,[3] lipo-myelomeningocele, diastematomyelia, sacral agenesis, proboscis, dermal sinus with adhesions, and recurrent tethering after repair of myelomeningocele.[4-10] Progressive deterioration in neurological functions in patients with TSCS has been observed and values of early prophylactic surgery have been stressed. Because of complex anatomy and the difficulty of assessing the value of prophylactic surgery, controversy persisted till recent years. With the passage of time neurosurgeons ability to deal properly with tethered spinal cord has been greatly improved by technological advances in operative magnification, surgical instrumentation, monitoring devices and radiological techniques.

Based upon excellent outcome reported in the recent literature, we advanced one step in pediatric neurosurgery by offering surgical treatment to patients with TSCS that consists of early decompression and un-tethering of spinal cord with reconstruction of dural canal. This article is based upon that experience.

PATIENTS & METHODS:

A retrospective analysis was conducted on 248 patients with TSCS treated by surgery at Department of Neurosurgery Jinnah Postgraduate Medical Centre Karachi during the period 2001 to 2006. There were 76 (31%) males and 172 (69%) females, ranging in age from less than 6 months to 32 years. Keeping in view the phenomenon of tethering that the neurological deficit is typically progressive with spurts of growth, all patients were therefore divided into different age groups to find out the influence of growth of child in respect to clinical presentation and eventual outcome following repair. All patients were divided into five age groups: Group 1: less than 6 months, Group 2: from 6 months to 3 years, Group 3: between 3 and 5 years, Group 4: between 5 years and 12 years and Group 5: between 12 to 32 years of age.

All cases were grouped according to associated mechanical factors or lesions causing tethering of the cord. These were tight filum terminale in15 (6%), lipo-myelomeningocele 156 (63%), spilt cord malformation 10 (4%), sacral agenesis 2 (1.2%), dermal sinus or dimple (without swelling on back) 12 (4.8%), hypertrichosis 17 (6.8%), appendage 2 (0.8%) and after repair of myelomeningocele 15 (6%). The tethering of the cord was also classified according to location of tethering. In 248 cases these were located at thoracic 20 (8%) region, thoracolumbar region was involved in 17 (7%), lumbar in 90 (36%), lumbosacral 95 (38%) and sacral 26 (10.4%).

All patients including infants, children and adults presented either neurologically intact only with local signs on the back or had variety of neurological findings. These were mass on the back in 156 (63%), skin stigmata 54 (22%), repaired myelomeningocele 15 (6%), weakness in lower extremities 10 (4%), bladder and bowel dysfunction 62 (25%), smaller or deformed leg or foot 20 (8%), gait difficulty 15 (6%), backache 10(4%), scoliosis/ kyphoscoliosis 20 (8%), trophic ulcers in foot / amputation of toes in 10(4%) cases.

To assess the functional outcome we adopted the functional grading scheme, self devised for these patients. Grade-0: No neurological, orthopedic or urological problem (mostly infants), Grade-1: Minimal weakness / muscle wasting in one leg without gait disturbance, and normal sphincter function, Grade-2: Weakness of one leg, neurogenic bladder; or weakness of both legs and normal sphincter function. Grade-3: Moderate to severe weakness of one leg producing gait disturbance with or without neurogenic bladder or minimal weakness of both legs combined with neurogenic bladder. Grade-4: Severe paraparesis requiring aids for walking, with or without neurogenic bladder.

Plain radiographs were taken in all patients to see details of spina bifida and other spinal abnormalities. MRI studies were done in all cases for making decision of surgery and choosing of procedure. All cases have been operated either prophylactically only because of swelling on the back or those with symptoms. The technique of surgical management of tethered spinal cord has gradually refined over the period of review by first author with availability of magnification and experience but basic principle remained unchanged.

Our philosophy of treatment consisted of un-tethering of spinal cord, both from the overlying fatty connection to the skin and the dura. A thickened filum was divided and in all cases with diastematomylia fibrous band or bony spurs were taken out with repair of central dura. In addition dura was closed watertight with adequate space left for neural tissue and remaining fat. Dural grafting was also done whenever needed. Redo surgery was done in all patients with repaired myelomeningocele at other centers, having tethered cord, adhesions with dura were cleared and cord left floating in the theca to ascend up with age.

TECHNIQUE

Most of the surgical procedures were done under magnification. The surgery was begun over normal spine depending upon the underlying pathology. In cases of lipoma laminectomy was performed proximal and caudal to lesion for recognition of exact pathology and dura opened at the edge. The dural opening was then continued caudally, dividing the dura just at the edge of its attachment to lipoma. In the dorsal type of lipo-myelomeningocele, the dural opening was carried around the sides of the lipomatous region bilaterally to the bottom of the lipoma, where normal dura was again encountered, and the dural opening continued in a normal fashion. In the caudal and transitional types of lipo-myelomeningocele, the dura was widely opened at the bottom of the dura and dural opening was carried down to the bottom where the dura disappear. The spinal cord was thus completely freed from its dural attachment. With the dura separated from the lipoma, traction sutures were placed in the dura and the lipomatous mass then safely removed with scissors without involving the underlying neural tissues.

In cases with thickened filum terminale attaching the conus to the termination of the dural sac, this too was divided. When the spinal cord was completely freed from the dural sac it nestles loosely in the spinal canal. In cases of diastemetomyelia, after laminectomy dura was opened and the band or bony spur recognized with magnification and removed carefully. Inside dural division was obliterated, unified and repaired. All cases of tethered cord after repair of myelomeningocele were detethered and a graft from deep fascia was used to reconstitute dural sac thus allowing cerebrospinal fluid to completely surround the freed spinal cord and to prevent adhesions between the spinal cord and dura. There was always an excess of skin, which allowed for closure of skin without tension.

Patients were followed for varying period ranging from minimum period of 2 years and maximum period of 4 years with median follow up period of 3 years. All asymptomatic patients particularly at younger age left follow up after 2 years and symptomatic patients continued follow up.

RESULTS:

There was a significantly higher number of females than males with female to male ratio of 2.1:1. Most of the patients presented at a younger age, a total of hundred patients during first 6 months of life. Eighty-six (34.6%) were presented after age of 6 months to 3 years and 55(21%) after age of 3 years. Clinically these patients presented with inadequate bladder and bowel control, leg problems, including deformed feet, unequal size of feet, gait difficulty, backache, scoliosis/ kyphoscoliosis and trophic ulceration. Of great significance was the deteriorating neurological function with advancing age.

Ninety-eight out of 100 patients under 6 months of age underwent repair were in Grade-0 and two out of 100 were in grade-1 with mild leg weakness. The neurological grade remained unchanged or intact even after 2 years of follow up. Out of eighty-six patients of 6 months to 3 years age, 79 had neurological grade 0 or intact status and 5 cases were in grade 1, and 2 cases in grade 2 respectively. There was significant improvement after follow up of 2 years. Subsequent improvement in neurological functions were observed in other age groups but desired improvement could not be seen in older age (12-32 years).

Further more we made three categories to make simple outcome scale based on pre and postoperative status of the patients including neurologically intact, gradually progressive neurological deficit, and stabilized or fixed neurological deficit. 228 (93%) patients treated surgically remained neurologically intact without any change; eleven patients (4.4%) improved after surgery who had progressive neurological deficit preoperatively, however 5 patients (2%) could not improve. We have four patients

(1.6%) with fixed or stable neurological deficit operated, but no change in their status was found after surgical treatment.

There was no mortality or morbidity. Other complications experienced by us were post surgical wound infection in 6 patients, which responded to antibiotics, and temporary leakage of cerebrospinal fluid into subcutaneous tissue in 7 patients. The later complication was treated with low doses of acetazolamide to decrease CSF production, nursing patient in a head down position and temporary placement of CSF drainage tube intrathecally to drain CSF for better wound healing.

DISCUSSION:

The philosophy that the spinal cord can be congenitally fixed, or tethered, at one point, leading to progressive neurological, urologic dysfunction and orthopedic abnormalities, has been a process of development for last 150 years. The term occult spinal dysraphism was used synonymously to label a group of developmental anomalies including lipo-myelomeningocele, diplomylia or diastemetomylia, dermal sinus tracts, dermal cysts, fibrous bands, shorter fixed filum terminale and appendages.[11-14] Medullary closure of the tube and ectodermic differentiation into neural and epithelial tissue occur between the 3rd and 5th week of intra-uterine development. Errors in this differentiation can lead to central nervous system and cutaneous abnormalities categorized as occult spinal dysraphism. Lipomas are the most frequently occurring form of occult spinal dysraphism and particularly always involve the lumbar and sacral spine.[16-19] In case of lipomyelomeningoclele, the conus is tethered and compressed by the lipoma and is unable to undergo its normal ascent with progressive lengthening of the vertebral axis, greater traction is placed upon the cord, producing low-lying conus medullaris. Myelo-lipomas produce neurological impairment by traction, compression and direct transmission of force.

Patients frequently become symptomatic during growth spurts. Although adipose tissue in myelo-lipomas does not undergo mitotic activity, the tumour does change in size, depending upon nutritional status of the individuals. Patients my experience neurological deterioration with weight gain. Similarly in all other conditions responsible for tethering of cord the mechanism causing neurological deterioration appears to be related to diminished mobility of the tethered cord during normal flexion and extension motions of the spine that occur with activities of daily living. This chronic intermittent stress presumably causes progressive insufficiency of the vascular microcirculation within spinal cord. Experimental evidence of diminished levels of oxidative metabolism in tethered human spinal cords improves after the cord is un-tethering.[20] In our series we have included 18 (7%) cases of tethered cord due to already repaired myelomeningocele. Cord was tethered because of faulty or inadequate surgery and adhesions.

Congenital lesions with skin stigma pathognomonic for TSCS found to develop in 1 of every 4000 births,[17] and to occur more often in girls as observed by others,[8] as in our series. Lumbosacral lipomas found common among etiological factors responsible for TSCS and most of these patients were identified at birth even when there were no neurological deficits because they have subcutaneous fatty masses or one or more cutaneous abnormalities in the dorsal lumbosacral region. As toddler patients presented with muscular weakness, wasting, trophic changes or sensory loss in the lower sacral distribution and in one or both lower extremities having orthopedic feet abnormalities. As child grow between 3-6 years bladder or bowel incontinence develop (urologic syndrome) mostly due to cord tethering between L3 and S1 and favours beginning of scoliosis simultaneously. As adolescents or adults, patient presented to us with severe back, pelvic, perineal and lower extremity pain and on further investigations, they have scoliosis and impairment of sexual functions.

We found skin stigmata exclusively in 54 (22%) cases and in all MR Imaging evaluation was the only diagnostic tool like other workers.[10] We recommend use of this diagnostic modality in all cases having skin stigmata in the midline to find out underlying pathology pathognomonic for TSCS syndrome. In our series we could not observe other associated anomalies of posterior neural tube closure defects like hydrocephalus or Chiari malformation.[21]

Plain radiographs were our routine to see boney details, as spinabifida were seen in all the cases and other spinal abnormalities like scoliosis. The usefulness of MR imag-

ing in visualizing cord and all other abnormalities is well recognized and has proved to be noninvasive, easily confirms the diagnosis. It has increased the population of the patients who need early diagnosis and understanding of exact nature of etiology of TSCS to be treated surgically. It is our policy that all patients with TSCS should under go surgical correction even if the condition is asymptomatic. The goal of prophylactic surgery is to prevent the onset of neurological symptoms. If symptomatic, the goal is to halt progression and alleviate deficits, where possible. Many reports describe, neurological deficit increases with age and operated large series in older age group.[8,14,16] Most of our patients were infants and children 217 (87.5%) cases and has shown very good results after surgery. We believe that all patients with TSCS should undergo surgical correction as early as possible.

The single most common etiological factor responsible for TSCS was lipoma in 156 (63%) and we have divided them into four types according to relation with nerves apart from their location at quada equina or at filum terminale. Type-1. Dorsal type: the lipomatous mass inserts itself directly into the dorsum of the cord through a small dorsal defect, and the sensory nerve roots anterior to the union of lipoma with cord and none of nerve roots run through the lipoma. We observed 112 (72%) cases of this type. Type-2. (Caudal type): Lipoma traverses a defect in the most distal part of the dural sac. There is no fusion of dura to the lipoma cord interface, and lipoma engulfs the tip of conus. The rootlets run within the fatty mass, usually in the anterior lateral region and filum terminale may not be identifiable. We observed 28 (18%) cases of this nature.

Type-3. (Transitional): Lipoma cords inter face dorsal lipoma superiorly, then extend around the conus inferiorly to resemble the caudal type. Dura fuse with cord at interface and attach to the exiting nerve roots. We had 19 (7%) cases of this type. Type-4. (Flair type): It consists of short thick filum terminal widened by infiltrating fat and fibrous tissue. Although the conu is tethered, the nerve roots have normal configuration. We observed only 5 (3%) cases of this type. We had 15 (6%) patients with tight filum terminal, spilt cord malformation in 10 (4%), post repair myelomeningocele in 18 (7%) and sacral agenesis 3 (1.3%) and appendage a tail like process in 2 (0.8%) cases. All were de-tethered and showed good results.

With the advancement of imaging, new information about anatomy, embryology, pathology of congenital anomalies and improved surgical techniques, complications are almost very rare. In our series there was no mortality, however wound infection and closure, remained a continued problem. Retethering is clearly the most significant long-term complication depending upon length of follow up after the initial surgery. Two patients of infancy age group and 15 cases with myelomeningocele repair were un-tethered.

In our series nearly all the neurologically normal children (98%) retained normal motor, sensory, and bladder function post-operatively except two. In contrast, among children with pre-operative motor, sensory or bladder deficits, only about half (51%) experienced improvement in function, 5 cases were stabilized. Recovery of bladder continence was difficult to achieve and was obtained in only 12 cases. In our series younger patients retained their pre-operative status and also showed improvement, however in patients older than 5 years surgical treatment was partially successful.

CONCLUSIONS:

1. Surgical treatment of TSCS is now remarkably safe and effective.
2. We recommend prophylactic surgical treatment in neurologically normal infants to prevent inevitable appearance of neurological deficits.
3. Surgical treatment in adults with TSCS improves neurological out come or stabilizes for long time.
4. In view of the recent advances in neuro-imaging and microsurgical techniques, early surgery is recommended for all patients

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TRANS-TENON'S RETROBULBAR INFUSION OF TRIAMCENALONE FOR TREATMENT OF INTERMEDIATE UVEITIS.

HUMA KAYANI, NAEEMULLAH

ABSTRACT

Objective: *To find out the efficacy and complications of triamcenalone acetonide injection given in trans-tenon retrobulbar space for treatment of intermediate uveitis.*

Study Design: *Interventional study.*

Place & Duration of study: *Department of Opthalmology, Ganga Ram Hospital Lahore, from January 2005 to December 2006.*

Patients & Methods: *Twenty eyes of twenty patients with intermediate uveitis uncontrolled with systemic corticosteroids were injected with 20mg of triamcenalone acetonide in trans-tenon retrobulbar space using long, round tip cannula via incision through conjunctiva and tenon's space. Results were analyzed for visual outcome and any side effects. Follow up was at one week post injection, followed by monthly interval for three consecutive months.*

Results: *At one week post injection, there was no change in visual acuity (except one patient which showed improvement). Mean visual acuity improvement was observed in sixteen eyes one month after triamcenalone injection, while one eye showed worsening and remaining two eyes showed no change in vision. No patient was repeated with triamcenalone injection during the three month follow up. All patients systemic steroids were discontinued after trans-tenon injection. Complications like cataract and raised intra-ocular pressure were not observed in any patients during the study period.*

Conclusions: *This study demonstrates that trans-tenon (retrobulbar) injection of triamcenalone acetonide to be effective treatment for decreased visual acuity associated with intermediate uveitis. Systemic steroids may be discontinued and there is a high level of patient acceptability for this technique. Further follow up is required to demonstrate its long-term efficacy.*

Key words: *Uveitis, Steroids, Retro-bulbar injection*

INTRODUCTION

Corticosteroids are the mainstay of treatment for all types of uveitis. According to the type of uveitis, route of treatment is planned. For intermediate uveitis, periocular injections of long acting corticosteroids have been used to deliver high drug concentration.[1] Several delivery techniques have been advocated including sub-conjunctival route, sub-tenon's, trans-septal, orbital floor and retrobulbar injections.[2-6] Recently, intra-vitreal corticosteroid

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injection,[7-8] and intra-vitreal corticosteroid implants have been investigated.[9,10] However, these techniques can result in complications like orbital fat herniation,[11] globe perforation,[12] retinal and choroidal vascular occlusion,[13] vitreous haemorraghe, retinal detachment and even endophthalmitis.[9,14,15]

In our study, we preferred using long, blunt, round tip, irrigating cannula to deliver 20mg of required drug in the trans-tenon retrobulbar space. The round, blunt tip helps minimize globe perforation and the long length allows delivery of drug to required location. The space beneath tenon is continuous with the space beneath the visceral layer of dura surrounding the optic nerve and is equivalent to the retrobulbar space.[16] Thus, we call it a trans-tenon retrobulbar infusion technique.

PATIENTS AND METHODS:

The study consisted of twenty eyes of twenty patients with intermediate uveitis (vitritis) visiting the eye outdoor of Sir Ganga Ram Hospital, Lahore over a period of twenty four months beginning in January 2005 to December 2006. The diagnosis was based on the presence of cells in vitreal cavity visually seen on slit-lamp examination, drop in visual cavity due to vitritis, intraocular pressure reading within normal range (less than 21mmHg), no lens changes and subjects were taking full dose of oral steroids for two weeks with no signs of improvement in vision and in clinical impression of inflammation.

Exclusion criteria were history of corneal disease, ocular inflammation besides intermediate uveitis, raised IOP, lens changes, intraocular surgery or any previous periocular or intraocular steroid injection. Patients that could not be followed up for three consecutive months were also dropped out.

Following data were extracted from the patients. Age, sex, eye effected, visual acuity recorded on presentation. They then underwent similar ophthalmic examination on each visit, that included intraocular pressure measurement, lens changes if any, vitritis (number of cells) and fundus examination. Follow up visit was arranged on day seven, one month, two month, finally third month. All results were recorded and maintained for analysis.

Of all the twenty patients recruited for the study, sixteen were males and four females. The age ranged between ten to fourty years. Visual acuity recorded using Snellen's chart was hand movement (one eye), counting finger at 1 meter (one eye), 5/60 (one eye), 6/60 (four eyes), 6/24 (seven eyes), 6/18 (four eyes) and 6/9 (two eyes). The severity of vitritis was from +1 to +4 cells. One patient with visual acuity of hand movements had retinal edema as well. Others had intermediate uveitis only.

Informed consent was obtained before each procedure. The procedure was performed in the minor operation theatre. Patient's eye was prepared with povidine-iodine and sterile drapes applied. After topical anesthesia, lid speculum was placed. Conjunctiva and tenon capsule were incised away from limbus infero-temporally, just enough to create a small button-hole opening onto sclera. A 23 gauge round, blunt tip curved cannula approximately 2.1cm in length connected to a tuberculin syringe filled with 20mg (0.5ml) of triamcenalone acetonide, was inserted to the hub into sub-tenon space. Once in position, 0.5ml of triamcenalone acetonide (20mg) was infused. If any resistance was met during infusion, cannula was reintroduced and injection reattempted, so that required amount of steroid reached the hub without any reflux through the button-hole opening. Through out the procedure, the patients were guided to look in the opposite direction i.e superonasally. On completion, the incision was left unsutured and 0.5% levofloxacin were instilled topically three times a day for one week. Systemic immunosuppressive drugs taken by the patients were discontinued.

Patients were examined a week later, then monthly for a period of three months, making four visits altogether. On every visit, visual acuity was recorded. Slit-lamp biomicroscopy was done to asses any changes in vitreal cavity. Appearance of lens opacification, intraocular elevation greater than 21mmHg by applanation tonometer were noted. Repeat triamcenalone injection was not considered during the three month follow-up.

RESULTS:

At the first post-operative week, there was no improvement or worsening in vision or in level of vitritis. No IOP elevation, or lens changes resulted. As such, patients were

kept on topical quinolones only for two weeks. On second follow-up (one month) eight patients showed one line improvement from their previous recorded value. Three patients had two line improvement. Two subjects showed drastic improvement in visual acuity from finger counting to 6/24. No visual change was seen in four patients from their pre-injection level. Two patients showed a drop in one line (from 6/60 to 5/60) and remaining one had a drastic decrease in vision from 6/60 to hand movement due to development of exudative detachment resulting in proliferation in vitreous and formation of membranes and so vitrectomy with internal temponade using silicone oil was performed. The level of vitritis i.e the number of cells in anterior vitreous observed on slit-lamp/ non-contact lens examination showed improvement in all except three cases in whom the level vitritis had increased. No other associations were seen. Intraocular pressure remained within normal limits and no lens changes developed.

Two months after trans-tenon injection, those two patients that showed improvement from finger counting to 6/24 had a further visual improvement of one line on Snellen's chart, now coming to 6/18. Another three patient with two line improvement on one month follow up now had three line improvement (6/60 to 6/18 (one patient), and 6/24 to 6/9(two patients)). Another four subjects now had an overall two line improvement on their second month follow up (hand movement to 6/60 (two patients), 6/18 to 6/9 (two patients)). The rest had the same results as the previous month follow up. One subject with exudative retinal detachment underwent vitrectomy. Number of cells in vitreous cavity showed a further decrease in these nine patients. Remaining eleven subjects had the vitreal appearance as that on first month follow up. No intraocular pressure rise or lens changes were seen.

On the final third month follow up, no change was noticed in visual acuity or vitritis in any subject from the previous follow-ups. In patient whose vitrectomy was done, the vision improved to finger counting, and intraocular pressure rise was seen due to silicone oil in vitreous cavity.

All the eyes (twenty) received only one triamcenalone injection. Mild subconjunctival haemorraghe over the injection site was occasionally seen. There was no retrobulbar haemorraghe, globe perforation or infection. Overall efficacy in visual acuity after trans-tenon's retrobulbar injection was: Sixty five percent (thirteen patients showed overall visual improvement). Four subjects (twenty percent) vision remained unchanged, while three patients (fifteen percent) had visual deterioration from pre-injection record. Similar results in efficacy were seen in the level of improvement of vitritis.

DISCUSSION:

Corticosteroids are known to reduce intraocular inflammation, and depending on their concentration, to suppress proliferation of cells.[17-19] They have been given either locally or systemically to treat many ocular conditions. To gain the required result, it is necessary that the highest concentration of corticosteroid come in contact with the tissue it needs to act intraocularly. Ten percent of our patients showed one line visual acuity improvement, while

Table I Results of Triamcinalone Infusion at Follow up

Follow Up			Visual Acuity and Number of Patients								
First week			No change from pre- injection								
One month (Number of patients)	HM-CF 2	CF-6/24 2	6/60--5/60 2	6/60-6/60 2	6/60 - HM 1	6/60-6/24 1	6/24-6/18 2	6/24-6/9 2	6/18-6/18 2	6/18- 6/12 2	6/9-6/6 2
Two month (Number of patients)	HM-6/60 2	CF-6/18 2	6/60– 5/60 2	6/60-6/60 2	Exudative retinal detachment 1	6/60-6/18 1	6/24-6/9 2	6/24-6/9 2	6/18-6/18 2	6/18- 6/9 2	6/9-6/6 2
Three month	No Change From Second Month										

fifty five percent showed a two line or greater (two line (four patients) and three lines, (five patients) and two patients more) improvement in three months. Study results published by Okada et al[20] using the same trans-tenon technique with similar cannula and concentration of drug also had a 79% visual acuity improvement within three months. However, they used log MAR for documenting vision. The median visual acuity improvement was noticed after three weeks of injection. Similar study reported by Kanski JJ et al[21] using 40mg of triamcenalone acetonide in intermediate and posterior uveitis. Out of twenty patients, objective visual improvement occurred in twenty five eyes at 6weeks follow-up, with improvement observed within two weeks of injection. However, level of visual improvement was not mentioned. Helm C J, Holland G N [22] also reported the results of twenty eyes with 40mg of triamcenalone acetonide given as posterior subtenon injection. Visual acuity improvement of at least two lines on Snellen's chart was sixty seven percent and median time to improvement was three weeks. Though the concentration of drug used in the two studies was higher (40mg) than our study, yet the results are not very different. Thus we believe that our study results using trans-tenon's retrobulbar infusion are comparable if not better, than Helm and Holland study and Tanner et al results, since only 20mg of triamcenalone was used to inject with long (2.1cm) blunt cannula. The blunt and round end helped limit ocular damage.

Vitreous cellular activity was diminished in seventeen (eighty five percent) of our patients. Tanner et al[21] also documented decrease in number of vitreous cells in twenty one out of twenty five eyes while in Okada[20] study twenty five out of twenty six eyes (ninety six percent) improvement in vitritis was observed. Freeman WR et al[23] used standardized A scan and B scan echography immediately after sub-tenon injection of steroid to determine its localization. However, we did not use the help of these scans since our technique involves visual confirmation of cannula entry into target space.

Potential local complications of the local technique like globe perforation,[23] retrobulbar haemorraghe, conjunctival abscess or orbital cellulites[20] did not occur. This probably was due to slow penetration with direct visualization of the blunt tip cannula along with small dose of drug into the required site. In our study, only one patient showed a slight intraocular pressure elevation after two weeks. The rest of the cases showed no cataract progression or intraocular pressure rise during the entire three months. This in comparison with Okada et al who reported a cataract progression and intraocular pressure elevation to be thirty one percent and twenty seven percent respectively. In their study, intraocular pressure rise was noticed after two to three months of injection and most of their patients were receiving concurrent topical steroids, while in our study, topical steroids were stopped after injection and only fourteen day topical antibiotic(oflaxacin) given. Whether adjunct topical steroid use in these patients resulted in intraocular pressure elevation, not seen in our patients is debatable.

Yoshikawa et al[24] also reported a fifteen percent cataract progression though intraocular pressure elevation was not reported. The follow period was also not mentioned. Tanner et al[20] reported a transient elevation of intraocular pressure in four patients and cataract progression was not documented. Helm and Holland[20] showed intraocular pressure increase in six patients (thirty percent) after three weeks of initial injection. Cataract progression was not mentioned even in longer follow-up (median 23.5 months).

Recently, intravitreal corticosteroid injections[7] have gained popularity in uveitic management. This is because the dosage is less (4mg) and direct intraocular placement of the drug to the required site. Intravitreal implants[9] are also being evaluated. However, this technique has risks of intraocular complications beside IOP elevation and cataract progression. Therefore, we believe it is safe to perform trans-tenon's retrobulbar triamcenalone infusion before giving intravitreal steroid injection or implant in already compromised eye.

In summary, we conclude that triamcenalone acetonide injection is an effective treatment option for control of intermediate uveitis. Except for one case, no intraocular pressure elevation and cataract progression were seen and careful slow insertion of blunt curved cannula reduced the risk of globe perforation and retrobulbar haemorraghe.

Low concentration (20mg) of drug provided the same desired results.

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MAGNESIUM SULPHATE PROPHYLAXIS IN PRE-ECLAMPSIA

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ABSTRACT

Objective: *To determine the efficacy of magnesium sulphate in the management of preeclampsia.*

Study Design: *Quasi-experimental.*

Place & Duration of study: *Ward 8, Department of Obstetrics & Gynaecology, Jinnah Post Graduate Medical Center (JPMC) Karachi, from January 2004 to December 2004.*

Patients & Methods: *A study was done using non random purposive sampling. Study population consisted of 100 pre-eclamptic women. All women with severe pre-eclampsia and impending eclampsia were recruited in the study with blood pressure more than140/100 mm Hg, proteinuria ++ on dipstick or signs and symptoms of impending eclampsia like epigastric pain, nausea, vomiting, headache associated with sever hypertension. Fifty patients had magnesium sulpahte prophylaxis and 50 (control group) without any anticonvulsant. Before giving magnesium sulphate, the clinician checked that knee and other tendon reflexes were present, respiratory rate was normal(more than 16 breaths per minute) and urine output more than100 ml in last four hours or greater than 25 ml in last four hours.*

Results: *The average age of patients with magnesium sulphate prophylaxis was 28.06±5.5 years and for controls, it was 27.88±5.46 years. A significant reduction in the rate of eclampsia in women assigned to magnesium sulphate 2% versus 12% ($p<0.05$, OR 0.15) was noted. However there was no significant reduction in the rate of abruptio placentae in either group, 6% versus 8% ($p>0.5$). The rate of caesarean section was lower in women given magnesium prophylaxis 6% versus 17% ($p=0.01$). There was no significant difference in perinatal outcome in either group, 41% live births in study versus 38% amongst controls ($p=0.91$). No maternal death was observed in either group.*

Conclusions: *Magnesium sulphate minimizes the risk of eclampsia and decreases the morbidity and mortality related to eclampsia but at the same time it does not prevent the progression of pre-eclampsia and therefore maternal and fetal surveillance should be continued irrespective of magnesium sulphate prophylaxis.*

Key words: *Eclampsia, Pre-eclampsia, Magnesium sulphate, Pregnancy.*

INTRODUCTION:

Pre-eclampsia (and eclampsia) is still a leading cause of maternal mortality throughout the world.[1,2] US parenteral magnesium sulphate has been in use for the prevention of recurrent seizures in patients with eclampsia over the last 80 years. Later on its use was extended for seizure prophylaxis in women with pre-eclampsia. In 1990, it was

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Karachi.

suggested that magnesium sulphate is the ideal anticonvulsant in pre-eclampsia.[3]

During the recent years, several randomized controlled trials were reported that compared the efficacy of magnesium sulphate with other anticonvulsants in eclamptic women. In these trials magnesium sulphate was compared with other anticonvulsants like diazepam, phenytoin. Only one of these trials was multi-center and had adequate sample size, but all these trials proved that magnesium sulphate is superior over other anticonvulsants.[1,4] The Magpie study has demonstrated that administration of magnesium sulphate to women with pre-eclampsia reduces the risk of eclamptic seizure. Women allocated to magnesium sulphate have a 58% lower risk of eclamptic seizures.[1]

The primary objective of magnesium sulphate prophylaxis in women with preeclampsia is to prevent or reduce the progression to eclampsia.[5,6] Secondary benefits also include reduced maternal and perinatal mortalities and morbidities even in women who do not develop convulsions.[1,7-8] In addition in women with mild pre-eclampsia, a secondary benefit could be a reduction in the rate of progression to severe pre-eclampsia.[10,11] The aim of this study was to determine the efficacy of magnesium sulphate in the management of pre-eclampsia.

PATIENTS AND METHODS

The study was conducted from January 2004 to December 2004 at Obstetrics & Gynaecology Department, Jinnah Post Graduate Medical Center Karachi. It was a quasi-experimental study using a non random purposive sampling method. Study population consisted of 100 pre-eclamptic women. All women with severe pre-eclampsia and impending eclampsia were recruited in this study with blood pressure more than140/100 mmHg, proteinuria ++ on dipstick or signs and symptoms of impending eclampsia like epigastric pain, nausea, vomiting, headache associated with severe hypertension. Patients with pregnancy induced hypertension and mild to moderate pre-eclampsia with blood pressure less than 140/100 mm Hg and proteinuria in traces or one + were excluded. The women were matched for age parity and gestational age.

Fifty women (study group) received magnesium sulphate prophylaxis and 50 (control group) were without any anticonvulsant. Before administering magnesium sulphate, the clinician ensured presence of knee and other tendon reflexes, respiratory rate of more than 16 breaths per minute and urine output more than100 ml in the last four hours or greater than 25 ml in last hour. Magnesium levels were not routinely measured. Magnesium sulphate prophylaxis was given according to the Prichard regime,14 gm loading dose (4 gm by intravenous route over 20 minutes, and 10 gm intramuscularly) followed by 5 gm intramuscularly after every four hours provided the respiratory rate was more than 16 breaths per minute, urine output more than 25 ml per hour, and knee jerks were present. Other treatment management of patients were on the same lines like control of blood pressure, induction after stabilization if indicated. The results were analysed on SPSS version 10 and Fisher exact test was used for statistical analysis.

RESULTS

The mean age of patients with magnesium sulphate prophylaxis (study group) was 28.06±5.5 years, ranging from 19-38 years with median age of 28. In controls, it was 27.88±5.46 ranging from 18-48 years with median age of 20. The difference in ages among the two groups was found statistically non significant (p=0.18). The median parity of patients in study group was 2 (range 0-7) compared to median 2 (range 0-6) in control group. The gestational age at the onset of pre-eclampsia and delivery in study group ranged from 34 to36 weeks with median 34 compared to 35 to 36 weeks, with median of 34 weeks in the control group. In this study abruptio placentae was found in 6% of patients in study group versus 8% in control group and 2% of patients developed seizures in study group versus 12% in control group, however other serious complications like liver rupture, liver failure, stroke and renal failure were not observed in our patients.

The results revealed a significant reduction in the rate of eclampsia in women assigned to magnesium sulphate 2% versus 12% ($p<0.05$,OR=0.15 table I). However there was no significant reduction in the rate of abruptio placentae in either group 6% versus 8% ($p>0.05$ table II). The rate of caesarean section was lower in women given

magnesium prophylaxis 6% versus 17% (p=0.01). However the gestational age at the time of onset of pre-eclampsia and delivery in either group was not statistically significant. There was no significant difference in perinatal outcome in either group 41% live births in study group versus 38% amongst controls (p=0.91). No maternal death was observed in either group and no adverse effects were observed on fetus by the use of magnesium sulphate.

Table-I Development Of Eclampsia

	Development of Eclampsia	Patients who remained fits free	Total
Patients with magnesium sulphate	1 2%	49 98%	50
Patients without any anti convulsant	6 12%	44 88%	50

Fisher Exact:p<0.05,OR 0.15

Table-II Development Of Antepartum Haemorrhage

	Placental Abruption	No Placental Abruption
Patients with magnesium Sulphate	3 (36%)	47(94%)
Patients without anti convulsant	4 (48%)	46 (92%)
Fisher Exact:p>0.5		

DISCUSSION

The management of pre-eclampsia is a balance between the risks to the mother and risks to the foetus. Since delivery is the ultimate cure, management aimed benefiting the mother may be detrimental to the foetus as pre-maturity is a significant cause of foetal morbidity and mortality. Therefore the management of pre-eclampsia is based on stabilization, continued monitoring and delivery at the optimal time for mother and her baby. Most women with pre-eclampsia, particularly with mild disease, will have a favourable outcome and go on to deliver a healthy term baby. In our study only cases with severe pre-eclampsia were included and therefore this aspect could not be compared. In contrast to 5-10% of patients of severe pre-eclampsia, may have serious complications like pulmonary edema, antipartum haemorrhage with or without disseminated intravascular coagulation, renal or liver failure, ruptured liver haematomas, stroke and seizures.[3]

An overview of randomized control trials of magnesium sulphate in severe pre-eclampsia included four studies (including Magpie trial) totaling 6343 patients. The rate of seizures was significantly lower with magnesium sulphate therapy (0.6% versus 1.9-3.2% with placebo or other therapies).[4] The results were drawn from this study where 2% of patients developed eclampsia in study group versus 12% in control group. Thus magnesium sulphate remains the agent of choice for prophylaxis and it is probably safe to give magnesium sulphate than no treatment, however not without risk and therefore careful monitoring is recommended.[4,12] The clinical course of severe preeclampsia may be characterized by progressive deterioration of both mother and the foetus. There is universal agreement to deliver patients if disease develops beyond 34 weeks gestation, however if pre-eclampsia develops before 34 weeks there is high perinatal morbidity and mortality. A large randomized trial has shown that expectant management with close monitoring of mother and foetus has lower neonatal complications and neonatal stay in intensive care unit.[13] In our study the gestational age was not prolonged in the study group but there was lower caesarean section rate in study group. The lower caesarean section could be attributed to stabilization of patients after prophylaxis.

Magnesium sulphate does not prevent progression of disease unrelated to convulsions. Approximately 10-15% of women in labour have mild pre-eclampsia can develop signs of severe pre-eclampsia, whether or not they receive magnesium sulphate.[14,15] Some experts recommend against the use of magnesium sulphate in mild pre-eclampsia because the risk of developing eclampsia is low in this group.[15] Thus the benefit to risk ratio does not support the routine use of magnesium sulphate prophylaxis in mild pre-eclampsia but its efficacy in the prevention and treatment of eclampsia has been proven.[16-19]

Regarding the dose of administration of magnesium sulphate, observational studies and randomized control trials recommend magnesium sulphate to be used by intravenous route.[3] In our study magnesium sulphate was used by intravenous loading dose was followed by intramus-

cular maintenance dose .The intramuscular route has the advantage of ease of use, although intravenous route may provide better blood levels. However no serious untoward complication was observed and negligible number of patients complained of pain at the injection site that was settled with analgesics. Finally magnesium sulphate minimizes the risk of eclampsia and decreases the morbidity and mortality related to eclampsia but at the same time it does not prevent the progression of preeclampsia and therefore maternal and fetal surveillance should be continued irrespective of magnesium sulphate prophylaxis.

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RECURRENT GOITER: IS IT PREVENTABLE?

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ABSTRACT

Objective: *To determine the different factors responsible for the recurrence of goiter after surgery*

Study Design: *Analytic study*

Place & Duration of Study: *Department of Surgery, Fauji Foundation Hospital, Rawalpindi from January 1998 to December 2005.*

Patients & Methods: *All patients with recurrent goiter irrespective of place of first surgery were included. The patients with recurrent goiters due to thyroid malignancies were excluded.*

Results: *Sixty-four patients were included during study period from January 1998 to December 2005. 34.38% were in 4th and 25% of patients reported in 3rd and 5th decade each. Among them 96.9% were females and 3.1% males. 46.88% patients noticed recurrence after 4-6 years and 28.13% after 6-7 years of surgery. 75% of patients had not used thyroxin at all and 25% used for some duration after surgery. None of the patients gave the history of continuous use of suppressive dose of thyroxin postoperatively. During surgery it was observed that the site of recurrence was 25% whole one lobe, 18.75% from both lobes or at multiple places, 12.5% from pyramidal lobe and 9.37% from superior pole.*

Conclusions: *Adequate thyroxin prophylaxis, correct indications for primary surgery, adequate surgery and removal of all palpable nodules reduce the risk of recurrent goiter.*

Key words: *Recurrent goiter, Surgery, Thyroxin prophylaxis*

INTRODUCTION

Thyroid surgery has evolved from a life threatening intervention during the last century to an effective and safe wide accepted safe procedure. Surgery of goiter has been greatly influenced by Theodor Kocher. The conservative Kocher's type of surgical resection of multinodular goiter has been associated with high rate of recurrence.[1,2] The surgical therapy for thyroid disease raises controversial discussions concerning the appropriate technique of bilateral resection. The avoidance of recurrent goitre and other surgical complications is a great demand of thyroid surgery.

Recurrence of goitre after surgery is of two types i.e. a true recurrence or a false recurrence. False relapse is defined as a recurrence after operation as a consequence of leaving the pathological tissue (i.e. inadequate operation) and true recurrence is termed an unchanged thyroid tissue under the influence of the same reasons as

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at primary disease.[3] Radical resection at first operation is also recommended by surgeons to reduce the recurrence postoperatively.[3,4]

Goiter is endemic in Pakistan especially in Northern areas, North West Frontier Province and Northern Punjab. We had observed a high incidence of recurrent goiter in our set up. After reviewing national literature no study was found which shows risk factors and reasons for recurrence of goiter in our setup.

PATIENTS & METHODS

This analytic study was carried out in the Department of Surgery, Fauji Foundation Hospital, Rawalpindi from January 1998 to December 2005. The purpose of the present study was to determine the different factors responsible for the recurrence of goiter after surgery and to compare the data with the national and international literature. Inclusion criteria was all patients with recurrent goiter irrespective of place of first surgery. The patients with recurrent goiters due to thyroid malignancies were excluded. All patients were admitted and thorough clinical, biochemical and histopathological evaluations were done. Patients were prepared for operation and all necessary routine investigations for thyroid surgery were carried out. During surgery special emphasis was done to look for the site of recurrence and to identify the type of first surgery. All preoperative, operative and post-operative findings including site of recurrence etc were recorded in detail. The results were evaluated and analyzed.

RESULTS

A total of 64 patients were included during study period from January 1998 to December 2005. Majority (34.38%) reported in 4th decade of life and 25% of patients reported in 3rd and 5th decade each. None of the patients having follow up documents of previous surgery and majority of them were operated at different hospitals during their husband's service in army. Among them 96.9% were females and 3.1% males. Table –I, shows the age of patient at first surgery and interval when recurrence noticed first time after first surgery. 46.88% patients noticed 4-5 years and 28.13% after 6-7 years of surgery. 75% of patients had not used thyroxin at all and 25% used for some duration after surgery (Table-II). None of the patient gave the history of continuous use of suppressive dose of thyroxin postoperatively. During surgery site of recurrence was observed in 25% of patients from whole one lobe, 18.75% from both lobes, 18.75% from multiple places, 12.5% from pyramidal lobe and 9.37% from superior pole (Table-III).

Table -I
Age at First Surgery and Duration of Recurrence After First Surgery
N=64

Age	< 1 yrs	2-3 yrs	4-5 yrs	6-7 yrs	8-9 yrs	> 10 yrs	Total
<20	4	4	4	-	-		12
21 – 30	-	2	12	6	-		20
31 – 40	-	2	14	18	2	2	32
41 – 50	-	-	-	-	-	-	
>51							
Total	4	8	30	18	2	2	64
	(6.25%)	(12.50%)	(46.88%)	(28.13%)	(3.12%)	(3.12%)	

Statistical analysis95% Confidence limits for maximum duration of occurrence (4-5 Year) = 29.0 to 65.2%

Table – II
Thyroxin use after surgery
N = 64

Use of thyroxin after surgery	No of patients	%	95% Confidence limits
Thyroxin not used	48	75.0%	56.2 to 87.8
Thyroxin used for some time	16	25.0%	12.1 to 43.7
Permanent use of thyroxin	-	-	-
after surgery			
Total	64		100.0

Table - III
Site Of Recurrence At Surgery
N=64

Site of Recurrence	No Of Patients	Percentage	Statistical analysis95% Confidence limits
Superior pole	6	9.37	2.4 to 26.1
Pyramidal lobe	8	12.50	4.0 to 29.9
Isthmus	10	15.63	5.8 to 33.5
One lobe	16	25.00	12.1 to 43.7
Both lobe	12	18.75	7.8 to 37.0
Multiple places	12	18.75	7.8 to 37.0
Total	64	100	

DISCUSSION

Recurrence of goitre is one of the well known complications of thyroid surgery. Different reasons were given for the recurrence of goitre after surgery in literature. Incidence is higher in patients undergoing more conservative surgery, young patients and lower after post operative thyroxin suppressive therapy.[4,5,6] Thyroid

hormone suppressive therapy has long been used to treat benign and malignant thyroid disorders. After thyroidectomy in patients with endemic goitre thyroid hormone suppression therapy prevents goitre recurrence in majority of cases. Thyroid stimulating hormone (TSH) suppressive therapy is recommended by some authorities to prevent true recurrences, although its efficacy is debated. Some studies proved that the patients with multinodular goitre are at high risk of development of recurrence so TSH suppression therapy must be considered in those patients.[6-8] Once TSH suppression treatment is begun, then it will logically be continued for life. It was observed that in our patients none of the patients used thyroxin suppressive therapy postoperatively and only 25% patients used it for some time. Reason for this probably is poor compliance and improper counseling of the patients. Rate of recurrence among patients who had not used thyroxin suppressive therapy post operatively reported in different studies are 25% by Kraimps et al[7], 18.2% by Cherkasov et al, [8] and 35.7% by Ronga and his colleagues.[5] Cherkasov[8] has also observed reduction in recurrence rate from 18.2% to 2.5% among patients who used thyroxin suppressive therapy post operatively.

Majority of recurrences (46.88%) were observed in our study after 4-5 years of surgery followed by 28.13% after 6-7 years of initial surgery. Duration of recurrence reported in different studies is 29% by Rios and his colleagues[9] within 10 year of surgery, 33.9% between 6-7 years of surgery by Bellantone et al [10] and 60% after 8 years of surgery by Kraimps and his fellows. [5] Duration of recurrence in our patients is comparatively at early age as compared to international literature which may be due to fact that majority of our patients are from endemic goiter area, none had use suppressive thyroxin therapy and operated at comparatively young age i.e. 2nd and 3rd decade of life. About 50% of patients had first surgery at younger age i.e. 2nd and 3rd decade of life. Surgery at young age is one of the risk factors in recurrence of goiter which also is reported in literature by Rios et al,[9] Gibelin et al, [11] Rios and his colleagues [12] and Ronga et al.[5]

Recurrent goiter may occur because of the development of new nodules (true recurrence) or because of the growth of the 'residual" or persistent macroscopic or microscopic nodule left at the previous thyroid operation.[13,14] Inadequate previous surgery is another important factor in goiter recurrence.[14,15] Vetshev[6] after a study of 214 patients gave the conclusion that inadequate surgery and inadequate suppressive therapy with thyroxin drugs were the main causes of recurrent goiter. Same observation was made by Rios[9] and Bellantone[10] in their studies. Gibelin and his colleagues[11] after reviewing the 4334 thyroidectomies were of the opinion that young age and multiple nodules at initial surgery are the risk factors for recurrence. Ronga and his colleagues[5] reported higher incidence of recurrence (35.7%) in colloid goitre and this recurrence was higher after conservative surgery and in younger patients, while it was lower after postoperative replacement therapy. Per-operatively we found that inadequate or improper surgery was one of the factors among recurrence in our patients.

We observed in our study that in 25% patients one lobe was not removed during previous surgery. Recurrence noticed from pyramidal lobe in 12.50%, superior pole in 9.37% and isthmus among 15.63% patients which is suggestive of previous inadequate surgery. Removal of all nodules and intraoperative digital palpation of the entire thyroid gland is essential for detecting residual macroscopic thyroid nodules, and all enlarged nodules should be removed at operation.[7,13] Total thyroidectomy has been recommended by some endocrine surgeons for treating patients with multinodular goiter.[12,13] Some surgeons prefer subtotal thyroidectomy and total thyroidectomy is reserved for patients when no normal thyroid tissue can be preserved. The reason for this is that not all patients with subtotal thyroidectomy develop recurrence and secondly incidence of complications is greater in total thyroidectomy. Prevention of residual nodules is probably best assured by systematic palpation during operation of two thyroid lobules. This considerably lessens the risk of recurrence.[7,13]

CONCLUSIONS

It is concluded that adequate thyroxin prophylaxis, correct indications for primary surgery, adequate surgery and removal of all palpable nodules reduce the risk of recurrent goiter.

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FLEXIBLE CYSTOSCOPE : A USEFUL AID TO DIFFICULT MALE CATHETERIZATION

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ABSTRACT

Objective: *To assess usefulness of flexible cystoscope in difficult male urethral catheterization.*

Study Design: *Descriptive case series.*

Place & Duration of study: *Fauji Foundation Hospital and Maryam Memorial Hospital, Rawalpindi during a period of four years.*

Patients & Methods: *In a consecutive series of thirty patients with acute urinary retention and initial difficulty in urethral catheterization, a flexible cystoscope and a guide wire was used to insert the Foley's catheter.*

Results: *Ten patients (33.3%) presented with acute urinary retention due to benign enlargement of prostate. Five patients (16.6%) required re-catheterization following unsuccessful trial after transurethral resection of prostate. Four patients (13.3%) had carcinoma of prostate. This technique was used five times (16%) to catheterize prior to intravesical instillation of cytotoxic drugs. Two patients (6.6%) had bladder neck distortion due to transitional cell carcinoma of bladder, one (3.3%) had an extravesical haematoma and another one (3.3%) had massive post traumatic clot retention. The procedure was successful in 86.7% of the cases. Difficulty to negotiate the urethra was faced in cases of urethral strictures(6.6%).*

Conclusion: *Flexible cystoscope is a safe, quick and effective method for difficult urethral catheterization in male patients.*

Key Words : *Urethral catheterization, Flexible Cystoscope, Guide wire.*

INTRODUCTION

The term *catheter* in Greek means to let or send down. Catheterization has been used to relieve painful retention of urine from time immemorial. Many materials have been utilized to form the tubular structure of the catheter including straw, rolled up palm leaves, long, thin dried leaves of *Allium*, gold, silver, copper, brass and lead.[1] The earliest known catheters used by the Chinese for relieving acute urinary retention were dried reeds and palm leaves.[2] A bronze tube with a blunt tip and a side hole found buried in the house of a surgeon of AD 79 in Pompeii is thought to have been used for the same purpose. Paul of Aegina in his seventh century writings described use of wool fluff through catheters to create suction for emptying bladder urine.[3] The method of using straight tubes with an end hole for urine evacuation is repeatedly described in the tenth century Arabic medical writings of Albacusis

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and in the fifteenth century Turkey.[4]
The catheters used so far were rigid. The earliest flexible catheters using sea animal skin stuck together with cheese glue were designed by the Arab physician Avicenna. In the sixteenth century Italy, Fabricius of Aquapandante used catheters made of horns which softened after coming in contact with urine. A seventeenth century Dutch surgeon Cornilius Solingen designed a tube from a spiral strip of metal and used it as a core of a flexible catheter covered by parchment treated with wax for lubrication. Benjamin Franklin covered a similar tube with gut. Michele Toria used natural rubber to make urinary catheters. Charles Goodyear in 1844 discovered vulcanized rubber which later was used by a French urologist Nelaton to form a urethral catheter with a side hole near its tip. In the twentieth century a variety of synthetic rubber and silicone catheters were developed.[5] Where urethral catheterization is difficult the traditional alternatives have been the use of an introducer with or without prior bouginage or a suprapubic stab.

Minimally invasive techniques are being intensively studied for a variety of clinical surgical scenarios.[6] The flexible cystoscope is part of these efforts. A flexible cystoscopy can be utilized for both diagnostic and therapeutic reasons.[7] Since its introduction and refinements, flexible cystoscope has proved a useful addition to urologists' armamentarium. Stiff hips, penile prosthesis and severely ill or multiply injured patients in intensive care present no difficulty for flexible cystoscopy at the bed side. The shape and size of the instrument is in many ways similar to a modern catheter and it is a little wonder that negotiation of the bends of the male urethra is straightforward and carried out with acceptable patient comfort and compliance.[8] Flexible cystoscope can be effectively and more safely used in place of the rigid counterpart[9] and it compares favorably in all respects with standard rigid equipment. It has the added advantage that cystoscopy can be performed supine and under local anesthesia with ease. Biopsies may be taken; small lesions fulgurated and even the ureteric catheterization can be performed without general anesthesia.[10]

In difficult cases of male urethra catheterization, Krickler described a technique using a flexible cystoscope to pass a guide wire into the bladder followed by catheter introduction over the guide wire.[11] In the present study the use of this procedure in thirty consecutive cases where standard urethral catheterization failed is described.

PATIENTS AND METHODS

During a three year period in Fauji Foundation Hospital and Maryam Memorial Hospital Rawalpindi, thirty consecutive patients with initial difficult urethral catheterization were included in this study. The patients ranged in age from thirty five to eighty two years (mean 60.63 +,- 9.91 years). In all such patients a flexible cystoscope was used to introduce a guidewire into the bladder under direct vision in order to pass a catheter over it to establish vesical drainage. This procedure was used in preference to introducer insertion, bouginage or suprapubic catheterization. The indication being, patient's history of urological disease and an unsuccessful attempt at initial urethral catheterization.

The procedure was carried out in the endoscopy suite or operation theatre under aseptic conditions using drapes. A 10 milliliter of local anesthetic (xylocaine) gel was introduced into the urethra for 5 – 10 minutes. One gram of intravenous cefotaxime administered followed by a titrated dose of midazolam. A flexible cystoscope was negotiated into the bladder. A 0.035cm guide wire passed through the instrument channel. The cystoscope was then withdrawn leaving the guide wire in place. The tip of a suitable catheter was amputated or perforated to expose an end hole taking care to avoid damage to the balloon. The balloon was test inflated before insertion. The catheter then passed over the guidewire which was then withdrawn.

RESULTS

The flexible cystoscope was passed in all (93.3%) except the two cases (6.6%) of urethral stricture. The urethral strictures could not be negotiated with the 0.38 cm flexible cystoscope. In one case of carcinoma prostate and the patient with extra vesical haematoma, we were able to pass even the guide wire but subsequently Foley's catheter could not be passed over it. But passage of the Foley's catheter after having the guide wire passed was accomplished in 86.7% of the patients (Table-1,2).

Table: 1 Disease Relation With Passage of Flexible Cystoscope Passed

Disease	Flexi Passed		Total
	Yes	No	
Benign Prostatic Hypertrophy (BPH)	10	-	10
Ca Prostate	4	-	4
Transitional Cell Carcinoma (TCC) for Intra Vesical Chemotherapy (IVCT)	5	-	5
Clot Retention	1	-	1
Failed TWC	5	-	5
Urethral Stricture		2	2
TCC Urinary Bladder (UB) with BND	2	-	2
Extra Vesical Hematoma (EVH)	1	-	1
Total	28	2	30

Table: 2 Disease Relation with Flexi-assisted Foley's Urethral Catheter Passage

Disease	Foley's Urethral Catheter Passed		Total
	Yes	No	
BPH	10		10
Ca Prostate	3	1	4
TCC for IVCT	5		5
Clot Retention	1		1
Failed TWC	5		5
Urethral Stricture		2	2
TCC UB with BND	2		2
EVH		1	1
Total	26	4	30

DISCUSSION

Blind procedures are frequently avoided in surgery. The one common procedure which is invariably carried out blind is urethral catheterization. Difficulty in male catheterization may be the result of a variety of conditions. Inability to negotiate the S shaped bulbous urethra, distorted prostatic urethra, urethral stricture or false passages are the common causes of failure to introduce catheter into the urinary bladder.[11] In difficult cases introducer insertion, bouginage or a suprapubic stab may be employed. Urethral catheterization is the commonest procedure involved in emergency admissions in urology. It is a distinct entity as it is not an operation. However, it is in the 'top 10' lists in emergency admissions, waiting list admissions, and the number of bed days.[12] Urethral catheters inserted for acute retention have been estimated to have a urinary infection rate of 10-50%.[13] Septicemia may occur in 3-5% of these patients.[14] Silicone and polyvinyl chloride (PVC) catheters cause less urethral irritation and stricture formation.[15]

Although supra pubic catheters (SPC) have a lower incidence of urinary tract infection (UTI) compared to urethral catheterization[16,17] but it increases the incidence of bladder and renal calculi.[18] Other complications include recurrent catheter blockage with debris, persistent urinary leakage, abdominal wall and urinary infections associated with chronic use, and injury to adjacent viscera during insertion.[19]

In straight forward cases of acute urinary retention or those requiring peroperative catheterization a choice between urethral and suprapubic catheterization depends upon patient requirement and preference of the surgeon. In complex cases of urinary tract pathology which constitute majority of our series, atraumatic insertion of larger diameter up to 24 French three way catheter if indicated, using a flexible cystoscope and a guidewire has proved very useful. The two cases in which we were not able to pass flexible cystoscope and subsequently Foley's catheter were of urethral strictures. But the problem can be overcome with the use of smaller size (26 cm/7.5 French) pediatric flexible cystoscope which has been used very effectively in managing these patients.[20]

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ORIGINAL ARTICLE

AN AUDIT OF PATIENTS PRESENTING TO GLAUCOMA CLINIC

FARAH AKHTAR, MAHMOOD ALI, MUHAMMAD SHOAIB

ABSTRACT:

Objective: *To report the demographic pattern and frequencies of various types of glaucomas and their treatment strategies.*

Study Design: *A cross sectional observational study*

Place & Duration of study: *At glaucoma clinic of Al-Shifa Trust Eye Hospital, Rawalpindi, from 1st July 2006 to 30th June 2007.*

Patients & Methods: *All the patients above 16 years of age reporting for the first time at glaucoma clinic were included. After recording the demographic profile and taking history, a detailed ocular examination including Snellen visual acuity, slit lamp examination, applanation tonometry, gonioscopy and a stereoscopic assessment of the vertical cup disc ratio (CDR) were performed. In selected subjects, visual field examination was advised. Keeping in view the compliance, affordability of the patient and stage of the disease a treatment plan was made. All the data was recorded on a special proforma then assessed using statistical software SPSS version 12.0.*

Results: *A total number of 800 new patients were examined in the glaucoma clinic during the study period. Among them 487 (60.9%) were males. The male to female ratio was 1.55:1. The age of the patients ranged from 16 years -103 years with a mean age of 57.7years (+/- 17.47 SD). Primary open angle glaucoma (POAG) was the most frequent type of glaucoma (33.50%) followed by the primary angle closure glaucoma (PACG - 22.12%). POAG was more common in males [34.90% of males] while PACG was more common in females [28.43% of females]. Regarding the management 912 eyes were treated medically, while 273 eyes required some sort of surgical intervention.*

Conclusions: *POAG was the most frequent type of glaucoma at our clinic. The risk of developing glaucoma increases with the advancing age so people aged 40 years and above should be encouraged to visit hospitals for glaucoma screening at least once a year so that the burden of permanent visual morbidity caused by glaucoma could be decreased.*

Key words: *Glaucoma, Demography, Types of glaucoma.*

INTRODUCTION:

Glaucoma is defined as "a progressive optic neuropathy involving characteristic structural damage to the optic nerve and characteristic visual field defects"[1]. It is a multi-factorial disease in which loss of retinal ganglion cells and their axons is characterized by topographical changes in the optic nerve head and retinal nerve fiber layer. By the 1950s, it was established that raised intraocular pressure (IOP) was glaucoma, however, in the mid 1960s it was revealed that there were many people in the population with raised IOP and no glaucoma and vice versa. Now

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IOP is considered as an important and only modifiable risk factor for the glaucoma.

Glaucoma is the second most common cause of blindness worldwide affecting 65 million people around the world and an expected 7.5 million people are blind due to it. The number of glaucoma patients is expected to increase up to 79.6 million by the year 2020 and Asians will represent 47 % of those.[2] Although more people are affected worldwide by primary open angle glaucoma (POAG) than by primary angle closure glaucoma (PACG), the latter is more common in Asians. The Indian subcontinent, including Pakistan, Bangladesh and India has a population of over 1.3 billion people. According to the World Health Organization estimates, this region is home to 23.5% of all blind people, around 10.5 million people and the major causes of blindness in this region are cataract and glaucoma.[3]

Currently glaucoma is considered as a major priority area in the vision 2020 program - a global initiative to prevent avoidable blindness. Studies have shown that racial differences do exist in the prevalence of various types of glaucomas and thus results of studies conducted in one part of the world can not be generalized. Studies have been conducted in Pakistan regarding the prevalence of various types of glaucomas but most of the studies are based on the inpatient data.[4,5] Presentation and management of a disease at outpatient is quiet different and more reflective of the magnitude of that disease. The aim of this study is to share our experience of managing glaucoma at an outpatient glaucoma clinic. In addition to reporting the frequencies of various types of glaucoma, an effort was made to describe the demographic pattern of the disease. Such data will definitely be helpful in making future health policies to target the areas which need special attention and the population at risk.

PATIENTS & METHODS:

It was a cross sectional observational study including all the patients above 16 years of age reporting for the first time at glaucoma clinic of Al-Shifa Trust Eye Hospital, Rawalpindi from 1st July 2006 to 30th June 2007. At presentation, general screening of all patients was done at the out patient department. Patients with suspicious IOP, CDR and visual fields or with the history of any glaucoma surgery are referred to glaucoma clinic for further workup. At glaucoma clinic, patients are thoroughly reevaluated by the glaucoma consultants and managed accordingly.

For this study, special proformas were used to record the demographic profile, history, examination, investigations and management. In addition to the routine ophthalmic history, questions were asked regarding patients education, smoking habits and family history of blindness or glaucoma. After the history a detailed ocular examination was done. Best corrected visual acuity was checked by optometrists. The anterior segment of the eye was examined using a slit lamp (Takagi SM-30), to detect evidence of secondary glaucoma and previous ocular surgery. Gonioscopy was carried out on all subjects, using a Zeiss 4 mirror gonioscope and drainage angles were graded according to Schaffer's classification scheme. Intraocular pressure (IOP) was then measured using Goldmann applanation tonometer. We prefer to record the visual fields with automated threshold perimetry or frequency doubling perimetry before dilating the pupils for fundus examination. The pupils of subjects were dilated with tropicamide 1% eye drops. The optic disc was then examined using a +90 D lens ("Volk", Mentor, OH, USA). The disc was examined through an undilated pupil if angles were judged occludable or closed. Glaucoma was diagnosed on the basis of abnormal vertical CDR combined with an abnormal visual field test or in cases of advanced visual loss in which visual field testing could not be performed, diagnosis was made on the basis of a grossly abnormal CDR. If it was not possible to examine the optic discs and visual fields, glaucoma was diagnosed on the basis of a raised intraocular pressure alone.

All the treatment options were discussed with the patient and the management plan was made keeping in view the compliance and affordability of the patient and stage of the disease. The data entered on the proformas was analyzed using statistical software SPSS version 12.0.

RESULTS:

A total number of 801 new patients were examined in the glaucoma clinic 1st July 2006 to 30th June 2007. One patient was wrongly referred from out patient department,

so 800 patients were further examined for glaucoma. Among these 800 patients, 487 (60.9%) were male and 313 (39.1%) female. The male to female ratio was 1.55:1. The age of the patients ranged from 16-103 years with a mean age of 57.7years (+/- 17.47 SD).

The most frequent type of glaucoma in these patients was primary open angle glaucoma (POAG) which was diagnosed in 268 (33.50%). patients. Other frequent types of glaucoma were primary angle closure (177 patients - 22.12%), pseudoexfoliation (90 patients - 11.25%) and neovascular glaucoma (41 patients - 5.12%). The frequency of various types of glaucomas and their distribution according to gender is shown in table 1. Although POAG was more common in males (170/487 -34.90%) as compared to females (98/313 - 31.30%) but the difference was not statistically significant ($p>0.05$). PACG was more common in females (89/313 - 28.43%) as compared to males (88/487 - 18.06%) and the difference was statistically significant ($p<0.05$, OR - 1.57).

To calculate the relationship between age and various types of glaucomas, patients were divided into four age categories i.e. below 40 years, 40-49 years, 50-59 years and patients aged 60 years or above. Table 2 shows the frequency of various types of glaucoma in these age categories. It was noted that frequency of almost all types of glaucoma was more in the patients aged 60 years and above. Regarding the management 912 eyes were treated medically, while trabeculectomy was advised in 136 eyes and YAG peripheral ididotomy in 70 eyes. Details of treatment options are shown in table 3.

DISCUSSION:

Limited data is available on the relative and overall prevalence of glaucoma and its types in Pakistani population. Population based studies in this regard have been carried out in our neighboring countries of India and Bangladesh, however in our country data from hospital based studies is available.[4,5,6] Two studies have previously been done in

Table 1. Frequency of various types of glaucomas and their distribution in males and females

Diagnosis	Gender		Total
	Male	Female	
Primary Open Angle Glaucoma	170	98	268
Primary Angle Closure Glaucoma	88	89	177
Neovascular glaucoma	27	14	41
Pseudoexfoliation Glaucoma	60	30	90
Angle recession Glaucoma	5	-	5
Steroid Induced Glaucoma	5	-	5
Pseudo/Aphakic Glaucoma	9	7	16
Ghost Cell Glaucoma	-	1	1
Glaucomatocyclitic Crisis	1	-	1
Lens Induced Glaucoma	2	2	4
Uveitic Glaucoma	10	5	15
Hyphema / Red cell glaucoma	1	-	1
Miscellaneous 2° Glaucomas	19	7	26
Classification not possible due to hazy media, non-cooperative patients etc	57	36	93
Glaucoma Suspect	24	20	44
Normal Tension Glaucoma	9	4	13
Total	487	313	800

teaching Hospitals of Peshawar but these are based on inpatient data. One study was carried out in our hospital in glaucoma outpatient clinic from 1992-94. Our recent study is also done in the outpatient glaucoma clinic, which is different from the previous study in the following ways: In addition to describing the relative frequencies of various types of glaucoma, the demographic pattern of the disease and distribution according to age, gender and address is also discussed in our study. Secondly our study is only concerned with the adult glaucomas while the previous study also included the paediatric cases as well.

The male to female ratio in our study is 1.55:1. In the study conducted at Khyber Teaching hospital Peshawar male to female ratio was 1.1:1. Similarly in the other study done at Hayatyabad medical complex the number of male patients is more than the females. The mean age of presentation in our study is 57.7 years which is more than the mean age (40 years) found in the inpatient data of HMC.

Studies show that racial and gender differences exist in the prevalence of various types of glaucomas. POAG is more prevalent in the black American population while the most prevalent type of glaucoma in Asians is the PACG.[7] However studies done in India and Bangladesh have reported the prevalence of POAG more than PACG in this region.[8,9] Similarly in our study POAG was the most frequent type of glaucoma followed by the PACG. This compares well with the previous study of our hospital. But the inpatient data from Peshawar shows PACG and secondary glaucomas were the most frequent types in the admitted patients of Hayatabad Medical Complex and Khyber Teaching Hospitals respectively.[4,5,6] This difference is because the patients of PACG or secondary glaucomas (like lens induced, hyphema etc) often present in acute stage and require some surgical intervention, while the POAG is often treated medically and require less frequent admissions.

The frequency of Aphakic Glaucoma was 13% in the previous study, while in our study aphakic glaucoma accounts for just 1.6% of the total patients. The improved standard and technique of cataract surgery, transition from ICCE to ECCE / phaco + IOL, and less use of anterior chamber IOL has definitely decreased the incidence of aphakic / pseudophakic glaucoma as compared to the previous studies.[6]

Pseudoexfoliation (PXF) glaucoma was the third most frequent type accounting for about 11.25% of all the patients. The prevalence of pseudoexfoliation in Indian subcontinent is quite common and is easily overlooked cause of glaucoma. Elderly male people with PXF appear to be at higher risk of developing glaucoma.[10] In our study 66.6% patients were male. 90% of all the patients with PXF glaucoma were aged above 60 years. All the patients of angle recession glaucoma were male which is explained by the fact that males are more prone to occu-

Table 2. Frequency of various types of glaucomas in different age groups

Diagnosis	Age Group			
	Below 40 yrs	40-49yrs	50-59yrs	60 yrs and above
POAG	34	34	51	149
PACG	16	17	41	103
Neovascular Glaucoma [NVG]	7	4	6	24
Pseudoexfoliation [PXF] Glaucoma	0	0	10	80
2° Glaucomas other than NVG and PXF	36	5	13	20
Uncalssified Glaucomas[Due to hazy media, non-cooperative patients]	17	3	19	54
Normal Tension Glaucoma	4	2	2	5
Glaucoma Suspect	13	10	3	18
Total	127	75	145	453

Table No 3. Frequency of various treatments options advised in different cases

Mode of Treatment	Frequency (No. of eyes)	Percent
Medically Treated Cases	912	67.6%
Trabeculectomy	136	10.1%
YAG Laser Peripheral Ididotomy	70	5.2%
Cyclocryopexy	38	2.8%
Observe Only	98	7.3%
Combined Extraction	6	0.4%
IOP found controlled with previous surgery	66	4.9%
Medical+PRP or Intravitreal anti VEGF injection	15	1.1%
Cataract Surgery	7	0.5%
AC wash for Hyphema	1	0.07%
Total no. of Eyes Treated	1349	100%

pational trauma. Steroid induced glaucoma was also more frequent in young male patients. As vernal keratoconjunctivitis is quite common in our male population, injudicious use of corticosteroids for the relief of symptoms with poor monitoring of intraocular pressures leads to this devastating condition.[11]

Lens induced glaucoma and neovascular glaucoma are the two other common types of secondary glaucoma. In South Asia poor socioeconomic factors, lack of health education and transport facilities are the factors that are responsible for late presentation of patients for the management of cataract, diabetic retinopathy and central retinal vein occlusion which ultimately leads to lens induced and neovascular glaucoma.[12] The frequency of lens induced glaucoma in our study is underestimated and the actual number of such patients is slightly more than this. The reason for this bias is that the patients of lens induced glaucoma presenting to out patient department are usually not referred to glaucoma clinic. Rather they are admitted as an emergency and operated as soon as their intra ocular pressure is controlled. As a result of this emergency management, some patients may bypass the glaucoma clinic.

Majority of our patients were from Rawalpindi, Islamabad, Azad Kashmir and the nearby cities of Rawalpindi including Gujar Khan, Chakwal, Jhelum, Gujrat and Attock. This might be due to the fact that the patients of these areas have easy access to Rawalpindi. Secondly Al Shifa Centre for Community Ophthalmology [ACCO] regularly arranges eye camps in these areas. Although many cases of advanced glaucoma are screened and referred to hospital from these camps but it is a fact that this effort is not sufficient to combat the morbidity caused by glaucoma.

CONCLUSIONS:

The risk of developing glaucoma increases with the advancing age so people aged 40 years and above should be encouraged to visit hospitals for glaucoma screening at least once a year so that the burden of permanent visual morbidity caused by glaucoma could be decreased. Government should provide the eye care centers with proper diagnostic tools so that glaucoma could be detected at an early stage.

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ORIGINAL ARTICLE

A COMPARATIVE STUDY OF OPIOD AND NSAIDs AS POST OPERATIVE ANALGESIA

SYED MOHAMMAD SALEEM, MUKHTAR MEHBOOB, ABDUL QAYYUM.

ABSTRACT

Objective: *To compare the analgesic effect of opiod and non steroidal anti inflammatory drugs (NSAIDS) during the first 24 hours after surgery.*

Study Design: *Randomize clinical trial.*

Place & Duration of Study: *This study was conducted in Surgical Unit II of Bolan Medical Complex, Hospital, Quetta during the month of August 2006.*

Patients & Methods: *A total of 107 postoperative patients equally matched at age, sex and type of surgery were assessed for 24 hours after surgery for pain and side effects of drugs. Patients of trauma and malignancy were excluded. Patients were divided into two groups. In Group A, 54 patients received inj. tramadol 100mg intramuscularly (IM) at 8 hourly interval while the group B 53 patients received inj diclofenac sodium 75mg IM 8 hourly. Pain relief score was graded as excellent, very good, good and poor.*

Results: *In this study of 107 patients the age ranged from 12- 70 years, with mean age in group A of 39.65 year and in group B 42.35 year. The male to female ratio varied in different surgical groups like abdominal surgery 1:2.3, anorectal 6.5:1, inguinoscrotal 13:1, urological 1:5, miscellaneous 1:5. Postoperative pain relief assessment during first 24 hours after surgery in group A was graded as: 21 patients (38.88%) excellent and 18 patients (33.33%) very good. while in group B, 14 patients (26.41%) had excellent and 27 patients (50.94%) very good pain relief. In group A only 5 patients had mild headache and nausea, while in group B no side effects were observed.*

Conclusions: *When the results of excellent pain scale were analyzed statistically it was found that accuracy to control the early postoperative pain with opiod was 56.07%, while with NSAIDs 43.91%.*

Key Words: *Postoperative pain, Opiod, Non steroidal anti-inflammatory drugs.*

INTRODUCTION

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. Pain itself causes physical immobility and neurohormonal stimulation, which leads to increased morbidity and mortality. The only thing which is given to patient immediately by the surgeon is the pain. Different operations cause different level of postoperative pain and every patient gives different response.[1] Therefore it is very difficult to assess postoperative pain and relief.

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The joint commission accreditation of health care organization (2000) standards advocates assessment of pain as the fifth vital sign. Foley & colleagues, published the WHO analgesic ladder, followed by the establishment of the pain as the 5th vital sign, assuring that pain assessment and management would be routinely established.[2,3]

There are varieties of methods available to control the pain. However analgesic drugs are commonly used to relieve pain, with difference in doses, mode of administration, frequency of administration as a single agent or in combination. Although pain threshold vary from patient to patient, but in about 75% of surgical patients postoperative incisional pain is sufficiently severe to warrant its relief.[4] Pain is probably the most common problem that compels the patients to seek medical advice.[5]

The present study was designed to evaluate the analgesic effects and side effects of freely available Opiod vs NSAIDs in early postoperative period.

PATIENTS & METHODS:

This randomize clinical trial was conducted in surgical unit II of Bolan Medical Complex Hospital, Quetta during the month of August 2006 on 107 patients, who were operated for different surgical pathologies. All postoperative patients (except trauma and malignancy) were entered in this study equally matched at age, sex and type of surgery. After taking informed consent, they were divided into groups A and B.

In Group A, 54 patients received inj. tramadol 100mg IM 8 hourly while the group B received inj diclofenac sodium 75mg IM 8 hourly. Side effect of the drugs and pain response after during the first 24 hours were noted by 4 volunteer final year students on a data sheet. Rating was done as follows.

1. Poor: Patient did not leave the bed in first 24 hours.
2. Good: Patient left the bed with difficulty in first 24 hours.
3. Very Good: Patient left the bed with minor difficulty in first 24 hours.
4. Excellent: Patient left the bed happily in first 24 hours.

RESULTS:

Total 107 patients with mean age 41 years were operated in the month of August 2006. The male to female ratio in abdominal surgery was 1:2.3, anorectal 6.5:1, inguinoscrotal 13:1, urological 1:5 and miscellaneous 1:5. Table I shows the result of pain assessment score. In group A of abdominal surgery patients, the pain relief assessment score was excellent in 51.51% while in group B excellent was 27.27%. In group A of anorectal surgery excellent was 25.0% and in group B excellent was 28.57%. In inguinoscrotal surgery pain relief assessment score in group A and B no excellent score was observed.

As a whole the sensitivity of group A on pain scale of excellent was 39.6%, while specificity was 73.3%. In group B on pain scale of excellent the sensitivity was 26.4% and specificity was 61.1%. Overall pain grading in all patients of group A and B is shown in table II. The side effects in 5 patients were mild headache and nausea in group A, while no side effect observed in group B.

DISCUSSION

By the middle of the 20th century, acute pain associated with surgery and trauma was more or less under control. The concept of multidisciplinary pain clinic to treat such patients was the idea of John Bonica in the early 1950s. Modern pain management centres have input not only from physicians but other allied health care professionals such as clinical psychologist, physiotherapist and social workers, who use a variety of modalities from counseling to invasive procedures.[6]

Different trials to control postoperative pain after different types of surgery had been conducted in the past in which varieties of drug, their combination, different routes of administration and their side effects were observed. The present study is a trial to compare the relief of pain after administration of Opiod & NSAIDs in two different groups. In a study conducted by Shah et al on100 patients

Table1: Postoperative Pain Assessment In Different Surgical Procedures

S.No.	Type of Surgery	Post-operative Pain Relief Assessment During first 24 hours. (n=107)			
1.	Abdominal Surgery (n=66)	Group Category	Pain Relief Grading	No of patients	% of patients.
		Group A.(n=33)	Excellent	17	51.51%
			Very good.	8	24.24%
			Good.	6	18.18%
			Poor	2	6.06%
		Group B.(n=33)	Excellent	9	27.27%
			Very good.	15	45.45%
			Good.	6	18.18%
			Poor	3	9.09%
2.	Anorectal Surgery (n=15)	Group A.(n=8)	Excellent	2	25.0%
			Very good.	4	50.0%
			Good.	2	25.0%
			Poor	Nil	Nil
		Group B.(n=7)	Excellent	2	28.57%
			Very good.	4	57.1%
			Good.	1	14.28%
			Poor	Nil	Nil
3.	Inguino-scrotal Surgery (n=14)	Group A.(n=7)	Excellent	Nil	Nil
			Very good.	3	42.85%
			Good.	4	57.1%
			Poor	Nil	Nil
		Group B.(n=7)	Excellent	Nil	Nil
			Very good.	5	71.4%
			Good.	2	28.57%
			Poor	Nil	Nil
4.	Urological Surgery (n=6)	Group A.(n=3)	Excellent	1	33.33%
			Very good.	1	33.33%
			Good.	1	33.33%
			Poor	Nil	Nil
		Group B.(n=3)	Excellent	Nil	Nil
			Very good.	2	66.66%
			Good.	1	33.33%
			Poor	Nil	Nil
5.	Miscellaneous(n=06)	Group A.(n=3)	Excellent	1	33.33%
			Very good.	2	66.66%
			Good.	Nil	Nil
			Poor	Nil	Nil
		Group B.(n=3)	Excellent	2	66.66%
			Very good.	1	33.33%
			Good.	Nil	Nil
			Poor	Nil	Nil

where ketoprofen was compared with diclofenac, average duration of analgesia was 8-12 hours, but maximum effect of 12 hours was seen in group ketoprofen. It was concluded that NSAIDs were as effective as Opiod in postoperative pain relief.[7]

In a study conducted by Hussain SM, on 50 female patients who were to underwent surgery were given diclofenac sodium suppository or placebo one hour before surgery. There was no difference in the pain score 3 to 6 hours after intramuscular injection of nalbuphine hydrochloride.[8] In our study group B patients were given diclofenac sodium intramuscularly and the overall postoperative pain control in first 24 hours was in excellent grade in 26.41%, while in patients of group A who were given opiod intramuscularly had 38.88%. In a study conducted by Hossain N, et al, on 75 female patients who underwent different obstetrical and gynecological surgeries, conclusion drawn was that diclofenac sodium used in infusions of dextrose water & dextrose saline was effective, safe and convenient to use in postoperative patients. A rescue analgesic was required in only 6% of patients. Nausea and vomiting were the main side effects observed in 22% and 24% of patients.[9] In our series it was found that accuracy to control postoperative pain in first 24 hours with Opiod was 56.07%, while NSAIDs had 43.91%.The side effects like headache and nausea were observed in 5 patients receiving opiod, while no side effect observed in patients receiving NSAIDs.

In a study conducted by Ch Anwar M, et al, on two groups of 100 patients, who underwent abdominal surgery, one group received the 0.25% bupivacaine injection on the abdominal incision, while other group was control group. It was observed that postoperative analgesia demand was delayed for 5.3 hours as compared to 2.7 hours in control group. 75 mg of analgesia used as compared to 175mg in control group and average mobilization time was 8 hours as compared to 14 hours after operation in control group. Only 1% of patient had transient central nervous system toxic symptoms due to bupivacaine.[10] In our study both groups were given 8 hourly analgesia by intramuscular route.

Table II: Overall Pain Grading In Opiod vs NSAIDs

Pain Relief in Grades	Group A (n=54)	Group B (n=53)
Excellent	21 (38.88%)	14 (26.41%)
Very Good.	18 (33.33%)	27 (50.94%)
Good.	13 (24.07%)	9 (16.98%)
Poor.	2 (3.70%)	3 (5.6%)

CONCLUSION

Opiod has slightly better results as compared to NSAIDs in early postoperative period with statistical accuracy of 56.07% in Opiod group vs. 43.91% with NSAIDs.

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NITROGLYCERINE OINTMENT FOR ANAL FISSURE

SHAMIM QURESHI, RABIA UROOJ, NAZISH BUTT, MUMTAZ MAHER

ABSTRACT

Objective: *To determine long term effectiveness of glyceryl trinitrate (GTN) for treatment of anal fissure and to find out its side effects.*

Patients & Methods: *This study was done on patients who presented with symptoms of anal fissure in colorectal clinic surgical ward 2 JPMC. Total 498 patients were included out of which 237 had acute anal fissure while 261 patients had chronic fissure. All patients received 8 weeks treatment with 0.2% GTN ointment three times daily applied over perianal area. Those patients who developed side effects i.e. headache were offered treatment with 2% diltiazem.*

Results: *After 8 weeks treatment 228 patients of acute anal fissure had complete healing and 9 patients had partial response. In chronic anal fissure, 229 patients completely healed after 8 weeks of treatment while 32 patients were advised further 4 weeks treatment of GTN due to partial healing and out of them 22 patients had complete healing. Thirteen patients had to undergo lateral sphincterotomy. Five patients complained of headache that settled after shifting to treatment with diltiazem ointment. Ten patients developed recurrence of symptoms.*

Conclusions: *GTN proved to be good first line treatment for most of patients with anal fissure. Small group of patients experience recurrence of symptoms and most of them respond to prolong duration of treatment.*

Key Words: *Anal fissure, Nitroglycerine, Sphincterotomy.*

INTRODUCTION

Anal fissure is a painful tear or split in distal anal canal. It is a common condition in young adults with nearly same incidence in both sexes.[1] Fissure is associated with spasm of internal anal sphincter and a reduction in mucosal blood flow with delayed or nonhealing of ulcer.[2] Anal fissures are defined chronologically and morphologically into acute and chronic fissure and the definition of chronicity is duration not less than 6 weeks and presence of visible transverse internal sphincter fibers at the base of an anal fissure.[3] The symptoms of anal fissure include severe pain initiated by passage of stool usually accompanied by passage of small amount of blood. Some patients may complain of pruritis, swelling, prolapse or discharge.[4]

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The aim of treatment is to improve blood supply to ischemic area to facilitate healing by reducing resting anal pressure. Nitric oxide is the most important inhibitory neurotransmitter in internal anal sphincter. Topical application of GTN, a nitric oxide donor to anus can cause reversible relaxation of internal sphincter and heal the fissure.[5]

Traditional surgical options include anal stretch or partial division of sphincter by internal or lateral sphincterotomy but feared complications are infection, hemorrhage, full thickness prolapse and above all permanent incontinence of varying severity. With advent of nitric oxide ointments,

atment has undergone a transformation from surgical to medical. Chemical sphincterotomy has been done using various agents including calcium channel blockers (i.e. nifedipine and diltiazem) and botulinum toxin.[6] But most promising results have been obtained with GTN and diltiazem. Topical use of GTN has some limitation because of side effects mainly headache of varying severity, recurrence of fissure due to acquired tolerance to GTN with continuous usage and some patients are not responsive to GTN hence treatment failure occurs. The use of alternate topical agent such as diltiazem produces a solution to this problem.

This study was undertaken to determine long term effectiveness of GTN for treatment of anal fissure and to find out its side effects.

PATIENTS & METHODS:

Patients with anal fissures who were seen at Jinnah Postgraduate Medical Centre (JPMC) surgical ward 2 OPD between 2003 to 2006 were included. Patients with specific diseases were excluded. All patients were registered in the OPD. Anal fissure was considered to be present if patient presented with history of anal pain on defecation or bleeding during defecation. Per rectal and proctoscopic examination were done if allowed. Site, number and presence of sentinel pile noted. Patients were advised to take high fiber diet, increased fluid intake and apply 2% GTN ointment.

Healing was defined by resolution of symptoms and absence of fissure on examination. Total 498 patients were included out of which 237 had acute anal fissure with 150 males and 87 females.261 patients had chronic fissure out of which 204 were male and 57 were females. Age range was 24 to 45 years. All patients received 8 weeks treatment with 0.2% GTN ointment three times daily applied over perianal area. Follow up was done after 2, 6 and 8 weeks from start of treatment. Patients were asked to maintain a pain diary for pain score and were followed in the OPD. Side effect were explained to the patients. Those who developed side effects i.e. headache were offered treatment with 2% diltiazem.

RESULTS

Response of treatment after 8 weeks was better in cases of acute anal fissure. 96% (228 patients) had complete healing and 4% (9 patients) had partial response and were continued on further 4 weeks treatment. In six patients fissure healed completely after further treatment. In case of chronic anal fissure, 88 %(229 patients) completely healed after 8 weeks of treatment while 12 % (32 patients) were advised further 4 weeks treatment of GTN due to partial healing and out of them 22 patients had complete healing. At end of 12 weeks 13 patients had persistent symptoms and they had to undergo lateral sphincterotomy. There was no incidence of non compliance with treatment and no report of allergic dermatitis.

Only 1 %(5 patients) complained of headaches. They were shifted to treatment with diltiazem ointment. In these patients the headache disappeared and fissure healed. In a median follow up of 2 years about 10 patients devel oped recurrence of symptoms after GTN and 8 of them settled with further 4 weeks treatment. Only 2 needed lateral sphincterotomy because of frequent recurrence.

DISCUSSION

Anal fissure is a common condition which can be treated with chemical or surgical sphincterotomy.(11) Lateral sphincterotomy results in healing in up to 95% of cases but there is a significant risk of incontinence, (7, 8, 9) hence medical therapy is considered as first line therapy both because of its safety and efficacy.

GTN remains the standard for chemical sphincterotomy since it is a nitric oxide donor hence it decreases the mean resting sphincter pressure thus increasing the perfusion and favours healing.(8,10). However side effects such as headache, tachyphylaxis and occasional loss of flatus control have been reported.(5) Treatment is more likely to be effective in cases of acute anal fissure as is also observed in our study while in chronic fissure response rate is better as compared to international studies.

Different reports give response rate of 50-85% while in our study group complete healing was observed in 96% with 88% in 8 weeks while remaining responding with further 4 weeks treatment. Calcium channel blocker such

as diltiazem has shown to reduce mean resting anal pressure up to 22% to 28%.(6)The principle side effects are facial flushing, postural dizziness and mild headache with oral calcium channel blockers. 2% topical diltiazem is capable of reducing anal pressure without significant side effects.

In conclusion GTN proved to be good first line treatment for most of the patients with anal fissure. Small group of patients experience recurrence of symptoms and most of them responded to prolong duration of treatment. Only side effect noticed was headache in small group of patients and they were effectively treated by switching to 2% diltiazem. Surgical treatment should be reserved as treatment of last choice for treatment failure.

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LOWER EYE LID RECONSTRUCTION USING SINGLE STAGE MUSTARDE' CHEEK ROTATION FLAP

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ABSTRACT:

Objective: *To determine the functional and cosmetic outcome of Mustarde' cheek rotation flaps performed for reconstruction of large lower eyelid defects.*

Design: *Case Series.*

Place & duration of study: *Bahawal Victoria Hospital, Bahawalpur, from August 2003 to March 2006.*

Patients & Method: *All those patients in whom Mustarde' cheek rotation flap was done for the reconstruction of large lower eyelid defects, were included. Follow up included assessment of position of eyelid, closure, presence of epiphora, aesthetic balance, and donor-site morbidity.*

Results: *Thirty patients, aged 2 year to 70 years, have been operated with this technique for total or sub total defects of the lower eyelid. Two patients received an auricular chondro-cutaneous graft. Rest of them received a nasal chondro-mucosal graft for inner lining. The flap remained viable in every patient, without total or partial necrosis.*

Conclusion: *Mustarde cheek rotation flap is very reliable procedure that provides complete reconstruction and can be used with good functional and cosmetic results in patients with total and sub-total lower eyelid defects.*

Key words: *Lower eyelid defects, Mustarde flap, Lid reconstruction, Single stage procedure.*

INTRODUCTION

Eyelid tumor excision and trauma are two common causes of eyelid defect requiring surgical reconstruction. Such surgery is quite challenging because of functional and cosmetic requirements. Eyelid defects are classified according to size and location. For young patients (tight lids) it is described as: Small – 25-35%, Medium – 35- 45%, Large – greater than 55%. For older patients (lax lids) it is classified as: Small – 35-45%, Medium – 45- 55% and Large- greater than 65%.[1]

Large lower eyelid defects can be reconstructed using a variety of techniques such as two stage tarso-conjunctival flap procedure with full thickness skin graft (Hughes's flap).[2] Mustarde cheek rotation advancement with chondro-mucosal graft (obtained from the nasal septum), triple or bipedical flaps with nasal chondro-mucosal graft. In this case series a single stage Mustarde cheek rotation flap procedure was performed to repair large lower eyelid defects.[3,4,5]

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PATIENT AND METHODS:

This study was carried out at Bahawal Victoria Hospital, Bahawalpur, from August 2003 to March 2006. In this case series Mustarde' cheek rotation flap procedure was performed. The procedure used is standard one, in which a large skin muscle flap is rotated from the cheek to repair large lower eyelid defect. Incision begins at the lateral canthal angle, extends upwards into the temple, arcs posteriorly just anterior to the ear and then inferiorly across the mandible. Establishing good vertical height to this flap is important so that correct position of the lateral canthal angle can be achieved post operatively. The posterior lamella of this flap was reconstructed with a nasal septal chondromucosal graft or auricular chondro-cutaneous graft.

Follow up included assessment of eyelid position, closure of the eye, presence of epiphora, donor site morbidity and aesthetic results. Follow up ranged from 3 months to 5 years.

RESULTS:

There were total of 30 patients in this series. The age ranged from 2 year- 75 years. There were 25 male and 5 female patients. There were 18 patients of diagnosed basal cell carcinoma with an age range of 52- 75 years, among which 15 were male. Ten cases had large eyelid defects due to road side accidents, eight of them were male. Two male patients of pediatric age group suffered from dog bite.

Assessment of eyelid position showed anatomically correct position of lower eyelid in all the patients except two who had an auricular chondro-cutaneous graft. Closure of the eyelid was proper in all cases. All had good Bell's phenomena so no exposure keratopathy was noted. Five patients with defect involving the medial canthus complained of epiphora. All were later scheduled for DCR .The problem was taken care of adequately. Donor site showed excellent recovery with no prominent scar or donor site deformity. All patients were aesthetically and cosmetically very satisfied. The restoration of lower eyelid anatomy also restored them their sense of well-being. Three patients developed lower eye lid post surgery ectropion, which was released and grafted later on.

DISCUSSION:

In the management of malignant eyelid tumors complete eradication of the malignancy is the most important goal and concern about best cosmetic results should never compromise the adequate removal of malignant tumor. Proper eyelid functioning and best possible cosmetic appearance of the eyelid, are secondary but very important considerations. Despite the availability of a wide variety of procedures, the Mustarde cheek rotation flap procedure[3] was chosen because of the most feasible mobilization of the skin and more importantly a single stage technique. Two patients who received auriculo-chondro-cutaneous graft had lower eyelid ectropion problem because of the lack of take of the graft used. In all the rest of the patients where the posterior lamella was constructed using the nasal septal cartilage graft, had proper lid firmness and more anatomically correct eyelid.

Usage of full thickness skin grafts alone is not suitable as they result in a shrunken appearance. Mustarde technique involves the use of rotation flap from adjacent tissue which gives the advantage of good colour match, less post posterior constriction and excellent vascularity. The formation of posterior lamellae from the nasal septal cartilage provides the necessary support to the eyelid and prevent the sunken appearance. Mustarde cheek rotation flap surgery is an excellent single stage technique to repair large lower eyelid defects.

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CONJOINED TWINS IN A TRIPLET PREGNANCY

Fouzia Perveen, Lubna Ali, Subhana Tayyab, Naheed

ABSTRACT

Conjoined twin is a rare event. Triplet pregnancy in conjunction with conjoined twin is even rare. In this report we present the outcome of female, monochorionic, diamniotic triplets consisting of two monoamniotic conjoined fetuses and a normal baby in separate amnion. Emergency cesarean section was done due to non progress of labor in a female who was unbooked case. Conjoined twins (thoraco-omphalopagus) died due to birth asphyxia during the section while third baby was normal and remained well.

Key Words: Triplet pregnancy, Conjoined twins, Cesarean section.

INTRODUCTION:

Spontaneous monochorionic triplet pregnancy is rare and is at increase risk of pregnancy complications and one of the complication is conjoined twins (CTS)[1]. Conjoined twins is a rare congenital anomaly which was known since prehistoric times. Its incidence is estimated to be 1:50000 to 1:80000 births with a female preponderance but occurrence of conjoined twins as a part of triplet pregnancy is even more unusual.[2] A review of literature over last 30 years revealed 11 other cases diagnosed prenatally by ultrasound.[3]

Early prenatal diagnosis of CTS with three dimensional ultrasound is possible but still some of the cases remain undiagnosed till delivery. CTS are monozygotic and most authorities believe that it occurs due to incomplete cleavage of blastodermic vesicle between the 13th and 15th day of embryonic life.[4] We present a case of female, monochorionic diamniotic triplets consisting of 2 monoamniotic conjoined fetuses and a normal baby in separate amnion.

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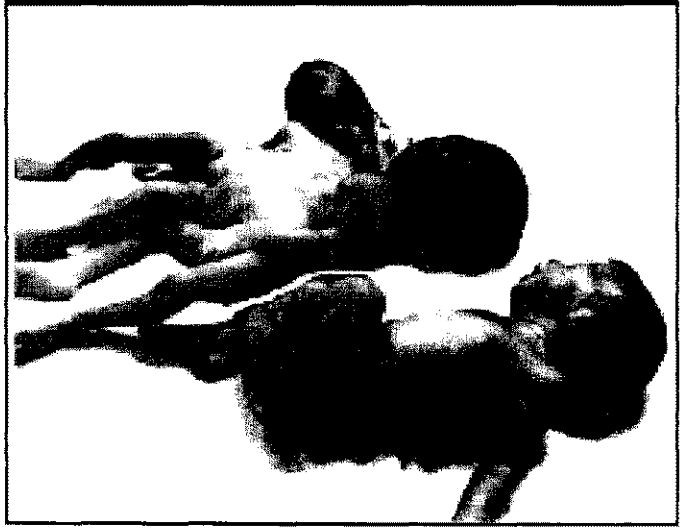
CASE REPORT:

A 30 year old housewife, primigravida married since 1 year, was admitted as unbooked emergency case with 34 weeks gestational amenorrhea, labour pains since 12 hours, severe headache, swelling over feet, with a diagnosis of 34 weeks triplet pregnancy and severe pre-eclampsia. She had only one ante-natal visit with a private practitioner 2 weeks ago where diagnosed as having 32 weeks triplet pregnancy with some undefined congenital anomaly on ultrasonography.

She had regular cycles and conceived spontaneously. She had family history of twins but no history of congenital anomalies. On examination her BP was 190/110 mm of Hg. She had moderate oedema feet. Abdomen was over distended and tense with multiple fetal parts. Os was fully dilated with head at +1 station and absent membranes. Uurine albumim was positive. Her blood group was B+ve, haemoglobin 8 gm/dl. Renal and liver functions were within normal limits. Emergency caesarean section was done within 1 hour due to non progress of labour. 1st and 2nd fetuses were presenting by head, conjoined, with weight of 3 kg and delivered with difficulty and could not be revived because of severe birth asphyxia. 3rd fetus was oblique breech female of 1.5 kg and having separate amniotic cavity. It was born alive with APGAR score 6 at 1 minute and 8 at 5 minutes. Conjoined twins had thoraco-

Fig. I: Note Triplets With One Set of Conjoined Twins



omphalopagus with 2 head, joined thorax and abdomen, 4 arms, 4 legs and single umbilical cord (Fig 1), while the third baby was not having any deformity. Postmortem examination not performed as family refused. Placenta was monochorionic and diamniotic. Post operative recovery of mother was uneventful while baby needed NICU admission and both were discharged on 8th postoperative day without any complication.

DISCUSSION :

CTS are simply classified according to the most prominent site of union plus the Greek postfix ' pagus', meaning fixed. Spencer has stressed upon the need of creating a standardized nomenclature for CTS and he made a major advance to this field with a recent extremely comprehensive review of CTS.[5] According to the site of union it is classified into : A - Ventral union 1. Cephalopagus - anterior union of upper half of baby with 2 faces opposite to each other. 2. Thoracopagus - anterior union of upper half of trunk. 3. Omphalopagus - anterior union of middle of trunk. 4. Ischiopagus - anterior union of lower half of body. B – Dorsal union : 1. Craniopagus - junction at vertex, occiput or lateral parietal areas of skull. 2- Rachipagus - fused posteriorly above the sacrum. 3- Pypopagus - posterior union of sacrum and buttock. C - Lateral union : Parapagus - lateral union of lower half of body. D – Atypical CTS.

The case presented had thoraco-omphalopagus. The fusion extended from sternum to umbilicus and the internal fusion of shared organs could not be ascertained as the postmortem examination was not allowed. Literature review also reveal thoracopagus as the commonest anomaly with varying degrees of cardiac fusion followed by omphalopagus.[6] CTS in a set of triplet is very rare entity and to the best of our searching efforts no case was reported in local literature in last 20 years while few cases described in international literature.[7] Although CTS is more common in conception following in-vitro fertilization with intracytoplasmic sperm injection but here it followed spontaneous conception.[7] Study reveals that monochorionic placentation is more frequent after spontaneously conceived conjoined triplets as in this case.[8] All 3 fetuses were female which correlates with studies showing 2 to 3 times female preponderance.[2] The cause of higher female preponderance is not known exactly but some investigators have implicated X- inactivation which could be related to increase female to male ratio in higher order multiple gestations.[9] Precclampsia, preterm premature rupture of membranes and preterm labour are commonly associated with triplets as evident in this case.[10]

Prenatal diagnosis of CTS and triplets is more likely in countries where pregnant mothers are scanned routinely by ultrasound and it provides precise information regarding the nature of anomaly.[6,11] This is helpful in making appropriate management decision and possible surgical planning after parental counseling. Caesarean section is the best option for delivery in third trimester for CTS and triplet pregnancy as it can lead to obstructed labour and increase perinatal mortality if allowed for vaginal delivery as happened in this case. Perinatal mortality is high in triplet itself and further increased in CTS especially in thoracopagus complicated by conjunction of cardiovascular system.

In summary, the rare condition of conjoined twins in a triplet pregnancy poses a significant obstetric challenge from both diagnostic and management point of view. Accurate determination of chorionicity in these cases plays a critical role in determining management and outcome.

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FIBROUS HAMARTOMA OF INFANCY

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ABSTRACT: *Fibrous hamartoma of infancy (FHI) is one of the rare tumor-like malformation. This benign tumor can cause much concern and confusion about being malignancy. We report a case of 10 months old infant who presented with a mass at posteriomedial surface of left upper arm. The mass was excised completely and histopathology confirmed the lesion as FHI.*

Key Words: *Hamartoma, Malformation, Benign tumor.*

INTRODUCTION

Fibrous hamartoma of infancy is a rare lesion. It appears within first two years of life and some times present at birth.[1,2] It is almost always solitary and commonly found at the regions of shoulder, axilla and upper arm.[2] The physical appearances and characteristics of such a mass in a child may suggest a malignant process, however, FHI should be included within the differential diagnosis. We present a case of a 10-month-old female patient who presented with a mass at left upper arm.

CASE SUMMARY

A 10 month old female baby presented with a painless swelling for 5 months at posteriomedial surface of left upper arm just above the elbow. Initially swelling was small and subcutaneous but grew with time. The swelling measured about 8 cm ′ 7 cm in diameter. It was firm to rubbery in consistency, non-tender and mobile in all directions. The swelling was covered with ulcerated skin at its base and the tumor was fungating out (Figure1). Nearby nerves and vessels were not involved. Regional lymph nodes were not palpable. Systemic examination was normal. X-ray showed a mass effect.

At surgery the mass was found to be arising from subcutaneous tissues not involving the muscles, nerves or vessels and was completely excised (Figure 2). Postoperative course was uneventful. Histopathology revealed fibrous hamartoma of infancy.

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DISCUSSION

Fibrous hamartoma of infancy is a rare entity that is hardly mentioned in textbooks of Surgery and Pathology.[1] It is a rare benign soft tissue tumor that usually occurs within the first two years of life and sometimes present at birth.[2] Reye first described FHI in 1954 and later Enzinger coined its name.[3,4,5] Up to 1989 seventy five cases were reported, later on six cases were added by Efem[1], one each by Mahajan[6] and Agarwal[7] from India, two cases by Saeed[7] from Pakistan and we are reporting 86th case of FHI. Males are affected more often than females with a male to female ratio of 2:1 and there is no apparent familial syndromic association.[4] FHI is almost always solitary[2] as also noted in our patient. FHI is most commonly found in the axilla, shoulder, upper arm (as in our patient), inguinal region and chest wall, however isolated cases involving foot, scalp, perianal and gluteal regions and arising from scrotum have been reported.[7,8]

The lesions are typically 1-8 cms as in our patient but have been reported up to 10cms in size. Grossly the lesion is poorly circumscribed and composed of whitish tissue of fibrous appearance intermixed with islands of fat,[2] but in our patient skin was ulcerated and tumor was fungating out. The tumor is usually firm and may be affixed to the under lying tissues thus causing concern of potential malignancy.[8] The differentials

clude numerous benign and malignant soft tissue tumors, owever, FHI should be included within the differential agnosis of soft tissue tumors.

The treatment of choice is local excision.[8] The clinical course is basically that of benign disease.[2] Local recurrence is approximately 16% according to study by Enzinger and may have been explained by incomplete excision of the lesion.[4] Histologically three distinct types of tissue being present, well-differentiated spindle cells, mature adipose tissue and immature cellular areas arranged in whorl like pattern resembling primitive mesenchyme. Positivity for vimentin occurs in both fibrous and immature areas, where as reactivity for actin and sometimes desmin is found mainly in spindle cell areas.[2] In our patient histology showed presence of sheets of spindle cells, interspersed in walled vessels mixed with inflammatory cells. While vimentin and desmin found positive and actin was negative in tumor cells.

Figure 3 Excised and cut opened specimen.

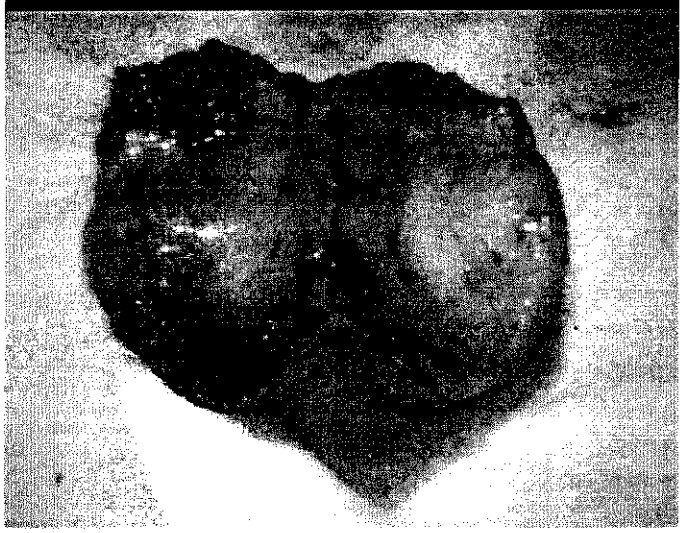

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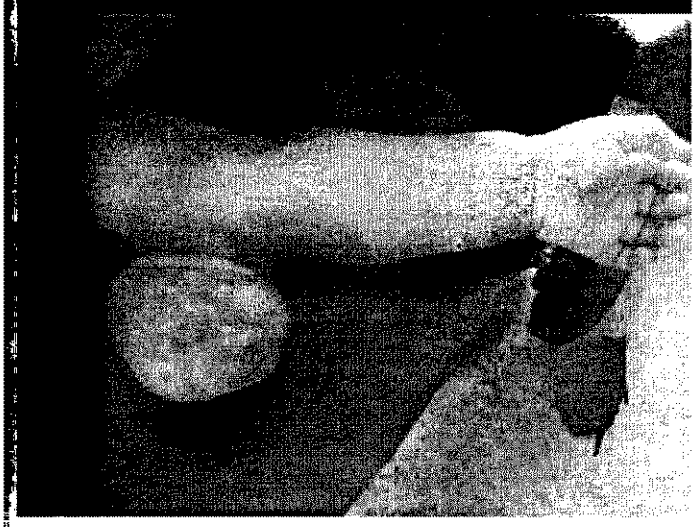
Figure 2 Fungtaing Mass near elbow joint.



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