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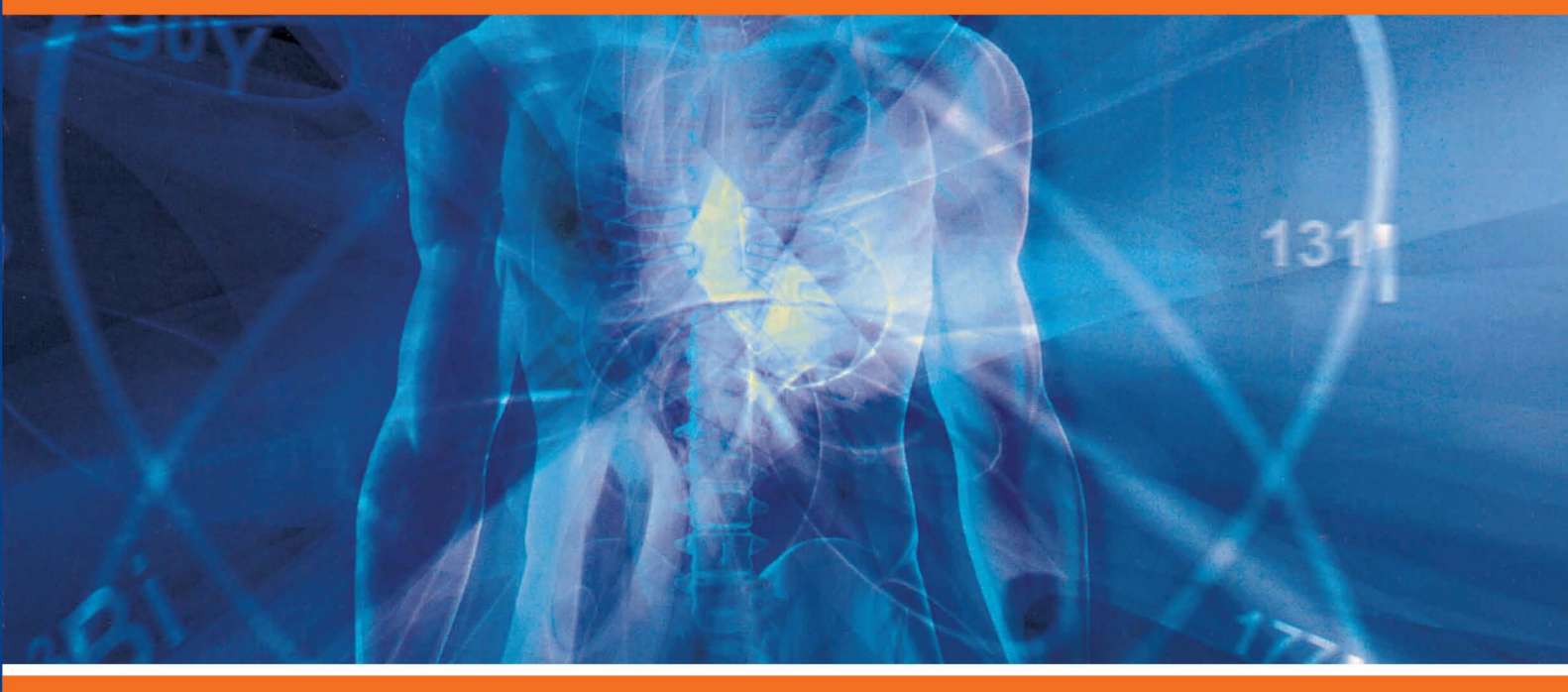

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EDITORIAL

Reflection As An Essential Component of Medical Education

Shaheen Moin

Medical education has taken many turns in the last 2 decades. For centuries the teaching and learning of the science and art of Medicine as a discipline has been pedagogic. A figure of authority taught from personal experience and knowledge, garnered in time, most of it from former teachers and passed on verbatim to students. There was no need for proof, experimentation, change or the challenge of inquiry or skepticism on the part of the learner. Additional knowledge crept in but again went unchallenged. This system still accounts for a large part of education or information transfer worldwide albeit with an increasing tendency to seek a more solid basis for the knowledge than the pronouncement of a pedagogue or the words of a pedagogic textbook. Further refinement came when it was recognized and accepted that teachers needed to learn how to teach hence arose the need for developing departments of Medical Education. Different teaching methodologies were developed: interactive learning; problem based learning; problem solving interactive learning; evidence based learning, making association maps and more significantly reflection, reflective learning and reflective practice.

AMEE(Association of Medical Educators of Europe) guideline 44 defines reflection as "a meta cognitive process that occurs before, during and after situations with the purpose of developing greater understanding of both the self and the situation so that future encounters with the situation are informed from previous encounters". Metacognition is thinking about thinking. Points for reflection are: the basis of decisions making, actions taken or behavioral changes made, the results of the action taken. Reflection may not result in immediate improvement in patient care but will certainly help to develop better decision making in an individual and in a team. Reflection can only be successful when there is experiential learning. A child also learns by experience, we all do. The basic three stage model of reflection is DO > REVIEW > PLAN. A child touches a hot plate, feels the searing pain of burning fingers, and learns that hot plates, indeed all hot objects must never be touched. Can we learn before touching a hot plate? Can we apply the experience of getting burnt to other situations? Can we translate experimental learning to reflection?

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How do we learn from experience? According to Kolb(1984) there are 4 phases; having an experience; reflection; abstract conceptualization; application. An example is: a patient is brought to the ER with a generalized fit: reflection- what made him have this fit; was it a drug or injury or diet or brain disorder: he has an insulin pen in his pocket; conceptualization - too much insulin; not enough food: application- reduce the dose of insulin when discharging him and make sure he carries food with him at all times and a card in his pocket saying that he is a diabetic on insulin. If application is restricted to checking his blood sugar and giving him intravenous glucose then reflection has not helped because the situation will occur again. In the majority of cases the situation will be restricted to the correction of hypoglycemia only.Critical reflection is the process of analyzing, questioning, and reframing an experience in order to make an assessment of it for the purposes of learning (reflective learning) and/or to improve practice (reflective practice).

How can reflection be practiced in clinical life? One form of reflection is group reflection. Healthcare workers do not work in isolation. The team that shares patient care includes doctors from different disciplines, nurses, technicians, auxiliary workers. An input from each member, especially those who are not heard or involved during a ward round or clinical decision making session, will make the reflective session meaningful. The group reflection is not a critique nor is it meant to apportion blame or praise.That is how it differs from a formal postmortem or clinical audit session. An input from each member is meant to include personal values and observations. The input from each member of the group is of value as moral and social values, perceptions of priority are as important as clinical management. A conclusion may or may not be reached. Some areas of change will usually be identified and the group can decide formally or informally whether behavior changes in the group or its members are needed. This may be formal i.e. written down or informal i.e. communicated during the discussion. Every patient or clinical situation need not be reflected on but a group member can request a reflection session, which a group leader can arrange. Reflection can be a solo exercise. A person can reflect on a situation or encounter with the help of a mentor. This has the advantage that an input from the mentor can be obtained. The individual carrying out the reflective exercise can maintain a journal or audio record of the session and can use this record later to review the performance.

There is increasing emphasis on the use of reflection in both undergraduate, postgraduate and continuing medical education, but often the nature and intentions of reflection are nebulous. Does reflection have a definite purpose? Will reflection be useful in the practice of medicine? If reflection can shape our actions in the future it has a definite purpose. If we can use reflection to make sense of a situation or an encounter and improve our reaction to it then reflection will become a tool that can be used to improve medical care and medical practice. What is an encounter? It is an interaction with another person or group of people i.e. a patient, or a cohort under study, or a group for a therapy session, pertaining to healthcare in any way, a medical encounter is said to have taken place. A medical event such as a road traffic accident, cardiac arrest, decision to turn off a ventilator is a medical situation.

The aim of being a clinician par excellence requires knowledge, clinical skills and renewal or updating of knowledge. To interact with a patient and the patient's care givers requires reflection on the part of the clinician. An essential part of the relationship between a patient and a doctor, is to preserve, respect and maintain the value system held by both of them. An essential part of the development of a doctor is to become a self-regulated life-long learner. Self-regulated learners use metacognitive processes i.e. think about their own approach to thinking, to select, monitor and evaluate their approach to a task, hence reflection is essential. The terms used for reflection, the processes used for it are often ambiguous and an overlap in usage occurs.

A powerful shift in learning occurs when an individual's strongly held view of self-worth or world view changes; as the individual realizes that the learning or other skills which were successfully applied previously do not apply any longer. This is a phenomenon encountered by medical students when they encounter their peers in college i.e. students who are equally good or better and realize that they are no longer the "best" student in the class by default and that the cognitive skills at which they excelled and which helped them enter a medical college are no longer sufficient. These students encounter embarrassment, shame, sadness, anger. Reflection will help them realize that the skills required to survive in medical college are diverse and angled towards application and understanding.

How can reflection be used in undergraduate and postgraduate learning in a medical college?Guided reflection, with help of a mentor who is experienced in reflective activities can be very useful. A facilitator can provide the necessary supportive environment to enable the individual to notice and make sense of their experience. The facilitator can provide this support through key counselling and mentoring skills, such as non-judgmental questioning and acceptance of differences. Attention to the physical environment is also important, ensuring that the discussion can occur in privacy and is free from interruption. To gain maximum support from reflection the individual must first notice that they need more than information from their education. Being able to ask questions such as

. Does anything surprise me about the situation?

. Do I have the information or skills to deal with this situation?

. Do I need to have further information or skills to deal with this situation, either now or in the future? The ethical and emotional effects of medical education, clinical encounters and emergency situations can be enormous. An experienced mentor with time and empathy is required. The use of portfolios, structured clinical storytelling are useful and it is necessary to include the ability to reflect in the assessment plan can be used to improve and include reflection in medical education. It can be argued that the human race would not have reached its present state of civilization without reflection but it can also be argued that insufficient use of reflection has slowed the process of civilization perhaps by millennia.

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REVIEW ARTICLE

CementalTear

Predisposing Factors, Clinical Signs Symptoms, Diagnosis and its Management

Shama Asghar

ABSTRACT:
A cemental tear is a rare condition in which a total or partial detachment of the cementum occurs along the root surfaceat the cemento-dentinal junction and is associated with moderate to severe periodontal attachment loss. Literature regarding this article was searched fromPub Med, Medline and Google during the period of Jan 2008- Dec 2012.Cemento-dentinal tear is more frequently seen in older men above 60 years, single-rooted vital or nonvital teeth, particularly the incisors and premolars areinvolved. Other significant etiological factors are traumatic occlusion, poor ability of tissue healing due to age and structural weakness of the cementum. Its diagnosis can be confirmed by clinical signs and symptoms,(presence of localized periodontal pockets with exudates and localized pain) by radiographic findings(as a radiopaque fragment) and surgical inspection. The treatment of cemental tears involves scaling and root planning, open flap debridement, bone graft, regenerative tissue guide, apical surgery and dental extraction.
KEY WORDS: Cemento-dentinal junction, Apical lesion, Fracture, Cemental tear,Periodontal disease.

INTRODUCTION:

Cementaltear is a particular kind of root surface fracture whichis rarely observed in clinicaldentistry.1It isclassified asa complete or incompletedetachment of the cementum, ariseswithin the root surface along the cemento-dentinaljunction or along an incremental line.[1,2] It is observedthat cemental separation is a reason for periodontal or periapical tissue breakdown and is frequently associated with a periodontal pocketof variable depth.[3,4] At rest, the prevalence of cementalseparation is not known; this maybedue to difficult recognition of cementalfragment and limited case reports or studies available in the literature.

Difficulty in early diagnosis of cemental separation and its management causes severe localized periodontal and periapical lesion with angular bony breakdown and influences the prognosis of teeth.[5] Therefore, correct evaluation ofcemental split has great clinical importance.[1] Cervical cemental breakdown is different from vertical root fracture that involves the long axis of the root and passes through the root canal space.[6,7,8] The cementumdetachment occursfrequently in the mid-cervical or in the apical root and its diagnosis can be established by clinical signs and symptoms, radiographic findings and surgical examination.[7,9] This article discusses the etiological factors responsible for cemental split with its clinical and radiographic characteristics and management approaches.

METHODOLOGY

Literature search for this review was done from January 2008 to December 2012 with key words and phrases, cemental tear, perio-endo lesions, vertical root fracture, guided tissue regeneration, non-surgical periodontal treatment etc.utilizing search engines PubMed, Medline and Google scholar.

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ETIOLOGICAL FACTORS

At present,the mechanism by which cementalbreakdown occurs are not completely understood but several etiologic factors including age, gender, tooth type, trauma, occlusion, traumatic incident, attrition, and high brittleness of cementum are responsible for it.[10,11,12] (Table 1)Other causes that are considered for the development of cemental tears includes, scaling and previous periodontal procedures, tooth extraction which damage the cementum of adjacent tooth, structural flaws at the cemento-dentinal junction.[12,13]

Cemental tear is more frequent in male and older patients above 60 years.[14] Incisors are the commonly involved teeth.[4] Anatomic distributions of the teeth showed maxillary incisors are the dominant group followed bymandibular incisorsand maxillary premolars.[15] A study reported that high occlusalforce of male patients in anterior single-rooted teeth is a predisposingfactor of cemental split.[16] During aging, physiochemical alteration of the cemento-dentinal interface, increased fibrosis and the decreased collagen extensibility make the cementummore proneto detachment.[17,18]

Lin et al found in his study that endodontic therapy and post/core placement has little link with the cemental separation.[2] He also said that Vertical root fracture has close relation with post placement as it is not possible that the stress from a post can separate the dentin and dentin- cementum junction.[2] Vertical root fracture (VRF) occurs in non-vital posterior teeth (83.3%) between 40-60 years of age (55%).19,20 On the other hand,cemental split occurs in anterior vital teeth (65.3%) above 60 years of age (73.1%).[21,22] Traumatic occlusion is also depicted as the major reason of cervical cemental separation.[23] Noma et al observed that a collective effect of strain originated with repetitive loading on premolars can cause cracks in the cemento-enamel junction, leading abrasion and abfraction cavities, in addition to a fracture along the root surfaces, aiding the development of cemental splits.[13]

The length, Sizeand Site of Cemental Tear: The length of cementalfragment has a range of 3.0-6.0 mm, a width of 2.0-4.0mm, and a thickness of 1.0-1.5 mm.[24] A report described that the thicknessof cementum augments throughout life, so this thickened cementumin older individuals is more susceptible to breakas compared to adolescents.[25] Light microscopic inspection of a study discoveredthat the detachments were frequently observed alongside the cemento-dentinal interface.[26]

Examination for mesio-distal site revealed that the majority ofcemental splits are on the proximal side of root surfaces soearly recognition in radiographs is possible if some separation of cementum has occurred.[5,27] For apico-coronal site, Ishikawa et al described that cemental separation were often observed in the cervical third.[1] Though, another study found that cemental tears present more frequently in the middle third (45.3%) and apical third (41.5%) ofroot surface as compared to cervical third.[28] Lin HJ et al described thatcontinuous excessive strain (such as attrition)could lead to cementum displacement on the thicker place (such as theapical third) or on the tensional part (such as the middle third) of an anterior single rooted tooth.As considering the unnecessary tensional forces on the posterior teeth, such as vertical or lateral force, numbers of roots, integrity of dentition, also add to this action.[2]

Clinical sign symptoms and Radiographic presentation: The clinical complaintsof cemental separation are the occurrence of localized periodontal pockets with bleeding on probing as well as localized tenderness and swellingbut tooth may response to vitality.[6,18,29]

Radiographic assessment is always necessary to the identification of cemental breakdown.[30] A study recommends that before and throughout root canal procedure, radiographs should be cautiously observed for the occurrence of cemental separation,particularly for referred cases and teeth that are not giving response to conventional endodontic management.[31]

On preoperative radiograph, the detached cementum visible as a radiopaque piece in the proximal surfacesof the root within the periodontal ligament.[5,32] However, in buccal or lingual surfaces, this image can be covered by the tooth root,making the diagnosis difficult.[33] In these cases, computed tomography should be taken to make a differential identification between root fracture (Table 2) and cemental split.[34,35] A radiopaque foreign body should be suspected to be a cemental split/tearwith radiograph or surgical examination.[36]

Differential diagnosis includes root fracture (particularly in endodontically treated teeth or bridge abutments), periapical infection, periodontal abscess caused by foreign body or incomplete instrumentation and loss of attachment due to cemental tears.[37]

Table 1. : Predisposing factors for cemental split/tears in teeth

Gender	Occurs frequently in Male
Age	Above 60
Tooth type	Single rooted teeth, commonly incisors and premolars are involved
Location	Usually on the proximal sides in the mid-cervical of root surfaces

Table 2.: Difference between Cemental split/tear and Root fracture

Cemental tear	Vertical Root fracture
It is a total or partial detachment of the cementum primarily occurs in the cementum-dentin interface.	It involves the long axis of the root and pass through the root canal space It occurs between 40- 60 years.
It usually arise in old age above 60 years	It commonly observe in posterior teeth (molars)
It typically involves single-rooted teeth (incisors and premolars) It presents in vital or non-vital teeth	It occur in non-vital teeth (RCT, post/core placed teeth)

Fig 1. : Detached fragment, cemental split is exposed in oral cavity.

TREATMENT APPROACHES:

The fragments of cementumvisible or not to the oral cavity can initiate a localized attachment loss and numerous management approaches have been recommended:,[26,27]

a). Scaling and root planning[28]

b). Open flap debridement[16]

c). Regenerative tissue guide and bone graft[38,39,40]

d). Apical surgery

e). Intentional replantation,[42]

f). Extraction in cases of unfavorable scenario.

Nonsurgical management for periodontal diseases has been advised as the first line of treatment, as scaling and root planning are successful in the resolution of periodontal diseases, decreasing the depth of periodontal pockets.[27,28]

A case reported, when part of the cementum segment was showing to the oral cavity and the pocket depth was less than 4mm, only nonsurgical management was done.[30] (Fig.1)Another case report mentioned that conservative procedure should be adopted in cases in which the cemental fragment is exposed, since it causes less morbidity, as well as reducing the management time and expenditure.[39] Sandeep reported a treatment of cemental split,removed the fragment,curettage and clean the defectand restored with MTA and followed by application of Glass ionomer.[16] If affected teeth in cemental tear are nonvital due to the spread of infection from the periodontal pocket through the lateral canals, first root canal treatment should be performed.[40] In cemental breakdown cases with periapical infection, endodontic treatment should be done followed by apical surgery and removal of cemental fragments.[31] The long term prognosis of teeth with cemento-dentinal tear is poor.[35] Earlier studies have revealed that teeth treated for cemental tear with many different approaches areat last extracted.[40,41,42]

CONCLUSION:

Cemental tear is a rare type of root fracture thatusually demonstrates clinical features resembles the periapical or periodontal disease.The knowledge of the clinical and radiographic features of the cementalsplit/tear is essential in dental practice to avoid misdiagnosis and needless treatment of teeth with cemental tears.Dental clinicians should know the predisposing factor (such as age, gender, anterior teeth, and traumatic occlusion etc.) and appropriately assess the radiographs and pulp vitality of teeth. Non surgical periodontal therapy should be an appropriate and conservative treatment modality for this rare lesion.

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ORIGINAL ARTICLE

Measuring Patient Satisfaction Parameters: A Cross-Sectional Descriptive Study At PNS RAHAT Hospital Karachi.

Naila Azam[1], Sikandar Hayat Khan[2]

ABSTRACT

Objective: To describe patient satisfaction with hospital services and staff dealing.

Materials and Methods: This cross-sectional study was carried out between January to April-2011 at out-patient departments of PNS Rahat. Randomly selected 96 patients entitled to free medical treatment were offered to voluntarily fill the pretested structured questionnaire in URDU(with mathematical scoring for each selected satisfaction index selected) to comment on the various aspects of services offered at the hospital. The four objective satisfaction scores included: 1-seating /waiting facilities, 2-length of waiting time, 3-staff attitude and 4-Cleanliness at the outpatient departments, radiology, laboratory and pharmacy.

Results: The availed mean score was 80.1 + 42.6. Out of the total possible score of 170 of the questionnaires filled. The mean patient score achieved was 57.4 + 33.9. Patients scored less on the satisfaction indices pertaining to waiting time [Average score=4.73/10] and comfortable stay [Average score=6.43/10] in the waiting areas of the hospital OPDs. Patients had a higher satisfaction score on indices related to sanitation/cleanliness issues [Average score=7.52/10] and staff attitude [Average score=7.71/10].

Conclusion: Prolonged waiting time and non-availability of quality stay in waiting areas of outpatient departments and diagnostic centers are the cause of lesser patient satisfaction during a patient's visit to hospital.

KEYWORDS: OPDs, Diagnostics, Pharmacy, Satisfaction

INTRODUCTION:

Healthcare management revolves around appropriate human and material resource utilization and developing workflow patterns in line with the requirements of the patients.[1] Like various business profession and other services industries, health care delivery also has its foundations based upon public perception and demands from the consumer i.e., in need patient.[2] Apart from their medical or surgical ailments they harbor, they also need care in a respectful way from the caregivers, quality service provision and a chance to comment upon what they want to say about services focused for their welfare.[3] Thus managing patients as stakeholders and incorporating their views for improving service provision along with an effective healthcare utilization in public sector has been identified as one of the opportunity areas for improving performance.[4] In order to improve the process, the existing practices must be evaluated to develop benchmarks and key performance indicators from where effective management should intervene for the sake of improvement.[5]

Measuring healthcare quality and improving patient satisfaction have become increasingly prevalent among healthcare providers and purchasers of healthcare.[6, 7] The measurement of satisfaction among patients as clients is a multi-dimensional concept. Such measurement does require appreciation and understanding of multiple factors, which need to be socio-economically compatible and culturally relevant for any effective intervention to improve patient's satisfaction.[8] Many developed nations have formulated systems for continuous improvements of hospital functions based upon feedbacks from their patients. These feedbacks encompass various easy to understand and answer style questionnaires, which are used to identify areas for improvement.[9] Present day healthcare setups suffer due to less attention being focused on patient's associated needs: Firstly, minimal efforts are being implemented to create a congenial physical atmosphere for patient stay during their visit to the hospital.[10] Secondly, a patient centered management approach has been shown to improved satisfaction levels among different patients as concluded by Navipour [11] Lastly, the new dimensions in healthcare management even among tertiary care set up do focus on incorporating practices which are measurable in terms of the promised benefit to the patient.[12]

With this rationale in background, a public opinion survey was carried out in PNS Rahat hospital to assess the degree of satisfaction of patients attending various outpatient departments. This survey was intended to serve as the measure of patient satisfaction parameter to improve hospital processes performances in line with valuable patient's input.

MATERIALS AND METHODS:

The survey was conducted from January to April 2011 at PNS Rahat. The hospital medical store dispensary was identified as the endpoint of any hospital outdoor visit. The pre-tested questionnaire was offered to randomly selected patients reporting for acquisition of prescribed medicines at the dispensary. They were all entitled patients belonging to Pakistan Navy and were requested to voluntarily fill the form and drop it in the locked drop box provided at the outer wall of medical store. The filled

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forms were collected on daily basis by administrative staff for coding and data entry as per the format given in figure-1. A closed ended questionnaire in Urdu was used as instrument designed as shown in figure-1. The questionnaire was developed in line with similar survey instruments used for studies to assist the measurement of the satisfaction of patients visiting outpatient clinics of National Health System (NHS) general hospitals[13,14]. The data was entered on Microsoft Excel and analyzed by SPSS version [15]. The individual scores were defined as per the scores availed in the questionnaire as per a numerical scale. The numerical scale was then defined once data was entered into SPSS. The data was described for descriptive statistics, and various bar-charts were produced through SPSS-15 data output. Mean patient scores were compared between genders by the Independent sample t-test. A p-value of < 0.05 was considered as significant.

Operational Definitions: The various satisfaction parameters assessed during our study included following: 1-OPD attendance time score, 2- Attitude of staff score, 3- Seating area comfort score, and 4- Hospital cleanliness score. These parameters were measured as per the scale mentioned in (Table-I). Total patient satisfaction score was 170, out of which patients were marked for total availed score. Individual departments including OPD, radiology, pharmacy and lab were compared for status of various scores on a numerical scale to assess which department stands where in terms of specific satisfaction index.

Fig-I: : Closed ended questionnaire in Urdu as distributed among patient population.

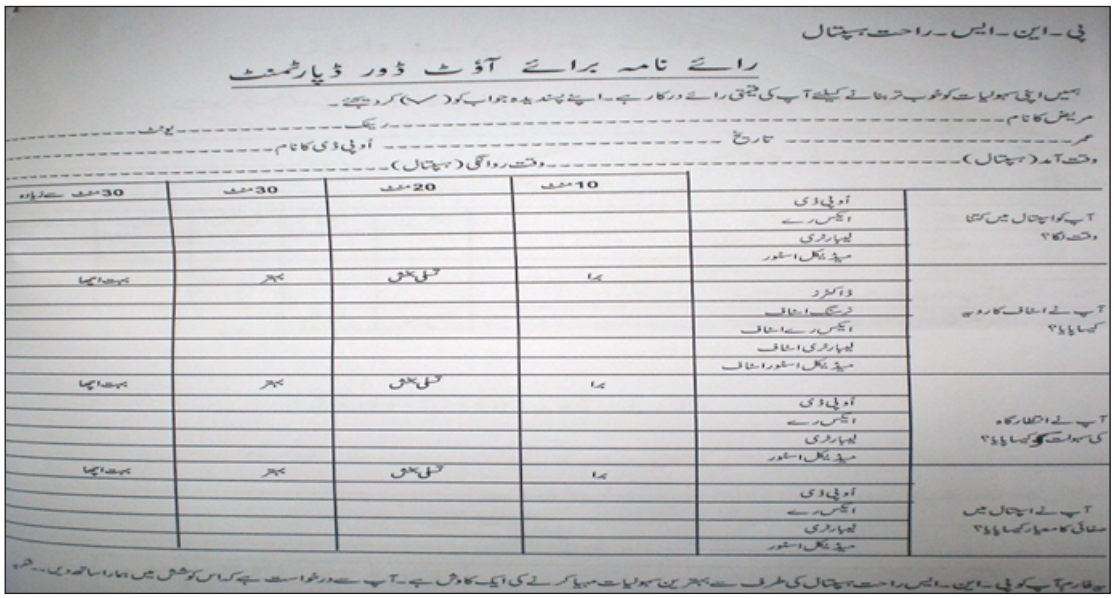

Table-I: Data scoring key for Closed ended questionnaire in Urdu.

KEY TO INDICATOR		SCORE			
A.	OPD attendance time score	> 30 min	20-30 min	10-20 min	< 10 min
	Patient's score	1	4	7	10
B.	Attitude of staff score	Bad	Satisfactory	Better	Best
	Patient's score	1	4	7	10
C.	Seating area comfort score	Bad	Satisfactory	Better	Best
	Patient's score	1	4	7	10
D.	Hospital cleanliness score	Bad	Satisfactory	Better	Best
	Patient's score	1	4	7	10
Total score Possible		**170**			
Patient score		**AVAILED**			
Patient		**SECURED**			
Patient		**SECURED (%)**			

RESULTS:

Total respondents were 96 in our study. The mean age of patients submitting the questionnaire was 39.8 (+19.5) years. Males outnumbered females in terms of filling questionnaire, as there were 68 (71%) males. Mean of attempted score based upon number of columns filled among our data set was 80.1 + 42.6 (Total possible score was 170). The mean of patient's achieved score was 57.4 + 33.9was 57.4 + 33.9 (69.5 + 16.3%). Mean patient satisfaction score was not observed to be different among males and females [(Male: 69.4 + 16.8%) and (females: 69.5 + 15.2%)]. Figure-2a,2b,3a & 3b indicate the various patient satisfaction indices across OPDs, laboratory and radiology departments, highlighting most non-satisfaction for waiting time before being attended by the physician or a concerned personnel in the department. This index was followed by seating area satisfaction score in the departments. Patients showed more satisfaction with regards to doctor or staff attitude and cleanliness status in the hospitals. Out of the various departments selected, patients seem to have the worst satisfaction scores in the OPD, followed by radiology and laboratory department. (Fig 3b).

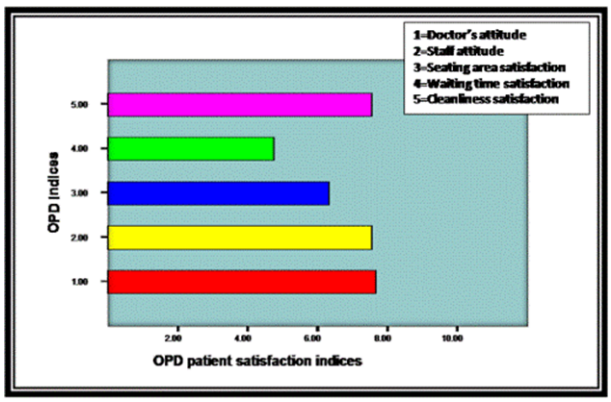

Fig-2a: Patient's scores on various patient satisfaction indices in OPD department.

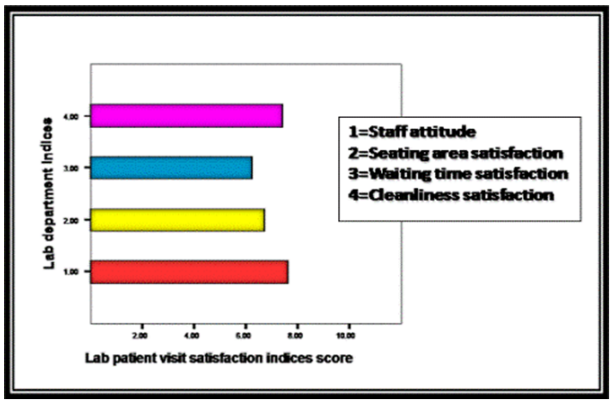

Fig-2b: Patient's scores on various patient satisfaction indices in laboratory.

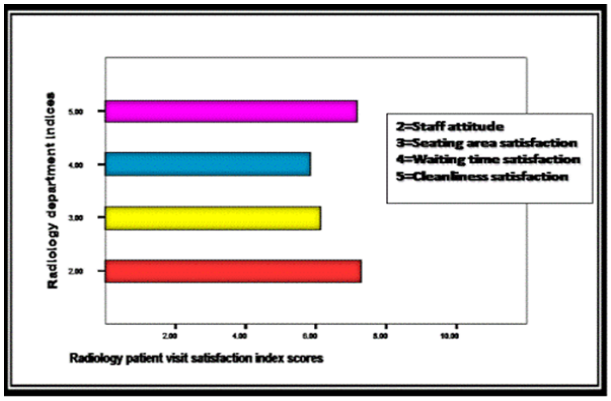

Fig-3a: Patient's scores on various patient satisfaction indices in Radiology.

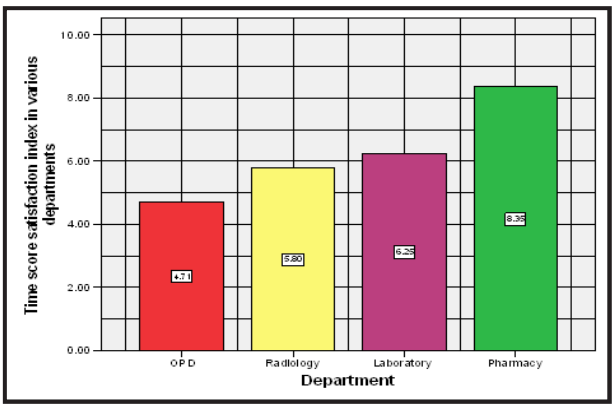

Fig-3b: Patient's scores availed in terms of waiting time satisfaction index across different OPD departments.

DISCUSSION:

Measuring patient's feedback by formulating a structured questionnaire is not a new idea in health care set up. Westaway et al have demonstrated the validity of donabedian model of healthcare whereby the attributes of providers and settings are major components of patient satisfaction, and showed that the scale is a reliable and valid measure of patient satisfaction.[15] Another study that aimed at assessing patient satisfaction in government health facilities in Qatar, general satisfaction was associated with the index of availability and convenience of services, besides humaneness of doctors, quality of care, and continuity of care.[16] Similarly, factor analysis conducted on patient satisfaction scale and three factors showed the major items on Factor I to be helpfulness, communication, support and consideration, representing the interpersonal dimension[17]

Our study has highlighted that patients primary concerns during a visit in an OPD or a diagnostic centre is the time duration and quality of waiting time. The study indicates that patients prefer to be seen early for his or her visit to the respective department whether it be the physician concerned or the radiology or some phlebotomy

procedure. While not much has been published locally, some evidence augmenting our findings is there in the literature to suggest similar results.[18,19,20] One more factor which must be appreciated is the observation that the content level was observed to be higher in diagnostic departments than in OPDs. Probable reasons include the following: Firstly, the patient's are immediately taken on board by direct interaction with the dealing staff for the intended procedure which may be suggested to improve patient's satisfaction level. Secondly, few hospital OPDs have nurse stations added as a step before they are actually seen by the physician. These nurse stations do include several anthropometric measurements and recording of vital signs in details along with basic details about patient's history. This approach not only saves times for the physicians but probably adds to improvement in patient's satisfaction level as well.[21,22] Finally it highlights that the physician to patients statistics in primary and specialist OPDs can be enhanced to reduce the duration of time before they are dealt by the physicians. Examples are available in literature which indirectly signifies our discussed concept. [23]

Some studies have highlighted that staff dealing the patient creates a major impact from patient's perspective with regards to patient satisfaction,[24] our study has shown the attitude of dealing staff to be lesser factor for patient's non-satisfaction. This is an important finding and suggests that the physical environment surrounding a patient during a hospital visit has to do a lot to change his perception and thought process. Other studies have also highlighted the patient's surrounding's to be tailor made as per specific patient's needs as having a major influence on his ideas about hospital improvement.[25]. Some of the weakness associated with the study must be appreciated: it is a hospital based study with a small sample size and non probability convenient sampling which has its own inherent weaknesses. Secondly, Hawthrone phenomena could be a factor which could affect our results.

The study has important clinical implications. This study being a descriptive study opens a Pandora box of questions, which challenge our routine functioning based mainly upon decisions of management. Incorporating patient's input and valuable thought processes in routine functioning can certainly add to improve our business prospects i.e., healthcare. Moreover, it also necessitates the creation of our national standards based upon realistic resource calculation regarding several healthcare resource indicators like patients to physician statistics. It is expected that more studies may follow this pattern and should attempt to answer the questions raised by our observations.

CONCLUSION:

Prolonged waiting time and non-availability of quality stay in waiting areas of outpatient departments and diagnostic centers are the cause of lesser patient satisfaction during a patient's visit to hospital.

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ORIGINAL ARTICLE

Prescribing Patterns in Hospital Inpatients

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ABSTRACT:

Objective: To evaluate the prescribing patterns by an audit of prescriptions in hospital inpatients.

Materials and methods: After a written informed consent from the medical ward incharge & hospital administrator 32 case notes of adult patients discharged from a private hospital in Malir were collected from 1st to 30th April 2012. Patients demographics, disease & prescription details (number, type, dose, route, frequency, duration of drug use, tendency of polypharmacy, cost of drugs & discharge notes) were entered in a specially designed performa.

Results: Mean age of patients was 27.18years with 14 males & 18 females. They were diagnosed to have enteric fever (10), gastroenteritis (5), RTI (4) & others (13). Average hospital stay period was 2.5 days.Total number of drugs used were 120, of which only 5 (4.17%) were prescribed by generic name. 25.83% drugs were from National Essential drug List of Pakistan (NEDLP). Mean number of drugs per patient was 9.35. Antibiotics & analgesics each was given to 29 (90.63%) patients. Anti -ulcer drugs were given to 27(84.38%) & nebulization to 11 (34.38 %) patients without need. Average cost of drugs per patient was 1200 rupees. None of the prescription was complete for the above mentioned parameters.

Conclusion: Audit of prescribing patterns in hospital inpatients of a private setup showed irrational use of drugs.

Key Words: Prescribing patterns, Private hospital, Inpatients, Rational use, Drugs

INTRODUCTION:

Once a patient with a clinical problem has been evaluated & a diagnosis is reached the most common chosen option is by far the drug therapy. Around the world more than 50% of all medicines are prescribed, dispensed or sold inappropriately. This ineffective & inefficient use of drugs commonly occurs at health facilities in developing & developed countries.[1] Evidence suggests that more appropriate utilization of prescription drugs has the potential to lower the total expenditure & improve the quality of care.[2] Thus drugs are the essential tool for preventive, curative and rehabilitation in health care.[3] The overuse, underuse or misuse of medicines results in wastage of scarce resources & widespread health hazards. WHO conference of experts has given a guideline to the health care providers in 1985,that all patients should be given medications appropriate to their clinical needs in an adequate dose that is as per requirement of the individual. These drugs should be administered through an appropriate route for an adequate period of time & above all should be available at the lowest cost to the community.[4] Drugs are prescribed to the patient by the prescriber which in our scenario is traditionally the physician. However in many states of America, health care practitioners other than MD and physicians can write prescriptions. Licensed physician`s assistants, nurse practitioners & pharmacists can prescribe medications under various circumstances.5 Prescription is a prescriber`s order, a written direction to prepare, dispense or administer a specific treatment. Moreover it is a legal order and therefore should be dealt with great care & attention.[6]

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As per cycle of drug use (Figure-1) there are 5 phases in the use of any drug. These are (I) diagnosis (II) prescribing (III) dispensing (IV) adherence & (V) follow-up.[7] Although the physician /doctor/ prescriber has impact on all these phases but a more direct effect is seen on the first two phases. At the level of prescribing the commonly encountered problems are

A) Under-prescribing where:
Needed medications are not prescribed
Dosage is inadequate for treating the disease
Length of treatment is too brief

B) Incorrect prescribing where:
Drug is given for incorrect diagnosis
Wrong drug is selected for the diagnosis
Prescription is prepared improperly
Adjustment is not made for co-existing medical, genetic or other factors

C) Extravagant prescribing where:
A less expensive drug can provide comparable efficacy and safety & is not given
Symptomatically treating mild conditions & diverting funds from treating serious illnesses

D) Over-prescribing where:
Drug is not needed and is still given
Dose is too large for any disease treatment
Treatment period is too long than actually needed

E) Multiple prescribing where:
Two or more medications are used when fewer would achieve the same effect
Several related conditions are treated when treatment of

primary condition would improve or cure the other conditions.[8]

It is documented that effective plan design, strategies utilizing generic substitutions, rational prescribing & use of formulary can help manage cost while maintaining quality & customer satisfaction. Before such strategies can be implemented prescribing patterns of clinicians must first be explored.[9] The study of prescribing pattern is a component of medical audit that does monitoring and evaluation of the prescribing practice of the prescribers as well as recommends necessary modifications to achieve rational & cost effective medical care.[10] This helps to evaluate & suggest modifications in prescribing practices of medical practitioners so as to make medical care rational & medical profession high esteemed.[11] Few studies are documented in Pakistan on hospital inpatients & that too are mainly on pediatric population. Present study was done to audit the prescribing patterns in the adult inpatients of a private hospital.

MATERIALS & METHODS:

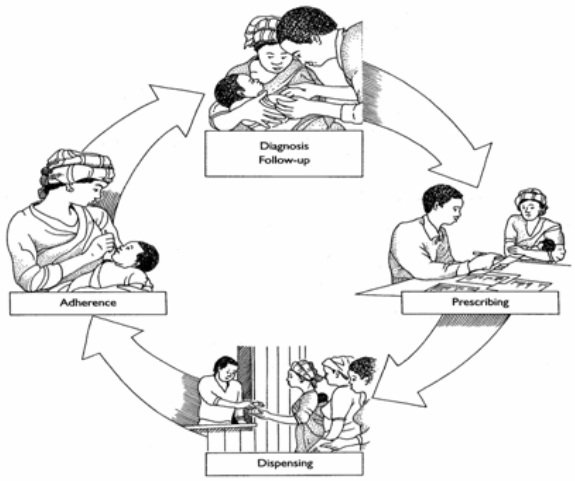
This pilot study was approved by IRB/ERB-BUMDC through letter ERC03/12. After a written informed consent from the medical ward incharge & hospital administrator 32 case notes of patients discharged from a private hospital in Malir, Karachi were collected from 1st April to 30th April 2012. Patients demographics, disease & prescription details were entered into a specially designed performa. Case notes of medical ward inpatients of both genders more than 18 years with proper diagnosis and with or without concurrent illness were included in the study. Audit of the prescribing practices in these hospital inpatients was done by determining the number, type, dose, route, frequency & duration of drug use. Tendency of polypharmacy, cost of drugs & follow up of patients was also ascertained. SPSS version 17 was used for analysis of data.

RESULTS:

Mean age of 32 patients was 27.18 years with 14 males & 18 females. They were diagnosed to have enteric fever (10), gastroenteritis (5), RTI (4) & others (13) [Fig: 2]. Total number of drugs used were 120, of which 115 drugs were prescribed by brand name and only 5 (4.17%) were prescribed by generic name [Fig: 2]. 31(25.83%) drugs were from National Essential Drug List of Pakistan (NEDLP) [Fig: 2]. Antibiotics & analgesics were given to 29 (90.63%) patients respectively & their main route of administration was parenteral with most injections given intravenously. Vitamin injections were given to 6 (18.75%) patients. Anti -ulcer drugs were given to 27(84.38%) & nebulization of Ipratropium Bromide (Atrovent) to 11 (34.38 %) patients without need that is treatment not in accordance to their respective diagnosis [Fig: 3]. Average hospital stay period was 2.5 days. Average number of drugs prescribed per patient was 9.35 and average cost of drugs per patient was 1200 rupees [Fig: 3]. None of the prescriptions was found to be complete for route, dose, frequency & duration of drug use. Discharge notes were present in only 18(56.25%) sheets and they were also incomplete [Fig: 3]

Fig: 1

Process of drug use (RUD cycle)[7]



Results:

Fig: 2

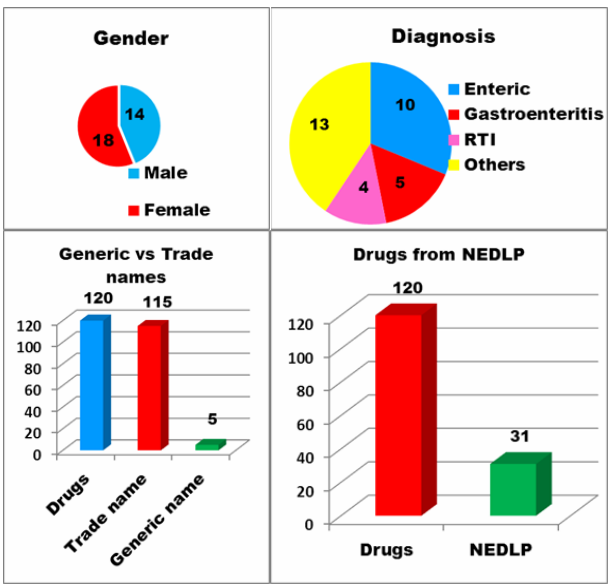
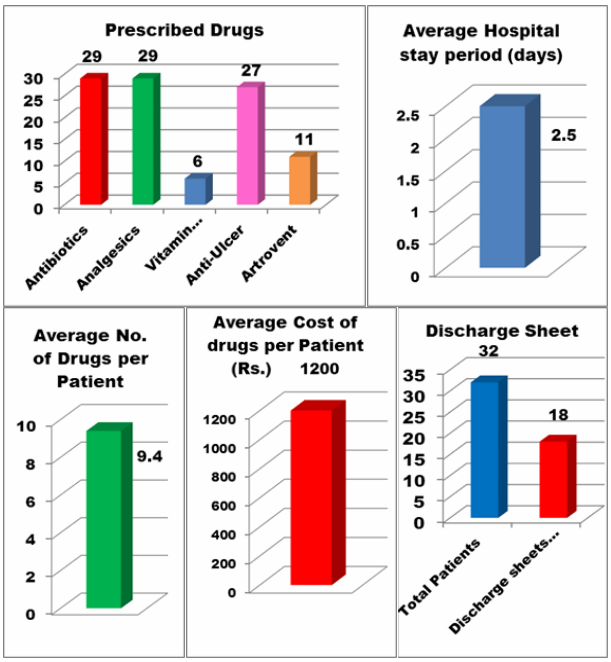


Fig 3



DISCUSSION:

The widespread use of many new and powerful drugs and the increasing recognition of adverse effects have stimulated interest in the manner in which physicians prescribe drugs. The three main sources of information about the prescribing patterns of physicians are marketing research data, studies of general practice and monitoring of prescribing in hospitals.[12] Aggressive drug marketing promotions, lack of information on the use of drugs & drug shortages are said to be the major causes of irrational drug use. The rational use of drugs demands prescription of appropriate drugs.[13] Prescribing practices of the consultants in Karachi, the home of at least eight medical colleges has been documented as non-rational.[14,15,16] We collected 32 case sheets of patients discharged from the medical ward of a private hospital in Malir, Karachi from 1st April to 30th April. They showed mean age of patients 27.18 years with 14 males & 18 females. They were diagnosed to have enteric fever (10), gastroenteritis (5), respiratory tract infection (4) & others (13). Mengistu has documented a similar data where case sheets of 36 adults admitted to the medical ward of Jimma hospital from first April 2002 to 30th May 2002 were evaluated. They had mean age of 30 years with diagnosis of TB (8), diabetes (6), cardiac disease (5) & others (17).[17] By definition, a product identified by its official chemical name rather than an advertised brand name (propriety or trade name) is called a generic. It exerts its pharmacological effects at the same site, supposed to show the same potency, same dosage form & same bioavailability as a brand name.[18] Higher generic drug prescription rate implicates less cost on health care with similar efficacy in clinical results.[19] In our study a total of 120 drugs were used & only 4.17% were prescribed by the generic name in contrast to 45.2% & 23.6% at HUKM, a teaching hospital owned by University Kebangsaan Malaysia.[20] However it is said that for specialists & consultants more options are available as they are allowed to prescribe from both branded & generic drug list. In our case it seems that their preferences were more inclined towards the branded drugs.[21] We have found an average hospital stay period of 2.5 days with mean number of drugs per patient 9.35 which is comparable to the results of Lucena.[22] Polypharmacy is said to be associated with more adverse effects & less patient`s compliance. Average cost of drugs per patient for a period of 2.5 days was found to be 1200 rupees that is per day 480 rupees. This didnot include the consultant`s fee, investigation charges, hospital charges or even the food of the patient at the hospital. Pakistan is a third world country with per capita income of 7000 rupees/month declared in May 2012. One can very well imagine that even if a person is earning 1000 rupees per day that is a monthly income of 30,000 rupees will not be able to bear these drug expenses with the simultaneous responsibilities of the family, housing & food. Najmi [23] have documented an average cost of drugs per day to be 88.36 rupees & 80% of drugs use from NEDLP in 1988. But this was 23 years back & now prices of commodities are gone up by many fold.

Essential medicines are those that satisfy the priority health care needs of the population. They are selected with due regard to disease prevalence, evidence on efficacy and safety, and comparative cost-effectiveness. Essential medicines are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford. We have found use of 25.83% drugs from National Essential Drug List of Pakistan (NEDLP). Antibiotics & analgesics were the most common drugs prescribed to 90.63% patients respectively & the most common route for their administration was intravenous. Vitamin injections were given to 18.75% patients. Our findings are coinciding with those of Litton who found 28.7 % of drugs used from the Ministry of Health Drug List & antibiotics the most commonly prescribed drugs.[24]

Mengistu has documented in his study that significant number of files (case sheets) were incomplete for the route , dose, frequency, duration of drug use & discharge notes which completely favors our findings as none of our case sheets were complete for the above mentioned factors .Discharge notes were found in only 56.25% case sheets & that too were incomplete. These malpractices could result in administration of drugs through the wrong route, unwanted shorter or longer interval of drug administration & incorrect duration of treatment. We were not able to find why anti-ulcer drug injections were given to 84.38% & Ipratropium bromide nebulization to 34.38% patients when they didn`t had any features of

peptic ulcer or bronchoconstriction. These might be used to satisfy the patients high expectancies when treated by specialist in a private set-up or to produce a feeling of well being within a short period. It is clear that treatment is not co-relating with the diagnosis in these patients or vice versa.

Educational, managerial & regulatory interventions to rationalize the prescribing practices are the need of today & should be carried out by the government authorities & professional bodies The important thing is the safety of an ill person which should not be compromised for the sake of personal or industrial growth.[25]

CONCLUSION:

Audit of prescribing patterns in adult hospital inpatients of a private setup showed irrational use of drugs. Measures should be taken by the government & PMDC for:

1. Standardization of therapeutic schemes.
2. Prescription control sheet audits.
3. Improving the knowledge of doctors through specific trainings, printed educational materials, therapeutic manuals & guidelines.

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ORIGINAL ARTICLE

Finding Factors Causing Postdural Puncture Headache In Obstetric Patients After Spinal Anaesthesia

Maqsood Ahmad[1], Zareen Fatima[2]

ABSTRACT:

Objective: Among various recognized factor of spinal headache the single most important causative factor is size of spinal needle. The aim of this study was to determine incidence of spinal headache with 27 GQuincke Babcock spinal needle in Caesarean section patients.

Materials and Methods: This observationalcross sectional study was carried out in the Combined Military Hospital Gujranwala and Pakistan Naval Shipping Rahat Hospital Karachi from Jan 2011 to Jan 2013. In 500 Caesarean section (C section) cases preloaded with 1000 ml Ringers Lactate, 27 G QuinckeBabcok spinal needle was used in sitting as well as left lateral position for spinal anaesthesia in all patients using local anaesthesia plain lidocaine 2% 1-2ml.In interspace L 2-3 / L3-4 eitherBupivacaine hydrochloride hyperbaric 0.75 % or 0. 5% was injected. All Caesarean cases were included except contraindicated. Spinal needle Quincke Babcock 27 G alone was used.The results were presented in percentages, mean and standard deviation.

Results: A total of 500 patients of c-section were evaluated. Overall incidence of true spinal headache was 2%, failed spinal anaesthesia 4%, spinal needle was changed in 3 %, success rate of 96 % and maternal acceptance 47.4 %. Single pricks were 59.4 % while 2-3 pricks were 40.6 % .

Conclusion: Smaller spinal needle has changed the safety profile of spinal anaesthesia in C section cases by very low failure rates and true PDPH a rarity. PDPH will continue as long as dura is punctured but incidence can be decreased by different techniques.

KEY WORDS: Spinal anaesthesia, Spinal needle, Caesarean section, Postdural puncture headache (PDPH).

INTRODUCTION:

Spinal anaesthesia is widely accepted technique for Caesarean sections[1] revolutionizing the practice byproviding fewer complications since its discovery in 1885 by J Leonard Corning[2]. The ease of performance, quick onset of dense block rendering excellent analgesia has surpassed other techniques for obstetric anaesthesiain terms of its benefits but PDPH after subarachnoid (SAB) block is the greatest fear which has contributed to search for optimum spinal needles and drugs. The obstetric anaesthesia care accounts for approximately 12 % of American Society of Anesthesiologists (ASA) Closed Claims database where post dural puncture headache was third in claims [3, 4].

It is pertinent to note that headache is diagnosed clinically and causation is multifactorial but size and shape of spinal needles is mostly blamed.These needles have been modified to simplify their use and minimize complications. Needle design variables, such as diameter, tip design and orifice location, have been altered to enable rapid flow of cerebral spinal fluid (CSF) and injected medications, yet simultaneously limit dural trauma and loss of CSF. The CSF leak is one proposed mechanism which induces reflex vasodilatation and traction on cranial contents5. This leak is directly proportional to dural hole which in turn is directly proportional to needle size.Parturient age and gender are inevitable contributing factors in spinal anaesthesia[6].

A popular needle in practice is 25 G Quincke Babcock with a reported PDPH incidence of 25% [7]. Needles like 29 G and 30 G are available but their use is limited due to high failure rate and technical difficulty[8, 9]. The selection of needle is personal preference but 25 G is generally accepted. The use of pencil point needles was suggested very early by Hart and Whitacre for reducing duraltrauma[10].Various studies have demonstrated that pencil point and smaller bore needles are beneficial [11, 12]. The smaller needles have no or minimum incidence of PDPH at the cost of common technical errors like failed spinal and bending of needle. We have conducted this study to search a needle which is easy to use, readily available, fewer complications rate and economical.

MATERIALS AND METHODS:

This cross sectional observational study of 500 C section cases was conducted in Combined Military Hospital Gujranwala and Pakistan Naval Shipping Rahat Hospital for 3 years by a single anaesthesia specialist using only 27 G QuinckeBabcok spinal needle. After prior approval of hospital ethical committee and written informed consent, the procedure was explained and local anaesthesia plain lidocaine 2% 1-2ml was injected in patients preloaded with 1000 ml of Ringers Lactate. Sensocaine (Bupivacaine 0.75 % 2 ml hyperbaric or Bupivacaine 0.5 % hyperbaricml packing of Brookes Pharmaceutical Laboratories (PVT) Pakistan) or Abocaine (Bupivacaine 0.75 % hyperbaric 2 ml of Abbott Laboratories Pakistan) was used in L 2-3 / L3-4 level in sitting as well as lying positions. Free flow of CSF was confirmed before

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injection. All elective, emergencies, pregnancy induced hypertensive, primigravida, multigravida and obese cases were included in this study excluding unwilling and contraindicated patients.In emergency cases C-Fuser 1000 (medex, Dublin, Ohio 43016 USA) was used to preload the patients and ephedrine IV was titrated to control blood pressure. Nalbuphine IV 4-6 mg was given post delivery and Metoclopramide 10 mg IV for nausea and vomiting. O2 was given with facemask at a rate of 4 liters if required and level of T4-6 was achieved before starting incision. After completion of surgery the patient was shifted to respective wards /intensive care advising complete bed rest for 24 hours. The PDPH incidence as defined by the international headache society criteria (Table 1) after the operation till 72 hours, change of needle to another 27 G due to bending, successful/failed spinal block and maternal spinal acceptance was noticed. The data was collected and presented in percentages after analysis.

RESULTS:

A total of 500 patients were evaluated.Mean age of patients in the study was 28.5years. Mean weight and height was 62 kg & 155 cm respectively. Majority of patients were multipara 337 and more than half (300) belonged to ASA grade 1. (Table 2)

Success rate in the study was 96 % with maternal acceptance rate of the procedure 47.4 %. Overall incidence of true spinal headache was found to be 2%. Failure of spinal anaesthesia was encountered in 4% of the patients. Spinal needle was changed in 3 % of cases. Majority of patients underwent single prick that is in 59.4 % while 2-3 pricks were needed in 40.6 % of the patients. (Table 3)

Table 1: International Society of Headache PDPH Criteria 12

Definition: Headache that develops within 7 days of dural puncture and disappears with 14 days.	
Classic Features but variable presentation	• Headache is often frontal-occipital • Most headaches do not develop immediately after dural puncture but 24-48 hours after the procedure with 90% of headaches presenting within 3 days. • Headache is worse in the upright position and eases when supine. • Pressure over the abdomen with the woman in the upright position may give transient relief to a rise in intra abdominal pressure (Gutsche sign)
Associated symptoms	• Neck stiffness, photophobia, tinnitus, visual disturbance and cranialnerve palsies.

Table2: Demographic Data

Age in years	28.5±11.5		
Weight in Kg	62±15		
Height in cm	155.486±7.62		
ASA grade	**ASA 1**	**ASA 2**	**ASA 3**
	300	120	80
Parity	**Multigravida**	**Primigravida**	
	337	163	

ASA: American Society of Anesthesiologist grade

Table 3: Outcomes of Spinal Anaesthesia

PDPH Incidence	2 %
Spinal Success Rate	96%
Spinal Failure Rate	4%
Maternal Acceptance	47.4%
Needle Changed	3 %
Single prick	59.4 %
2-3 Pricks	40.6 %

DISCUSSION

The search of optimum spinal needle had started since the invention of spinal anaesthesia but PDPH is reported with all needles.PDPH mechanism is not clear but CSF leak is clearly associated with this headache and CSF leak is directly proportional to needle size. The backache associated with spinal dural puncture has nothing to do in the long run except where some damage has been done during procedure. The backache solely associated with spinal anaesthesia in obstetric cases has been studied by Kashif and Arshad[13] declaring that pre anesthesia exam should include counseling about backache as the backache is not associated with this technique. However persisting chronic cases must be referred and epidural abscess or hematoma is excluded [13]. Pre anaesthetic history should exclude preexisting backache or nerve injury and many obstetric patients had preoperative backache which is multifactorial likechange in centre of gravity and hormones.

Reportedly contributing factors for higher PDPH are needle size, type, entrance angle, technique, no of dural tap, multiple attempts by different users, pre existing backache history, trauma to structures especially periostium and nerves. Other factor like age, weight, posture, patient's sensitivity to pain, spinal acceptance and previous experience are contributing to maternal satisfaction. Only PONV (post operative nausea and vomiting) and pain are best controlled in spinal anaesthesia whereas acceptance for regional techniques is very low. Similarly backache is there despite cause is not established and the maternal satisfaction is very poor[14]. Large bore (<25 or =25) and cutting point needles produce PDPH [15,16,17,18] so their use must be discouraged. The needles of 27 G are studied extensively and approved in many studies [19, 20, 21, 22] but had variable PDPH incidence. Theoretically atraumatic pencil point needles provide advantages over cutting needles in the form of insignificant PDPH[23, 24]. The histological review on either needle had proved equivocal results of neurological damage/ inflammation [25]. Our study is based on using 27G needle for spinal anaesthesia in all elective as well as emergency obstetric cases. In expert hands results with this needle in form of high success rate, low PDPH, good analgesia and fetal outcome are excellent but backache complaints are difficult to rectify. Psychological factors along with extent of structural damage are contributing.

CONCLUSION:

All efforts must be exercised for gentle atraumatic spinal anaesthesia in a single attempt or minimum attempts minus damaging nerve or bone. Smaller spinal needle has changed the safety profile of spinal anaesthesia in C section cases by very low failure rates and true PDPH a rarity. PDPH will continue as long as dura is punctured but incidence can be decreased by different techniques. Furthermore adoption to this needle is required after practice as it is soft providing better dural puncture feel than larger bore needles. We strongly suggest all junioranaesthesia doctors to use this needle early in their career for better future practice outcomes.

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ORIGINAL ARTICLE

Transpedicular Decompression And Spinal Fixation In Thoracolumbar Burst Fractures

Ahmed Tashfeen Ashraf

ABSTRACT:

Objective: To evaluate the results of transpedicular decompression and single stage pedicle screw fixation in burst fractures of thoracolumbar spine.
Materials & Methods: This study was carried out at PNS Shifa from Dec 2010 to Jan 2013. All consecutive traumatic burst fractures that underwent surgery were included in the study. Twenty three consecutive patients aged 17 to 57 (mean, 41) years who had burst fractures in the thoracolumbar (n=13) and lumbar (n=10) regions and were surgically treated were included in this study. There were 18 males and 5 females. Fractures were classified according to the AO classification. The extent of spinal canal compromise was assessed by computed tomography, and the neurological status by the modified Frankel grading for traumatic paraplegia. All patients underwent posterior transpedicular decompression and same stage pedicle screw fixation. Outcome was assessed on Frankel grading scale.

Results: The extent and level of neurological injury varied. It did not correlate with extent of canal compromise, age and sex of the patient. Neurological injury was greater with T11 and T12 injuries than Lumbar fractures. No worsening of neurological grade was observed after surgery; rather 20 of 23 patients (86.9%) improved to the next higher grade. Screw malposition to the extent warranting readjustment was noted in 2 cases. Hardware failure occurred in 1 case after 6 months, bed sores in 3 cases and deep vein thrombosis in 1 case.

Conclusion: Single stage Transpedicular decompression and spinal fixation from a posterior approach gives good results in burst fractures of thoracolumbar spine.

Key Words: Transpedicular; Spinal fixation; Pedicle screws.

INTRODUCTION:

Spinal injuries have greatly increased as a result of high speed vehicle accidents. They generally involve younger population and therefore are more tragic as it makes the patient bed ridden in the prime of his youth. However many recent advances have enabled the surgeons to greatly reduce the morbidity and improve the outcome in these injuries. A specific subset of spinal fractures are consists of Burst fractures of thoraco-lumbar spine. Burst fractures, as defined by Denis [1], involve compression failure of the anterior and middle columns of the spine. Most burst fractures of the spine are associated with varying degrees of bone fragment retropulsion into the neural canal leading to neurological deficit. Although burst fractures can occur at any spinal region, their occurrence at thoraco-lumbar region presents specific problems as well as opportunity for neurological improvement and recovery due to involvement of lower motor neurons in injury [2]. The optimal initial treatment of thoracolumbar burst fractures continues to be strongly debated [3,4]. Although some centers choose to treat these injuries conservatively [5], vast majority of centers treat them surgically. The surgical approach has varied from anterior decompression alone or with staged posterior fixation or posterior fixation and indirect reduction by ligament taxis. The transpedicular decompression and single stage pedicle screw fixation is another approach to treat these fractures. This was the only approach used in our series of patients. The transpedicular decompression and fixation represents an attempt to restore the anterior column without the need for anterior decompression or strut grafting [6]. In fact it combines decompression and fixation through a single approach and avoids morbidity of anterior or combined approach. The use of pedicle screws increases the biomechanical strength of the fused segments more than any anterior construct alone[7,8].

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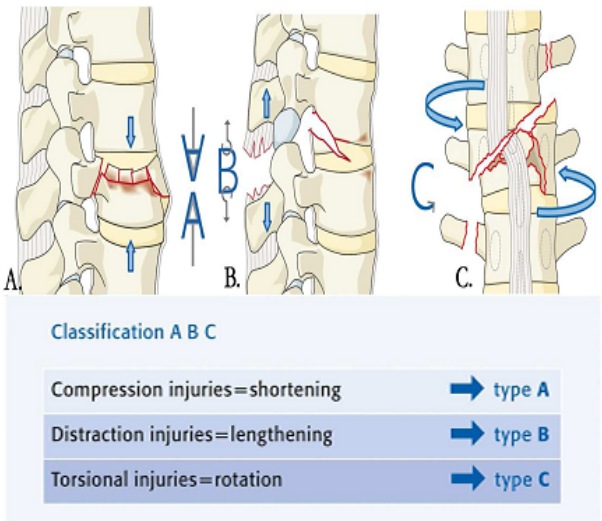
MATERIALS AND METHODS:

After departmental approval twenty three patients aged 17 to 57 (mean, 41) years were included in this study from December 2010 to January 2013. They had burst fractures in the thoracolumbar (n=13) and lumbar (n=10) regions. There were 18 males and 5 females. Upon admission, the complete medical history with a detailed clinical evaluation was recorded and radiological examinations were performed. Fractures were classified according to the AO classification (FIG 1).

Fig 1: The AO Spine classification system



The extent of spinal canal compromise was assessed by computed tomography, and the neurological status according to the modified Frankel grading for traumatic paraplegia. The most common mechanism of injury was a motor vehicle accident followed by fall from a height. The most common vertebra involved was L1 (41%) (Table 1), and the most common type of burst fracture (Fig 2a), was type A3 (Table 2).

Fig 2a: Burst Fracture of LV1

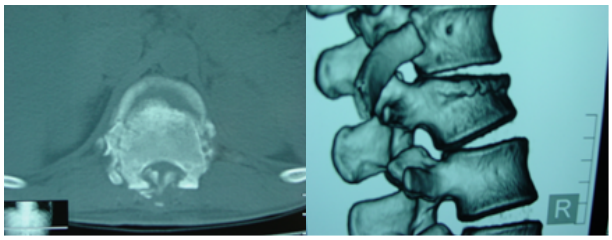


Table 1. Distribution Of Thoracolumbar Injuries

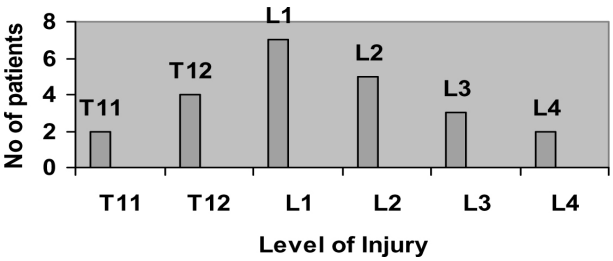


Table 2. Distribution of thoracolumbar fractures according to AO classification

A	-	6	9
B	3	5	-
C	-	-	-

According to the AO classification, 6 patients had the A2 fracture, whereas 9 patients were diagnosed with the A3 fracture. 3 patients were diagnosed with B1 type fracture, and 5 patients were diagnosed with the B2 fracture. No patient was diagnosed with the type C fracture.

All patients were assessed according to Frankel grading system (Table 3).

Table 3: Frankel classification

Grade A: No motor or sensory function

Grade B: No motor but sensory present

Grade C: Sensory normal but motor useless

Grade D: Useful motor function present

Grade E: Normal motor and sensory function

The pre and post-operative neurological status of the patients is given in fig 3a & 3b

Fig 3 a: Pre-operative Frankel Grade of the patients

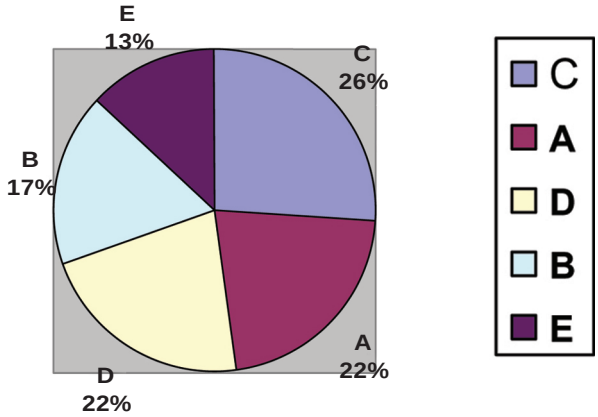
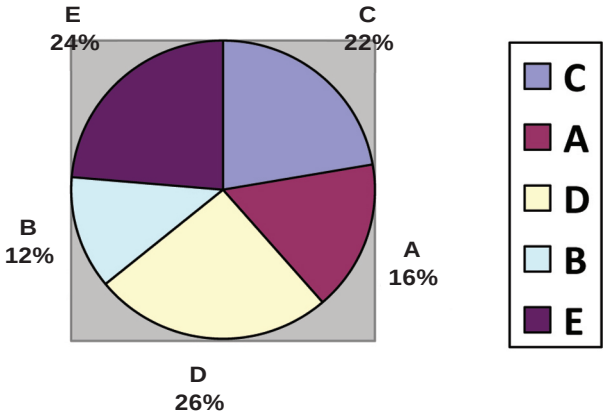


Fig 3 b: Post-operative Frankel Grade of Patient



Surgical Technique

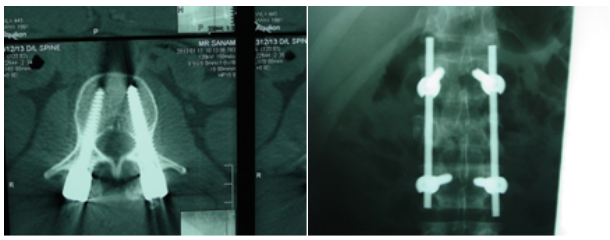
Preoperative evaluation: All patients were thoroughly assessed prior to surgery. Several of these patients had multiple injuries including head injury in 3 patients, abdominal injuries in 4 and limb injuries in 7 patients. Surgery was undertaken as soon as the patient became hemodynamically stable.

Intraoperative Positioning: Following endotracheal intubation, the patient was positioned prone on a spinal frame. All osseous prominences were padded and the eyes were protected. Prior to beginning the surgery, AP and lateral fluoroscopic (C-arm) images were obtained at the intended operative levels to ensure that all osseous landmarks could be adequately visualized.

Surgical Approach: A standard midline approach was followed. A subperiosteal exposure was performed from two levels above to two levels below the intended

vertebrae to be instrumented. Care was taken to avoid disruption of the interspinous ligaments and facet joint capsules at levels not included in the fusion. After the exposure was completed, the facet joints, lamina and transverse process of the level to be decompressed were removed taking care to protect the exiting nerve roots. This was best achieved by circumferential subperiosteal dissection in which a Penfield elevator and small angled curettes were used. At the completion of the posterior element resection, the cauda equina, exiting nerve roots, and descending nerve roots were clearly visualized.
Pedicle Screw (PS) placement: Using C-arm guidance, PS was inserted bilaterally into the vertebrae one level above and one level below the fractured vertebrae. We used fixed angle 5.5mm titanium screws in all patients.
Transpedicular decompression: Using high speed pneumatic drill with long angled attachment and cutting 5mm burrs, bone was removed from the vertebral body (VB) through the pedicles and created a sort of defect in the central and anterior part of VB. Caution was exercised to prevent the drill from 'wandering' outside the confines of the VB. Lastly the posterior most or retro pulsed fragments were 'pushed' into the defect thus created, by using angled curettes and Penfield dissectors. All steps were monitored on the C-arm.
Postosteotomy Instrumentation and Bone Grafting: 4mm Titanium rods were then contoured and secured to the PSs on each side. Some times cross-connectors were used to secure additional torsional stability. Locally harvested well morcelized bone graft was placed on a well prepared bed. Final check was made on C-arm before closure (Fig 2b).

Fig 2b: Post op CT scan of LV1 burst fracture



RESULTS
Follow-up: The follow-up of the operated patients was between 6 and 24 months (14.12 on average). All patients were given a custom-made thoracolumbar orthoses for 3 months postoperatively. Physical therapy was initiated in the hospital and continued for 6 weeks on an outpatient basis. After hospital discharge, clinical and radiographic follow-up evaluations were scheduled every 4 weeks for first six months and then three monthly.
Complications: Mean duration of hospitalization was 10.5 days (range, 3 to 25 days). During the postoperative recovery, we had two cases of a mechanical complication which were overcome successfully by means of reintervention and refixation. We also had one case of deep venous thrombosis, two cases of hospital acquired pneumonia, three cases of catheter related complications and three cases of bed sores.
Outcome: The final anatomical and functional outcome was good in all patients, considering the severity of the inflicted injuries (Table 4). No patient worsened after surgery. Only one patient in Frankel grade A had return of some power in legs. Other than that almost all patients improved neurologically to the next or even higher grade.
DISCUSSION
Thoracolumbar burst fractures pose some unique problems. Although there are still some advocates of conservative treatment of these fractures,[9] however most of these fractures are treated operatively. Operative treatment of these fractures is aimed at spinal canal decompression along with solid and adequate spinal fixation. Surgical decompression in patients with incomplete lesion of the spinal cord is the greatest possible benefit for the patient. The route of decompression can be posterior, anterior or a combination of the posterior and anterior approaches. However fixation after decompression is almost always required. Both these parameters are fulfilled through a single stage posterior approach. Most of these patients have sustained a high velocity accident and have associated other systemic and limb injuries. Anterior approach in these patients can lead to significant morbidity.[10,11,12,13] The main advantages of the internal fixation of these unstable spine fractures are shorter hospitalization stay, early rehabilitation, deformity prevention and prevention of other complications which may occur in non - surgically treated patients. There are some advocates of fixation without fusion,[14,15] however in our experience fracture fixation with fusion lead to better neurological functioning in patients with the spinal cord injury, especially in early surgical decompressions, stabilizations and fixations.[16] Moreover short segment posterior fixation has a higher rate of failure.[17,18]
In our study, the most common type of burst fracture was type B, whereas the least common was type C. 87% of our patients had some neurological deficit, which was higher than the previously reported incidence of 30 to 60%.[19] However canal compromise as assessed on CT scan was found to vary and did not have any correlation with the type of burst fracture or with neurological deficit. Spinal cord injury occurs at the time of trauma rather than being a result of pressure from fragments persisting in the canal thereafter. Radiological and computed tomography images taken a few hours after injury merely reflect the final resting position of the retro pulsed fragments after trauma. These phenomena may explain why there is no correlation between the extent of canal

compromise and the severity of neurological deficit. [20] Moreover our study compares favorably with other studies comparing morbidity of anterior approach to these fractures [21,22]

The modern systems for transpedicular fixation include transpedicular screws which are placed in pedicle, and a rod which is fixed with screws after the distraction. In that way, fracture correction and reduction are performed and stabilization is achieved. Many systems for transpedicular screw fixation have been described. We used PSs of 5.5 diameter and titanium rod of 4mm diameter. They were of local make but with very good titanium quality and finish. The use of transpedicular approach to decompress the bone fragments in the spinal canal requires high speed drill with angled attachment and angled curettes. Mean operating time of 130 minutes and mean blood loss of 500ml in our study compares well with similar studies.[23,24,25] We did not encounter any problem in canal decompression through the posterior transpedicular route. Even those burst fractures in which spinal canal was almost completely occupied by the bone fragments could be adequately decompressed and fixed through this approach alone.

CONCLUSION

Transpedicular decompression and spinal fixation is a viable alternative to anterior approach or staged approach, when dealing with burst fractures of thoracolumbar spine. It is safe, technically easy and gives good long term results.

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STUDENT`S CORNER

Frequency And Factors Associated With Headache Among People Of Various Occupations

Madiha Mohyuddin[1], Wajahat Lodhi[2], Ramsha Khan[3]

ABSTRACT:

Objective: To find out the frequency and factors associated with headache among people of various occupations.

Materials andMethods: This cross sectional study with purposive sampling was carried out in four cities, Karachi, Rawalpindi, Rahim Yar Khan andMuzafarabad from June 2011 to September 2011. Data was collected on a specially designed questionnaire with 21 questions both open and closed ended variety. After a written consent 250 individuals working as doctors, engineers, businessmen, bankers, executives, drivers, teachers, armed officers, laborers and household servants aged between 18 and 60 years were enrolled. Individuals suffering from any acute illness like common cold and gastroenteritis etc and chronic debilitating disease like diabetes, cancers were excluded.

Results: Two hundred and fifty subjects participated in this study. 82.4 % were males while 17.6% were females. Their age range was 18-60 years Majority of subjects 80.8% were married. Overall frequency of headache was 62.8%. Highest frequency of headache was found in bankers & teachers (80%) and lowest was among doctors (48%).Age, anxiety and work place showed statistically highly significant association with headache. Family history, physical activity, high and low blood pressure and daily working hours were significantly associated with headache.

Conclusion: Frequency of headache is found to be high whereas age, family history, physical activity, both high & low blood pressure ,anxiety, daily working hours and work place are found to be associated with headache among people of various professions.

KEY WORDS: Headache, Frequency, Associated factors, Occupation

INTRODUCTION:

Headache or cephalalgia is pain anywhere in the region of the head or neck.The brain tissue itself is not sensitive to pain as it lacks pain receptors. Nevertheless, the pain is caused by disturbance of the pain-sensitive structures around the brain. Nine areas of the head and neck have these pain-sensitive structures, which are the cranium (the periosteum of the skull), muscles, nerves, arteries and veins, subcutaneous tissues, eyes, ears, sinuses and mucous membranes.[1] Headache often results from traction to or irritation of the meninges and blood vessels. The nociceptors may also be stimulated by other factors than head trauma or tumors and cause headaches.[2] Headache is not only painful but sometimes disabling also.The long term effort of coping with a chronic headache disorder may also predispose individuals to other illnesses, for example depression is three times more common in people with migraine or severe headaches than in healthy individuals.[3] There are over 200 types of headaches, and the causes range from harmless to life-threatening. The description of the headache, together with findings on neurological examination, determines the need for any further investigations and the most appropriate treatment.[4] Headache disorders are classified aseither primary or secondary. Primary headaches include those in which intrinsic dysfunction of the nervous system, often genetic in origin, predisposes to increased vulnerability to headache attacks. Various studies have shown that there are many factors.Particular individuals are vulnerable to provocation (triggering) by certain extrinsic and intrinsic events, including hormonal fluctuations, use of oral contraceptives, weather changes, certain foods, skipped meals, fasting, extra sleeping time and stress.According to International Headache Society (IHS) classification, the primary headacheentities include,migraine with aura, without aura, chronic, cluster headaches, tension type headaches.Secondary headaches are those in which the headache is secondary to an organic or physiologic process, intracranial or extra cranially[5].

Headache has a significant impact on public health in terms of quality of life and economic consequences, but in primary care, needs often remain unmet in terms of recognition, diagnosis and treatment [6] Although the epidemiology of headache disorders is only partly documented, taken together, headache disorders are extraordinarily common. Population-based studies have mostly focused on migraine which, although the most frequently studied, is not the most common headache disorder.Other types of headache, such as the more prevalent Tension Type Headaches (TTH) and sub-types of the more disabling chronic daily headache, have received less attention.Statistics show that 16.5% people of USA suffer from headache [7]. Worldwide, according to the World Health Organization (WHO) overall prevalence of headache is 47% & migraine alone is 19th among all causes of years lived with disability (YLDs)[8]. Headache disorders impose recognizable burden on sufferers including sometimes substantial personal suffering, impaired quality of life and financial cost. Repeated headache attacks, and often the constant fear of the next one, damage family life, social life and employment[9]. Since headache is a cause of low productivity in professionals therefore present study was designed to find out its frequency and associated factors among people of various occupations.

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MATERIALS AND METHODS:

This cross sectional study was approved by ethical committee of Community Health sciences department of Bahria University Medical & Dental College.It was carried out with purposive samplingat different hospitals, schools, colleges and institutes of four cities, Karachi, Rawalpindi and Rahim Yar Khan and Muzafarabad from June 2011 to September 2011.The places in Karachi were Pakistan Naval Services (PNS) Shifa,Liaquat National Hospital, The City School Darakhshan Campusi and Tri-Pack Films.

The places in Rahim Yar Khan were Sheikh Zaid Hospital Medical centre,Fauji Fertilizers Company limited Goth Machi, Fauji Fertilizer Company Grammar School Goth Machi andFaujiFertilizers.The places in Rawalpindi were Combined Military Hospital, Army Public School Humayun Road,Pivato engineers,Army Public College of Management Science (APCOMS), Global Academy andAslam Academy.Two hundred and fifty individuals between 18 to 60 years of age after a written consent working as doctors, engineers, executives, businessmen, bankers, drivers, teachers, armed officers, laborers and household servants were enrolled for the study. Individuals suffering from any acute illness like common cold, gastroenteritis etcand chronic debilitating disease like diabetes, cancers were excluded.

Sample Size:[10]

Using the formula:

$$1.962x\ p\ x\ q/e2$$

Where Z=1.96, p=prevalence, q=100-p and e=5.

The sample size came out to be 212 but it was increased to 250.

Data Collection Procedure:

A questionnaire comprising of 21 questions with open & close ended questions was used for data collection. Written consent was obtained from all the subjects and they were asked to fill the questionnaire. Those who were not able to read or understand the questionnaire a face to face interview was conducted.Data was analyzed using SPSS version 15.

RESULTS:

Two hundred and fifty subjects participated in this study. 82.4 % were males while 17.6% were females. Their age range was 18-60 years. Maximum and minimum number of subjects were 84 (33.6%) with age range of 31-40 years and 8(3.2%) with age range of18-20 years respectively Majority of subjects 80.8% were married. (Table 1)

Overall frequency of headache was 62.8% as 157 subjects out of 250 suffered from this painful condition. Highest frequency of headache was found in bankers & teachers (80%) followed by laborers & drivers(64%),household servants, businessman & armed forces personnel (60%), executives and engineers (56%) and doctors (48%). (Table2)

Age, anxiety and work place showed statistically highly significant association with headache.Family history,physical activity, high and low blood pressure and daily working hours were significantly associated with headache. Headache was predominantly present in subjects who were less than 40 years of age, had anxiety and worked at noisy,crowded and unventilated places. Headache was more common in individuals with a positive family history, who were physically inactive, had high / or low blood pressure and who worked for less than 8 hours per day. (Table 3)

Table 1: Demographical features

Sex	**Frequency**	Percentage
Male	206	82.4
Female	44	17.6
Age groups		
18 --- 20 Yrs.	8	3.2
21 --- 30 Yrs.	73	29.2
31 --- 40 Yrs.	84	33.6
41 --- 50 Yrs.	53	21.2
51 --- 60 Yrs.	32	12.8
Marital status		
Married	202	80.8
Unmarried	48	19.2

DISCUSSION:

Headache is an extremely common complaint causing more patients visits to primary care practitioners than respiratory diagnoses such as bronchitis or gastrointestinal illnesses such as peptic ulcer disease.[11]and it is the fourth most common complaint seen in emergency department.[12] In terms of cost productivity the cost of migraine type of headache alone in the United States is estimated to be between dollar 5.6 billion and 17.2 billion annually [13] and during a given year, 90% of people suffer from headaches. Various precipitating factors may cause headaches in susceptible individuals.Stress that usually occurs in the afternoon after long stressful work hours or after an exam, sleep deprivation, uncomfortable stressful position and/or bad posture, irregular meal time (hunger),eyestrain ,depression, anxiety ,clenching one's jaw are some of these factors.[14]Although disabling, headaches remain under-recognized and under-treated throughout the world.[15]

Overall frequency of headache in our study is 62% with

Table 2: Frequency of Headache And Its Breakup Profession Wise.

Overall	**Headache**		**Total**
	Yes	**NO**	
	157 (62.8%)	93 (37.2)	250 (100%)
Profession wise breakup			
Doctors	12 (48%)	13 (52%)	25
Household servants	15 (60%)	10 (40%)	25
Bankers	20 (80%)	05 (20%)	25
Executives	14 (56%)	11 (44%)	25
Engineers	14 (56%)	11 (44%)	25
Business men	15 (60%)	10 (40%)	25
Drivers	16 (64%)	9 (36%)	25
Labourers	16 (64%)	9 (36%)	25
Teachers	20 (80%)	5 (20%)	25
Armed forces personals	15 (60%)	10 (40%)	25
Total	**157**	**93**	**250**

Table 3: Cross Tabulation of Headache with Associated Factors

S. No.	**Factor**	**Category**	**Headache**		
			YES	NO	P - value
1.	Age	< 40 years	117	48	
		> 40 years	40	45	0.000**
2.	Gender	Males	126	80	
		Females	31	13	0.247
3.	Marital status	Married	128	74	
		Unmarried	29	19	0.704
4.	Family History	Yes	39	12	
	of Headache	No	118	81	0.024*
5.	Smokers	Yes	58	32	
		No	99	61	0.687
6.	Daily sleepy	< 8 hours	134	73	
	hours	? 8hours	23	20	0.165
7.	Skip meal	Yes	101	55	
		No	56	38	0.413
8.	Caffeine intake	Yes	153	87	
		No	4	6	0.181
9.	Physical Activity	Yes	75	60	
		No	82	33	0.013*
10.	Blood Pressure	Normal	122	83	
		High + Low	35	10	0.022*
11.	Anxiety	Yes	115	42	
		No	42	51	0.000**
12.	Daily working	? 8 hours	82	35	
	hours	> 8 hours	75	58	0.025*
13.	Work place	QPV	95	75	
		NCnV	62	18	0.001**
14.	Public dealing	Yes	126	75	
		No	31	18	0.940
15.	Work in	Yes	118	65	
	Vacations	No	39	28	0.363

*Significant, **Highly Significant, QPV= Quite, Peaceful & Ventilated, NCnV = Noisy, Crowded &Non Ventilated.

highest frequency (80%)among bankers & teachers & lowest frequency(48%) in doctors.Other researchers have mentioned estimated lifetime prevalence rate of 61%.[16,17,18] and headache severity related to job type, with legislators, senior officials and managers being most affected 19. We had 157 out of 250 subjects with headache which is similar to the findings of Rhee 16 where 144 out of 237 had headache.It is documented that about 80% of the patients were below 55 years of age in 1995 and 2008 Ethiopian and 2009 Pakistani studies which is coinciding with our results. The age specific frequency of headaches in this study 70.91% is in age group less than 40 years .This is indicative of young population and reproductive years.

We have found statistically non significant but more preponderance of headache in females70.45% versus males 61.17% which is coinciding with the findings of Castillo[20] A Brazilian study has estimated one year prevalence of any headache as 65.4%, more prevalence in females and less prevalence in the elderly and divorcee.[21] These findings are coinciding with our result.A positive family history of headache has also been documented as a major influential factor[22]. This is in agreement with our study as 76.47% of subjects with headache had a positive family history for headache. Strong and significant association of headache is mentioned in literature with specification that both smoking status and the nicotine content of the preferred cigarette adversely affects headache activity.[23,24] Recent epidemiologic research has confirmed the long-recognized interdependence of sleep and headache, and it has associated headache with a wide range of sleep disorders.. Among individuals with a predisposition to headache, episodes may be provoked by the dysregulation of normal sleep (eg, sleep loss, alterations in sleep/wake schedule) & sleep disorders.[25] Our findings indicate that less than 8 hours of sleep are associated with headache attacks. The frequency of migraine was observed in patients reporting fasting as a trigger and ranges from 40% to 82%.[26,27]A positive association between fasting and severe migraine was found by Chakravarty[28] however, a recent study has contradicted this association.[29] We had headache reported on skipping of meals with a frequency of 64.74%.Skipped meals operate by producing hypoglycemia & hypotension and may predispose to headache.Statistical analysis have identified alcohol and coffee consumption, smoking, neck pain, stress and physical inactivity as risk factors for headache.[30] This is in accordance to our findings.However caffeine intake was associated with headache non significantly while anxiety/ stress and physical inactivity significantly. Castillo20 have identified both female gender and increase intake of caffeine as factors associated with headache. Norwegian researchers have also documented that individuals who drink large amounts of caffeine tend to get more headaches than those with low consumption or people who never drink coffee and tea.[31]

A survey of 2673 patients enrolled in seven double blind, placebo-controlled studies of the effectiveness of irbesartan, an angiotensin receptor blocker, found that in the placebo group, there was a weak correlation between the prevalence of headache and the diastolic pressure, but no correlation with the systolic pressure. Also, active drug treatment was associated with a significantly lower incidence of headache (17% of treated patients vs. 22% of those receiving placebo). The authors concluded that headache is a feature of mild hypertension and that the aggressive reduction of blood pressure can reduce this symptom. It is stated thatabout 1 in 30 treated persons is benefited by having headache prevented.32 Low blood pressure also produces headache.[33]Among workers in the general population, long working hours were associated with the prevalence of headaches, and the association may depend on a lack of physical activity also.[34]We have found that equal to or less than 8 hours of daily working predisposed our subjects to headache. This could probably be because of more workload exposure in short period of time.In a nonspecific and unrecognized way, noise, crowdness& ventilation can generate an unsettling level of stress with profound influence on general health & can produce irritability, anger; headaches etc.[35]Our view was that occupations involving direct public dealing and making people work at vacations accounts for stress and anxiety. This has provenalthough non-significantly by our findings. Thus frequent and severe headache have a major impact on academic performance and quality of life, and may bring about limitation in daily activities and work.

CONCLUSION:

Frequency of headache is found to be high. Bankers and teachers were the most affected professionals. Age, family history, physical activity, both high & low blood pressure ,anxiety, daily working hours and work place are found to be associated with headache among people of various professions. Further studies are required with large sample size to evaluate and authenticate these associations in our population.

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COMMENTARY

OSPE In Pharmacology - Students Perspective

Mehtab Munir[1], Talea Hoor[2], Nasim Karim[3]

ABSTRACT

Students' perspective about OSPE was assessed in 2012. They responded on pre- examination arrangement, time allocation, number of stations; content, process, process explanation, quality of questions, marks allocation, faculty behavior, overall atmosphere and comments about OSPE experience and its comparison to conventional pattern. Student`s responses were graded as good (combining agree and strongly agree), poor (combining disagree and strongly disagree) or neutral. Of 102 students, ninety students (88%) responded to questionnaire at the end of all four examinations. 87.65% students found pre-examination arrangement good while 86.5% were happy with explanation of procedure. 89% felt faculty behavior satisfactory, 82.5% considered OSPE process smooth, 86% expressed satisfaction with quality of questions, 79.5% considered number of stations adequate, 86.75% believed time adequate, 87% concluded that content was adequately covered. 86.87% considered atmosphere conducive and 81.25% considered marks justified. Students' overwhelmingly found OSPE in Pharmacology an effective method of assessment.

KEY WORDS: OSPE, Students' perspective, Questionnaire, Structured viva, Module exam, Assessment

Bahria University Medical and Dental College (BUMDC) since its inception in 2008 has followed a modular curriculum for MBBS in all basic health sciences subjects. Students' learning objectives are designed for each of these modules separately. Multiple methods of assessment including MCQs are used to assess knowledge objectives while OSPE (Objectively Structured Practical Evaluation) cover laboratory skills. Curriculum planners of third year of Pharmacology department deviated from traditional practical assessment and developed OSPE with emphasis on interpretation & experimental skills both. All students started and ended at the same time

The term Objective Structured Practical Evaluation (OSPE) has been derived from Objective Structured Clinical Evaluation in 1975. Later it was extended to practical examination and modified by Harden and Gleeson. [1] The conventional method of practical assessment has fallen into disrepute because of its subjectivity that can affect the results. Also performance of a single experiment by the student cannot give the true picture of the outcome of individual competencies. [2] OSPE was developed to overcome these pitfalls, where students perform different tasks at different stations. [3] OSPE has also reported to test the mental attendance and students' attitude during time of practical demonstration and performance. [4] Moreover, OSPE is a reliable method that can discriminate between good and poor performers which is not possible with conventional method of examination. [5] OSPE also helps in integration of teaching and a variety of questions at different stations enhance students, interest.[6] OSPE is being increasingly used both in the developed world and developing countries like India and Nepal mainly due to benefits like objectivity and reliability. [7] If OSPE/OSCE is designed appropriately it can be useful for students to identify their own deficiencies and strategies to overcome them.[8] BUMDC has introduced three modules in one academic year. Each module consists of two Class Assessment Tests (CAT 1 and 2), and a final comprehensive modular assessment comprising of written and practical held on two separate days. OSPE has been conducted in BUMDC Pharmacology department since its inception in 2011. We tried to minimize the time of students spent in the examination process which therefore decreases the stress level of students without compromising on the quality of assessment. Student feedback is extremely necessary when introducing a new assessment practice as based on their comments further improvement of this practice is possible. Students were asked to complete a ten item questionnaire based on 5 point Likert scale at the end of each module and final professional exam 2012 after a verbal consent. [9]

A total of 102 students were divided into three practical groups A, B and C, each with 34 students and OSPE was held on three consecutive days. OSPE consisted of two circuits, first with 34 stations, that is, 25 working and 9 resting stations of 2 minutes duration. First circuit included questions relevant to the practical objectives of respective module printed in the students' study guide book. A team comprising of the faculty of pharmacology prepared a table of specification to ensure adequate coverage of content. The OSPE process was structured and all students started and ended at the same time. After a break of thirty minutes, the second circuit started and students experienced four interactive stations comprising of case based structured viva of 5 minutes duration. Percentages were calculated for each item.

Majority of students were of the view that OSPE involved greater coverage of the curriculum, a better opportunity to score marks as number of stations was ample and questions were focused. Moreover, this method decreased anxiety and examiners' bias as the group of students started and ended at the same time, and faced same

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questions. Stuents appreciated pre-examination arrangements like venue, seating which facilitated smooth flow between the stations. Similarly, prior to OSPE, the process was explained to students on number of stations, time duration and direction of movement for the stations. Pharmacology department faculty gave the instructions and guided students to avoid any chaos and mistakes. Students overwhelmingly expressed satisfaction with the tasks that were consistent with the module content, flow between different stations and time allocated for each station. These findings are consistent with the study done by Wani regarding students' perception of OSPE. They also calculated percentages of responses; however they organized their questionnaire into themes and had included comparison with the conventional method and OSPE as a learning tool. 10 Other researchers like Menezes through a ten item questionnaire based on five point likert scale also have reported that students were strongly of the view that OSPE tested a wider range of skills, and was a good form of examination as well as a learning experience. [11] Same was the finding of Shankar and colleagues. [12] Furthermore Zia-ud-din Medical University Karachi 5 CMH Lahore Medical College and Shifa College of Medicine, Islamabad have also concluded that OSPE is an effective assessment tool. [13, 14]

Classical OSPE as mentioned in literature requires ample space, greater number of faculty members, adequate technical support and more planning in terms of table of specifications and questions preparation. Also checking of papers by the faculty becomes a more laborious task. Classical OSPE also focus on integration of the basic sciences with the clinical sciences which create more interest of the subject among the students. [15] In our case integration with clinical sciences was lacking as the students were not accustomed to the practice; however clinical scenarios were used with a pharmacological perspective. Our cumulative results (as shown in Table 1) of all the four responses showed that 80% of the third year students were in favor of the OSPE pattern of examination. Students were happy with the pre- exam arrangements, quality of questions, coverage of syllabus and overall atmosphere in the exam. However students provided valuable suggestions on the flow between stations and the time given at each station. These few comments will guide us to refine our practice in future. For the former we will place more directional displays & for the latter we will increase the time to 3 minutes on each station.

We conclude that BUMDC third year MBBS students' found OSPE in Pharmacology, an effective assessment tool. Students seemed satisfied with this format, and their scores. The curriculum taught in medical schools throughout Pakistan is as per Pakistan Medical and Dental Council guidelines. However, remaining within these guidelines, BUMDC- Pharmacology introduced OSPE incorporating interpretation & experimental performance simultaneously as a method of assessment to evaluate students comprehensively, to increase students' interest due to relevance, to decrease bias and to eventually reduce stress and anxiety among students.

Table 1 Grading of Student`s Responses

S. No.	Items	Good	Neutral	Poor
1	Pre exam arrangements	87.34	6.67	5.95
2	Process explained	86.70	6.1	7.15
3	Helpful faculty	88.19	5.62	5.37
4	Smooth flow	81.71	9.16	7.68
5	Quality of questions	85.95	7.36	8.58
6	Adequate stations	79.90	12.5	7.66
7	Adequate time	87.31	7.27	21.26
8	Syllabus covered	86.78	7.77	5.88
9	Overall atmosphere	87.20	6.65	6.66
10	Allocation of marks	79	9.67	9.18

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CASE REPORT

Giant Parotid Tumor

Shaukat Malik[1], Khalid Ashrafi[2], Qaiser Sajjad[3]

ABSTRACT:
Malignant parotid tumors are uncommon tumors. Although pleomorphic adenoma is the commonest benign tumor of the parotid accounting for 65% of tumors but malignant tumors are also seen frequently in parotid gland. Normally these tumors are slow growing with a long history of lump in the parotid gland. The rapid growth phase in these tumors indicate malignant transformation. The involvement of facial nerve is a late symptom and denote advance stage. We are presenting a giant malignant tumor of the parotid gland measuring 22cm x 15cm in a lady of 50 years. To the best of our knowledge this is the biggest tumor reported so far in Pakistan.
KEY WORDS: malignant parotid tumor, rapid growth phase, adenoid cystic, giant long standing tumor

INTRODUCTION:

Most textbooks suggest that one in six parotid tumors are malignant. Some even quote higher figure. Tumors enlarge laterally producing a visible swelling. Malignant tumors may enlarge rapidly and facial nerve involvement is not uncommon. Carcinomas of deep lobe expand medially into the pharynx producing bulge and pushing tonsil and pharynx medially. The surgical anatomy of the parotid gland is complex, with the facial nerve growing through it dividing the gland into two unequal parts. Thus the concept of a superficial and a deep lobe is purely one of surgical anatomy. The commonest malignancy is the mucoepidermoid carcinoma followed by adenoid cystic carcinoma.

CASE REPORT:

We are presenting a case of Rashida Begum, a 50 year old female,who attended outpatient department of AbbasiShaheed Hospital with a huge mass right side of face, bleeding at places with multiple skin breeches. The patient was severelyanaemic and in pain. The history was long about 18 to 20 years. On clinical examination a giant, irregularly shaped, mulilobulated, mobile, fungating, bleeding tumor on right side of face was noted arising from parotid and hanging down onto the neck. The mass measured 22cm by 15 cm. The facial nerve was intact.

There was a previous history of surgery for a mass in right parotid area long ago. The patient had lost all the relevant record and only remembers that it was not a malignant tumor. Following that surgery, the patient remained symptom free for about ten years. Then she developed a small mass in the same area which gradually increased to this huge size in about six years.The bleeding from the mass about fourmonths ago months ago and pain about two months ago.

When the patient was seen in outpatient, she was severely anaemic with a Hb. of 2.7gms only. She was given multiple packed cell transfusions to raise the Hb. Along with high caloric diet. All other laboratory investigations were within normal limits.

C.T. scan revealed a tumor, 22cm by 15 cm, multi lobulated arising from right parotid area, involving the submandibular area, paraphryngeal space and abutting the paravertebral muscles and carotids with a fat plan in between. A large postauricular mass seen projecting from the main mass. Contrast C.T. showed enhancement showing high vascularity with large vessels entering the mass from the periphery.

Clinically the mass was mobile and not fixed to the deeper tissues. There was no intraoral extension or bulge, indicating that the tumor was arising from superficial part of the parotid. Larynx was within normal limits and there was no swallowing difficulty. The facial nerve was intact.

Multiple biopsies were taken and sent for histopathology which confirms it to a highly suspicious adenoid cystic carcinoma. As the adenoid cystic carcinoma spread through the peripheral nerves, the consent of the patient was taken for sacrifice of facial nerve. A total parotidectomy including facial nerve was done removing the skin involved with two cm safe margins.

DISCUSSION:

There is no universally agreed classification exists but overall parotid tumors can be divided into seven categories:

- Adenomas
- Carcinomas
- Non epithelial tumors
- Malignant melanoma
- Secondary tumors
- Unclassified tumors

If we look at malignant tumors, following histological types are seen in parotid gland.

1. Acinic cell carcinomas
2. Mucoepidermoid carcinomas
3. Adenoid cystic carcinomas
4. Polymorphous low grade adenocarcinomas

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5. Papillary cystadenocarcinoma
6. Mucinous adenocarcinomas
7. Carcinoma expleomorphic adenoma
8. Malignant mixed tumors
9. Squamous cell carcinomas
10. Undifferentiated carcinomas

Fig 1a: Bleeding tumor on right side of face

Fig 1b :Multi lobulated fungating tumor of parotid gland

Fig 2a: CT SCAN

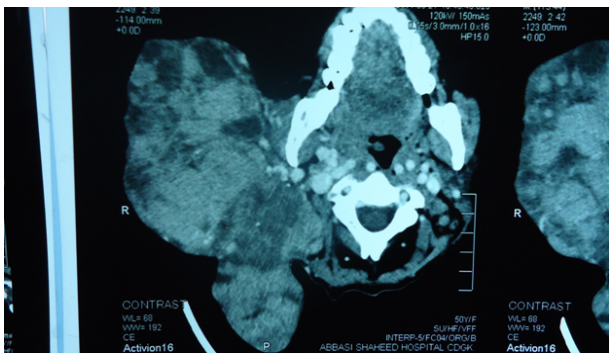
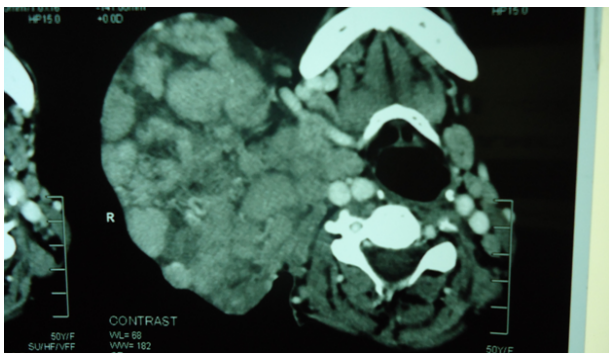


Fig 2b: CT SCAN



Acinic cell carcinoma is regarded as low grade malignancy and account for 15% of parotid malignancies. It gives the best survival rate for any salivary tumor and so facial nerve should be preserved at all cost. There is no justification for sacrifice of facial nerve in acinic cell carcinomas.

Mucoepidermoid carcinomas are the most common malignant tumors of parotid, and can be classified as low grade anf high grade. Low grades tend to be cystic while high grade tends to be solid in consistency, with areas of necrosis and heamorhage. In high grade tumors, lymph node metastasis occurs in three quarters of cases. So in high grade tumors a total parotidectomy is performed with neck dissection. Facial nerve can be spared if not involved.

Adenoid cystic is the most notorious malignancy and 41% are locally advanced at the time of presentation, with 11% having distant metastasis. This tumor is said to be never cured and the recurrence rate at 30 years is almost 100%. Lung metastasis is characteristic of this tumor. These tumors have a predisposition to invade and spread along the peripheral nerves and for this reason facial nerve is sacrificed with the tumor resection.

CONCLUSION:

Giant malignant tumors of the parotid are a rare entity and only few cases of this enormous size had been reported in world literature. The lack of proper medical facilities, lack of knowledge and negligence are the factors for such a huge tumor in third world countries.

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