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Annual ENT Check up of the Students in School; Time for Change in School Health Services

Iqbal Hussain Udaipurwala

Pakistan's has a population of over 183 million and it is the world's sixth-most-populous country¹. Pakistan's current urban population has expanded over sevenfold as compared to population in 1950. Nearly 36.7% of total population is under the age of 14 years¹. Health is vital for overall development of the child and also determines his/her ability to acquire knowledge and skill². Ear, nose and throat disorders are very common in pediatric age group and may affect his ability adversely. There is a lack of scientific data regarding the incidence and prevalence of these disorders in Pakistan but certainly these are the most common cause of consultation to a general practitioner. Socio-economic status, family background, overcrowding, and provision of health care facilities act as a risk factor for all ear, nose and throat problems.

The burden of morbidity due to ENT problem is also more during childhood but it can be prevented by early detection and proper intervention³. The most important among all ENT disorders in school going children is the hearing impairment⁴. A child himself or even his parents and teachers are unaware of this problem. In majority of the cases of hearing impairment, it is preventable by early intervention⁵. For example often children come in ENT with hearing impairment due to adhesive otitis media or atelactic ear drum as a result of long standing eustachian tube dysfunction which can be otherwise prevented easily just by early detection and timely treatment. The World Health Organization suggests that in developing countries, children should be screened at school entry by inspecting ear and hearing assessment by simple audiometer⁶. Recurrent respiratory tract infection, tonsillar hypertrophy, adenoid enlargement and undiagnosed foreign bodies are the other common problems in school going children.

The school health services exist only in some schools in Pakistan which is limited only in urban areas. Annual medical checkup of the students is usually done by a medical officer. ENT consultants or specialists are not involved in this medical checkup and this is the main reason that many ENT diseases are not detected in the early stages. Only few of the private schools in Karachi insist for private ENT check up of the students and submission of a medical certificate at the start of the session.

The author has performed an ENT check up of all students in a reputable school of Karachi and found astonishing and shocking results. This check up was arranged by the school management at the start of last academic year. A total of 1139 students were examined and only 31% of the students were found to be completely normal. Rest of the students were having some sort of ENT problem although most of them were minor and treatable conditions. Impacted wax in one or both ears was the most common problem found in around 38% of the students. The other common problem encountered were tonsillar hypertrophy, adenoid enlargement, otitis media with effusion, chronic suppurative otitis media, turbinate hypertrophy, septal deviation and spur etc. Interestingly two students were found to have foreign body in the ears although there was no history or complaint regarding this problem.

We strongly suggest that each and every school management should arrange ENT check of all students once in a year so that all preventable ENT diseases can be managed before it causes some serious morbidity. The school health services should be strengthened which needs a combined

efforts from both governmental and non-governmental organization. An ENT consultant should be involved in the annual medical checkup of the students. Rules and laws related with the implementation of school health services should be amended and strictly followed. The system of annual ENT checkup adopted by some private schools, should also be implemented in all schools especially schools run by the government. Proper implementation of school health services and health education will be very helpful in reducing prevalence of these ENT diseases. Health education can be promoted by arranging lectures by the health professionals in the school regularly and awareness programs in electronic and print media.

REFERENCES:

1. http://en.wikipedia.org/wiki/Demographic_of_Pakistan.
2. Kishve SP, Kumar N, Kishve PS, Syed MMA, Kalakoti P. Ear, nose and throat disorders in pediatric patients at a rural hospital in India. *Australian Medical Journal*, 2010, 3(12):786-790.
3. Gupta AS, Rum R, Islam F, Mukherjee S, Ram AK, Bhattacharya SK A study on clinico-epidemiological profile of ear, nose and throat diseases among patients aged 6 to 14 years attending the ENT OPD at MGM Medical College, Kishanganj, Bihar, India, *Global Journal of Medicine and Public Health*, 2012; 1(4): 13-17.
4. Maharajan M, Bhandari S, Singh I, Mishra SC. Prevalence of otitis media in school going children in eastern Nepal. *Kath. Uni. Med. J.*, 2006; 16: 479-82.
5. Rao Rs, Subramanyam MA, Nair MS, Rajashekar B. Hearing impairment and ear diseases among children of school entry age in rural south India. *Int. J. Pediatr Otorhinolaryngol.*, 2002; 64: 105-10.
6. World Health Organization (2006), Fact sheet. Deafness and hearing impairment. March 2006.

ENDONASAL SURGERY OF THE PARANASAL SINUSES AND THE ANTERIOR SKULL BASE

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Endoscopic Dacryocystorhinostomy: Experience at Sheikh Zayed Hospital, Lahore

Raheel Ahmad, Atif Rafique, Sarfraz Latif

ABSTRACT: **INTRODUCTION:** External dacryocystorhinostomy (DCR) has been the gold standard for treatment of blocked nasolacrimal duct. We evaluated results of endoscopic endonasal DCR in our institution. **OBJECTIVE:** The aim of the present study is to report the experience of the Otorhinolaryngology department of Sheikh Zayed Hospital Lahore in the management of the obstruction of the nasolacrimal system by endoscopic endonasal dacryocystorhinostomy (DCR). **SUBJECTS AND METHODS :** Retrospective descriptive study conducted in the department of ENT, Sheikh Zayed Hospital, Lahore from January 2008 to January 2011. All patients who were referred to ENT department for blocked nasolacrimal duct were assessed for inclusion in this study. Patients who suffered with history of sinonasal disease or previous surgery for obstruction of nasolacrimal system on same eye were excluded. **RESULTS :** Total of 67 patients were included, 48 were males and 19 were females, mean age was 59 years (range 32-79). All underwent endoscopic dacryocystorhinostomy. We encountered only minor complications, 4 patients developed hemorrhage, 1 preseptal cellulitis and 1 nasal adhesions. After a median follow-up of 6 months, 61 patients were completely symptom free, 4 were partially asymptomatic and treated conservatively and 2 did not show any improvement and required revision surgery. **CONCLUSION:** Endoscopic endonasal dacryocystorhinostomy (DCR) is now safer and better technique than conventional external dacryocystorhinostomy (DCR).

Key Words: Nasolacrimal duct obstruction, Dacryocystorhinostomy, Endoscopic.

INTRODUCTION: The usual causes of stenosis of the nasolacrimal drainage system are inflammation, trauma and congenital malformations¹. Surgery remains the only effective treatment, when other measures, such as unblocking through probes or a local massage over the lacrimal sac area have failed². Dacryocystorhinostomy (DCR) consists of creating a lacrimal drainage pathway to the nasal cavity to restore permanent drainage of the previously obstructed excreting system, through an opening normally made at the level of the lacrimal bone³. Classically; it has been performed by ophthalmologists using an external approach. However, the introduction of direct and angled endoscopes for paranasal sinus surgery and the refinement of endoscopic surgical procedures allow a complete intranasal exposure and surgical management of the lacrimal sac⁴. Endoscopic DCR is a new and effective indication for endoscopic nasal surgery, because of benefits which include: endonasal approach is more natural and avoids the sequelae of an external approach, having less surgical trauma, fewer postoperative complications and better anatomical accessibility and in most cases, a reduced surgical time and hospital stay⁵. The disadvantages of this technique are related to the use of specific instruments and to the technical difficulties of the endonasal route⁶. Endoscopic sinonasal surgery required specific training in the new anatomic region and a significant learning curve was observed in surgeons. Although at first the presence of an ophthalmologist may be necessary to help in channeling lacrimal canaliculi, any otolaryngologist can perform

the complete technique⁷. This retrospective descriptive study was done to assess the expertise, surgical outcome and complications of endoscopic DCR at ENT department Sheikh Zayed Hospital Lahore.

SUBJECTS AND METHODS: This study was carried at ENT department Sheikh Zayed Hospital Lahore. 71 patients who were referred from ophthalmology department with nasolacrimal duct obstruction (NLDO) were analyzed. Three patients having nasal pathology such as polyps, DNS, chronic sinusitis and previous DCR surgery on same eye were excluded from the study. In 1 patient endoscopic DCR was converted to external DCR, this left 67 patients in our study. All patients were subjected to endoscopic DCR and silicon tube was placed as a stent in all cases. Patients were discharged on day 1. Patients were seen at week 1, 3 and 6 at clinic to perform suction cleaning until complete internal healing. The silicone tube was removed 12 weeks postoperatively. Patients were regularly followed up to 6 months. The operation was classified as successful both by the objective demonstration of a patent nasolacrimal system through irrigation and relief of epiphora. The study was approved by the ethical committee of Sheikh Zayed hospital Lahore. Endoscopic endonasal DCR was performed under general anesthesia. After vasoconstriction of the nasal cavity, the head of the middle turbinate and the mucosa surrounding the lacrimal sac were infiltrated with a (lignocaine and adrenaline combination) local anesthetic. A surgical incision is made at the lateral nasal wall, antero superior to the insertion of the middle turbinate. The

posterior mucosal flap is elevated off the maxillary bone and the bone removed until the sac is exposed. Metallic lacrimal probes are passed medially through both canaliculi so as to tent the sac lumen. A silicone bicanalicular tube is then positioned and tied. All patients were given postoperative chloramphenicol and prednisone drops to the affected eye four times a day for a month as well as oral cephalosporin. Medication variation was only considered if the patient had a known allergy. Patients are encouraged to wash using nasal rinse to prevent crust formation.

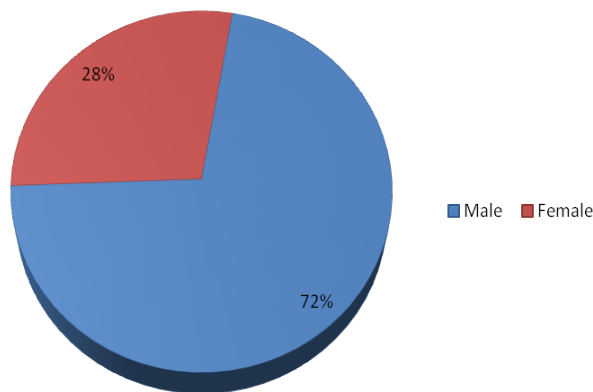


Figure 1: Gender distribution (n=67).

S/N	Complications	No. of Patients	Percentage (%)
1	Hemorrhage	4	6
2	Pre-septal cellulitis	1	1.5
3	Adhesions	1	1.5

Table 1: Post-operative complications noted after endo DCR procedure (n=67).

RESULTS: Out of total 67 patients in our study, 48(72%) were males and 19(28%) were females as demonstrated in figure 1. The mean age was 59 years (range 32-79). All patients underwent endoscopic DCR. Mean follow up period was 6 months. Out of 67 patients, 61 patients (91%) demonstrated primary surgical success, defined as decreased or absent epiphora and an adequately patent neo-ostium. In 4 patients (5.9%) complete patency of nasolacrimal duct was not achieved and managed conservatively, where as 2 patients (3%) did not show any improvement and they underwent external DCR and were symptom free. These results are elaborated in figure; 2. Table; 1 show the complications of endonasal DCR. Post-operative hemorrhage was successfully managed with nasal packing's in all cases. Pre-septal cellulitis was managed with intravenous steroids. Post-operative synchae was managed with adhenolysis and splint placement. **DISCUSSION:** External DCR surgery was regarded as the gold standard in treatment for nasolacrimal duct obstruction few years back. Direct visualization of the anatomy compared with a nasoendoscope is the main success factor for this approach. However, cutaneous scar and the potential for injury to medial

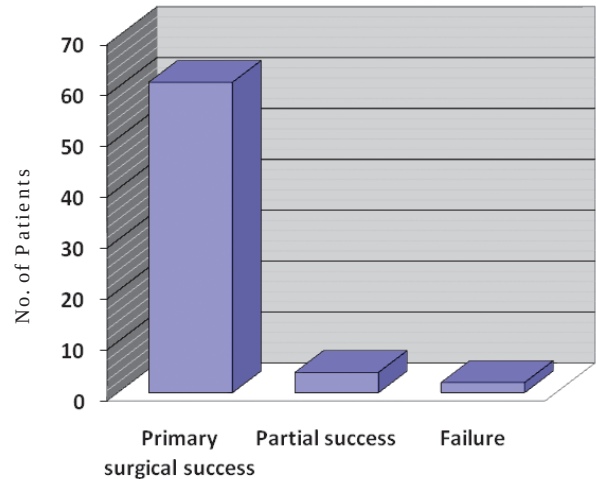


Figure 2: Surgical outcomes (n=67).

canthal structures, cerebrospinal fluid rhinorrhea and functional interference with the physiological action of the lacrimal pump are major drawbacks⁸. Although the endonasal approach was for the first time introduced by Caldwell in 1893, its use stayed limited due to difficulties in visualizing the endonasal structures during the operation⁹. The advancement of the operating microscope and later a rigid endoscope into the surgery stemmed interest for the endonasal approach¹⁰. The most important surgical difficulties with this technique are hemorrhage and nasal anatomical anomalies, which if present can be corrected in the same operation with the endoscopic technique. Among the most frequent difficulties are nasal polyposis, middle turbinate hypertrophy and septal deviation. Although a slight deviation of the septum is present in almost 25% of the population, the need for septoplasty prior to DCR varies from 0.3% to 30% in recent medical literature. The endoscopic approach allows diagnosis and management of associated conditions^{11,12}. Hence, patients with a concomitant nasal and paranasal disorder that may contribute to the nasolacrimal obstruction can be diagnosed and treated simultaneously if the endoscopic endonasal procedure is performed. In our series we excluded the patients with sinonasal pathology from our study so cannot comment on this aspect. The endoscopic approach has a reduced risk of interfering with the medial canthal tendon and physiology of the lacrimal pump mechanism. There is the advantage of no external scar, providing a desired cosmetic effect for patients. More importantly endoscopic endonasal DCR surgery has been shown to have earlier postoperative recovery time¹³. Our patients were discharged on same day with prompt recovery and early return to work. Complications of endoscopic endonasal DCR are low but can include re-stenosis of the opening, bleeding from the nasal cavity, orbital injury and corneal abrasion, or canaliculi erosion¹⁴. Serious complications including orbital and subcutaneous emphysema, retrobulbar hemorrhage, medial rectus paresis, and

orbital fat herniation are rare in the medical literature for both forms of DCR surgery¹⁵. In our study only 4(6%) patients developed hemorrhage, 1(1.5%) developed preseptal cellulitis and adhesions. None of the patients developed serious complications such as retrobulbar paralysis showing endoscopic DCR to be quite safe procedure. Out of total 226 patients who underwent endoscopic endonasal DCR in the Sonkhya retrospective case series, only two patients had complications of orbital fat prolapse and lamina papyracea damage. Both had no sequelae from this complication¹⁶. We found no serious complications in our study, with only four patients with postoperative hemorrhage requiring conservative treatment. In a case series of 115 patients, the success rates of external and endoscopic DCR were found to be 89.8% and 88.2%, respectively. A lower complication rate was observed in the endoscopic group, with minimal morbidity and shorter operative time compared with the external approach¹⁷. In our study primary surgical success was 91% which is comparable with this study. It is difficult to compare success rate for primary surgery between external DCR and the endoscopic endonasal procedures as there are few comparative studies¹⁸. Few studies have standard outcome measures, with some studies defining success as patency to irrigation with others concentrating on symptom resolution¹⁹. Guidelines published by the Royal College of Ophthalmologist suggest that lack of tearing 3 months after surgery is a good indicator of successful surgery. We have used these guidelines for patients with at least 6 months' follow-up time postoperatively. Our study included both objective patency results and subjective patient symptom measurements. Evidence for endoscopic dacryocystorhinostomy appears to be comparable to the "gold standard" external approach, with success rates ranging from 78% to 97%. Endoscopic DCR are more expensive to run initially, with high equipment costs compared with general ophthalmology used in external DCR². However, with shorter surgical times and use of local anesthetic in a day-surgery setting, these costs can be absorbed over time^{20,21,22}. The procedure is technically involved and can initially be difficult to learn. Experience with persons highly skilled with endonasal surgery and endoscopic techniques is imperative, and this can incur higher training costs only in the short-term. A learning curve of the endoscopic procedure was demonstrated in several studies. Onerci stratified according to experience of the surgeon and found high success rates of up to 94% with experienced surgeons, compared with inexperienced surgeons with success rates of only 58%^{9,10}.

CONCLUSION: Endoscopic DCR is a better alternative to external procedures in the management of nasolacrimal canal obstruction; it is a less invasive procedure, an efficacious method with a high success rate, fewer complications and good outcome.

REFERENCES:

1. Choi CJ, Jin HR, Moon YE et al. The surgical outcome of endoscopic dacryocystorhinostomy according to the obstruction levels of lacrimal drainage system. *Clin Exp Otorhinolaryngol* 2009;2:141-4.
2. Karim R, Ghabial R, Lynch TF et al. A comparison of external and endoscopic endonasal dacryocystorhinostomy for acquired nasolacrimal duct obstruction. *Clin Ophthalmol* 2011;5:979-89.
3. Saeed BM. Endoscopic DCR with stents: clinical guidelines and procedure. *Eur Arch Otorhinolaryngol* 2012;269:545-9.
4. Gu Z, Cao Z. Silicon intubation and endoscopic dacryocystorhinostomy: a meta-analysis. *J Otolaryngol Head Neck Surg* 2010;39:710-3.
5. Kupper DS, Demarco RC, Resende R, Anselmo-Lima WT, Valera FP, Moribe I. Endoscopic nasal dacryocystorhinostomy: results and advantages over the external approach. *Rev Bras Otorhinolaryngol*. 2005; 71:356-60.
6. Zenk J, Karatzanis AD, Psychogios G et al. Long-term results of endonasal dacryocystorhinostomy. *Eur Arch Otorhinolaryngol* 2009;266:1733-8.
7. Korkut AY, Teker AM. A comparison of endonasal with external dacryocystorhinostomy in revision cases. *Eur Arch Otorhinolaryngol* 2011;268:377-81.
8. Abdullah RA. A comparative study between Intubated and Non-Intubated DCR's in NLD obstruction. *Pak J Ophthalmol* Apr 2004;20(2):61-4.
9. Watkins LM, Janfaza P, Rubin PD. The Evolution of Endonasal Dacryocystorhinostomy. *Surv Ophthalmol*. 2003; 48:73-84.
10. Onerci M. Dacryocystorhinostomy. Diagnosis and treatment of nasolacrimal canal obstructions. *Rhinology*. 2002; 40:49-65.
11. Dietrich C, Mewes T, Kuhnennund M, Hashemi B, Mann WJ, Amedee RG. Long term follow up of patients with microscopic endonasal dacryocystorhinostomy. *Am J Rhinol* 2003;17:57-61.
12. Ben Simon GJ, Joseph J, Lee S, Schwarcz RM, McCann JD, Goldberg RA. External versus endoscopic dacryocystorhinostomy for acquired nasolacrimal duct obstruction in a tertiary referral center. *Ophthalmology*. 2005; 112:1463-68.
13. Taban M, Jarullazada I, Mancini R, Hwang C, Goldberg RA. Facial asymmetry and nasal septal deviation in acquired nasolacrimal duct obstruction. *Orbit*. 2011 Oct;30(5):226-9.
14. Azizur Rahman, Shahnawaz Channa, Jawaid Hassan Niazi, Muhammad Saleh Memon. Dacryocystorhinostomy without intubation with intraoperative Mitomycin-
15. Mir Zaman, Tariq Farooq Babar, Ayesha Abdullah. Prospective randomized comparison of Dacryocystorhinostomy (DCR) with and without intubation. *Pak J Med Res*. 2005;44(2):75-8.
16. Ghulam Sabir. Modified external dacryocystorhinostomy with silicon tube intubation. *J Rawal Med Coll*. 2010;14(1):26-7.
17. Sonkhya N, Mishra P. Endoscopic transnasal dacryocystorhinostomy with nasal mucosal and posterior lacrimal sac flap. *J Laryngol Otol*. 2009; 123:320-6.
18. Smith W, Merkonidis C, Draper M, Yung M. Endoscopic dacryocystorhinostomy in warfarinized patients. *Am J Otolaryngol Head Neck Med Surg*. 2006;27:327-9.
19. Geoffrey E. Rose. The Apparent Paradox of "Success" in Lacrimal Drainage Surgery OCULOPLASTICS AND ORBIT. *Essentials in Ophthalmology* 2006, Part 3, 51-59, DOI: 10.1007/3-540-29969-6_4
20. Yung MW, Hardman-Lea S. Analysis of the results of surgical endoscopic dacryocystorhinostomy: effect of the level of obstruction. *Br J Ophthalmol* 2002;86:792-4.
21. Raj Kumar Advani, Fiaz Mohammad Halepota, Syed Imtiaz Ali Shah, Wasif M Kadri. Comparative results of Dacryocystorhinostomy with and without silicon intubation. *Pak J Ophthalmol* 2004;20(1):29-34.
22. Malhotra R, Wright M, Olver JM. A consideration of the time taken to do dacryocystorhinostomy (DCR) surgery. *Eye* 2003; 17:691-6.

Mass Parapharyngeal Space – An Experience at CMH, Rawalpindi

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*****Zubair Khan, **Muhammad Farooq

ABSTRACT: **OBJECTIVE:** To review surgical approaches to parapharyngeal space and post operative histology of parapharyngeal masses. **STUDY DESIGN:** Descriptive study. **PLACE AND DURATION:** Department of ENT, Head & Neck surgery Combined Military Hospital Rawalpindi from January 2006-January 2008. **PATIENTS & METHODS:** Patients of any age and sex with radiologically confirmed parapharyngeal masses. **RESULTS:** There were a total of 14 cases included in this study; ten were managed by cervical, two by transparotid and two by mandibular swing. The commonest tumor was pleomorphic adenoma (57%), followed by schwannoma (14%), lymphoma (14%), craniopharyngioma (7%), and metastatic deposit (7%). **CONCLUSION:** Treatment of parapharyngeal masses is a challenge for the surgeon. We mostly employed the cervical approach because it needs relatively less dissection but it depends upon the size and site of tumor. Pleomorphic adenoma of the parotid gland remains the commonest tumor in complex anatomical space. Diagnosis is based on radiological evidence and cytological. **Key Words:** Parapharyngeal masses, Cervical route, Pleomorphic adenoma.

INTRODUCTION: Masses of the parapharyngeal space present a treatment challenge. Of the facial spaces of neck, the parapharyngeal space plays an important role in diagnosis and treatment of neck masses because of its central location and extension of tumour to and from this space^{1,2}. Parapharyngeal masses can be divided into three broad categories: congenital, infectious or inflammatory, and neoplastic etiologies. Most of the parapharyngeal masses are benign and include tumours of salivary gland other tumours less commonly neurogenic tumors and metastatic lesions are encountered³. Historically, the transoral approach has been used to excise smaller parapharyngeal lesions, but this approach is no longer used due to the inadequate exposure which led to a high rate of vascular injury, tumor spillage and local recurrence. Selection of approach dealing with parapharyngeal tumours is based on the need for exposure, the size of the lesion, and the nature of the lesion i.e. encapsulated vs infiltrating, or benign vs malignant³.

PATIENTS AND METHODS : This research project was carried out as a descriptive study in department of ENT & Head and Neck surgery, Combined Military Hospital Rawalpindi from January 2006 to January 2008. There were a total of seventeen radiologically confirmed cases of mass parapharyngeal space that presented to ENT OPD from January 2006 to January 2008. After relevant investigations it was decided that fourteen patients were to undergo surgical excision. Two patients were unfit for general anaesthesia and one refused surgery. Cervical approach was planned in ten, transparotid in two and mandibular split in two of the patients. Resected specimen sent for

histopathological examination. The patients age, gender, surgical approach and post operative histopathology report was recorded.

RESULTS: There were 9 males (64%) and 5 (26%) females in this study (Figure 1). Their ages varied from 31 to 57 years. Mean of the age was 41 years. Cervical approach was employed in 10 cases, transparotid in 2 cases and mandibular swing in 2 cases (Table 2). Histopathology reported as; pleomorphic adenoma in 8 cases (57%), followed by schwannoma in 2 patients (14%), lymphoma in two cases (14%), craniopharyngioma in 1 patient (7%), and metastatic deposit from nasopharynx in 1 patient (7%) (Table 1).

DISCUSSION: We employed the cervical approach in most of our cases. This is due to our experience with this approach and relatively less dissection as compared with other approaches. The approach entails the removal of the submandibular gland and thereafter it is relatively a blind dissection. Exposure can be increased by dividing the stylomandibular ligament. The most commonly encountered pathology was pleomorphic adenoma, which can arise from minor salivary glands in the parapharyngeal space or more commonly from congenital salivary rests. There were two cases of lymphoma and schwannoma. Histopathology of one patient revealed metastatic deposit of carcinoma nasopharynx, previously examination of the nasopharynx in the same patient did not reveal any abnormality. One patient had craniopharyngioma. Bass⁵ and Som⁶ divided approaches to parapharyngeal space into four groups, (i) cervical or submandibular approach, (ii) transparotid-cervical with or without angle

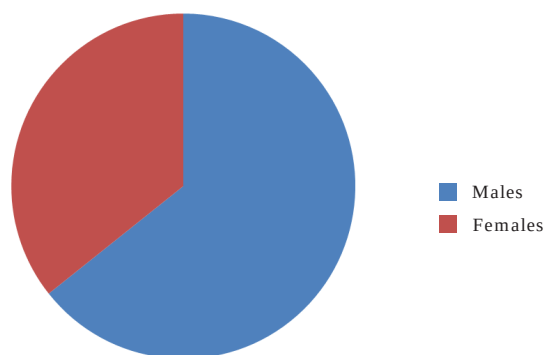


Figure 1: Gender distribution of Parapharyngeal masses.

S. No.	Para Pharyngeal Masses	Occurrence
1	Pleomorphic adenoma	8 (57%)
2	Schwannoma	2 (14%)
3	Lymphoma	2 (14%)
4	Craniopharyngioma	1 (7%)
5	Metastatic deposits	1 (7%)

Table 1: Frequency of para-pharyngeal masses.

S. No.	Methods	No of cases
1	Cervical	10
2	Trans-parotid	2
3	Mandibular Swing	2

Table 2: Methods employed.

mandibulotomy, (iii) cervical-transpharyngeal with midline mandibulotomy, and (iv) transmastoid-transcervical approach for jugular foramen lesions. The cervical or submandibular approach gives access to the parapharyngeal space through the submandibular space, and lesions arising from the minor salivary glands can also be removed using this approach. The transparotid-cervical approach provides exposure for facial nerve dissection and is used for tumours arising from the parotid. The cervical-transpharyngeal approach, also known as the "mandibular swing" utilizes midline mandibulotomy at the symphysis. Tracheotomy is mandatory in this procedure. With the hemimandible reflected laterally, wide exposure is afforded^{7,8,9}. In a retrospective study by Seth et al of 166 cases, histopathology showed that

21 (12.7%) were malignant, 145 (87.3%) were benign, 76 (45.8%) were vascular, and 69 (41.6%) involved the skull base. Transcervical techniques were used in all cases¹⁰. In an 18 years review of thirty one operated cases Kenney et al found that the commonest aetiology was a deep lobe of parotid tumour (44%), followed by neurilemmomas (18%), there was only one paraganglioma. The most common route employed was transcervical route¹¹. In a review of 23 cases by Allison et al the most common histological type (56.52%) was pleomorphic adenoma and the tumours were managed by transoral removal if small, or a combined transcervical approach if large¹².

CONCLUSION: Treatment of parapharyngeal masses is a challenge for the surgeon. Pleomorphic adenoma of the parotid gland remains the commonest tumor in complex anatomical space. Diagnosis is based on radiological evidence and cytological.

REFERENCES:

1. Cowan DL, Hibbert J. Acute and chronic infection of the pharynx and tonsil. In: Kerr AG, Hibbert J, editors. Scott Browns Otolaryngology. 6th ed. Butter worth-Heinemann 1977. 5/4/1 – 5/4/23.
2. Barry MT, Vijay MR, Flavius G. Imaging of the parapharyngeal space: anatomy and pathology. Crit Rev Diagnos Imag 1991;31: 315-56.
3. Michael M, Herman J. Temporal bone neoplasm and lateral cranial base surgery. In Cummings CW, Harker LA, editors: Otolaryngology- Head and Neck Surgery, St Louis, 2005, Mosby.
4. Jackson CG, Harris PF, Glasscock ME 3d, Fritsch M, Dimitrov E, Johnson GD, et al. Diagnosis and management of paragangliomas of the skull base. Am J Surg 1990;159: 389-93.
5. Bass RM. Approaches to the diagnosis and treatment of tumors of the parapharyngeal space. Head Neck Surg 1982;4: 281-9.
6. Som PM, Biller HF, Lawson W. Tumors of the parapharyngeal space: preoperative evaluation, diagnosis, and surgical approaches. Ann Otol Rhinol Laryngol Suppl 1981;90: 3-15.
7. Ammirati M, Ma J, Cheatham ML, Mei ZT, Bloch J, Becker DP. The mandibular swing-transcervical approach to the skull base: anatomical study. Technical note. J Neurosurg 1993;78: 673-81.
8. Biedlingmaier JF, Ord R. Modified double mandibular osteotomy for tumors of the parapharyngeal space. J Oral Maxillofac Surg 1994;52: 348-52.
9. Dubner S, Spiro RH. Median mandibulotomy: a critical assessment. Head Neck 1991;13: 289-393.
10. Seth M, Cohen MD, MPH *, Brian B. Burkey, MD, James L. Netterville, MD Surgical management of parapharyngeal space masses Volume 27, Issue 8, Pages 669 - 675 Published Online: 6 May 2005.
11. Kenny PP, Christopher H. K, How MT. Parapharyngeal space tumours: an 18 years review The Journal of Laryngology & Otology 2002, 116: 170-5.
12. Allison RS, Van der Waal I, Snow GB. Parapharyngeal tumours: a review of 23 cases. Clin Otolaryngol 1989;14: 199-203.

TEMPORAL BONE SURGICAL DISSECTION COURSE

April 07 - 11, 2014

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Morphological Evaluation of Thyroid Nodules on Ultrasound

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ABSTRACT: **OBJECTIVE:** To evaluate different morphological appearances of thyroid nodules by using high frequency 7.5 MHz ultrasound along with Doppler ultrasound to provide criteria to characterize the nodule as benign or malignant. **DESIGN:** Non-interventional, Descriptive Study. **SETTING:** Department of ENT and Radiology, Dow University of Health Sciences and Civil Hospital, Karachi. **DURATION:** January 2011 to June 2012. **PATIENTS AND METHODS:** All adult patients who underwent ultrasound imaging either with palpable or non palpable thyroid nodules, were included in the study. Cases of any gender, aged between 20 – 65 years, having symptoms of goiter with or without palpable lump or nodule, pain or abnormal thyroid profile were included in the study. Biopsy proven and treated cases for thyroid diseases were excluded from the study. Main outcome measures were, presence of the abnormal clinical, laboratory and ultrasonic findings. Sonographic findings that are suggestive of potential malignancy are, size, shape (taller than wider), hypoechogenicity, microcalcification, irregular or lobulated margins, presence of septae, and solid nodule. If any one of the above criteria was present it was considered as positive case for malignancy. In all such cases cytology and post operative histopathology were advised. Statistical analysis was done for descriptive purpose. Overall sensitivity, specificity, positive and negative predictive values of thyroid nodules, frequency and percentage analysis were carried out. **RESULTS:** Total of 85 patients were included in the study out of which, 56 (65%) were female and 29 (34.2%) were male. Palpable lump was observed in 70 (82%) patients, while other 08 (9.4%) had non palpable symptomatic lumps. In 07 (8.2%) patients, thyroid nodules were discovered incidentally on ultrasound neck for non thyroid ultrasonic examinations. Typical single solid nodules were observed in 35 (41%) patients, and 20 (23%) patients were with typical single cystic nodules. Multiple benign solid nodules were noted in 28 (21.1%) patients and in 02(2.35%) cases diffuse goiter was observed. Potential malignant features of shape and marginal irregularity, microcalcification, heterogeneity and type I and II abnormal flow were observed in 10 (11.7%) patients, while 20 (23%) patients had typical sonological features of malignancy, i.e., taller than wider, irregular, heterogeneity, mural solid nodules with abnormal vascularity of type III and IV. All thyroid nodules (n=85) were further assessed by cytology or post-operative histopathology. Out of 30 potentially malignant cases, 24 were true positive for malignant cells, and 06 were false positive. Out of 55 potentially non-malignant cases, 52 cases were true negative, and 03 cases were false negative. Overall Ultrasound sensitivity of morphological characteristics is estimated to be 88.8% (24/30) and specificity to be 89.6% (52/55). Negative predictive value is calculated as 94.3% (52/55) and positive predictive value of 80.6% (24/30). **CONCLUSION:** This study reflects that high frequency ultrasound is the alternative non-invasive modality to recognize benign and malignant features of thyroid nodules by their size, shape, margins, calcifications, solid mural nodules, septae and abnormal vascularity. Morphological characterization of thyroid nodule on ultrasound substantially reduce the number of unnecessary biopsies. **KEYWORDS:** Goiter, Doppler ultrasound, Histopathology, Neck lump, Thyroid nodule, Sonography

INTRODUCTION : A thyroid nodule is an abnormal growth or lump in the thyroid gland. These growths can be benign or malignant. Fluid filled cyst or solid masses presenting as single nodule or multiple nodules. High frequency ultrasound scanning is the imaging modality of choice for thyroid masses. It is possible to detect thyroid nodules, especially those which are not palpable or difficult to diagnose clinically and are discovered incidentally on neck ultrasound. Thyroid ultrasonography may be used to differentiate benign from malignant nodule on the basis of certain characteristics features on ultrasonography^{1,2}. Thyroid diseases are quite common, especially in those areas where iodine deficiency

is present. The reported frequency of malignancy in thyroid nodules is 5%. It is important to diagnose it early, as thyroid cancers progress slowly. With early treatment, prognosis is much better with high survival rate^{3,4}. With advancement and modification of ultrasound technology, rate of detection of thyroid nodules is increased^{5,6}. Different studies were carried out since late 90's to assess the relationship of different features of thyroid nodules and potential malignancy^{7,8}. American and European Thyroid Society of Radiologists have suggested different guidelines to mark benign or malignant thyroid nodules. These guidelines for thyroid nodule are still confusing^{3,9}. Few authors believe in

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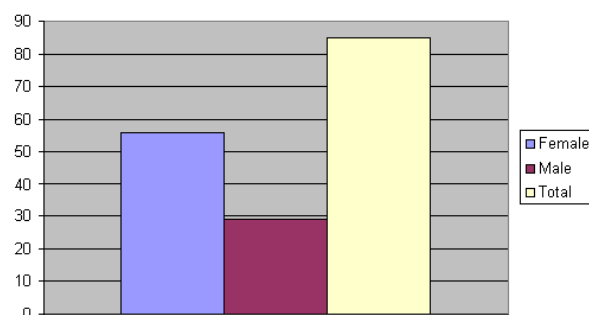
specific morphological pattern rather than individual or single feature to differentiate benign or malignant thyroid nodules^{10,11}. Ultrasound features indicative of malignancy are the presence of predominantly solid mass, hypoechogenicity, micro calcifications, abnormal nodular vascularity, irregular margins and internal septations¹²⁻⁴. Some investigators prefer combination of features rather than single feature¹¹⁻². Although combination of features and overlaps of findings between benign and malignant are also found in some studies^{6,15}. Sensitivity and specificity of ultrasound findings of thyroid nodule are also variable. In present study, we determined different morphological features of thyroid nodules on high frequency ultrasound by shape, size, margins, and numbers of nodules, presence of septae, hypoechogenicity, calcifications and abnormal vascularity. By combination of these ultrasonic features we can differentiate benign from malignant thyroid masses and recommend FNAC or biopsy in potentially malignant nodules only. This can reduce the number of unnecessary biopsies.

PATIENTS AND METHODS : This non-interventional, descriptive study was carried out at departments of ENT and Radiology of Dow University of Health Sciences and civil Hospital Karachi between January 2011 to June 2012. All adult patients of any gender between the age of 20-65 years with the complains of neck lump and / or Thyroid related swelling with or with out palpable nodules with abnormal thyroid profile referred from department of ENT or General Surgery to radiology for ultrasound neck, were included in the study. Biopsy proven thyroid lesion and treated cases for thyroid diseases were excluded from the study. Ultrasound of thyroid was carried out by high frequency 7.5 - 12 MHz Zario Toshiba machine with linear array transducer and Doppler study was performed with gray scale B mode. Ultrasound examination of neck was carried out after taking detailed clinical history, informed consent and giving brief description of the examination. It was carried out by experienced sonologist adopting departmental scanning protocol. Transverse and longitudinal real time imaging of thyroid gland were performed. Ultrasound appearances of thyroid nodule was observed for size, shape, margins, hypoechogenicity, numbers, internal architecture i-e septae, solid nodule, calcification. Assessment of vascularity of each thyroid nodule was carried out by color Doppler ultrasound. These were ranked from 0-4 as follows Type 0 no visible flow Type I as peripheral flow only Type II as predominantly peripheral with some central flow Type III as extensive internal flow with peripheral flow Type IV as central flow only,

On the basis of above findings thyroid nodules were potentially classified as positive or negative. If one or more features were suggestive of malignancy, the nodules were classified as positive. If a nodule had no suspicious features, it was classified as negative (benign). Statistical analysis was performed for mean age, sex preponderance of nodule, frequency of different appearances of thyroid nodules, its vascularity, ultrasonic features of potentially malignant thyroid nodules, FNAC or post-operative biopsy. Positive predictive and negative predictive values of thyroid nodules, frequency and percentage analysis of benign & malignant findings were carried out.

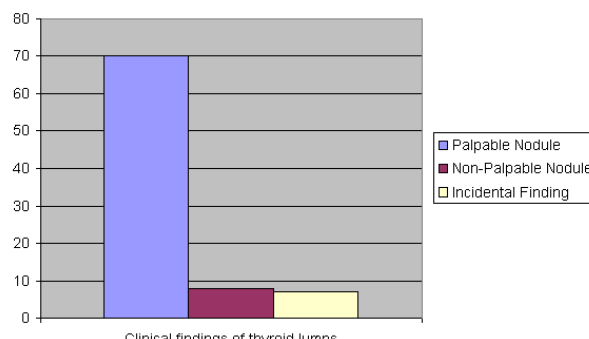
Sensitivity, specificity, Positive and Negative predictive values, and accuracy were calculated.

RESULT : Total of 85 patients were included in this study, 56 (65.8%) were females and 29 (34.2%) were males (Table & Figure-1). Palpable lump was observed in 70 (82.4%) patients, while other 08 (9.4%) had non palpable symptomatic lumps. In 07 (8.2%) patients, thyroid nodules were discovered incidentally on ultrasound neck for non thyroid ultrasonic examinations (Table & Figure-2). Typical single solid nodules were observed in 35 (41%) patients, and 20 (23%) patients were with typical single cystic nodules. Multiple benign solid nodules were noted in 28 (21.1%) patients. Potential malignant features of shape and marginal irregularity, microcalcification, heterogeneity and type I and II abnormal flow were observed in 10 (11.7%) patients, while 20 (23%) patients had typical sonological features of malignancy, i.e., taller than wider, irregular, heterogeneity, mural solid nodules with abnormal vascularity of type III and IV. (Table-3). All thyroid nodules (n=85) were further assessed by cytology or post-operative histopathology. Out of 30 cases 24 were true positive for malignant cells, and 06 were false positive (Table-4). Out of 55 cases, 52 cases were true negative, and 03 cases were false negative. Overall Ultrasound sensitivity for morphological characteristics is estimated to be 88.8% and specificity to be 89.6%. Negative predictive value is calculated as 94.3% (52/55) and



Female	Male	Total
56	29	85

Table & Figure-1: Gender Distribution.



Palpable Nodule	Non-palpable Nodule	Incidental Finding	Total
(70)	(08)	(07)	(100%)

Table & Figure-2 : Clinical findings of thyroid lumps.

Ultrasound Features		Frequency n=85	% (PERCENTAGE)
Shape	Taller than Wider	25	29
	Wider than Taller	40	47
	Round / oval	20	23
Margins	Circumscribed	37	36
	Microlobulated	26	30
	Irregular	22	25
Echogenicity	Cystic	20	23
	Solid	28	33
	Complex	37	43
Heterogeneity	Present	25	30
	Absent	60	70
No. of Mass	Single	37	43.5
	Multiple	48	56.5
Calcification	Coarse	30	35
	Micro	20	23
	Absent	35	42
Vascularity	Central	18	21
	Peripheral	45	53
	Absent	22	26

Table-3 : Morphological features of thyroid lumps on ultrasonography.

Type of Nodule	Ultrasound Doppler	FNAC/Histopathology
Malignant	30	24
Benign	55	61
Total	85	85

Table-4 : Comparison of Ultrasound findings and Histopathological findings (n=85).

positive predictive value of 80.6 % (24/30) with accuracy of ultrasound to be 89.4% (76/85).

DISCUSSION : Thyroid nodules are quite common in Pakistan, either as palpable or non palpable nodules. They may be discovered incidentally on high frequency ultrasound for other lesions of neck. Palpable nodules occur in 4-7% of population¹⁶. The prevalence of incidental discovery on sonography is 13-67%¹⁷. Most of the thyroid nodules are asymptomatic and the patient only complains of the presence of lump. It may be incidental finding of nodules on cross sectional imaging performed for other reasons⁸. Normally, the healthy thyroid gland shows homogeneous echogenicity when compared with the surrounding muscle. Most thyroid nodules show hypoechogenicity when compared with the thyroid parenchyma. But this comparison does not provide much useful information. Hypoechogenicity is marked when compared with strep muscle for consideration of malignancy, as strep muscles are uniformly present in all patients. Therefore, it is used as the comparative standard for the determination of the echogenicity of solid nodules^{1,12}. Micro-calcifications suggesting malignancy were defined as tiny, punctate hyperechoic foci which are 10- 100 µm sized, round- laminar crystalline calcified deposits, with or without acoustic shadows¹⁸.

In this study we evaluated different morphological features of thyroid lump by non-invasive, easily available and cost effective modality. This avoid unnecessary advanced imaging modalities and interventional procedure like FNAC and biopsy. In present study different morphological ultrasonic criteria were assessed, which include shape (taller than wider), margins (regular, irregular), hypoechogenicity, heterogeneity, number

(single, multiple), calcification (micro, macro or curvilinear) and vascularity (central, peripheral or both) on the scale of 0-4 as suggested in literature¹⁹. There is no single definitive criteria in the literature to label the lesion as malignant or benign. In a well defined, homogenous lesion with absent central vascularity, can be confidently reported as true benign nature of the disease and so avoiding FNAC or post operative biopsy.

On the other hand, tissue growing against the soft tissue planes and taller than wider lesion signify aggressiveness of the disease¹⁸. Cystic with mural nodule, type III or IV vascularity and micro calcification are highly suspicious of malignancy and require biopsy to confirm the nature of the disease and to plan further management. Indeterminate or equivocal lesions with heterogeneity and complex cystic masses with mixed pattern of vascularity, microcalcification and more hypoechoic nodules also need further evaluation by FNAC and post-operative histopathology. With availability of color Doppler ultrasound to assess the vascularity of thyroid nodule it has become established imaging tool to assess the malignancy on basis of vascularity and its grading. Many authors believe that vascularity has good sensitivity and specificity index, when reporting as potential malignancy². Sensitivity and specificity of vascularity of our study is comparable to other published studies^{19,20}. In our study overall sensitivity, specificity, positive and negative predictive values of the ultrasound criteria of thyroid nodules are calculated by standard formulae in conjunction with histopathology report. The overall ultrasound sensitivity of morphological characteristics is 88.8% (24/27) and specificity of 89.6% (52/58). Negative predictive value is 94.3% (52/55), while positive predictive value is 77.6% (24/30) with accuracy of 76/85 (89.4%). These figures are also comparable with reported study by M. Yunus et.al.²¹, where ultrasound sensitivity was calculated to be 92%, specificity of 73%, positive predictive value 65.7% and negative predictive value was 95.3%. This study described the frequencies of different ultrasound features, sensitivity, specificity, positive and negative predictive value and accuracy of ultrasound features in different thyroid nodules. These informations are utilized in the management plan that avoids unnecessary FNAC/ biopsies.

CONCLUSION : Ultrasound is sensitive, non-ionizing, easily available, simple and safe method to detect intrathyroid nodules. On the basis of different ultrasound features a thyroid nodule may be characterized as benign or malignant nodule. Although no single criteria is reliable but combined ultrasonic features help in predicting benign and malignant thyroid lesions. It saves economic burden and avoid unnecessary biopsies

REFERENCES:

1. Frates MC, Bencen BC, Charboneau JW, Management of thyroid nodules detected at US: Society of Radiologist in ultrasound consensus conference statement. Radiology 2005;237:794-800.
2. Marques E, Bencen BC, Frates MC. Usefulness of ultrasonography in the management of thyroid disease, Ann intern medicine 2000;133:696-700.
3. Chammass MC, Gerhard R, de Oliveira IR, Widman A, deBarros N, Durazzo M, et al. Thyroid nodules: evaluation with power Doppler and duplex Doppler ultrasound. Otolaryngol Head Neck Surg 2005;132:874-82.

4. Fukunari N, Nagahama M, Sugino K, Mimura T, Ito K, Clinical evaluation of color Doppler imaging for the differential diagnosis of thyroid follicular lesions. *World J Surg* 2004;28:1261-5.
5. Chan BK, Desser TS, McDougall IR, Weigel RJ, Jeffrey RB, Jr. Common and uncommon sonographic features of papillary thyroid carcinoma. *J Ultrasound Med* 2003;22:1083-90.
6. Iannuccilli DC, Cronan JJ, Monchik JM. Risk of malignancy of thyroid nodules as assessed by sonographic criteria: the need for biopsy. *J Ultrasound Med* 2004;23:1455-64.
7. Jun P, Chow LCM, Heffret RB. The sonographic features of papillary thyroid carcinomas: pictorial essay. *Ultrasound Q* 2005;21:39-58.
8. Frates MC, Benson CB, Doubilet PM, Prevalence and distribution of carcinoma in patients with solitary and multiple thyroid nodules on sonography. *J Clin Endocrinol Metab* 2006;91:3411-9.
9. Cooper DS, Doherty GM, Haugen BR, Management guidelines for patients with thyroid nodules and differentiated thyroid cancer. *Thyroid* 2006;16:109-142.
10. Reading CC, Charboneau JW, Hay ID, Sebo TJ. Sonography of thyroid nodules: a classic pattern, diagnostic approach. *Ultrasound Q* 2005;21:157-65.
11. Hegedus L. Thyroid ultrasound. *Endocrinol Metab Clin North Am* 2001;30:339-60.
12. Pappini E, Guglielmi E, Bianchini A, Risk of malignancy in thyroid Nodules: predictive value of ultrasound and color Doppler features. *J Clin endocrinol*: 2002;87:1941-6.
13. Nam Goong IS, Kim HY, Gong G. Ultrasound guided fine needle aspiration of thyroid incidentaloma correlation with pathological findings. *Clin endocrinol* :2004;60:21-8.
14. Khool ML, Witterik IJ, Freeman JL, Thyroid calcification and its association with thyroid carcinoma: 2002;24:651-5.
15. Wineck JR, Chong WK, Fielding JR, Zou KH, Mittelstaedt CA: Sonographic features of benign thyroid nodule: Interobserver reliability and overlap with malignancy. *J Ultrasound Med*: 2003;22:1027-31.
16. Tan G H, Gharib H. Thyroid incidentalomas: management approaches to nonpalpable nodules discovered incidentally on thyroid imaging. *Ann Intern Med* 1997; 126: 226-31.
17. Brander A E, Viikinkoski V P, Nickles J I, Kivisaari L M. Importance of thyroid abnormalities detected at US screening: a 5 year follow-up. *Radiology* 2000; 215: 801-6.
18. Hoang JK, Lee WK, Lee M, Johnson D, Farrell S. US features of thyroid malignancy: pearls and pitfalls. *Radiographics* 2007;27:847-65.
19. Nicola HD, Szegfeld J, Flavia A. Wolosker AMB, Souza LRM, Chiferi V. Flow pattern and vascular resistive index as predictor of malignancy risk in thyroid follicular neoplasms. *J Ultrasound Med* 2005;24:897-904.
20. Choi Y J, Yun J S, Kim D H. Clinical and ultrasound features of cytology diagnosed follicular neoplasm. *Endocr J*. 2009; 56: 383-9.
21. Yunus M, Ahmed Z. Significance of ultrasound features in predicting malignant solid thyroid nodules: Need for fine-needle aspiration. *J Pak Med Assoc*:2010 60; 10; 848- 53

Deformed Nose-Clinicopathological Correlation with Treatment Outcome: Case Series at Calcutta Medical College

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INTRODUCTION : Normal nose doesn't enhance the beauty of a person, but a deformed nose is greatly responsible for decreased facial cosmesis of the subject. Various etiologies of deformed nose are avoidable or can be corrected with minor procedures. Augmentation rhinoplasty could be defined as the method whose goal is to increase the dimensions of the nasal pyramid, both the dorsum and the tip. Different kinds of materials can be used for this purpose. The aim of this study is to report our experience with various techniques of septorhinoplasty, emphasising the type and nature of the grafts employed and the ensuing complications. Pathologic, physiologic, and esthetic problems are considered in the patient desiring and needing septorhinoplasty. Expertise in septorhinoplasty necessitates a methodology and planning of the surgery to bring the nose and face into good esthetic definition as well as satisfactory functional usefulness.

KEYWORDS : Autologous graft; secondary rhinoplasty; osteotomy; saddle nose.

OBJECTIVES : (1) The incidence of external nasal & septal malformations. (2) To evaluate the type of (a) Pyramidal deformities such as saddle nose, hump. (b) Tip deformity such as drooping, bulbous tip, polybeak. (c) Septal pathology.

(3) To assess preoperative grading of the deformities & the post operative outcome.

MATERIALS AND METHODS: Prospective longitudinal study was conducted in the department of ENT, Medical college and hospital, Kolkata from January 2006 to December 2009. Inclusion criteria: Patients attending OPD with various external nasal & septal deformities Exclusion criteria: All patients with neoplastic conditions. Following parameters were used in our study (i) Demographic profile (ii) Patients Complaint (iii) Relevant past history (iv) Pre-operative analysis in details with photography (v) Diagnostic nasal endoscopy for assessment of nasal airway (vi) Post operative evaluation with photography. Following surgical methods were used: external & internal approach through following incisions intercartilaginous / transcartilaginous / marginal / rim/ transcolumellar incisions; followed by skeletonization; separation & correction for augmentation /hump removal / tip / crooked. Augmentation materials used are bone grafts from bone- iliac crest, mastoid; cartilage grafts from septal - conchal, tragal as struts/shields; vascular pedicle flap reconstruction of external nasal injury

RESULTS : 45 primary cases with 10 revision cases were included in our study. These revision procedures were done as adjunct to Wright's one step theory of nasal esthetic improvement (40%), as sequel to post operative complication (50%) in our institute, and (10%) outside our institute. Trauma (68%) heads the list among the etiology of deformed nose of which RTA and blow to the nose account for the majority of cases. Other less common causes include idiopathic origin, preexisting disease (atrophic rhinitis), iatrogenic (perforation and supra tip

deformity). These findings are consistent with the study conducted by Beekhuis⁴ et al which reveals mechanical and surgical trauma to the nose, fractures, septal hematoma, and racial features are the primary causes of saddle nose deformity; the incidence is increasing as fractures from high-speed automobile accidents increase. Age, sex distribution reveals preponderance of males in the 2nd and 3rd decade with male: female ratio turning up to be 2.6. Less number of studies are being done relating the demographic profile. One such study in the Slavic group⁵ states that females outnumbered males by the ratio 17:1. Also, one study by Takashi⁸ et al in Japan reveals 95% of rhinoplasty patients as female. These studies contradict our results. More male patients in our study reflect the active outgoing working age group suffering nasal deformity. The upper 2/3 nasal deformity (72%) involving bony and cartilaginous dorsum include deviated/ crooked/ saddle/ widening/ hump/ supratip deformity in our series of which crooked and saddle deformity accounts for the majority (28 and 24%, respectively). The lower 1/3 tip deformity (52%) encountered comprises of bulbous/ retraction/ droop/ flare/ injury-columella, tip, dorsum/ upward rotational tip deformities, of which bulbosity, drooping, and tip dorsum injuries forms the bulk. No literature determining the site of deformity is available. It is noted that augmentation and septoplasty are the most performed procedures (64% each), followed by surgery for crooked nose, reduction procedures and tipplasty (36, 28 and 16% respectively). We have resorted to closed technique in 48 % of cases and open technique in 20% of cases; the rest are attributed to reconstructive procedures 8% and correction of deviated septum. Osteotomies have been performed in 68% of patients and lateral osteotomy has been done in majority of cases (56%). In the field of augmentation rhinoplasty, many kinds of materials, such as bone, septal cartilage, ear cartilage, and prostheses were used. But, we used only autologous

materials. Augmentation was done in 44% of cases and the materials used were conchal cartilage (53%), septal cartilage (17%) and iliac crest bone (30%). Takashi⁸ et al in their study states the advantages of ear cartilage as implant material. As it is autologous, so rejection never occurs; it is strong against infection. In terms of disadvantages, compared with insertion of prosthesis, the operative procedure is difficult and lengthy. In addition, graft resorption sometimes occurs. But, in our short follow up period, none of the patients had graft absorption. They inferred that the use of ear cartilage is the best procedure as compared with other materials for Japanese augmentation rhinoplasty. Among complications, we have come across infection, septal dislocation, dislocation bone of dorsum, wide dorsum and valve obstruction with a total incidence of 16% which is a little bit higher than the 10% international standard. The most common complication is widening of the dorsum (15%) which required revision in second sitting in a single case with revision osteotomy; the rest resolved over time signifying post operation inflammation. Dislocation of bone graft (8%) in augmentation rhinoplasty required revision in these cases of saddle deformity. Recurrent dislocation of septum occurred in 8% of cases requiring surgery in a single case. Infection (8%) involved osteomyelitic change over iliac crest graft site and infected cyst over nasal dorsal bone graft site. Valve obstruction was observed in a case of nasal reconstruction with supratrochlear forehead flap which was later removed following nasal tip reconstruction. Thus, among complications, 38.5% were corrected by surgical procedures and the rest conservatively. In the study by Takashi⁸ et al, analysis of 51 complications revealed the following: malposition was the largest, totaling 42 patients, and needed a minor repair operation later; local infection occurred in 6 patients, but was treated conservatively using antibiotics and healed within 2 months. As for the outcomes, we have taken into the functional and aesthetic aspect of the patient. Functionally 72% of the patients are satisfied, 32% are indifferent and none dissatisfied. Whereas the satisfaction rate, in terms of aesthetic outlook, is 68%; dissatisfaction 12% and indifference 20%.

CONCLUSION : This longitudinal study for four years as a series of cases based on study of different septorhinoplastic problems was done with a set of objectives and aims. Trauma is the most common cause resulting in nasal deformity and urgent intervention may avoid full rhinoplastic procedure later. The ideal graft, which exists only as a concept, would be the one combining biocompatibility, a low complication rate and results that remained stable for a long time. At present, autologous cartilage, and more precisely conchal cartilage, is still the first option for augmentation rhinoplasty. Dislocation of the augmented material is the commonest complication and will improve with our experience. Proper pre-operative counseling of the patient is mandatory. Nasal dorsum reconstruction requires the knowledge of different methods and surgical procedures, as well as the use of different types of grafts according to the needs of each patient.

REFERENCES:

1. Hwang PH, Maas CS, 1998 Correction of twisted nasal deformity: a surgical algorithm using the external rhinoplasty approach .Am J Rhinology May –June; 12(3):213-220.
2. Byrd HS, Hobar PC. 1993; Rhinoplasty: a practical guide for planning. Plast Reconstr Surg. 91(4):642.
3. Wolfgruber H. 1985. Correction of saddle nose.Laryngol Rhinol Otol. Feb; 64(2):81-88.
4. Beekhuis, G. J. (1974), Saddle nose deformity: Etiology, prevention, and treatment; augmentation rhinoplasty with polyamide. The Laryngoscope, 84: 2–42.
5. Igor Niechajev et al Ethnic Profile of Patients Undergoing Aesthetic Rhinoplasty in Stockholm Aesthetic Plastic Surgery Volume 21, Number 3, 139-145.
6. Niechajev I et al Ethnic profile of patients undergoing aesthetic rhinoplasty in Stockholm Aesthetic Plast Surg. 1997 May-Jun;21(3):139-45.
7. Benito Vilar Sancho et al Use of Septal Cartilage Homografts in Rhinoplasty Aesthetic Plastic Surgery Volume 24, Number 5, 357-363.
8. Takashi et al Augmentation Rhinoplasty: Observations on 1200 Cases Plastic & Reconstructive Surgery January 1991 - Volume 87 - Issue 1.

Coin Impaction at Upper end of Esophagus; Wait or Intervene

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ABSTRACT: **OBJECTIVE :** To document logical management of coin impaction at upper end of esophagus. **STUDY DESIGN:** Prospective, observational. **PLACE & DURATION OF STUDY.** This study was done in two centers, PNS Shifa, Karachi and Combined Military hospital Quetta from August 2009 to December 2010. **PATIENTS AND METHODS:** 83 children with history of coin impaction at upper end of esophagus were included after radiological evidence of impaction at upper end of esophagus. Rigid endoscopy under general anesthesia was planned in every case. Prior to endoscopy, base line investigations done and patients were kept nil by mouth for six hours. Just before endoscopic intervention repeat X-ray neck & chest was done in every patient to see the latest location of impacted coin. **RESULTS:** There were 53 boys and 30 girls. Age varied between 2 to 6 years. Five rupee coins impacted in 37(44.57%), two rupee coin in 24(28.91%) and one rupee coin in 22(26.50%). Size of five rupee coin in millimeters is 25, two rupee coin 22 mm and one rupee coin is 20 mm. 4 five rupee coins, 9 two rupee coins and 15 one rupee coins spontaneously passed from esophagus to stomach within 06 hours. **CONCLUSION:** Chances of coin impaction is directly proportional to its size and inversely with the age of child. An impacted coin, 20 mm or below in size must be given a chance for at least 6 hours to pass spontaneously. **Key Words:** Coin impaction, Foreign bodies esophagus, Spontaneous passage of coin, Esophagus.

INTRODUCTION: The history of coin impaction in esophagus is as old as invention of first coin " Lydian electrum trite" in 600 BC. Presently a vast variety of coins of different sizes ranging from 4 mm to 85 mm are in use all over the world. Three varieties of coins being used in Pakistan. These coins price as five, two and one rupees. Although a coin impaction is least complicating and easy to handle emergency, yet it creates a lot of panic among parents. A tactful and good doctor has to treat kid and council parents. Coin is the commonest foreign body in children and its documented incidence is 5 %¹. More than one coin impaction in same child at same site or different sites in esophagus is a rare happening and few have been reported². Out of three anatomical potential sites for impaction, most coins (70 %) stuck up at upper end of esophagus. Generally, impacted foreign bodies in esophagus are not life threatening these days and reported deaths in America is one in five hundred .In case of coins it is lower than this³. During 1900s fatality was more than 50% .Most of the coins impact during first decade of life and age in more than 60 % cases is four years or below^{4,5}. Dominant signs and symptoms of impaction are dysphagia, increased salivation, vomiting and regurgitation. A thorough history coupled with plain radiography is sufficient to diagnose all coins and most of other foreign bodies. Good quality metal detectors are useful and economical recent tools for diagnosing and tracking metallic foreign bodies. These metal detectors, as screening tool have been recommended by American Society for Gastrointestinal Endoscopy⁶. We have multiple options to remove a coin like rigid endoscopic removal, fiberoptic endoscopic removal, balloon catheter removal, and conservative management to wait for spontaneous

passage. The rigid endoscopy still remains the gold standard for removing any foreign body⁷.

PATIENTS AND METHODS: This study was conducted simultaneously in two centers, PNS Shifa Karachi and Combined Military Hospital Quetta. 83 cases were included in this study (64 patients in PNS Shifa Karachi and 19 patients in Combined Military Hospital Quetta) over a period of sixteen months. Every patient reporting with history of coin ingestion, was immediately subjected to plain radiography of neck and chest obtaining both Antero posterior and lateral views. Patients with radiological evidence of coin impaction at upper end of esophagus were included in the study and admitted for planned rigid therapeutic endoscopy. Every patient was kept nil by mouth for 6 hours and closely monitored for vitals and signs of complications like choking, pain and vomiting. Mean time patient was prepared for general anesthesia after completing base line investigations. Next of kin was taken in confidence after detailed counseling. Informed consent was taken in every case. Few minutes before endoscopy, X-Ray was repeated in every case to see the latest location of impacted coin. Rigid endoscopy under general anesthesia was the method of removal in our study. After removing the coin second look esophagoscopy was performed by senior available consultant. Every patient remained nil by mouth till fully conscious and clearance of X-ray findings. **RESULTS:** Out of total 83 cases 53(63.85%) were boys 30(36.15%) were girls. Mean age of patients were four years. Five rupee coin was impacted in 37 (44.57 %), Two rupee coin in 24(28.91%) and one rupee coin in 22(26.50 %) as shown in figure 1 & 2. On getting repeat plain radiography just before shifting the patient to operation theater for rigid endoscopy under general



Figure 1 : Pakistani coins of rupee one, two & five.

anesthesia, Out of 37 five rupee coin impactions only 4(10.80%) got spontaneous passage within 06 hours, out of 24 coins of two rupee impactions 9(37.5 %) had spontaneously passed within 6 hours and out of 22 one rupee impactions 15(68.18 %) had spontaneously passed into stomach within 6 hours as shown in figure 3. Age of patients in 67(80.72 %) impactions was under 4 years. In our study no impaction at upper end of esophagus was seen under one year and over six years of age. All 83 patients were asymptomatic on admission and remained symptom free till removal by endoscopy after six hours.

DISCUSSION: Conventionally foreign bodies of esophagus are divided as true foreign bodies and edible foreign bodies. Common true foreign bodies are coins, metallic buttons, plastic items, battery cells, common pins, safety pins and variety of toy parts and school items. Among true foreign bodies coin is the commonest foreign body of esophagus. In our study male dominance of coin impaction closely matched with most of previous studies. In this study there was not a single case having two or more coins in the same patient. This does not negate the importance of second look esophagoscopy after removal of coin during endoscopy because medical

literature has documented two or more coins in the same patient at same site as well as at other sites of anatomical constrictions in esophagus. Double and triple coin impaction in same patient at same location have been documented in few studies and case reports^{2,8}. Management of coin impactions in our study was not at all difficult and all endoscopies were rigid without a single complication but the justified panic of the parents of kids is very difficult to control and one needs a special counseling session for making them wait for six hours. Even after spontaneous passage of coin into stomach anxiety of parents never fades away and it needs repeated reassurance and radiograph. We observed all our cases who had spontaneous passage of coin into stomach for minimum 24 hours. There was not a single complication and all the coins passed from stomach safely. Previously documented safety of such like cases is 80 %⁹. Although this is generally agreed that chance of coin impaction is directly proportional to its size and inversely to the age of child, yet there are many unanswered and debatable questions on the topic of coin impaction and its management like which coin size is risky and what should be the criterion to wait for spontaneous passage? On completion of our study we are confident to document that a coin below 20 mm in size must be conservatively treated for about 6 hours awaiting spontaneous passage and coins above this size rarely pass spontaneously and need endoscopic removal. Obtaining second x-ray just before operation in coins above 20 mm in size is wasting of time and economy. Another research on this issue supports our study concluding that size of most impacted coins at upper end of esophagus is between 22 to 26 mm¹⁰. Certain studies recommend, a asymptomatic child with impacted coin irrespective of coin size must be given a chance for spontaneous passage of coin for two to five hours¹¹⁻¹³. Our study is conflicting with this recommendation because only 4 five rupee coins out of 37 (10.80%) with size of 25 mm could pass spontaneously and 15 one rupee coins out of 22 (68.18%) with a size of 20mm passed spontaneously within six hours. A logical approach is recommended in various studies, performing immediate endoscopy in those cases who are symptomatic (pain, vomiting, choking, excessive regurgitation and restlessness) and wait for spontaneous passage in rest

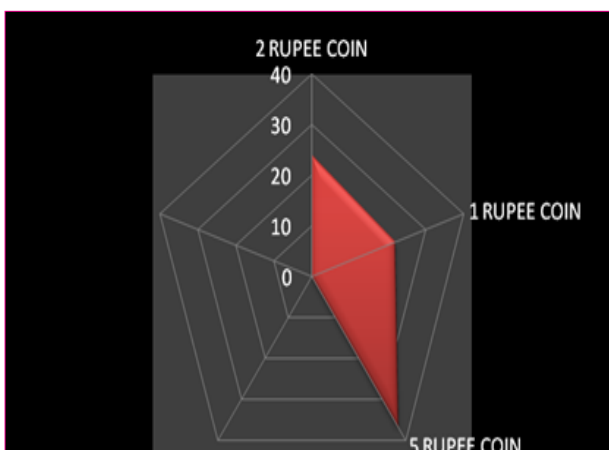


Figure 2 : Type and number of coin impactions.

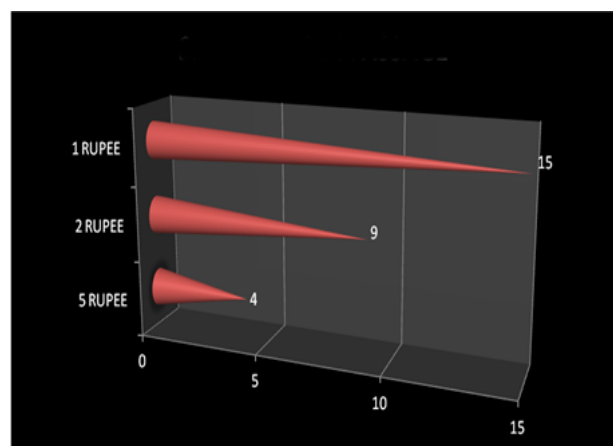


Figure 3 : Spontaneous passage.

coin impactions¹⁴. We agree that chance of spontaneous passage of a coin after impaction at upper end is less as compare to mid and lower esophagus¹⁵ but at the same time we must not forget that age of child and size of coin are the decisive factors for its spontaneous passage. Not mentioning the size and initial coin location, cases with a single coin impaction have 28% documented spontaneous passage¹⁶. In our study 77.27% spontaneous passage in coins with a size of 20 mm and only 5.40% spontaneous passage in case of coin above 24 mm in size clearly concludes that size of coin plays major role in its spontaneous passage or impaction. A never ending controversy still exists in terms of the best method of removal of coin and other foreign bodies. Rigid endoscopy was used by Jackson and Jackson in 1937. It is still most commonly used and is time tested. Fiberoptic option was first time used by Morrissey in 1972¹⁷. Bonadio used dilators to push the coins in to stomach¹⁸ and Bigler in 1966 reported using Foley catheter technique of removing blunt foreign bodies. In recent past a two center study has come up with a least invasive technique of removing coins from upper end of esophagus showing 96.4% success rate and average time of removal is 33 seconds using Magill Forceps¹⁹. These days mostly fiberoptic and rigid endoscopy is in practice. In our opinion rigid endoscopy is an ideal technique.

CONCLUSION: In the light of our study, we believe that doing a second X-ray and keeping a patient nil by mouth for so long in case of an impacted coin with a size more than 20 mm is wasting of time and economy. These should be removed as early as possible. It is strongly recommended that a coin below 20 mm size should be conservatively managed at least for six hours to allow likely spontaneous passage and if coin is still impacted on repeat X-ray after six hours, go for endoscopic removal. If possible medical authorities may please advise the Government to redesign the coin sizes. This will surely reduce the incidence of coin impactions and save the hospital economy. Print and electronic media can be used to educate the masses about the hazards of coin handling by kids.

REFERENCES:

1. Connors, GP II, Chamberlain JM : Weiner PR. Pediatric coin ingestion. A home based survey AM J Emerg Med,1995;13:638-40.
2. Upadhyaya EV, Srivastava PT, Upadhyaya VD, Gangopadhyay AN, SP Sharma, Gupta DK, Zaheer Hassan: Double coin in esophagus at same location and alignment-A rare occurrence: A case report. Cases Journal, 2009, 2 :7758.
3. Ratcliff KM. : Esophageal foreign bodies. American family physician, 44; 3:824-31.
4. Saki N, Nikakhlagh S, Farnaz Safai, Peyvasteh M. Esophageal foreign bodies in children. Pak J Med Sci, 2007. 23; 6 854-6.
5. Al-Qudah A, Daradkeh S, Abu-Khalaf M. Esophageal foreign bodies. UR J Cardiothoracic Surg, 1998;13:494-8.
6. Connors G.P. Diagnostic uses of metal detectors. A review tracking swallowed coins. Int J Clin Prac, 2005;59(8):946-9.
7. Khan C, Hameed A, Choudhry AJ, Management of foreign bodies in esophagus. J Coll Physicians Surg Pak, 2004;14(4):218-20.
8. Cutajar J, Astl J, Borg C, Radiologically aligned triple coin impaction in upper esophagus-The value of second look esophagoscopy. International journal of Pediatric Otorhinolaryngology, 2010;24:44-6.
9. Vijaysadan V, Perez MDM, Kuo D. Revisiting swallowed troubles: Intestinal complications caused by two magnets? A case report, Review and proposed revision to the algorithm for the management of foreign body ingestion. J AM Board Fam Med, 2006;19(5):511-6.
10. Tander B, Yazici M, Rizalar R, Ariturk E, Ayıldız SH, Bernay F: Coin ingestion in children, Which size is risky? J Laparoendosc Adv Surg Tech A, 2009;19(2):241-3.
11. Barclay. Conservative management appropriate for coin ingestion. Pediatr Radiol, 2003 ;33:859-63.
12. Hodge D.I.I.I, Tecklenburg F, Fleisher G: Coin ingestion: Does every child need a radiograph? Ann Emer Med 1985;14:443-6.
13. Schunk J.E; Corneli H, Botle R : Pediatric coin ingestion :A prospective study of coin location and symptoms. Am J Dis Child, 1998;143:546-8.
14. Waitzman ML: Management of esophageal coins. Curr Opin Pediatr, 2006;18(5):571-4.
15. Brayer AF, Connors GP, Ochsenschlager DW: Spontaneous passage of coins lodged in upper esophagus. Int J Pediatr Otorhinolaryngol, 1998 1;44(1):59-61.
16. Soprano JV, Fleisher GR, Mandl KD: The spontaneous passage of coin in children. Arch Pediatr Med, 1999;153(10):1073-6.
17. Morrissey J.F: Progress in gastroenterology. Gastroenterology, 1972;62:1241-67.
18. Bonadio W.A, Jona J.Z, Glicklich M, Cohen R: Esophageal bougienage for coin ingestion in children. J Pediatr Surg, 1998;23:917-25.
19. Cetinkursun S., Sayan A., Demirbag S., Surer I., Ozdemir T., Arikan A: Safe removal of upper esophageal coins by using Magill forceps. Two center 'experience. Clinical Pediatrics, 2006, 45(1):71-3.

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Frequency of Cervical Metastasis in Oral Cancer

Danish Ur Rahim, Atif Hafeez Siddiqui, Zeba Ahmed, Muhammad Saleem Marfani

ABSTRACT: OBJECTIVE: To determine the frequency of cervical metastasis and involvement of neck node levels in different sites of oral cavity cancer. **STUDY DESIGN:** Non interventional. **Description.** **DURATION:** August 2007 to July 2010. **SETTING:** Department of ENT-Head & Neck Surgery DMC & CHK. **PATIENTS & METHODS:** A descriptive case series was carried out in ENT department, Dow University of Health Sciences & Civil Hospital Karachi. Sixty patients of biopsy proven oral squamous cell carcinoma (SCC) with or without palpable neck node(s) admitted in department of ENT CHK, were included in the study. Demographic data & personal information of the patients were recorded in a proforma which included the record of histopathological confirmation of cervical metastasis after neck dissection for neck metastasis along with involvement of neck level(s) for different sites of oral cavity cancer. **RESULTS:** Cervical metastasis of oral SCC was present in 33.33% cases. Level I (99.98%) and level II (83.33%) were commonly involved neck levels in buccal SCC. Similarly level I (50%) and level II (75%) were also commonly involved in tongue SCC while cervical metastasis was absent in lip and alveolar SCC. **CONCLUSION:** This study indicates that an elective neck dissection may be performed on a near routine basis in oral SCC.

Key Words: Oral cavity, Squamous cell carcinoma, Lymph node metastasis, Neck dissection, Neck node levels.

INTRODUCTION: Oral cancer is one of the commonest cancers in humans with high prevalence in subcontinent where it is the most common cancer in males¹. The strongest association of oral cancer, out of many etiological factors, is chewing of various types of smokeless tobacco, including snuff, naswar and betel quid with tobacco². Over 95% of carcinoma of oral cavity is squamous cell carcinoma³ and the anterior tongue is the most common subsite^{4,5}. Carcinoma of the tongue has a higher risk of metastasis to the regional lymph nodes. Subclinical nodal metastasis is present in up to thirty percent of T1 and T2 tongue carcinomas⁶. In our region cancer of buccal mucosa is commoner⁷ but it has low rate of metastatic disease. Lymph node metastasis represent the most important negative prognostic factor in SCC of the oral cavity. Nodal metastasis increases with increasing T stage⁸. With neck nodes metastasis, survival drops by almost 50%⁹. Levels I, II and III are commonly involved with metastasis from oral cancers⁶. It is recommended that when the probability of cervical lymph node metastasis is more than 20 percent, neck should be electively treated⁶. This would therefore include all stage III and many T2 oral cavity carcinoma thicker than 3 mm¹⁰. Since the incidence of oral squamous cell carcinoma is on rise and the prognosis depend to a great extent upon cervical metastasis. We conducted this study to evaluate frequency of cervical metastasis and involvement of neck levels in squamous cell carcinoma at different sites of oral cavity. This may provide a guideline for extent of neck dissection. We hope that this study will serve as baseline for future studies and to develop guideline for management of oral squamous cell carcinoma with positive neck. The rationale of study was to select the histopathologically proven oral

squamous cell carcinoma with or without clinically palpable neck nodes and after primary resection of oral lesion & neck dissection, the specimen send for histopathological examination to determine frequency of cervical metastasis, and the level of involvement for various sites in oral cavity of squamous cell carcinoma. **PATIENTS AND METHODS:** Study was conducted at department of ENT-Head & Neck Surgery, Dow University of Health Sciences & Civil Hospital Karachi. Sixty patients of biopsy proven oral squamous cell carcinoma with or without palpable neck node(s) of any age and sex presented to ENT OPD and were admitted in ENT ward of Civil Hospital Karachi were included in the study from 1st Aug 2007 to 31st July 2010. All who were treated elsewhere and having no documentary proof, recurrent or residual diseases after surgery or exposure to chemo radiotherapy were excluded from the study. Demographic data, clinical findings of oral lesion and level of involvement with number & size of largest node & CT scan findings were recorded. In cases where there was suspicion of distant metastasis imaging studies like X-ray chest, ultrasound abdomen and / or C.T Scan (chest & abdomen) if needed were done & findings were recorded in a preformed proforma. Punch or Wedge Biopsy report and stage of the disease was also noted. Resection of primary lesion of oral cavity along with neck dissection was done under general anaesthesia The extent of neck dissection depends on the clinical status of neck. Therefore patients with palpable neck nodes usually had a modified radical neck dissection or radical neck dissection while patients with clinically impalpable or sometimes limited clinical N1 disease usually had selective neck dissection. Specimens of neck dissections were marked according to surgical neck levels and sent for histopathological examination. The histopathological

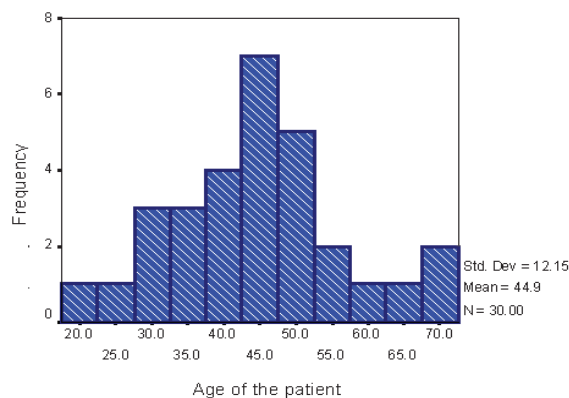


Figure 1: Presentation of Ca oral cavity in different age groups.

findings of neck level(s) involvement in different sites of oral cancer were also recorded in the proforma. Data was analyzed by using SPSS version 10. Descriptive statistics, frequencies and percentages were computed for qualitative variables like gender, site & characteristic of carcinoma, presence of neck nodes, stage of disease, type of neck dissection and histopathologically proven neck nodes level(s) for various sites of oral cavity. Mean, standard deviation, minimum & maximum of quantitative variable like age of patient were also calculated.

RESULTS: A total of 60 cases, out of which 38 (63.33%) were male and 22 (36.66%) were females with male to female ratio of 1.7: 1. The mean age was 44.93 years $\pm$ 12.15. The youngest patient included in the study was 20-years and oldest patient was 70-years. The range was 50 years, median 45 yrs and mode was 45 yrs as shown in figure-1. Out of 60 cases 38 (63.33%) patients presented with buccal SCC while 14 (23.33%) with tongue SCC, 6 (10%) with lip SCC and 2 (3.33%) with lower alveolus. The characteristic of primary lesion was usually ulcerative in 54 (90%) patients while 6 (10%) patients were presented with exophytic primary lesion. In our study, 22 (36.66%) patients were presented with clinically palpable neck nodes (cN+) while in 38 (63.33%) the neck nodes were not palpable. Out of 38 cases of buccal carcinoma 12 (31.57%) cases were presented with cN+ out of which 8 (66.66%) were at level I and 4 (33.33%) at level II. In 14 cases of carcinoma tongue, 8 (57.14%) patients had cN+ in which 2 (25%) patients presented at level I, 4 (50%) patient presented at level II and 2 (25%) patient presented at both levels I & II. In lip carcinoma out of 6 cases 2 (33.33%) patient had cN+ at level I. CT scan positive neck nodes were found in 34 (56.66%) patients while distant metastasis was not found in any case. In this study 46 (76.66%) patients presented with stage IV disease while 14 (23.33%) patients presented with stage III disease. Different types of neck dissection were performed in all 60 patients on the basis of clinical findings. In 40 (66.66%) patients selective neck dissection was performed, 16 (26.66%) patients had modified radical neck dissection and 4 (6.66%) patients had radical neck dissection. In our study 12 (20%) patients of buccal SCC had histopathologically positive neck nodes while 8 (13.33%) patient of tongue SCC had metastatic neck nodes (Table 1) while lip and lower alveolar SCC had no metastatic neck nodes. In these 12 cases of

Cervical metastasis according to site of Oral SCC (n = 60)

Site of Oral SCC	No.	pN+(%)
Buccal mucosa	12	20
Tongue	8	13.33
Lip	0	0
Lower Alveolus	0	0
Ca Oral cavity	20	33.33

Histopathological proven individually involved neck levels in Buccal SCC (n = 12)

Level (s)	No	%
I	12	100
II	10	83.33
III	6	50
IV	2	16.66

Histopathological proven individually involved neck levels in Tongue SCC (n = 8)

Level (s)	No.	%
I	4	50
II	6	75
III	2	25

Table 1: Cervical metastasis in Oral SCC.

histopathologically positive neck nodes of buccal SCC metastasis to only level I was found in 2 cases, 4 (33.33%) patients had level I & II involvement, 4 (33.33%) at level I, II & III while 2 (16.66%) patients had the involvement at level I, II, III & IV. The individual involvement of neck levels in buccal SCC were 12 (99.98 %) at level I patients, 10 (83.33%) at level II, 6 (49.99%) at III and 2 (16.66%) at level IV. In 8 cases of carcinoma tongue, 2 (25%) patients had involvement at level I, metastasis shown at level I & II is 4 (50%) while at level I, II & III in 2 (25%) cases. The individual involvement of neck levels in tongue SCC were level I in 4 (28.5%) patients, 6 (75%) at level II patients and 2 (25%) at level III patient.

DISCUSSION: Head and neck cancer constitute approximately 5% of all malignancies worldwide, and the incidence is increasing. The great majority of these tumors are SCC, which accounts for about 95% of all head and neck tumors¹¹. The lymph node status is generally considered as the most important prognostic factor in patients with SCC of oral cavity and in fact the presence of nodal metastasis decrease survival to about 50%^{12, 13}. Overall, cervical metastasis is present at initial evaluation in approximately 30% of patients, except for the lips and hard palate. Considering all T categories, the frequency of occult metastasis ranges from 19% to 40%¹⁴. Haddadin et al found that tongue tumors have a high incidence of subclinical nodal disease, which is less curable when clinically presented. There is high association between the survival rate of patient and presence of metastatic neck nodes at the time of presentation. Mathew-Iype reported statistically significant difference in disease free survival in patients with N0-N1 disease as compared to N2-N3¹⁵. In our study 36.6% patients presented with clinically palpable neck nodes, which was in contrast to G.I Smith et al study that found clinically palpable neck nodes only in 21 out of 171 patients (12.28%) in oral SCC¹⁶. Our study also revealed that tongue carcinoma had high chances of clinically palpable neck nodes (cN+= 57.14%)

as compared to buccal carcinoma (cN+ = 31.57%) and lip carcinoma (cN+ = 33.33%). This may be due to rich lymphatic drainage of tongue as compared to other sites of oral cavity. In our region due to excessive betel nut pan chewing habits there is formation of submucous fibrosis, which decreases the lymphatic flow from buccal and labial mucosa. The critical determinant of the utility of an imaging modality for oral cavity SCC is its ability to detect the presence or absence of metastatic neck disease. Umeda et al found that CT scan was very useful in early detection of neck metastasis¹⁷. As the sensitivity and specificity of the clinical examination is low. We also suggest CT scan prior to management of the neck in every case. In this study on CT scan, positive neck nodes were found in all cases of advanced disease that is stage IV (76.66%) & stage III (23.33%). The late presentation in this study may be due to delayed referral of patients to our tertiary care hospital, lack of education, poor socioeconomic status and inadequate health facilities. The results of several studies confirm that late presentation is a common phenomenon in most developing countries. In an under develop country like Pakistan, the people ignore their diseases in the early stages. It is the responsibility of general practitioners, dental surgeons and otolaryngologists that they spend little more time on their patient's education about the disease. At present, neck dissection with histopathologic examination is the most reliable staging procedure that provides important prognostic information. In this study neck dissection was done in all cases whether neck node(s) were clinically palpable or not. In majority of the cases selective neck dissection was done (66.66%) in clinical N0 disease and also in some cases of limited clinically N1 disease. Most of these cases belonged to buccal SCC because it had low metastatic rate due to submucous fibrosis. In limited clinical N1 disease the neck was selectively addressed from level I- IV. Similarly modified radical neck dissection (26.66%) and radical neck dissection (6.66%) was performed in cases with palpable neck nodes. In our study it was more commonly performed in patients of tongue SCC because they presented with palpable neck nodes. The increase metastatic rate in tongue SCC attribute to its high mobility during mastication and swallowing. We found over all histopathological positive neck nodes in oral SCC as 33.33%, while in contrast Woolgar reported 47.5% cervical metastasis¹⁸. Similarly it was also revealed from our study that 20% neck metastasis found in buccal SCC and histopathologically proven involvement of neck node(s) found more commonly at level I (99.98%) & II (83.28%) which was comparable to Dhawan et al in which 16% neck metastasis was present in buccal SCC and level I and II were the most frequent levels involved in buccal SCC¹⁹. Rao et al reported cervical metastasis at level I in 85 % and at level II in 51% cases²⁰. Pardhan et al found comparatively more neck metastasis (42.5%) in buccal SCC and also observed level I was the most frequent level involved in buccal SCC²¹. In our study 13.33% neck metastasis was seen in tongue SCC and histopathologically proven metastasis in neck were observed in level I (50%) and level II (75%). In contrast Nithya et al observed that the most commonly involved level in tongue SCC was level II (63.6%) followed by level I (51.5%)²². Similar results were also found in

Alkhalil study²³. It is mentioned in the literature that lymphatics of level I and II are the first echelon lymph nodes of oral cavity. This pattern is reflected in our case series as well as in others that levels I and II are more frequently involved than other levels in oral SCC. Byers et al found skip metastasis in lymph nodes at level III or IV in 15.8% in tongue SCC²⁴. This suggests that supraomohyoid neck dissection cannot take care of such patients. Although in this short series of tongue SCC there was no metastasis to level IV but another study carried out by Nithya showed involvement of level IV (15.2%) along with levels I, II & III, while Khafif et al reported only 4% involvement of level IV lymph nodes along with involvement of upper levels in early tongue SCC²⁵. Most of them suggest dissection of level IV & V only when there is intraoperative suspicion of extensive metastasis in levels I, II and III²⁶. Nabeel Riaz also described efficacy of SND (supraomohyoid neck dissection) in clinically N0 disease of oral SCC and found that SND was the procedure of choice in all T3N0M0 disease of oral SCC while it was not enough for T4N0M0 disease²⁷. These cases should be managed with MRND or RND²⁸. Similarly De Zinis et al suggested that in clinically N0 disease of oral SCC, SND should include level IV along with level I-III due to possibility of skip metastasis, while in clinically palpable neck nodes MRND should be considered²⁹. In the light of present results, we suggest elective neck dissection should be performed on routine basis in oral SCC, level IV should be addressed whenever a selective neck dissection is performed in clinical N0 disease. Further more histopathological findings did not completely correlate with CT scan findings, there is a need for a noninvasive procedure that provides high-quality prognostic & diagnostic information. Nowadays in many tertiary care centers of developed countries more advanced imaging modality is used in the form of 18F-FDG PET or combined 18F-FDG PET with CT scan for better detection of metastatic neck nodes prior to surgery³⁰. We suggest that health department make such advanced imaging modality available in tertiary care units of our country for better management of our patients.

CONCLUSION: Squamous cell carcinoma of oral cavity is a favourable site of cervical metastasis. Buccal mucosa (cheek) and tongue are common subsite of oral cavity for neck node metastasis. Level I and level II are more frequently involved neck levels than other levels in buccal SCC and tongue SCC. Considering the high frequency of cervical metastasis in squamous cell carcinoma of oral cavity, neck dissection should be performed on routine basis.

REFERENCES:

1. Naseem N, Naheed G, Nasreen S. Oral cavity cancers in North West Pakistan: A Hospital based study. *J Postgrad Med* 2009; 23: 28- 34.
2. Rana ZA, Khoso NA, Bajaj DR. Risk factors for precancerous lesions of oral mucosa. *Ann Pak Inst Med. Sci* 2009; 5: 220-3.
3. Effiom OA, Adeyemo WL, Omitola OG, Ajayi OF, Emmanuel MM, Gbotolorun OM. Oral squamous cell carcinoma: a clinicopathologic review of 233 cases in Lagos, Nigeria. *J Oral Maxillofac Surg* 2008; 66: 1595- 9.
4. Ayaz B, Saleem K, Azim W, Shaikh A. A clinico-pathological study of oral cancers. *Biomedica* 2011; 27: 29-32.
5. Andisheh- Tadbir A, Mehrabani D, Heydari ST. Epidemiology of squamous cell carcinoma of the oral cavity in Iran. *J Craniofac*

- Surg 2008; 19: 1699-1702.
6. Webster K. Oral cavity tumors including the lip. Scott Brown's Otorhinolaryngology, Head and Neck Surgery 7th edition. Great Britain: Edward Arnold 2008; 2543- 76.
7. Wahid A, Ahmad S, Sajjad M. Patterns of oral carcinoma of oral cavity reporting at dental department of Ayub Medical College. J Ayub Med Coll 2005; 17: 65-6.
8. Najeeb T. Clinicopathological presentation of tongue cancers and early cancer treatment. J Coll Physician Surg Pak 2006; 16:179-82.
9. Shaha AR. Neck dissection: an operation in evolution. World Journal of surgical oncology 2005; 3: 1-3.
10. Yuen APW, Lam KY, Wei WI, Ho CM, Chow TL et al. A comparison of prognostic significance of tumor diameter, length width, thickness area, volume, and clinicopathological features of oral tongue carcinoma. Am J 2000; 180: 139- 43.
11. Ng SH, Yen TC, Liao CT, Chang JT, Chan SC, Ko SF et al. 18F-FDG PET and CT/MRI in oral cavity squamous cell carcinoma: A prospective study of 124 patients with histologic correlation. J Nucl Med 2005; 46: 1136- 43.
12. Omar EA. The Outline of Prognosis and New Advances in Diagnosis of Oral Squamous Cell Carcinoma (OSCC): Review of the Literature. Journal of Oral Oncology 2013; 1-13.
13. Puri SK, Fan CY, Hanna. Significance of extra capsular lymph node metastasis in patients with head and neck squamous cell carcinoma. Curr Opin Otolaryngol Head Neck Surg. 2003; 11: 119-23.
14. Kaya S, Yilmaz T, Gursel B, Sarac Sennaroglu L. The value of elective neck dissection in treatment of cancer of the tongue. Am J Otolaryngol 2001; 22: 59- 64.
15. Mathew- Iype E, Pandey M, Mathew A, Thomas G, Sebastian P, Krishan Niar M. Squamous cell carcinoma of the tongue among young Indian adults. Neoplasia 2001; 3: 273- 7.
16. Smith GI, O'Brien CJ, Clark J, Shannon KF, Clifford AR, McNeil EB, Goa K. Management of the neck in patients with T1 and T2 cancer in the Mouth. Br J Maxillofac Surg 2004; 42: 494- 500.
17. Umeda M, Nishimatsu N, Teranobu O, Shimada K: Criteria for diagnosing lymph node metastasis from squamous cell carcinoma of the oral cavity: A study of the relation ship between computed tomographic and histologic findings and outcome. J Oral Maxillofac Surg 1998; 56: 585- 93.
18. Woolgar JA. The topography of cervical lymph node metastasis revisited: the histological findings in 526 slides of neck dissection from 439 previously untreated patients. Int J Oral Maxillofac Surg 2007; 36: 219-25.
19. Dhawan IK, Verma K, Khanzachi RK, Madan NC, Shukla NK, Saxena R. Carcinoma of buccal mucosa: incidence of regional lymph node Involvement. Indian J Cancer 1993; 30: 176-80.
20. Rao RS, Deshmane VH, Parikh HK, Parikh DM, Sukthankar PS. Extent of lymph node dissection in T3/T4 cancer of the alveolo-buccal complex. Head Neck 1995; 17: 199-203.
21. Pradhan SA, D'Cruz AK, Gulla RI. What is optimum neck dissection for T3/4 buccal-gingival cancers? Eur Arch Otorhinolaryngol 1995; 252:143-5.
22. Nithya CS, Pandey M, Naik B, Ahamed IM. Patterns of cervical metastasi from carcinoma of the oral tongue. World J Surg Oncol. 2003; 1: 1186-96.
23. Alkhalil M, Smajilagic A, Redzic A. The lymph node neck metastasiss in oral cancer and elective neck dissection as method of the choice. Medicinski Glasnik. 2007; 4: 94-5.
24. Byers RM, Webers RS, Andrews T, Mccgill D, Kare R, Wolf P. Frequency and therapeutic implications of skip metastasis in the neck from squamous cell carcinoma of the oral tongue. Head Neck. 1997; 19: 14-9.
25. Khafif A, Lopez- Garza JR, Medina JE. Is dissection of level IV necessary in patients with T1- T3 N0 tongue cancer? Laryngoscope 2001; 111: 1088- 90.
26. Akhtar S, Ikram M, Ghaffar S. Neck involvement in early carcinoma of tongue. Is elective neck dissection warranted? J Pak Med Assoc 2007; 57: 305- 7.
27. Riaz N. Supraomohyoid neck dissection in patients with squamous cell carcinoma of oral cavity. Pak J Med Health Sci 2011; 5:190-3.
28. Qureshi S, Tirmizi S, Hussain A, Rehman A. Is Supra- Omohyoid Neck Dissection Effective in Clinically Negative Node in T3 and T4 Oral Tumor. Pak J Otolaryngol 2007; 23: 71-3.
29. De Zinis LO, Bolzoni A, Piazza C, Nicolai P. Prevalence and Localization of nodal metastasis in squamous cell carcinoma of the oral cavity: role and extension of neck dissection. Eur Arch Otorhinolaryngol 2006; 263: 1131-5.
30. Rumboldt Z, Gordon L, Bonsall R, Ackermann S. Imaging in head and neck cancer. Current Treatment options in Oncology 2007; 7: 23-34.

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Causes, Clinical Manifestations and Treatment Outcome of Maxillary Sinusitis of Dental Origin

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ABSTRACT: OBJECTIVE : The objective of the study is to find out the common causes, clinical manifestations and treatment outcome of maxillary sinusitis of dental origin in our region. **STUDY DESIGN:** Non-interventional, prospective and descriptive study. **PLACE AND DURATION OF STUDY:** This study was conducted at the departments of ENT, head & neck surgery of Dow University of Health Sciences and Civil Hospital Karachi, Hamdard University Hospital and Liaquat National Hospital, Karachi, over a period of two years from January 2011 to December 2012. **PATIENTS AND METHODS:** A total of 195 patients of chronic sinusitis were seen in the above centers during this period. Out of these, 18 patients were included in this study who were primarily sinusitis due to odontogenic cause. So the incidence of odontogenic sinusitis was found to be 18/195 or 9.2% in this study. **RESULTS:** There were 11 male and 7 female patients (1.6:1) with mean age incidence of 41.23 years ($\pm$ 3.4 years). Unilateral purulent or mucopurulent rhinorrhoea was the most common symptom in this series (13 patients or 76.5%). The most common odontogenic cause for sinusitis was found to be use of different dental implants (6 patients or 33.3%). Involvement of one sided maxillary sinus alone was seen in 13 out of 18 patients (72.2%). The most common tooth responsible for sinusitis was the 2nd molar tooth (8/18 or 44.5%). Endonasal endoscopic sinus surgery was found to be curative in 10 out of 18 patients (55.5%).

Key Words : Maxillary sinusitis, Dental root infection, Sinusitis of dental origin, Iatrogenic sinusitis.

INTRODUCTION: The origin of sinusitis is considered to be primarily of nasal or sinus origin but in some cases it could be of dental origin. Sinusitis with an odontogenic source accounts for 5-12% of all cases of maxillary sinusitis^{1,2,3}. Sinusitis due to dental pathology occurs when the Schneiderian membrane is perforated as it can happen in patients with dental caries, dental trauma, placement of dental implants and tooth extraction⁴. Although odontogenic sinusitis is a relatively common condition, its pathogenesis is not clearly understood and there is lack of consensus concerning its clinical features, treatment, and prevention. An odontogenic source should be considered in patients with a history of dental pain or recent oral surgery and those with extended unilateral sinusitis or unilateral sinusitis resistant to conventional treatment⁵. The treatment of odontogenic sinusitis often requires management of the sinusitis as well as the treatment of primary dental pathology. Literature search in local journal revealed that very little work has been done on this important and relatively common condition. The purpose of this study is to determine the common causes of odontogenic maxillary sinusitis in our local setup. In addition to find out common clinical manifestations and the outcome of this condition after treating with the available modalities of treatment in our setup.

PATIENTS AND METHODS: This was a multicentric study, conducted at the departments of Ear, Nose, Throat, Head & Neck Surgery, Dow University of Health Sciences and Civil Hospital Karachi, Hamdard University Hospital and Liaquat National Hospital Karachi. This study was

conducted over a period of two years from January 2011 to December 2012. Inclusion criteria included all consecutive patients coming in these departments who have the diagnosis of chronic sinusitis of dental origin. Exclusion criteria included patients with concomitant nasal allergy, nasal polyp, deviated nasal septum or any growth in the nose, nasopharynx or paranasal sinuses. A detailed history was taken and a thorough ENT clinical examination was done in all the patients who have the provisional diagnosis of chronic sinusitis. History of any dental treatment was specifically asked and detailed clinical examination of the teeth was done in all the cases for any dental pathology. Routine baseline investigations, OPG and CT scan was done in all these cases. Diagnosis of sinusitis due to dental origin was made after this protocol and taking into consideration whether the patient fits in any of the exclusion criteria, remaining patients were included in the study. A total of 195 cases of chronic rhinosinusitis were seen during

Symptoms	No. of patients	Percentage
Unilateral purulent or mucopurulent rhinorrhoea	13	72.2
Nasal obstruction (mainly unilateral)	9	50.0
Offensive odor or smell from the nose or mouth	6	33.3
Unilateral facial pain	5	27.7
Swelling at upper gingival region	4	22.2
Post-nasal dripping	3	16.6
Pain in the region of upper teeth	3	16.6
Fever	1	5.5

Table 1 : Clinical presentation or symptoms of the patients.

Department of Ear, Nose, Throat, Head & Neck Surgery, * Dow University of Health Sciences and Civil Hospital, Karachi, ** Bahria University Medical & Dental College, Karachi.

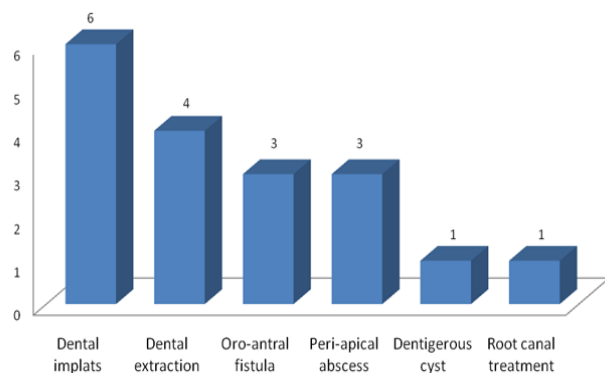


Fig 1 : Different causes of dental pathologies leading to sinusitis

the above mentioned period and out of these, 23 patients were diagnosed as sinusitis of dental origin after thorough history, clinical examination and investigations. Five patients out of 23 were excluded from the study because of nasal allergy (2 patients), nasal polyp (1 patient) and gross deviated nasal septum with spur (2 patients). So 18 patients were finally included in this study. All these patients were treated for the sinus disease as well as for dental disease. Sinus disease was dealt by the authors and for dental disease all patients were referred to the dental surgeon.

RESULTS: A total of 195 patients of chronic sinusitis were seen during this period and 18 patients were finally included in the study who were diagnosed as sinusitis due to dental pathology. So the incidence of sinusitis due to dental origin was found to be 18/195 or 9.2%. Out of the total 18 patients, there were 11 males and 7 female patients with male to female ratio of 1.6:1. The age ranges from youngest of 17 years and oldest of 58 years with mean age incidence of 41.23 years (± 3.4 years). Table 1 shows the presenting and associated symptoms, where all of the symptoms are unilateral, limited to the site of dental pathology. Unilateral and purulent rhinorrhoea was the most common symptom in 13 patients (72.2%) out of total 18 patients. Second most common symptom was nasal obstruction which was mainly unilateral in 9 patients (50%). Fig. 1 depicts the different causes of dental pathologies, where dental implant related sinusitis was the most common cause and found in 6 patients (33.3%). The involvement of different sinuses as assessed by CT scan showed maxillary sinus alone in 13 patients (72.2%). Maxillary sinus along with ethmoidal sinuses of same side in 3 patients (16.6%), maxillary sinus along with ethmoidal and frontal sinuses in 1 patient (5.5%) and involvement of all the sinuses on one side in 1 patient (5.5%). Different teeth of the upper jaw can lead to sinusitis depending on its proximity to the maxillary sinus. In our series most commonly involved tooth was 2nd molar in 8 patients (44.4%). The other involved teeth are, 1st molar in 5 patients (27.7%), both 1st and 2nd molar in 2 patients (11.1%), 3rd molar in 1 patient (5.5%), 2nd premolar in 1 patient (5.5%) and both 2nd premolar and 1st molar in 1 patient (5.5%). Fig. 2 shows different treatment options employed in this series. In all these cases treatment of the dental pathology was dealt by the dental

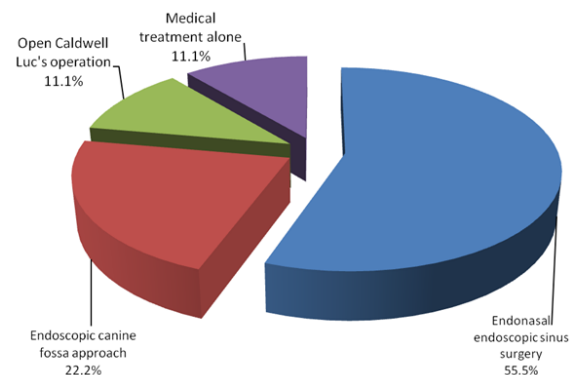


Fig 2 : Treatment modalities used for sinus diseases.

surgeon. For treatment of the sinus disease, endonasal endoscopic sinus surgery was done in 10 patients (55.5%), endoscopic canine fossa approach was utilized in 4 patients (22.2%), open Caldwell Luc's operation in 2 patients (11.1%) and medical treatment alone was given in 2 patients (11.1%). In three cases of oro-antral fistula closure of the fistula was done by local mucosal flap at the same time of surgery. All these patients were followed up for a period of two months to six months where all the patients were cured by the treatment. Revision surgery was not required in any of the case in this series. **DISCUSSION:** Frequency of maxillary sinusitis due to odontogenic origin is often under estimated⁶. Proper examination and investigations should be done to rule out dental origin specially in cases of unilateral sinusitis. Normally the roots of the maxillary premolar and molar teeth are separated from the sinus floor by a dense cortical bone with a variable thickness, but sometimes they are separated only by the mucoperiosteum. Clearly, this anatomical layout can explain the source and development of an inflammatory process. The otolaryngologist should suspect an odontogenic etiology of purulent chronic maxillary sinusitis in patients failing to improve with antibiotics, regardless of a negative dental workup¹⁰. In our series, overall incidence of sinusitis of dental origin was found to be 18/195 (9.2%). Male to female ratio in the present study is higher (1.6:1), which is similar to a previous study³ but in contrast to another study². With increasing awareness of odontogenic maxillary sinusitis, it is advised that CT scans should be reviewed carefully for the presence of periapical abscess and dental pathology. Unrecognized periapical abscess is often a cause of endoscopic sinus surgery failure and the radiological report frequently fail to note the periapical infection. Periapical abscess is sometimes difficult to recognize only with dental x-rays and examination. In patients with maxillary sinus disease, the teeth should be specifically examined as part of the radiological workup⁹. Dental pathology causing sinusitis is frequently missed on plain dental X-rays and CT scan reports. Dental pain and foul-smelling nasal discharge are present in less than one-half of patients and symptoms commonly persist for years. There must be a high index of suspicion for an odontogenic cause, in refractory maxillary sinusitis¹¹. The tooth most frequently involved is the upper first molar, followed by the second molar

and second premolar¹². In our series most commonly tooth responsible for maxillary sinusitis is 2nd molar (44.5%) followed by 1st molar (27.5%) and both 1st and 2nd molar in 11.1%, while the other teeth involvement is much less. In our series most common cause for sinus involvement due to dental pathology is found to be dental implant related complications. This is followed by dental extraction without oro-antral fistula. Oro-antral fistula is often a common cause of maxillary sinusitis and can account for upto 60% of the cases¹⁴. In our series there are only three cases of oro-antral fistula out of total 18 cases (16.6%). Successful closure of oro-antral fistula equally depends on complete elimination of sinus infection, excision of fistulous tract and proper post operative care¹³. Periapical abscess is the cause for sinusitis in three cases while dentigerous cyst is the cause in only one patient. The low incidence of sinusitis concerning cysts is mainly due to the fact that during their development, they push the sinus structures causing them no damage unless an infection accounts or the ostium obstructs preventing the natural drainage of the sinus. Sometimes excision of the cyst also causes oro-antral fistula formation leading to maxillary sinusitis. In two patients of this series, only medical treatment for the sinusitis was successful along with the treatment of his dental pathology by the dentist. Both of these patients have periapical abscess. While rest of the 16 patients required surgical treatment for the sinusitis. Endonasal endoscopic sinus surgery in the form of widening of the maxillary ostium along with clearance of disease from the ethmoid was successful in 10 patients. An endoscopic technique could be successfully used in patients with oroantral fistula causing chronic maxillary sinusitis of dental origin, instead of the Caldwell-Luc procedure⁷. Caldwell-Luc approach for the retrieval of a displaced root from the maxillary sinus is a safe, simple, and fast method with minimal complications⁸. We used endoscopic canine fossa approach to clear disease from the maxillary sinus in four patients. Open Caldwell Luc's operation was required in only two cases, both were having oro-antral fistula.

CONCLUSION : Among the different causes of sinusitis, dental pathology is often a cause and it should be suspected especially in refractory cases of sinusitis. In our series it was present in 9.2% of the cases of chronic rhino-sinusitis.

REFERENCES:

1. Lopatin AS, Sysolyatin SP, Sysolyatin PG, Melnikov MN. Chronic maxillary sinusitis of dental origin: is external surgical approach mandatory? *Laryngoscope*, 2002; 112: 1056-9.
2. Mehra P, Murad H. Maxillary sinus disease of odontogenic origin. *Otolaryngol Clin North Am*, 2004; 37: 347-64.
3. Lee KC, Lee SJ. Clinical features and treatment of odontogenic sinusitis. *Yonsei Medical Journal*, 2010; 51(6): 932 – 937.
4. Kretschmar DP, Kretschmar JL. Rhinosinusitis: review from a dental perspective. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 2003; 96: 128-35.
5. Broome M, Jaques B, Monnier Y. Diagnosis and management of sinusitis of odontogenic origin. *Rev Med Suisse*. 2008; 173:2080-4.
6. Chemli H, Mnejja M, Dhoub M, Karray F, Ghorbel A, Abdelmoula M. Maxillary sinusitis of odontogenic origin: surgical treatment. *Rev Stomatol Chir Maxillofac*, 2012; 113(2): 87-90.
7. Hajioannou J, Koudounarakis E, Alexopoulos K, Kotsani A, Kyrmizakis DE. Maxillary sinusitis of dental origin due to oroantral fistula, treated by endoscopic sinus surgery and primary fistula closure. *J Laryngol Otol*. 2010; 124(9): 986-9.
8. Huang I Y, Chen C M, Chuang F H. Caldwell-Luc procedure for retrieval of displaced root in the maxillary sinus. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.*, 2011; 112: 59-63.
9. Longhini, A. B, Branstetter, B. F, Ferguson, B. J. Unrecognized odontogenic maxillary sinusitis: a cause of endoscopic sinus surgery failure. *Am J Rhinol Allergy*, 2010; 24: 296-300.
10. Longhini A B, Branstetter B F, Ferguson B J. Otolaryngologists' perceptions of odontogenic maxillary sinusitis. *Laryngoscope*, 2012; 122(9): 1910-14.
11. Longhini, A. B, Ferguson, B. J. Clinical aspects of odontogenic maxillary sinusitis: a case series. *Int Forum Allergy Rhinol.*, 2012; 1(5): 409-15.
12. Elarbi M S. The management of an Oroantral fistula - a clinical study of 30 cases. *Pak Oral Dental Journal*, 2006; 26(1): 55-8.
13. Shah A A. Oroantral Fistula - A general dental practitioner's dilemma. *Ann King Edward Med University*, 2004;10(1):19-20.

RHINOPLASTY AND FACIAL PLASTIC SURGERY

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Frequency of Sensory Neural Hearing Loss (SNHL) in Type 1 and Type 2 Diabetic Patients

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ABSTRACT: **OBJECTIVE:** To observe the frequency of sensory neuronal hearing loss in type 1 and type 2 diabetic patients and to find out relationship between severity of hearing loss and glycemic control. **STUDY TYPE :** Descriptive Cross sectional. **PLACE & DURATION:** This study was conducted at Sindh Govt. Lyari General Hospital Karachi for 6 months. **MATERIAL AND METHOD:** This study is done in secondary care hospital of Karachi for duration of 6 months. The age limit was 12 -60 years. The exclusion criteria were noise exposure, alcoholism, smoking, inherited or anatomical inner or middle ear problems, ototoxic drug and conductive deafness. Those included in the study went through series of laboratory tests specially fasting blood glucose (FBG) and HbA1C. The audiometry was done and severity of SNHL was classified accordingly. **RESULTS:** Out of 110 patients, 15.5% (n=17) were type 1 diabetic while 84.5% (n=93) were type 2 diabetic. The SNHL was 79% (n=87) with no significant difference in type 1 and type 2 diabetic patients regarding severity of SNHL. The mean FBG was 148 ± 13.25 mg/dl and mean HbA1C was 8.12 ± 1.14 . There was strong association between increase in FBG level and raised HbA1C and severity of SNHL. The duration of diabetes also has significant correlation with severity of SNHL. **CONCLUSION:** The SNHL is the disease of old age but in diabetic patients it appears early. The study emphasized to do audiometry test for all patients with diabetes to recognize this complication. **Key Words:** Sensory neuronal hearing loss (SNHL), Diabetic hearing loss, Complications of diabetes.

INTRODUCTION: Type 2 diabetes mellitus and age related hearing loss are common in older age group and it become difficult to observe association between these two groups¹⁻³. There are some histopathological studies that have shown damage to the nerves and vessels of the inner ear of diabetic patients⁴⁻⁷. There is a hypothesis that diabetes mellitus is associated with progressive bilateral high tone sensorineural hearing loss starting at an earlier age than the normal population⁷. Most audiometric studies of hearing in patient with diabetes show a mild to moderate high frequency SNHL⁸. Although Celic et al⁹. observed higher thresholds in diabetic patients at all frequencies tested on audiometer but one study showed no difference in speech discrimination source among diabetic patients and a normal population. Only one of these study regarding hearing and diabetic neuropathy evaluated type 2 diabetes specifically for hearing loss¹⁰. but Several other did not differentiated between type 1 diabetes and type 2 diabetes for hearing loss in diabetic patients^{11,12,13,14}. The SNHL is not recognized microvascular complication of diabetes mellitus therefore to observe the association between diabetes and SNHL the study was designed in our institute. The basic aim of the study was to detect any hearing loss at an early stage in diabetic patients so further hearing loss could be avoided. **MATERIAL & METHODS:** It is a descriptive cross sectional study done at Sindh Govt Lyari General Hospital for duration of six months in department of medicine with collaboration of department of ENT. All

diabetic patients presented to diabetic OPD during this period were evaluated for the study. The age limit was from 12 year to 60 years. The exclusion criteria were history of noise exposure, alcoholism, smoking, inherited or anatomical inner or middle ear problems, ototoxic drug use and conductive deafness. The history was taken on preformed Performa for type of diabetes, duration of diabetes, complications of diabetes, use of insulin or oral hypoglycemic agents, use of other drugs and demographic data was noted. The patients were examined for complications of diabetes and laboratory test, fasting blood glucose (FBG), HbA1C, lipid profile, urine for albuminuria, serum creatinine, and complete blood count were done. The audiometry was done on an audiometer with standard method by single ENT specialist to reduce confounding factor. The hearing loss (dB) was classified in to sub group according to the severity of hearing loss¹⁵. The Group 1 normal (0-25dB), Group 2 mild (26-40dB), Group 3 moderate (41-55dB), Group 4 moderate to severe (56-70dB), Group 5 severe (71-90dB) and Group 6 profound (>90dB). The data was analyzed in SPSS v17. The Chi square was applied for qualitative variables and student t test for continuous variables. The one way ANOVA was applied multiple comparisons within the group and between the groups.

RESULTS: Out of total 110 patients, 79% patients (n=87) had SNHL. The ratio of male to female was almost 1:2. The 31.8% patients (n=35) were male and 68.2% patients (n=75) were female. There was no significant statistical difference in gender regarding SNHL (table

Variable		Severity								Sides						
		1	2	3	4	5	6	Total	df	p- Value	two sides	one side	total	df	p-Value	
Type of DM	type 1	4	2	4	4	3	0	17			8	10	18			
	type 2	19	23	23	17	9	2	93	5	0.769	79	13	92	1	0	
Gender	male	7	9	8	3	5	1	33			26	9	35			
	female	16	16	19	18	7	1	77	5	0.541	60	15	75	1	0.49	
Duration of DM	less than 5 years	17	10	10	7	2	0	46			38	8	46			
	more than 5 years	6	15	17	14	10	2	64	5	0.01	48	16	64	1	0.341	

Table 1 : Demographic data.

1). The mean age was 45.36 ± 11.21 and there was no statistical significant difference in age regarding SNHL in paired student t test (table 2). Only 15.5% (n=17) were IDDM (type 1) while 84.5% (n=93) were NIDDM (type 2). Thirteen out of 17 patients with type 1 had SNHL while 74 patients out of 93 patients had SNHL so, there was no significant difference in type 1 & type 2 regarding severity of SNHL. The statistical analysis revealed that there was significant difference for one or both sides (unilateral or bilateral) of hearing loss. The unilateral hearing loss was more common in type 1 while bilateral was more seen in type 2 ($p < 0.01$). The duration of diabetes had significant effect on severity of hearing loss (p value= 0.010) but it did not show any significant effect on unilateral and bilateral involvement of SNHL ($p = 0.34$). The mean FBS was 148.95 ± 37.47 and the student t test for paired samples revealed that there was significant difference between FBG & hearing loss (db) ($p < 0.01$). The post HOC multiple comparisons (table 3) within the group and between the groups revealed that normal hearing (db 0-25) has significant lower FBG than other groups with mild, moderate, moderate to severe, severe, and profound. The FBG is significantly higher in mild hearing loss than normal but it is significantly lower than moderate to severe, severe and profound hearing loss. In moderate hearing loss FBG is higher than normal but lower than severe and profound hearing loss. The FBG in moderate to severe hearing loss is significantly higher from normal & mild hearing loss but lower than profound hearing loss. In severe hearing loss FBG is significant higher than normal, mild and moderate hearing loss but lower than profound hearing loss. The profound hearing loss revealed the

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	FBG	148.95	110	37.473	3.573
	Hearing Loss (dB)	45.55	110	20.439	1.949
Pair 2	Hb A1C	8.12	110	1.142	.109
	Hearing Loss (dB)	45.55	110	20.439	1.949
Pair 3	AGE	45.36	110	11.212	1.069
	Hearing Loss (dB)	45.55	110	20.439	1.949

(b) Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	FBG & Hearing Loss (dB)	110	.529	.000
Pair 2	Hb A1C & Hearing Loss (dB)	110	.294	.002
Pair 3	AGE & Hearing Loss (dB)	110	-.061	.526

Table 2 : Paired t Test.

highest FBG. The median HbA1c was 7.85 while means was 8.12 ± 1.14 . The student t test for paired samples revealed that there was significant difference between HbA1C & hearing loss (db) ($p < 0.01$), as the increasing HbA1C cause more severe SNHL (table 2). The post HOC multiple comparisons (table 4) within the group and between the groups revealed interesting correlations. The HbA1C was significantly higher in mild, moderate, moderate to severe & severe SNHL groups than normal group but there was no statistically significant difference of HbA1c of normal group in profound SNHL group. DISCUSSION : Our study shows significant SN hearing loss in patients with diabetes. In our study 87 patients (79%) had SNHL in which (11.8%) were type 1 while others had types 2 diabetes mellitus but there was no significant difference in type 1 & 2 diabetes regarding presence of SNHL. These findings were similar to Mazaffari et al¹⁶ and Kakarlapundi et al¹⁷. There is another important finding in our study was the association between severity of SNHL & fasting blood glucose level. The increase in FBG level & high HbA1C

SEVERITY (I)	SEVERITY (J)	MEAN DIFFERENCE (I-J)	STD. ERROR	SIG.
1	2	-.817	.302	.008
	3	-.839	.296	.006
	4	-1.551	.315	.000
	5	-1.238	.372	.001
	6	-.663	.770	.391
2	3	-.022	.290	.940
	4	-.734	.309	.019
	5	-.421	.367	.254
	6	.154	.767	.841
3	4	-.712	.304	.021
	5	-.399	.362	.273
	6	.176	.765	.819
4	5	.313	.378	.409
	6	.888	.773	.253
5	6	.575	.798	.473

Table 3 : Post Hoc (One Way Anova) Dependable Variable HbA1C.

SEVERITY (I)	SEVERITY (J)	MEAN DIFFERENCE (I-J)	STD. ERROR	SIG.
1	2	-30.388	9.099	.001
	3	-35.200	8.937	.000
	4	-49.253	9.506	.000
	5	-58.514	11.215	.000
	6	-107.848	23.218	.000
2	3	-4.812	8.741	.583
	4	-18.865	9.322	.046
	5	-28.127	11.060	.012
	6	-77.460	23.143	.001
3	4	-14.053	9.163	.128
	5	-23.315	10.927	.035
	6	-72.648	23.080	.002
4	5	-9.262	11.397	.418
	6	-58.596	23.306	.013
5	6	-49.333	24.054	.043

Table 4 : Post Hoc (One Way Anova) Dependable Variable Fbg.

correlate with more severe SNHL. This is in contrast to the study done By Mozaffari et al¹⁶ in which there was no association between severity of SNHL and FBG but Okhovat et al¹⁸ described significant correlation in SNHL and HbA1C. The another interesting finding in our study was that the patients with profound SNHL had no statistical significant difference from normal patients regarding HbA1c although they had high FBS. This may be due to small number of patients in the study as only 2 patients in our study had profound SNHL. We did not measure fasting insulin level due to unavailability and cost, but it is described in the literature that neither insulin resistance nor decrease secretion has any association with SNHL¹⁹. The severity of SNHL was similar in type I & type II diabetes in our study which is in contrast to Mazaffari et al¹⁶ in which more severe SNHL in type I diabetic patients was noted. Dalton et al showed a higher incidence of hearing loss among diabetic subjects compared with a control Group but no significant association was established between hearing loss and type 2 diabetes²⁰. The other significant finding in our study is duration of diabetes mellitus which is significantly associated with SNHL. The severity of SNHL was increase with increase duration diabetes this finding coincides with Mazaffari et al¹⁶, kakarlapundi et al¹⁷ and Rozanska-Kudelska M et al²¹. Celik et al⁹ also represented increase in duration of diabetic increase hearing loss. The age of diabetic patients in our study has no significant effect on SNHL. Most of the patient were from middle age group (mean= 45.36 years) suggesting that age was not a confounding factor for SNHL. Axelsson et al¹³ revealed that incidence of hearing loss increase with age in diabetic patients. Most of our patients were females because there is more turn out of female patients in this hospital but there was no effect of gender on SNHL in diabetic patients. There was no significant difference in males and females regarding severity of hearing loss. This was similar to Muzzafarri et al¹⁶ and Helzner EP et al²² in contrast to Cullen and Cinnamon²³ male patients with DM have more SNHL than female patients. However Taylor and Irwin²⁴ observed female Patients have significant hearing loss than male diabetic patients. The most of the studies revealed that there was no significant difference between severities of SNHL, between the genders. This was a cross sectional descriptive study which could reveal a number of case with diabetes and SNHL so there were certain limitation of the study. One of the limitations is that it could not create a relationship with diabetes and SNHL because there was no control group of non diabetic patients. Another is the number of cases were only 110 and from a one hospital which is representing the population of specific locality. The age limit was from 12 years to 60 years and the old age patients were not included in the study but the age related SNHL was not a confounding factor in our study because there was no statistical significance of age in student t test for paired samples. The further study is required with larger group of diabetic patients and control of non diabetic patients with same demographical and social environment to compare the SNHL and its severity in diabetic and non diabetic patients.

CONCLUSION: We conclude our study with the recommendation for the patients with SNHL to be

screened out for diabetes mellitus as there is high rate of undiagnosed diabetes mellitus is mentioned in literatures²⁵. On the other hand the routine screening for SNHL should be done by pure tone audiometer to evaluate this complication of diabetes mellitus so early detection and early management would save from deafness.

REFERENCES:

- Harris MI: summary in diabetes in America. 2nd ed. Harris MI, Cowie CC, Stern MP, Boyko EJ, Reiber GE, Bennett PH, Eds. Washington, DC, U.S. Govt. Printing office, 1995, p.1-13(NIH publ.no.951468).
- Cruikshanks KJ, Wiley TL, Tweed TS, Klein BEK, Klein R, Mares-Perlman JA, Nondahl DM: Prevalence of hearing loss in older adults in Beaver Dam, WI: the Epidemiology of Hearing loss Study. *Am J Epidemiol*. In press.
- Vaughan N, James K, McDermott D, Griest S, Fausti S. A 5-years prospective study of diabetes and hearing loss veteran population. *Otol Neurotol*. 2006;27(1):37-43.
- Jorgensen MB: The inner ear in diabetes mellitus. *Arch Otolaryngol* 1961;74:373-81.
- Makishima K, Tanak K: Pathological changes of inner ear and central auditory pathway in diabetics. *Ann Otol rhinol laryngol* 1971;80:218-28.
- Kovar M: The inner ear in diabetes mellitus. *ORL* 1973;35:42-51.
- Wackym PA, Linthicum FH: Diabetes mellitus and hearing loss: clinical and histopathological relationships. *Am J Otol* 1986;7:176-82.
- Harner SG. Hearing in adult-onset diabetes mellitus. *Otolaryngol Head Neck Surg* 1981;89:322-7.
- Celik O, Yalcin S, Celebi H, et al. Hearing loss in insulin dependent diabetes mellitus. *auris Nesus Larynx* 1996;23:127-32.
- Hamer SG. Hearing in adult-onset diabetes mellitus. *Otolaryngol Head Neck Surg* 1982;89:322-7.
- Jorgensen MB, Buch NH: Studies on innerear function and cranial nerves in diabetics. *Acta Otolaryngol* 1961;53:350-64.
- Friedman SA, Schulman RH, Weiss S: Hearing and diabetic neuropathy. *Arch intermed* 1975;135:573-6.
- Axelsson A, Sigroth K, Vertes D. Hearing in diabetics. *Acta Otolaryngol (suppl.)* 1978;356:3-23.
- Miller JJ, Beck L, Davis A, Jones DE, Thomas AB: Hearing loss in patients with diabetic Retinopathy. *Am J Otolaryngol*, 1983;4:342-6.
- Harrell RW. pure tone evaluation. in: katz j, ed. *Handbook of clinical audiology*. New York, Williams and Wikins, 2002:82.
- Mozaffari M, Tajik A, Ariaei N, Ehyali A, Behnam H: Diabetes mellitus and sensorineural hearing loss among non elderly people: Eastern Mediteranean Health Journal, 2010;16 (9):947-52.
- Kakarlapudi V, sawyer R staecker H. The effect of diabetes on sensoriniural hearing loss. *Otology and Neurotology*, 2003;24:382-6.
- Okhovat SA, Moaddab MH, Okhovat SH, Al-Azab AAA, Saleh FAA, Oshaghi S, Abdeyazadan Z: Evaluation of hearing loss in juvenile insulin dependent patients with diabetes mellitus: *J Res Med Sci*. 2011 February; 16(2):179-83.
- Mala CA, Campos CA. Diabetes mellitus as etiological factor of hearing loss. *Revista Brasileira de Oto Rino Laringologia*. 2005;71:208-14.
- Dalton DS et al. Association of NIDDM and hearing loss. *Diabetes care*, 1998;21:1540-4.
- Rozariska –Kudelska M et al. [Hearing loss in patients with diabetes mellitus type II. I Zaburzenia sluchu U chorych na cukrzy 2 typu. *Otolaryngologia Polska*, 2002;56:607-10.
- Helzner EP et al. race and sex differences in age – related hearing loss: the health, aging and body composition study. *Jour – nal of the American geriatric society*, 2005;53:2119-27.
- Cullen JR, Cinnamon MJ, Hearing loss in Diabetes. *J Laryngol Otol* 1993;107:179-82.
- Taylor IG, Irwin J, Some audiological aspects of diabetes mellitus and hearing loss. *J Laryngol Otol* 1978;92:99-113.
- Wierusz-wystepowanie cukrzycy nieznanej W populacji czynnych zawodow osob W srodoqwisu mijskim[Appearance of undiagnosed diabetes mellitus in the population of profdrdionsly active people in the urban areas]. *Polskie Archiwum Medycyny wewnetrzej*, 2001;106:815-21.

Health Related Quality of Life in Children after Adeno-Tonsillectomy for Sleep Disordered Breathing

Pallavi Sinha, Rajendra Prasad Sharma Guragain, Chop Lal Bhusal, Bimal Kumar Sinha

ABSTRACT: **OBJECTIVES:** The objective of this study was to measure the Health Related Quality of Life (HRQOL) in children after adeno-tonsillectomy for sleep disordered breathing. **STUDY DESIGN:** Prospective, Comparative study. **SETTING:** Ganesh Man Singh Memorial Academy of ENT & Head & Neck Studies, Tribuvan University Teaching Hospital, Kathmandu, Nepal. **DURATION:** Twenty two months from 1st October 2008 to July 2010. **SUBJECTS AND METHODS:** Children less than 13 years of age with sleep disordered breathing due to adeno-tonsillar hypertrophy either undergoing adeno-tonsillectomy or being managed conservatively were included in the study. The children undergoing surgery comprised the surgical group where as those managed conservatively comprised the non-surgical group. OSD-6 questionnaire which was translated into the Nepalese language was used to assess the Health Related Quality of Life in both the groups. Paired Student's t-test was used for the analysis of difference of means within the same group and one way ANOVA was used for the analysis of difference of means among the different groups. **RESULTS:** Fifty-two children were enrolled in the study, thirty-six in the surgical group and sixteen in the non-surgical group. Out of them, there were thirty two boys and twenty girls. Mean OSD-6 scores were found to have significantly reduced post-operatively in the surgical group ($p < 0.001$). There was no significant difference in the mean OSD-6 scores of children in the non-surgical group at subsequent evaluations. **CONCLUSION:** There was significant improvement in the quality of life after adeno-tonsillectomy in children with sleep disordered breathing due to adeno-tonsillar hypertrophy.

Key Words: Sleep disordered breathing, Adeno-tonsillectomy, Quality of life, OSD-6 questionnaire

INTRODUCTION: Sleep disordered breathing (SDB) is a spectrum of airway obstruction which encompasses simple snoring, upper airway resistance syndrome (UARS) and obstructive sleep apnoea syndrome (OSAS), depending upon severity. Sleep disordered breathing is a commonly encountered condition in the paediatric age group. This condition is associated with considerable morbidity and complications as a result of which the quality of life of children is adversely affected. There is growing evidence that even simple snoring may not be as benign as it is thought to be. Studies showed that secretion of growth hormone is reduced in children with simple snoring and these children have a higher incidence of neurocognitive disorders¹. There are evidences that if this condition is untreated, quality of life suffers significantly in children and it may results in significant morbidity like failure to thrive, pulmonary hypertension and cor pulmonale². Adeno-tonsillar hypertrophy leading to SDB is one of the commonly made diagnoses in paediatric otorhinolaryngology. It can significantly affect health related quality of life of the patient. The treatment options available are continuous positive airway pressure and weight reduction in obese children which are poorly tolerated by the pediatric patients. Thus the treatment of choice for children with SDB due to adeno-tonsillar hypertrophy is adeno-tonsillectomy³. In children it is thought to improve the quality of life. Adeno-tonsillectomy, a frequently performed surgery in children is also associated with considerable morbidity. Obstructive Sleep Disorder (OSD-6) questionnaire is a validated tool to measure disease specific health related QOL in patients with obstructive sleep disorders utilizing six health related questions, asked from parents or caretakers at different stages of management.⁴

The objective of this study was to measure the health related quality of life (HRQOL) using OSD-6 questionnaire in children with sleep disordered breathing before and after treatment.

SUBJECTS AND METHODS: This study was conducted over a period of 22 months from 1st October, 2008 to 31st July, 2010. Ethical clearance from the Institutional Review Board was obtained. Children less than 13 years of age with SDB due to adenoid and/or tonsillar hypertrophy and children undergoing adenoidectomy, tonsillectomy and /or adeno-tonsillectomy for SDB were included in the study. Children with SDB due to other causes like syndromes, cerebral palsy, neurological disorders, deviated nasal septum, children whose care-takers were not definite, those with cleft palates, previous pharyngeal surgeries, psychiatric disorders and those children whose parents were unable to read or understand the questionnaire were excluded from the study. The OSD-6 questionnaire was translated in the Nepalese language and a pilot study was carried out to validate the tool. Patients were diagnosed on the basis of history and clinical examination and were enrolled in the study after taking informed consent from the parents/ caretakers. Cases were taken up in the non-surgical group if they refused surgery and were treated conservatively. Patients presenting with severe symptoms and requiring immediate surgical intervention were enrolled in the surgical group. Children in the surgical group were evaluated a day prior to surgery, on the 7th postoperative day and 6-10 weeks post operatively. They underwent adenoidectomy by curettage method and tonsillectomy by cautery dissection method. Children in the non-surgical group were evaluated on the day of diagnosis, 1 week after that and then after 5 weeks from

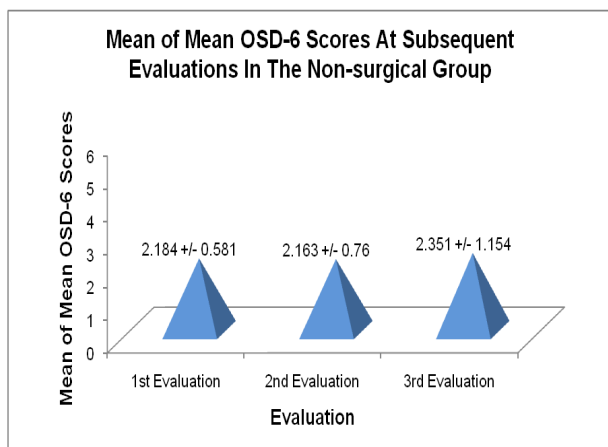


Figure-1: Mean of Mean OSD-6 Scores At Subsequent Evaluations In The Non-surgical Group p-value (1st vs 2nd Evaluation): 0.856; p-value (2nd vs 3rd Evaluation): 0.156; p-value (1st vs 3rd Evaluation): 0.417

the second evaluation. The OSD-6 questionnaire that was translated and validated in the Nepalese language was used. It was explained by the researcher and filled in by caretakers/ parents at each evaluation. A mean score was obtained by dividing the total score at each evaluation by 6. On subtracting the mean scores at subsequent evaluations from the mean score at 1st evaluation, if a positive score was obtained that denoted improvement and if a negative score was obtained that denoted deterioration of patient as compared to the 1st evaluation. Statistical analysis was carried out using SPSS 17.0 software. Paired Student's t-test was used for the analysis of difference of means within the same group and one way ANOVA was used for the analysis of difference of means among the different groups. P-value of 0.05 was taken as standard reference value with confidence interval of 95%.

RESULTS : A total of 57 children were initially included in the study out of which 5 were excluded, 1 from the surgical group and 4 from the non-surgical group. They were excluded from the study because they did not turn up for follow up. So finally total number of children included in the study was 52 cases, 36 in the surgical

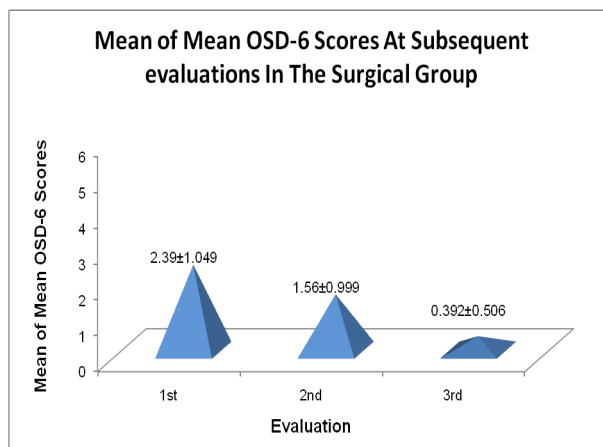


Figure-2: Mean of Mean OSD-6 Scores At Subsequent Evaluations In The Surgical Group p-value (1st vs 2nd Evaluation): <0.001; p-value (2nd vs 3rd Evaluation): <0.001; p-value (1st vs 3rd Evaluation): <0.001

group and 16 in the non-surgical group. Out of the 36 patients in the surgical group, 16 were girls and 20 were boys. Out of the 16 patients in the non-surgical group, 4 were girls and 12 were boys. Age range was 2-12 years with an overall mean age of 6.22 years. Mean age in the Non-surgical group was 6.56 years and that in the surgical group was 6.07 years. The mean OSD-6 scores at 1st, 2nd and 3rd evaluations in the non-surgical group were found to be 2.184 ± 0.581 , 2.163 ± 0.76 and 2.351 ± 1.154 respectively (Fig.1). There was no significant difference found in the mean OSD-6 scores at 1st, 2nd and 3rd evaluations in the non-surgical group ($p > 0.05$). The mean OSD-6 scores at 1st, 2nd and 3rd evaluations in the Surgical Group were found to be 2.39 ± 1.049 , 1.56 ± 0.999 and 0.392 ± 0.506 respectively (Fig.2). Overall mean OSD-6 scores were found to have significantly improved at subsequent evaluations as compared to previous ones after surgery. On comparing the mean OSD-6 scores at subsequent evaluations between surgical and non-surgical groups. Mean OSD-6 score at 1st evaluation in the surgical group was found to be relatively higher although not significant as compared to that of non-surgical group. The mean score post-operatively was found to be significantly lower in surgical group at 2nd and 3rd evaluations as compared to non-surgical group (Fig.3).

DISCUSSION: SDB is a common and important paediatric health problem. Because of difficulties in defining the condition, the exact prevalence is not known but it is believed that it may be as high as 11%⁵. It does not only cause night and day-time symptoms like snoring, restlessness, difficulty in breathing, sweating, enuresis, morning headache and daytime somnolence but has also been attributed to mental dullness and lethargy. This may lead to hampering of school performance. Untreated SDB may lead to complications like failure to thrive, behavioural and neurocognitive problems, learning difficulties and even cardiopulmonary complications like pulmonary hypertension and cor pulmonale^{6,7}. These may result in adversely affecting the quality of life of a child⁸ which could be a significant distressing factor for the parent. In the context of SDB, QOL describes its net consequences on the child's daily activities, physical symptoms, social interactions, and emotional well being. The effect of adeno-tonsillectomy on these areas of

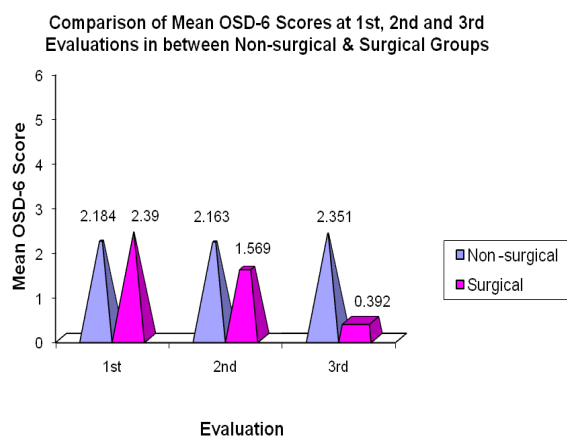


Figure-3: Comparison of Mean OSD-6 Scores at 1st, 2nd and 3rd Evaluations in between Non-surgical and Surgical Groups.

functioning is an important information for parents considering the procedure for their child and is an evidence of the procedure's effectiveness. The OSD-6 questionnaire which is a validated assessing tool⁴ was translated into the Nepalese language and was given to the caretakers to be filled. It is important to consider this existing tool to be adapted with slight modification in the national language of the population being studied⁹. The researchers should undertake comprehensive literature searches to ascertain whether a suitable measure is available before they decide to develop a new measure¹⁰. We used a previously existing validated instrument rather than generating our own. Children whose caretakers were not definite were excluded from the study as data obtained from those patients was unreliable. Similarly, the caretakers who could not read or understand the questionnaire were also excluded from the study to reduce bias. We came across one such patient whose caretaker could not read the questionnaire and also this patient in the non-surgical group did not visited for follow up and so was excluded from the study. Like in other outcomes studies, we carried out a longitudinal study by measuring change in QOL before and after surgery or over a period of time in those who didn't undergo surgery. The advantage of such a study is that every patient acts as his/ her own control thus reducing the possibility of bias. We also compared the mean OSD-6 scores of surgical and non-surgical groups which to the best of our knowledge were not done in any other study in the literature. There are longitudinal studies on QOL in children with OSAS but no comparative study was found. The peak incidence of disease is between three and seven years of age¹¹ which is in conjunction with our study where maximum numbers of children were below 10 years of age. The mean age in our study was 6.22 years, which is similar to the results obtained in a reported study¹². However, the mean age in the study by Beraldin et al. was found to be slightly higher¹³. There was no significant change in mean OSD-6 scores at the 2nd and 3rd evaluations as compared to the 1st evaluations in the non-surgical group. From this, we can infer that there is no change in patient's QOL status with conservative and/or no treatment over a duration of 1 ½ to 2 months. These results are similar to those obtained in a study where the patients were evaluated twice before surgery within a mean duration of 31 days (range 4 to 162 days) and found very trivial difference in scores preoperatively¹². Although the combined mean OSD-6 scores in our study had significantly reduced at the 2nd evaluation, that is 1 week post-operatively, there were 6 cases in which the mean score had actually increased. This increase was in the domains of speech and swallowing disturbances, sleep disturbance and in caregivers concern. Since pain was the major factor for morbidity following adeno-tonsillectomy and persisted for 1 week post-operatively, these children with increased OSD-6 scores may be having difficulty in swallowing. As it may take up to 3-6 weeks for obstructive symptoms to subside following adeno-tonsillectomy, sleep disturbance may be persistent leading to a rise in score in few cases. This in turn may lead to an increased score in the caregiver's concern domain. The mean OSD-6 scores were found to have significantly improved post-operatively. Beraldin et al too had similar findings in their study¹³. Our results regarding improvement in QOL are also in accordance

with the conclusion of Mitchell and Kelly's literature review which states that adeno-tonsillectomy leads to improvement in sleep, behavior, neurocognition and QOL¹⁴. There was significant improvement in the mean OSD-6 scores at 6 weeks post operatively as compared to 1 week post-operatively. This improvement may be attributed to the fact that at 1 week post-operatively, the effects of surgery may not have completely worn off which can be settled by 6 weeks post-operatively. In our study we also observed a difference in the mean OSD-6 scores at 1st evaluation between the surgical and non-surgical groups though not statistically significant. This may indicate a selection bias in our part that patients with a worse QOL were taken up for surgery and a wait and watch policy adopted for those with a better QOL. Statistically significant relationship was observed in the difference of scores at 1 week post-operatively between the two groups which became highly significant at 6 weeks post-operatively.

CONCLUSION: Adeno-tonsillectomy for SDB due to adenotonsillar hypertrophy results in significant improvement of QOL in short term. There is no significant change in QOL with conservative management.

REFERENCES:

1. Nieminen P, Loppopen T, Tolonen U, Lenning P, Loppopen H. Growth and biochemical markers of growth in children with snoring obstructive sleep apnoea. *Pediatrics* 2002; 109: 55.
2. Sohn H, Rosenfield RM. Evaluation of sleep disordered breathing in children. *Otolaryngology and Head and Neck Surgery* 2003; 128 (3): 344-52.
3. Chan J, Edman JC, Koltai PJ. Obstructive sleep apnea in children. *Am Fam Physician*. 2004 Mar 1;69(5):1147-54.
4. De Serres LM, Derkay C, Astley S, Deyo RA, Rosenfeld RM, Gates GA. Measuring quality of life in children with obstructive sleep disorders. *Arch Otolaryngol Head Neck Surg* 2000;126:1423-9.
5. Tal A, Lieberman A, Margulis G, Sofer S. Ventricular dysfunction in children with obstructive sleep apnoea: radionuclide assessment. *Pediatric Pulmonology* 1988; 4:139-43.
6. Saffer M. A criança respiradora bucal. In: Chinski A, Sih T. II Manual de otorrinolaringologia pediátrica da IAPO. IAPO-International Association of Pediatric Otorhinolaryngology;1999. p.170-81.
7. Guilleminault C, Khramtsov A. upper airway resistance syndrome in children: A clinical review. *Semin Pediatr Neurol*. 2001; 8:207-15.
8. Di Francesco RC, Komatsu CL. Melhora da qualidade de vida em crianças após adenoamigdalectomia. *Rev Bras Otorrinolaringol* . 2004;70(6):748-51.
9. Aaronson NK. Quality of life research in cancer clinical trials: a need for common rules and language. *Oncology* 1990; 4: 59-66.
10. Garratt A, Schmidt L, Mackintosh A, Fitzpatrick R. Quality of life measurement; bibliographic study of patient assessed health outcome measures. *British Medical Journal* 2002; 324: 1417-20.
11. Redline S, Tishler PV, Schluchter M, Aylor J, Clark K, Graham G. Risk factors of sleep disordered breathing in children, association with obesity, race and respiratory problems. *American Journal of Respiratory and Critical Care Medicine* 1999; 159: 1527-32.
12. De Serres LM, Derkay C, Sie K, Biavati M, Jones J, Tunkel D, et al. Impact of adenotonsillectomy on quality of life in children with obstructive sleep disorders. *Arch Otolaryngol Head Neck Surg* 2002; 128: 489-96.
13. Beraldin BS, Rayes TR, Villela PH, Ranieri DM. Assessing the impact adenotonsilectomy has on the lives of children with hypertrophy of palatine and pharyngeal tonsils. *Braz J Otorhinolaryngol* 2009;75(1):64-9.
14. Mitchell RB, Kelly J. Behavior, neurocognition and quality-of-life in children with sleep-disordered breathing. *International Journal of Pediatric Otorhinolaryngology* 2006; 70(3): 395-406.

Pleomorphic Adenoma of the Nasal Septum

*Snehasis Barman, **Saumendra Nath Bandyopadhyay, ***Jaydip Nath

ABSTRACT: A rare case of pleomorphic adenoma arising from the nasal septum is presented. The tumour has been excised satisfactorily using the nasal endoscope with reduced blood loss, minimal post operative pain and without facial scarring.

Key Words: Pleomorphic adenoma, Tumors of nasal septum.

INTRODUCTION : Pleomorphic adenomas form 60% of all salivary gland neoplasms. This benign mixed tumour mainly arises in the major salivary glands. Minor salivary gland involvement can be seen in 8% of cases, with the palate being the most common site¹. It is very rare for a pleomorphic adenoma to develop in the nasal cavity². We present one such rare case of pleomorphic adenoma of the nasal septum.

CASE REPORT: A 36 year old female presented with spontaneous profuse bleeding from the right nostril. There was past history of similar episode one year back, when she was diagnosed to have a nasal mass on the right side of the nasal cavity and was advised surgery. The patient ignored the advice as the bleeding stopped after conservative treatment. She had no other complaint except right sided nasal obstruction during the last one year. She did not give any history of headache, facial pain, and changes in vision, loss of smell, sensation or weight loss. Anterior rhinoscopy revealed nothing significant except hypertrophied turbinates. The nasopharynx was poorly visualized by posterior rhinoscopy. Head and neck examination revealed nothing significant, and in particular, there was no cervical lymphadenopathy. Nasal endoscopy revealed a pinkish white firm globular mass with normal overlying mucosa attached to the nasal septum with a wide base on posterior part of the right nasal cavity near the choana completely blocking it (Fig. 1). The mass did not bleed on touch.

CT scan showed a poorly enhancing heterogenous soft tissue mass in the posterior part of the right nasal cavity blocking the choana (Fig. 2). The site of origin of the mass could not be identified. There was no evidence of bone erosion. Routine pre-operative investigations were within normal limits. As there was history of severe epistaxis, punch biopsy was avoided and endoscopic excision of the mass was planned under general anaesthesia. Mucoperiosteal flap was raised on the right side of the nasal septum and the mass was excised along with the mucoperiosteum under endoscopic visualization. Haemostasis was achieved with cauterization of the margins of the wound. The mass on removal looked greyish white, firm, ovoid in shape, approx 3 cm in

diameter with smooth intact overlying mucosa. Histopathological features were suggestive of pleomorphic adenoma (Fig.3). There was histology of a cellular neoplastic lesion with considerable variation in morphology. In some areas it was composed of papillary processes and acini lined by cuboidal cells. Elsewhere there was preponderance of spindle cells. Some mass showed prominent clear cell component. There were areas of hyaline stroma and small foci of myxoid change. Mytotic figures were inconspicuous. No perineural invasion or endovascular emboli seen. The post operative course was uneventful. She had been followed up for eight months without any recurrence.

DISCUSSION: Pleomorphic adenoma occurs commonly in the major salivary glands, predominantly the parotid gland. It also occurs in the minor salivary glands of the hard and soft palate³. Mixed salivary gland tumours are found to arise from any part of the upper aero-digestive tract. However they are rare in the nasal cavity⁴. In the nasal cavity, nasal septum is the most common site and accounts for 80% of the cases and only 20% originated from the lateral wall or the turbinates⁵. The septal origin of these benign

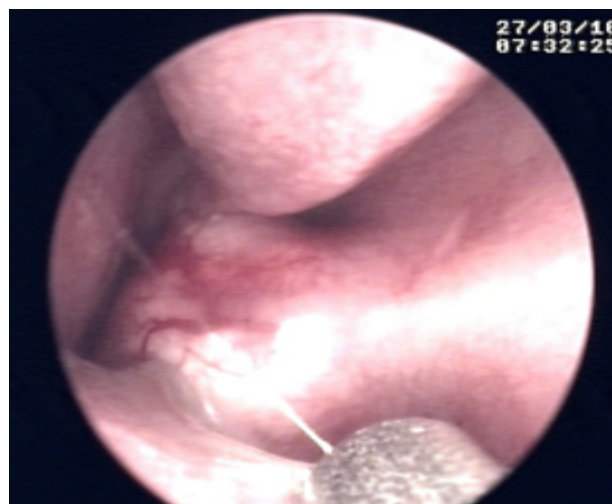


Figure 1: Endoscopic view of the pleomorphic adenoma attached to the nasal septum.

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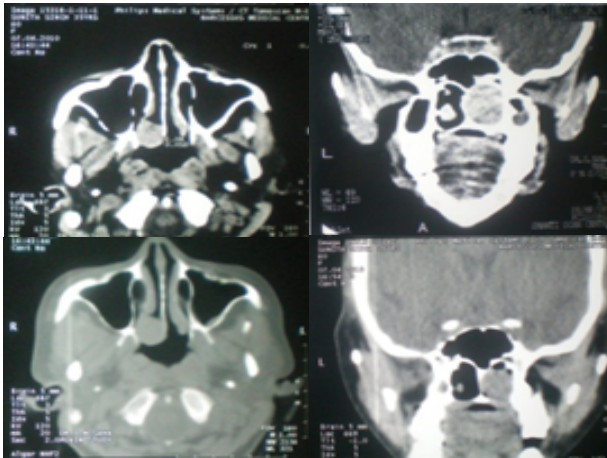


Figure 2: CT scan showing the heterogeneously enhancing mass occupying the posterior part of the right nasal cavity and the choana.

mixed tumours is rather curious due to the fact that the nasal septum is sparsely populated by salivary glands, whereas the vast majority of minor mucous and serous glands are located in the lateral nasal walls, which are affected less often⁶. Intranasal pleomorphic adenoma is more frequently seen in women and is common between the 4th and 6th decades of life⁷. The most common presenting symptoms are nasal obstruction, epistaxis and/or intermittent nasal discharge. The tumour can range in size from <5 mm to > 7 cm². The tumour is usually described as broad based, ovoid, mucosa covered mass originating from the nasal septum or less commonly from the lateral wall of the nose. Histologic appearance of pleomorphic adenoma includes an admixture of epithelial and myoepithelial components including the presence of acini or tubules and a mixed stroma. In a given tumour the ratio of these components varies, so that any one component may dominate the histologic picture. Intranasal pleomorphic adenoma is highly cellular and in contrast with pleomorphic adenoma of major salivary glands, has little myxoid stoma⁷. Higher cellularity of nasal pleomorphic adenoma is frequently interpreted as biologically more aggressive. This also results in many cases of misdiagnosis of pleomorphic adenoma of the nasal cavity at the initial biopsy as squamous cell carcinoma, adenoid cystic carcinoma or adenocarcinoma⁷. Sufficiently deep biopsy material to include the sparse myxoid stoma to help in the correct diagnosis and knowledgeable pathological consultation may guard against unnecessary radical surgery. Immunohistochemical expression of cytokeratin and S 100 may also be used to confirm the diagnosis⁸. Pleomorphic adenomas of the parotid gland have sometimes been reported to metastasize in bone, lung, lymph node or liver. There has only been one reported case of metastasis from the nasal cavity where the patient presented with recurrent septal pleomorphic adenoma with metastasis to ipsilateral submandibular lymph nodes⁹. Pleomorphic adenomas are known for their frequent recurrences, about 50%

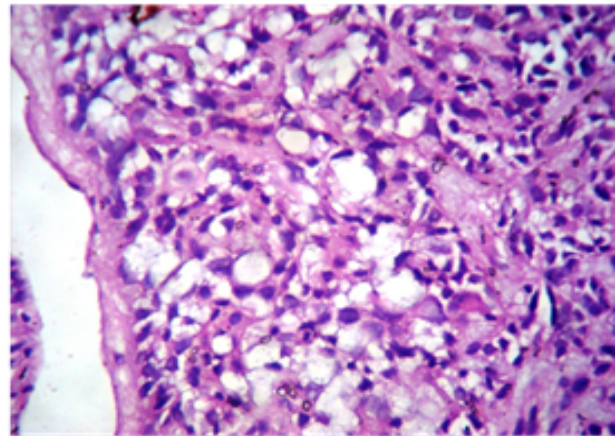


Figure 3: Photomicrograph of pleomorphic adenoma with intact surface epithelium showing epithelial cells arranged in irregular masses with a myxoid stroma and cystic spaces. (H&E,40x).

in parotid and 25% in oral cavity. Nasal pleomorphic adenomas, being more cellular, have a comparatively lower recurrence rate of 10%. Abundant myxoid stroma is considered to be the cause of recurrence in pleomorphic adenomas elsewhere; when spilling of the myxoid stroma during surgery provide the focus for recurrence. The histological characteristic associated with the recurrent pleomorphic adenoma is myxoid stroma which is distinctly uncommon in nasal pleomorphic adenoma. The most useful imaging studies for diagnosis of intranasal pleomorphic adenoma are CT and MRI. The role of these techniques is to detect the mass and to determine its origin². It may be difficult to demonstrate the origin when the mass is large or when it comes in touch with two opposing surfaces. The treatment of choice of pleomorphic adenoma of the nasal cavity is local surgical excision with histologically clear margins. Various surgical approaches have been used, depending upon the size and location of the tumour in the nasal cavity. They include intranasal excision, facial degloving and lateral rhinotomy. The development of new endoscopic techniques and instruments enable lesions to be safely removed from the nasal cavity, if the tumour is small enough to expose. These techniques have advantages of minimal blood loss, less pain and absence of external scarring¹⁰.

SUMMARY: Intranasal PA is a rare neoplasm to present with unilateral nasal obstruction and epistaxis. Though generally similar to mixed tumours arising from the major salivary glands, nasal pleomorphic adenomas differ in their cellularity and rate of recurrence. The treatment of choice is local excision. PA of nasal septum can be satisfactorily managed by adequate excision with proper visualization by nasal endoscope with minimal blood loss, less pain and without any facial scarring.

REFERENCES:

1. Hanna EY, Lee S, Fan CUY, Suen JY: Benign neoplasms of the salivary glands, in Cummins CW, et al(Eds) *Otolaryngology Head and Neck Surgery* (Ed 4). Philadelphia, Elsevier Mosby 1998, pp1348-77.

2. Oztürk E, Saglam O, Sonmez G, Cüce F, Haholu A. CT and MRI of an unusual intranasal mass: Pleomorphic adenoma. *Diagn Interv Radiol*, 2008; 14: 186-8.
3. Tahlan A, Nanda A, Nagarkar N, Bansal S. Pleomorphic adenoma of the nasal septum- A case report. *Am J Otolaryngol*, 2004; 25: 118-20.
4. Bergstrom B, Bjorkland A. Pleomorphic adenoma of the nasal septum :report of two cases. *J Laryngol Otol*, 1981; 95:179-81.
5. Batsakis JG. Tumours of the head and neck. Clinical and pathologic considerations. Baltimore, Williams & Wilkins (Ed 2), 1984, pp76-99.
6. Kalan AMH, Tariq M. Pleomorphic adenoma of the nasal septum. *Ind J Otolaryngol Head & Neck Surg*, 2005; Spl Issue I: 302-4.
7. Compagno J, Wong RT. Intranasal mixed tumours (Pleomorphic adenoma): A clinicopathologic study of 40 cases. *Am J Clin Path*, 1977; 68: 213-8.
8. Kumagai M, Endo S, Koizumi F, Kida A, Yamamoto M. A case of pleomorphic adenoma of the nasal septum. *Auris Nasus Larynx*, 2004; 31: 439-42.
9. Freeman S, Kennedy K, Parker G, Tatum S. Metastasizing pleomorphic adenoma of the nasal septum. *Arch Otolaryngol Head Neck Surg*, 1990; 116: 1331-3.
10. Motoori K, Takano H, Nakano K, Yamamoto S, Ueda T, Ikeda M. Pleomorphic adenoma of the nasal septum: MR features. *Am J*

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Benign Fibrous Histiocytoma of Submandibular Space

Pradipta Kumar Parida, Gopalakrishnan Surianarayanan, Sivaraman Ganeshan

ABSTRACT: Benign fibrous histiocytoma (FH) is a benign tumor composed of a mixture of fibroblastic and histiocytic cells. Based on the location of these tumors are usually divided into cutaneous types and those involving deep tissues. Non-cutaneous benign FH represents approximately 1% of all benign FH lesions. The diagnosis of benign fibrous histiocytoma located in the deeper tissues is clinically difficult and is frequently confirmed histopathologically after excision. The most important diagnostic distinction is the separation of this tumor from aggressive forms of fibrohistiocytic neoplasms like dermatofibrosarcoma protuberans and malignant fibrous histiocytoma. A 45-year-old male presented to us with a firm, painless swelling in the right submandibular area. After detailed clinical and laboratory examinations, the lesion was excised in toto under general anesthesia, and histopathology revealed a benign fibrous histiocytoma.

Key Words: Fibrous histiocytoma, Benign tumors, Submandibular region, Fibrohistiocytic neoplasms.

INTRODUCTION : Benign fibrous histiocytoma (FH) is rarely found in the head and neck region. It arises from the tissue histiocyte and generally behaves in a benign fashion. This tumor most frequently occurs in the dermis, but is also sporadically found in deeper soft tissues and parenchymal organs^{1,2}. Benign FH should be differentiated from the malignant FH, which frequently has a rather aggressive malignant course³. Here; we report a rare case of benign FH in right submandibular space. The clinical presentation, diagnosis, treatment and prognosis of benign fibrous histiocytoma of head neck region are also discussed.

CASE REPORT : A 45-year-old male presented to our ENT out patient department, with an apparently painless swelling in the right submandibular area of 6 years duration. The clinical examination revealed a firm mass of size 6x4 cm in the right submandibular region and overlying skin was free (fig-1). The mass was bimanually palpable. Oral examination revealed a mucosa covered mass in the right floor of mouth (Fig-2). Rest of the examination were normal. CT scan showed a well defined mass in right submandibular and sublingual space elevating the floor of the mouth in close approximation of submandibular gland. Fine needle aspiration cytology of the swelling reported as pleomorphic adenoma of submandibular gland. The mass was excised by transcervical route under general anesthesia. A horizontal cervical incision was made two fingers breadth below the right angle of mandible. Subplatysmal flaps were elevated. The submandibular gland was dissected out from anteriorly and retracted posteriorly to expose the tumor completely. The tumor was anterior and deep to the submandibular gland occupying the submandibular and sublingual space and well separated from submandibular gland (Fig-3). The mass was well defined and encapsulated (Fig-4). The histopathological examination of the excised mass showed it to be benign fibrous histiocytoma (fig-5). The postoperative period was uneventful. There is no evidence of recurrence 4 years after surgery.

DISCUSSION : Benign FH was not known as a clinical entity before 1970. With the development of immunohistochemical techniques and electronic microscopy, the diagnosis became feasible^{4,5}. The diagnosis of deep tissues benign FH is difficult clinically and is frequently confirmed after excision. Histopathologically, this tumor is a neoplasm of histiocytic origin and is composed of a biphasic cell population of histiocytes and fibroblasts⁶. In our case, immunohistochemistry was performed for differential diagnosis. The positivity for CD68 and vimentin demonstrated that the lesion was composed of histiocytic cells and fibroblast-like cells on immunohistochemistry, and the negativity for SMA and S100 could differentiate the lesion from leiomyosarcoma and neurogenic tumours⁷. The most important diagnostic challenge lies in the separation of this tumor from aggressive forms of fibrohistiocytic neoplasms, including dermatofibrosarcoma protuberans and malignant FH⁸.



Fig 1 : Clinical photographs showing swelling in right submandibular area.



Fig 2 : Clinical photographs showing mucosa covered bulge in the right floor of the mouth.

As with benign FH, the diagnosis of malignant FH frequently relies upon immunohistochemistry and electron microscopy to differentiate it from other lesions. Malignant FH is composed of malignant pleomorphic sarcomatous cells, bizarre giant cells, and frequent mitotic figures⁹. Histologic features, unfortunately, play a minor role in predicting the biologic behavior of these neoplasms. Based on the location, FH are usually divided into cutaneous types and those arising from the deep tissues^{2,4}. These lesions usually arise in the skin, but may very occasionally occur in soft deep tissues¹. Non-cutaneous benign FH represents approximately 1% of all benign FH lesions. This tumor has been associated with a previous trauma, sun exposure, and chronic infection, rather suggesting that it represents a reactive proliferation of benign cells but the present case did not have such past history. Benign FH of the soft tissues of the head and neck most often develops as a painless mass with specific symptoms caused by interference with the normal anatomy and physiology of the area in which they arise^{1,8}. The most commonly reported initial symptoms of head neck benign FH are nasal obstruction,

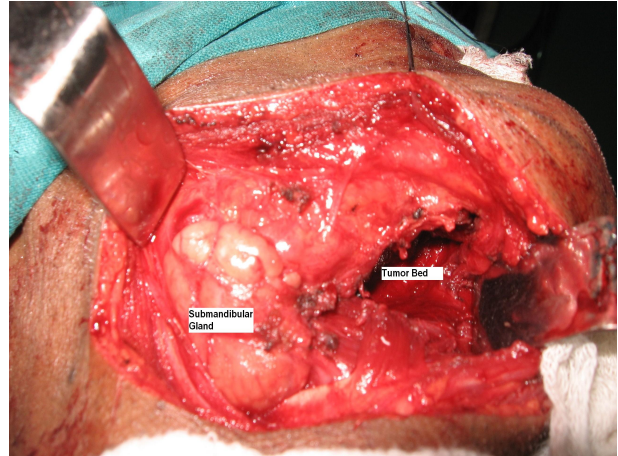


Fig 3 : Per-operative photographs after removal of the tumor showing the tumor bed and submandibular gland in situ.

epistaxis, dysphagia, dyspnoea and submucosal and neck swellings⁶. Our patient presented a painless mass in right submandibular area with a bulge in floor of mouth causing cosmetic deformity, discomfort and interfering with chewing and eating. Buccal mucosa, submandibular triangle, oral tongue, larynx, nasal cavity, mandible and supraclavicular fossa are frequently involved sites in head and neck region^{1,4,8}. Usually, these lesions appear very well circumscribed and encapsulated and the cut surface is firm and pale to yellowish-brown in color. There is no macroscopic evidence of necrosis but sometimes the lesions are focally cystic, presenting hemorrhage within. The size of the tumor has been reported to range from 2 to 12 cm⁴. Most of the lesions usually presents clinically as a solitary, painless, slowly growing mass, the pre-operative duration ranging from 3 to 12 months^{5,8}. The ages of the patients varies from 1 to 70 years, while the patient described in this report was 45 years old and he had the swelling for last six years. The male-to-female ratio is 2.5:1. The treatment of choice is surgical excision in toto. Our patient was submitted to complete local excision without any



Fig 4 : Well defined and encapsulated excised mass.

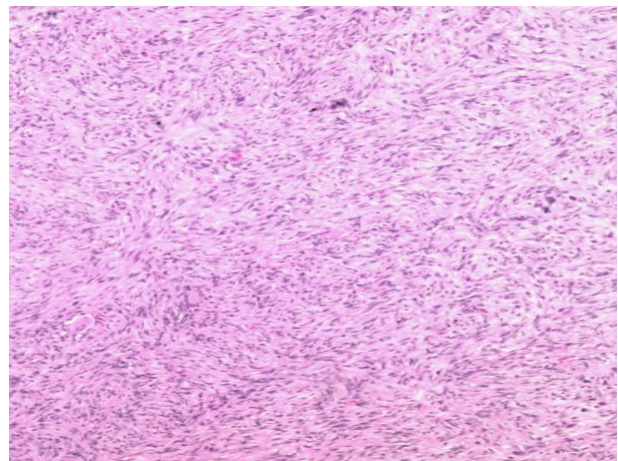


Fig 5 : Microscopic photograph showing spindle shaped cells (E&H stain, 10X).

functional or cosmetic morbidity. The recurrence of these tumors after complete surgical excision is rare. These lesions have no metastatic potential and they generally carry a good prognosis.

CONCLUSION: Benign fibrous histiocytoma of head and neck region presents as a painless progressive swelling; especially when it is arising from submandibular space, it may present as a swelling in submandibular area. So, it should be considered as a differential diagnosis for submandibular swelling. It may be misdiagnosed for submandibular gland lesion.

REFERENCES:

1. Bielski S, Dauer MS, Chang B, Zimmerman MC. Non-cutaneous benign fibrous histiocytoma of the head and neck. *Otolaryngol Head neck Surgery* 1995; 113:140-6.
2. Batsakis JG. Fibrous lesions of the head and neck: Benign, malignant and indeterminate. In: Batsakis JG, editor. *Tumors of the head and neck*. 2nd edn. Baltimore, MD: Williams & Wilkins; 1979. p. 252-79.
3. Femiano F, Scully C, Laino G, Battista G. Benign fibrous histiocytoma of the cheek: CD 68-KP1 positivity. *Oral Oncol* 2001; 37:673-5.
4. Fletcher CD. Benign fibrous histiocytoma of subcutaneous and deep soft tissue: a clinicopathologic analysis of 21 cases. *Am. J. Surg Pathol* 1990; 14:801-9.
5. Kamino H, Salcedo E. Histopathologic and immunohistochemical diagnosis of benign and malignant fibrous and fibrohistiocytic tumors of the skin. *Dermatol Clin* 1999; 17:487-505.
6. Calonje E, Mentzel T, Fletcher CD. Cellular benign fibrous histiocytoma. Clinicopathologic analysis of 74 cases of a distinctive variant of cutaneous fibrous histiocytoma with frequent recurrence. *Am. J. Surg Pathol* 1994; 18:668-76.
7. Fletcher CD, Gustafson P, Rydholm A, Willen H, Akerman M. Clinicopathologic re-evaluation of 100 malignant fibrous histiocytomas: prognostic relevance of subclassification. *J Clin Oncol* 2001; 19:3045-50.
8. Blitzer A, Lawson W, Zak FG, Biller HF, Som MI. Clinical-pathological determinants in prognosis of fibrous histiocytoma of the head and neck. *Laryngoscope* 1981; 91:2053-70.

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Hemangioma of Nasal Fossa in New Born

Kiran Rao , Kulwant Singh , Preety Malhotra

ABSTRACT: Hemangiomas in infancy are the most frequent benign tumors of the head and neck region . However, intranasal location is very rare. By obstructing the entire nasal fossa, it produces difficulty in breathing during the neonatal period, which leads to therapeutic measures being taken as early as possible. We present a patient who was born with intranasal hemangioma, we studied the various therapeutic options and exposed the final resolution of the case, that was surgical.

Key Words: Infantile hemangioma, Nasal fossa, Surgical excision.

INTRODUCTION : Hemangiomas are the most common type of benign head and neck tumours in infancy, which originate in the skin, mucosa and deep structures such as bones, muscles and glands. They are of two major types, capillary and cavernous. These neoplasm rarely arise in the nasal cavity, if present they are predominantly capillary type and usually found attached to the nasal septum. Cavernous hemangiomas, on the other hand, are more likely to be found on the lateral wall of the nasal cavity¹. Over all intra nasal location is very rare². It blocks the nasal cavity and causes respiratory distress during the neonatal period, making it necessary to resort to therapeutic measures to avoid possible respiratory complications³. An increased incidence is recognized in infants from multiple gestations, with older maternal age, maternal placenta previa, and pre-eclampsia. Epistaxis and nasal obstruction are the most marked symptoms. Most of the infantile hemangiomas are benign and do not cause any morbidity or mortality. Occasionally, they may impinge on vital structures and interfere with breathing, vision, eating, or hearing. Excessive bleeding is infrequent and rare, if ever, life threatening. Infantile hemangiomas are benign vascular neoplasms that have a characteristic clinical course marked by early proliferation and followed by spontaneous involution. During the proliferative phase in the neonatal period or early infancy, a rapidly dividing endothelial cell proliferation is responsible for the enlargement of infantile hemangiomas. Finally, an involution phase occurs. Most of the infantile hemangiomas are clinically resolved by age 9 years. Haemangiomas occur most commonly in white infants, with an incidence rate 10-12 times that of black and Asian infants. Females are affected more often than males by a ratio of 3:1. This disparity is higher (9:1) in infants with PHACE syndrome. Thirty percent of infantile hemangiomas are present at birth, and 70% of them initially appear in the first several weeks of life. The incidence of infantile hemangiomas is approximately 22-30% in preterm infants . Here we present a case of 3 days old child with normal birth weight who came to us with history of profuse nasal bleeding. Patient was clinically diagnosed as intra nasal hemangioma as a

bluish mass was protruding through right nasal cavity. **CASE SUMMARY :** A 3 days old male child presented to us with profuse nasal bleeding . According to parents child was absolutely normal, but 24hrs after birth he started profuse bleeding from right nostril and shifted to our hospital .Routine ENT examination revealed an angiomatous lesion in the right nasal cavity that occupied the entire right endonasal lumen. The 3D MRI imaging with gadolinium revealed the lobulated soft tissue signal intensity mass involving right nasal cavity (nasal vestibule, lateral nasal mucosa. and alar lobule.)The lesion measures 20.6x14.4x13.3mm in size and appears hypointense on T1W1 and heterogeneously hyper intense on T2W2/STIR images. The lesion was causing mass effect in form of compression/displacement of the nasal septum, nearly complete obliteration of nasal cavity and mild compression of contralateral nasal cavity. Root of nose appear normal. No extension into the nasopharynx / paranasal sinuses seen. The brain parenchyma showed normal signal intensity (Figure-1).

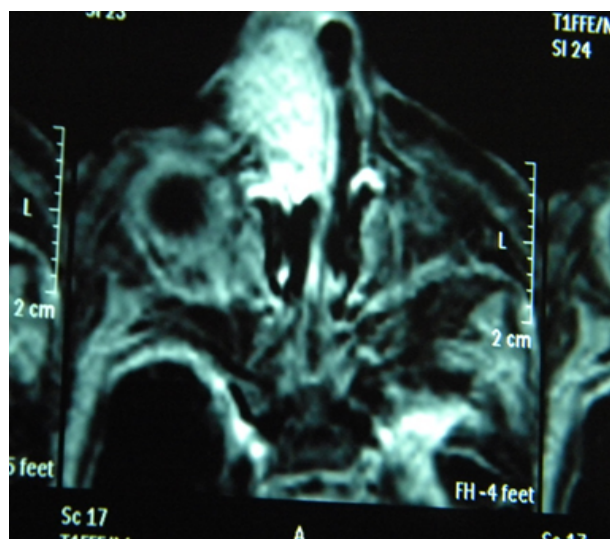


Figure 1 : Magnetic resonance showing hemangioma occupying front of right nasal cavity.

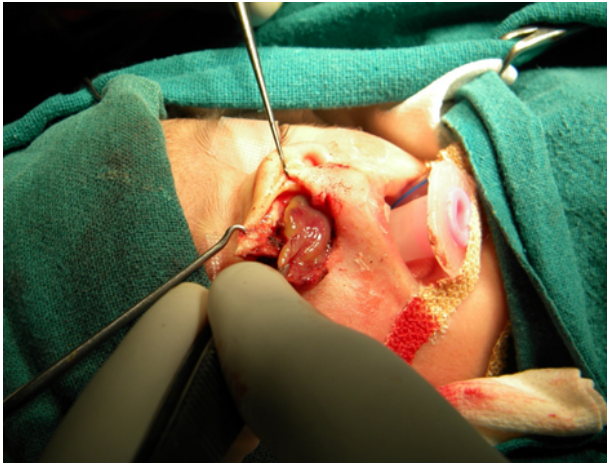


Figure 2 : Angioma occupying right nasal fossa.

A therapeutic approach for angioma was considered. Patient was treated surgically as it was bleeding profusely and a adrenaline nasal pack was done initially to stop bleeding. It was a clean, bloodless surgery and the angiomatous mass that blocked the nasal cavity was removed. The bleeding was controlled with a coagulation-suction device as well as with a light packing, which was removed 2 days later without recurrence of bleeding. The precise site of origin of this tumour was the lateral wall of the right nasal cavity and was determined only during the procedure. The postoperative result was very favorable, as a permeable nasal cavity free of pathology was achieved. Histopathological study of the tumour showed large blood-filled spaces lined with flattened endothelium and the tumour was found to be a benign cavernous angiomatous lesion.

DISCUSSION : Hemangiomas have a very characteristic natural history. They usually appear in the first few weeks of life, with the proliferative phase lasting 6 to 18 months on average, followed by a slow involution phase lasting a few years before they disappear. From the epidemiological point of view, this tumour is more predominant in females. It is also predisposed to fairer skin and has a higher incidence rate in premature infants weighing less than 1.5 kg⁴. They are histologically characterized as an endothelial cell proliferation which is why they are dynamic lesion. More than half of childhood hemangiomas appear on the head and neck, showing a preference for areas in the central part of the face, especially the cheek, lateral part of the upper lip and upper eyelid. Intranasal location is very rare and there is little information about it in medical literature. Treatment options for hemangiomas are varied, and based on medical literature, at the movement there is no consensus on the best protocol and/or guidelines. Although hemangiomas are common lesions of the head and neck, those of the nasal cavity and paranasal sinuses are rare. Many different classification systems for hemangiomas have appeared in the literature, with histological sub typing being the most widely accepted. Thus, depending on the dominant vessel size at microscopy, hemangiomas are divided into capillary, cavernous and mixed types. The differential diagnosis

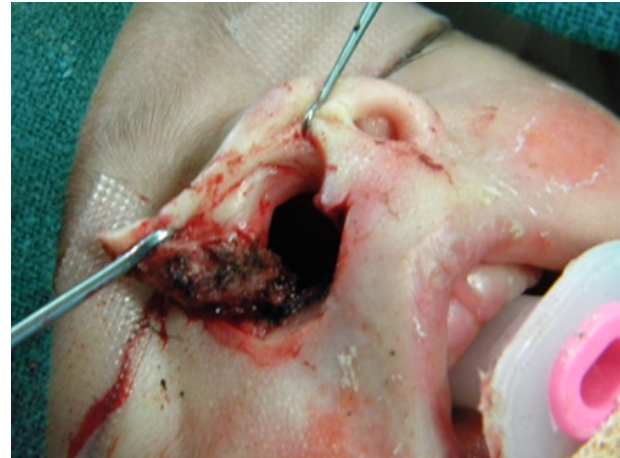


Figure 3 : After removal of lesion.

of the nasal hemangiomas includes inverted papilloma, olfactory neuroblastoma, lymphoma, hemangio-pericytoma, hemangioendothelioma, arteriovenous fistula, lymphangioma, glomangioma, melanoma, adenocarcinoma, squamous cell carcinoma and metastatic malignancies such as renal cell carcinoma. Cavernous hemangioma of the nose is a rare lesion but it has to be added to the differential diagnosis of an intra-nasal bleeding mass. A high index of suspicion, upon computed tomography delineation of the extent of the mass, including the presence of bone remodeling plus histological evaluation can be usefully employed to define an accurate diagnosis. CT features of the cavernous hemangioma is a soft tissue density circumscribed mass, enhancing after injection of contrast. Contrast CT scanning usually reveals anatomical location and extension of the tumour^{5,6}. MR images confirm the absence of clotted blood, which results in low signal intensity T1-weighted images and very high signal intensity on T2-weighted images^{5,6}. If there is any suspicion concerning the nature of these vascular tumours, the risk of bleeding is so high that angiography is always warranted, not only because it can offer the possibility of correct diagnosis but also because, with the aid of trans-arterial embolization, undue hemorrhage during surgical intervention can be avoided⁷.

Exceptionally, in our patient, angiography was not performed because patient was only 3 days child and he was not in a condition to move due to profuse nasal bleeding. Many forms of treatment have been advocated to cure hemangiomas but surgical resection of the tumour, and ligation or cautery to the feeding vessels, being the most successful. Other methods of treatment including cryotherapy, corticosteroid treatment, sclerosing solutions and resection using YAG laser have been used with differing results. An alternative form of management of these tumours, providing there is favourable anatomy is embolization of the hemangiomas, which is however only possible if appropriate angiographic facilities and expertise are available⁸. In the present case cavernous hemangioma was arising from the lateral wall of the right nasal cavity. The most interesting points were the rarity as a site of occurrence of this tumour, age of the

patient, and the successful extirpation of this lesion. We recommend the lateral rhinotomy incision for complete removal of a nasal hemangioma and sufficient control of bleeding as lesion was obstructing the nasal cavity completely and there was no space for nasal endoscope to pass.

REFERENCES:

1. Batsakis JG, Rice DH. The pathology of head and neck tumors: vaso formative tumors, part 9A. *Head Neck Surg* 1981;3:231-9.
2. Javier Cervera Escario,a,* Javier Enríquez de Salamanca and Margarita Bartolomé Benitoa. Hemangioma of the nasal fossa in infants
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B) Servicio de Cirugía Plástica, Hospital Universitario Niño Jesús, Madrid, Spain.
3. Kelly T. Endoscopic management of an intranasal hemangioma: a case report and literature review. *Otolaryngol Head Neck Surg.* 2003;128:595-7.
4. Haggstrom AN, Lammer EJ, Schneider RA, Marcucio R, Frieden IJ. Patterns of infantile hemangiomas: new clues to hemangioma pathogenesis and embryonic facial development. *Pediatrics.* 2006;117:698-703.
5. Dillon WP, Som PM, Rosenau W. Hemangioma of the nasal vault: MR and CT features. *Radiology* 1991;180:761-5.
6. Itoh K, Nishimura K, Togashi K, Fujisawa I, Nakano Y, Itoh H, et al. MR imaging of cavernous hemangioma of face and neck. *J Comput Assist Tomogr* 1986;10: 831-5.
7. Webb CG, Porter G, Sissons GRJ. Cavernous hemangioma of the nasal bones: an alternative management option. *J Laryngol Otol* 2000;114:287-9.
8. Dr. M. Archontaki Koronaïou 15, 73100 Chania, Crete, Greece *Acta Otorhinolaryngol Ital.* 2008; 28(6): 309-11.
9. Enzinger F, Weiss S. *Soft tissue tumor.* 2nd edition. St Louis: Mosby, 1988.

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Prevalence of Throat Symptoms in Asthmatic Patients in Nigeria

ABSTRACT: **OBJECTIVE:** This study was carried out to determine the prevalence of clinical features of throat in asthma with a view to follow a more holistic approach to the management of asthma patients. **METHODS:** This prospective study was conducted in the Chest Clinic and the Ear, Nose, Throat, Head and Neck Surgery Clinic of the University of Benin Teaching Hospital, Benin City, between 1st March, 2008 to 28th February, 2011. Asthmatic patients were enrolled into the study after taking informed consent. **RESULTS:** 41 Asthmatic patients participated in the study. There were 15 males and 26 females. Ages ranged from 17 years to 83 years, with an average age of 48.7 years. The common throat symptoms were cough (26.36%), itching of the throat (17.54%), hoarseness (15.79%). In 46.34% of asthmatics, no abnormality was detected in the throat. **CONCLUSION:** Common throat symptoms in asthmatics were cough, throat itching and hoarseness. A more detailed study of this topic is highly recommended **KEYWORDS:** Prevalence, Throat symptoms, Asthmatic patients, Nigeria.

INTRODUCTION : Asthma is defined as a chronic airway disease characterized by hyper-responsiveness of the airway due to recurrent inflammation following exposure to environmental allergens and manifesting as cough, wheezing, breathlessness and chest tightness which may be reversible with or without the use of bronchodilators¹. Acute asthma has also been defined as acute episodes of progressively worsening shortness of breath, cough, wheezing or chest tightness. Severity is defined according to the global initiative for asthma (GINA) guidelines². Asthma is further confirmed by a change in the Peak Expiratory Flow Ratio (PEFR) of at least 20% (measured with the mini- Wright's peak flow meter after the administration of a bronchodilator)³. Asthma is a common disease in children and adults worldwide⁴⁻⁶. However the prevalence of asthma varies from country to country and even within the same country. There are also differences in prevalence between urban and rural settings⁷⁻⁸. Generally, prevalence of asthma range from 0 to 10% in children and in up to 15% adults in Africa^{5,7}. It is possible that common immunologic reactions to antigenic stimuli as seen in asthma, leading to angio-oedema that causes clinical features of throat resulting from hypersensitivity or exaggerated response of the immune system seen in some asthmatic patients. Angio-oedema is an acute allergic, histamine-mediated reaction, which can occur in many parts of the body and it can be potentially fatal if it occurs in the larynx⁹. Although it is well documented that asthma has a close link to chronic bronchitis¹⁰, the prevalence of clinical features of the throat in asthmatic patients has not been properly documented in our center. This study was therefore carried out to outline the prevalence of throat features in asthma with a view to establishing a link or correlation between

asthma and throat problems. This will form a baseline for a more holistic approach in the management of asthmatic patients

METHODS : This is a prospective study that was carried out at the Chest Clinic and the Ear, Nose, Throat, Head and Neck (ENTH & N) Surgery Clinic of the University of Benin Teaching Hospital (UBTH), Benin City, between 1st March, 2008 and 28th February, 2011. Approval for this study was granted by the ethical review committee of UBTH, Benin City. All patients with a diagnosis of asthma that were seen in the Chest Clinic of UBTH, were evaluated to be enrolled for the study. The patients were diagnosed as having asthma with characteristics history, physical examination and reversibility testing³. All the asthmatic patients were stable and were on salbutamol inhaler/tablet and salmeterol/fluticasone propionate accuhaler. All the patients enrolled for the study were requested to attend the ENTH & N Surgery Clinic where clinical features of throat problem were taken and elicited respectively. The enquiries were made for the symptoms of dysphagia, odynophagia, regurgitation, breathlessness/dyspnoea, hoarseness, snoring, cough, itching of the roof of the mouth/throat

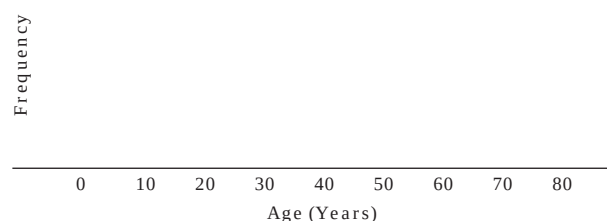


Figure 1: Age distribution.

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Throat Symptoms	Cough	Hoarseness	Odynophagia	Itching of Throat Palate	Snoring	Pain in throat	Dysphagia	No Complaint	Total
Freq	15	9	1	10	3	1	1	17	57
%	26.36	15.79	1.75	17.54	5.26	1.75	1.75	29.82	100

Table 1: Throat symptoms in asthmatic patient.

Symptoms	PND	Hyperaemia of ppw	Granular ppw	Hyper trophic papillae post 1/3rd tongue	Laryneal polyp	Oral Candidiasis	Dysphagia	Enlarged tonsils	NAD	Total
Freq	15	3	3	1	1	1	1	1	19	44
%	34.09	6.82	6.82	2.27	2.27	2.27	1.75	2.27	43.18	100

Table 2: Signs of throat problem in asthmatics.

and growth in the mouth /throat. A complete throat examination was also carried out by the first author. The clinical features were then documented in an adopted format/questionnaire for the study. Asthmatic patients found to have symptom of ENT were treated for the ENT problem. The data were analyzed manually, presenting the results in tabular formats and histogram.

RESULTS : A total of 41 consecutive asthmatic patients were enrolled for the study. There were 15 males and 26 females, with male to female ratio of 1: 1.7. Ages ranged from 17 years to 83years, with an average age of 48.7 years. Figure 1 showed the age distribution of patients in the study. Table 1 showed the throat symptoms in asthmatic patients. Table 2 showed the throat signs in asthmatic patients. It is significant to note that two asthmatic patients were diagnosed as having pharyngitis and laryngeal polyp respectively.

DISCUSSION : Only 41 patients gave consent to participate in this study, despite the fact that 160 asthmatic patients were seen in the Chest Clinic during this period. This is an attestation that people in this locality are reluctant or not so keen to participate in research with no financial or material benefit. The higher number of females in this study, may be due to the higher prevalence of female asthmatics in this age bracket. As seen in the age distribution of patients, there was a preponderance of the working class and the middle age group. The young and active asthmatics may be too busy to attend a second clinic in a week for 'research purpose', especially when stable. Similarly parents in this locality are less likely to bring their asthmatic children for a 'mere research visit' when there is no financial or material benefits attached. As regards to throat symptoms in asthmatics, cough (26.36%), itching of throat (17.54%) and hoarseness (15.79%) were the main symptoms in asthmatic patients. One may postulate that these symptoms might be a reflection of the allergic tendency of the asthmatic patients as the cough in most cases were non-productive and intermittent. Similarly the hoarseness appears to be related mostly to the period of acute asthmatic attack. Itching of the throat also points to allergic origin. Allergy has been closely associated with chronic laryngitis and asthma¹⁰. Allergy has also been

implicated as a cause of vocal cord oedema¹¹. These findings explain the predominance of cough, hoarseness and itching in asthmatic patients. Although allergic disorder may be different in terms of the stimulating antigens¹², the asthmatic patient has the predisposition to develop exaggerated immunoglobulin E (IgE) antibody responses against common inhaled aeroallergens, in different parts of the body inclusive of the entire respiratory system¹³. Allergic tendency in asthma leading to angio-edema⁹, can also explain the hoarseness in asthmatics in this study. The prevalence of post- nasal drip in some of the patients (34.09%) is due to chronic rhinosinusitis, which is a known common co-morbidity with asthma¹⁴. The mucopurulent discharge dripped from the nasopharynx, down the posterior pharyngeal wall and presented as a throat sign in the asthmatic patients. Laryngeal polyp is more likely to be due to inflammatory changes¹⁵, although allergy can precipitate in the inflammation. It is therefore necessary to look for the presence of these signs in asthmatics and to investigate and treat them when they are present. It is also noteworthy that in 19 out of 41 patients (46.34%) no abnormality was detected in the throat. All the patients in this study had throat examinations only once and they were not followed over a period of time for the symptoms they presented with or for other symptoms. These are limitations of this study. It is advised that a more detailed study in which the asthmatic patients can be monitored over a period of time may be conducted.

CONCLUSION : Asthmatic patients occasionally present with cough (26.36%), itching of throat/palate (17.54%), hoarseness (15.79%), which appear to be due to their allergic tendencies. 46.34% of asthmatic patients had no throat sign on examination. More detailed and follow-up study of throat features in asthma is recommended.

REFERENCES:

1. Scadding G, Durham S. Allergic rhinitis. In: Gleeson M, Browning GG, Burton MJ, Clark R, Hibbert J, Jones NS et al (eds). Scott-Brown's Otorhinolaryngology, Head and Neck Surgery. 7th edition. London: Edward Arnold Publishers Ltd, 2008:1395- 402.
2. National Asthma Education and Prevention Program. Expert Panel Report: Guidelines for the diagnosis and management of Asthma. Update on selected Topics 2002. J. Allerg clin. Immunol. 2002; 110(s): S141-S219.
3. Blair H. Aspects of asthma. Proceedings of the Royal Society of Medicine. 1969; 62:1008-10.

4. Godfrey RC. Asthma and IgE levels in rural and urban communities of the Gambia. *Clin Allerg* 1975; 5: 201-7.
5. Warrel DA, Fawcett IW, Harrison BDW, Agamah AJ, Ibu JO, Pope HM et al. Bronchial asthma in the Nigerian Savannah region. *Quart J. Med.* 1975; 44:325-47.
6. Sofowora EO. Bronchial asthma in the tropics: a study of 250 Nigerian patients. *East Afri Med J.* 1970; 47 (8): 432-9
7. Van Niekerk CH, Weinberg EG, Shore SC, Heese HDV, Schalkwyk DJ. Prevalence of asthma. *Lancet* 1977;ii: 500.
8. Wesley AG, Clyde JH, Wallace HL. Asthma in Durban Children of three racial groups. *S. Afri Med. J.* 1969; 43: 87-9.
9. Koufman JA. Allergic, immune and idiopathic disorders of the larynx. In: Ballenger J J. (ed) *Otorhinolaryngology: Head and Neck Surgery*. 15th edition. Media, Philadelphia, U.S.A: Williams and Wilkins Publishers Ltd, 1996: 546.
10. Pang LQ. Allergy of the larynx, trachea and bronchial tree. *Otolaryngol clin N. Am.* 1974; 7:719-34.
11. Jackson-Menaldi CA, Dzul AL, Holland RW. Allergies and vocal fold edema: a preliminary report. *J. Voice* 1999; 13:113-22.
12. Todd I, Powell RJ. Mechanisms of hypersensitivity. In: Gleeson M, Browning GG, Burton MJ, Clarke R, Hibbert J, Jones NS (eds) *Scott-Brown's Otorhinolaryngology, Head and Neck surgery*. 7th edition. London: Edward Arnold Publishers Ltd, 2008: 141.
13. Durham SR., Bangield G. Allergy: basic mechanisms and tests.

Pseudoepitheliomatous Hyperplasia of Tongue Treated by Microdebrider Shaver

Vanita Sarin, Bhanu Bhardwaj, Jaskaran Singh Gill, Baldev Singh

ABSTRACT: **OBJECTIVES:** We report an extremely rare case of pseudoepitheliomatous hyperplasia (PEH) of tongue successfully treated by Microdebrider shaver. **BACKGROUND DATA:** PEH is a difficult-to-treat, extreme-degree acanthosis characterized by proliferation of the epithelium. PEH shows the same histopathological features as of epidermal hyperplasia. To our knowledge, there have been no clinical trials published about the therapeutic response of Microdebrider shaving as a modality of treatment for PEH. **METHOD:** We present a case report of successful treatment of rare pseudoepitheliomatous hyperplasia of tongue using microdebriders shaver in an 18 year old male. **RESULTS:** This patient was an 18 year old immunocompetent male with a swelling over the dorsum of the tongue since 10-12 years which started increasing in size and was associated with pain while swallowing and foreign body sensation. Biopsy revealed pseudoepitheliomatous hyperplasia. Curative surgery with microdebrider shaver was successfully performed under general anaesthesia. **CONCLUSION:** Use of microdebrider shaver is safe and effective method in the treatment of difficult to treat cases of pseudoepitheliomatous hyperplasia.

INTRODUCTION: Pseudoepitheliomatous hyperplasia (PEH) is a difficult-to-treat extreme-degree acanthosis characterized by preparative, hyperplastic process of the epidermis. The histological formation is the outcome of abnormal and reactive epithelial proliferation that occurs in response to underlying infectious, inflammatory, neoplastic conditions and chronic cutaneous wounds¹. Conventional therapy for PEH is extensive surgical excision, which can lead to poor cosmetic outcomes, especially when local flaps or skin grafts are required for reconstruction. Topical photodynamic therapy (PDT) offers an alternate non-invasive treatment with good cosmetic outcome for intraepithelial neoplasia and inflammatory dermatosis, such as psoriasis and viral warts²⁻⁴ but have not been found useful in treatment of pseudoepitheliomatous hyperplasia even though these disorders and PEH share similar histological features, namely epidermal hyperplasia³. Both atypical cells and

proliferating epithelial cells can selectively concentrate the photosensitizing agents, which may trigger photodynamic reactions or secondary effects. Microdebrider shaver has been found to be useful in the management of lingual tonsil hypertrophy with minimal bleeding and postoperative pain⁵. However to our knowledge, there has been no clinical trial to date to test the effectiveness of microdebrider shaver in the treatment of PEH. We present this case report of the effective use of microdebriders shaver in treatment of rare PEH of tongue.

CASE REPORT : An 18 year old presented to us with swelling over dorsum of tongue since 10-12 years which gradually progressed in size and was associated with pain while swallowing and foreign body sensation. On examination the dimensions of swelling were 3.5cm x 2.5cm with irregular surface and well defined margins (Fig-1). Biopsy was taken which revealed features



Figure-1: Clinical Photograph of the PEH of the tongue.

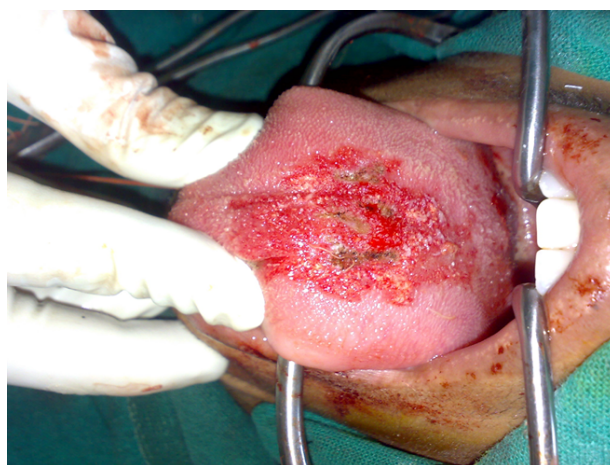


Figure-3: Photograph after removal of lesion by microdebrider shaver.



Figure-3: Photograph after 6 months of surgery.

suggestive of Pseudoepitheliomatous hyperplasia (Fig-4). There was no evidence of malignancy. After an informed consent, debridement of lesion was done with microdebrider shaver (speed:2400rpm). The lesion was shaved off in layers till smooth and soft surface of tongue was felt (Fig-2). Haemostasis was achieved with bipolar cautery. Post operative recovery was uneventful. Regular follow up was done for period of 6 months with no evidence of any recurrence (Fig-3).

DISCUSSION : PEH is a type of exuberant proliferation of the epithelium with down-growth into the dermis occurring in a variety of settings. The pathogenesis still remains unclear. The histological features are similar with well-differentiated, invasive squamous cell carcinoma, or may obscure an underlying malignant process, such as melanoma and granular cell tumour. Though there is no standard or optimal treatment; inappropriate invasive modalities such as cryotherapy and CO₂ laser curettage leads to an extension of the lesion area. This clinical case presentation indicates that microdebrider shaver is an effective mode of treatment when applied to PEH. Microdebrider are powered instruments which provide an excellent, safe, and thorough technique in endoscopic nasal surgery and transoral adenoidectomy. They provide atraumatic dissection with minimal bleeding which enables decreased surgical time and faster post operative healing⁶. Recovery period in the debrider assisted adenoidectomy was shorter than conventional adenoidectomy with faster recovery⁸. With microdebrider complete resection, accurate removal, less collateral damage, less postoperative pain and faster recovery can be achieved¹¹. These factors were associated with an excellent response in treatment of PEH with microdebrider shaver. Various studies have demonstrated that microdebrider was successfully used in the complete clearance of adenoids. Photodynamic therapy (PDT) is being used in the treatment of epithelial neoplastic cells in Acanthotic Keratosis, Bowens Disease, and Squamous Cell Carcinoma which absorb much more photo sensitizer than normal cells, leading to the elimination of the atypical cells. A study on the viral wart showed that PDT using an LED source achieved clearance rates of 81% (mean of 3.34 treatments)⁴. Complete clearance of periungula hand warts in 18 of 20 patients (30 of 40

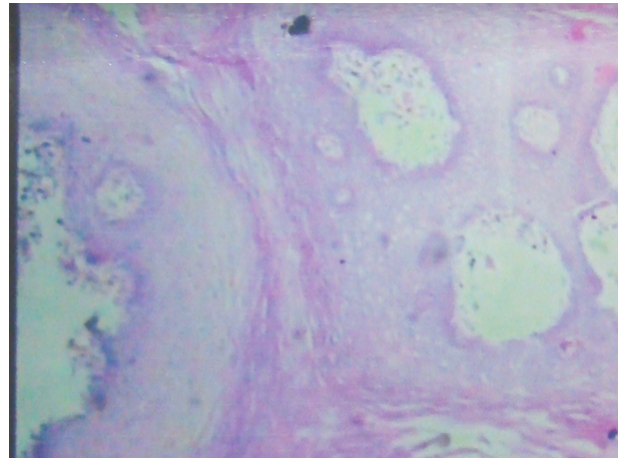


Figure-4: H&E stained section shows hyperplastic stratified squamous epithelium which is thrown into long ridges and forming meshwork at places.

warts) was achieved in a pilot study of PDT with Amino Levulinic Acid after a mean of 4.5 treatments⁷. PDT leads to the release of inflammatory mediators, like interleukin 2, interleukin 1- β , and tumour necrosis factor- α ⁹, suggesting that another mechanism for the clearance of these cells is in the indirect stimulation of local immune responses in the lesion area. Although the PDT parameters that were employed for the viral wart or the epithelial neoplasm were also used for PEH, it responded poorly. This suggests that the lack of effectiveness of PDT could be attributed to the peculiar pathological pattern, not to the neoplastic or inflammatory epithelial proliferation of PEH. Another possibility for the lack of response of PDT is the thickness of the skin keratin layer in PEH. A previous study showed that two precancerous lesions, oral verrucous hyperplasia and oral leukoplakia, responded well to topical 20% Amino Levulinic Acid-PDT; 8 of 8 oral verrucous hyperplasia lesions achieved complete recovery, 8 of 24 oral leukoplakia lesions showed complete recovery¹⁰. The major difference between PEH and oral verrucous hyperplasia or oral leukoplakia is the thickness of oral mucosa and the cutaneous surface keratin layer. Oral leukoplakia or oral verrucous hyperplasia lesions with a thinner keratin layer achieved complete recovery, which enabled more amino levulinic acid to diffuse into the tumour tissue¹⁰. This indicates that the poor response is associated with absorbance of the photosensitizing agent in PEH, not with the illumination dose. However with use of microdebrider shaver there was no such limitation and lead to complete removal of PEH. Nevertheless, large retrospective comparative follow-up study will be required for the re-confirmation of the successful use of microdebrider shaver in case of rare PEH of tongue. In conclusion, this case report suggests that microdebrider shaver is effective and powerful mode of treatment of PEH of tongue.

REFERENCES:

1. Fu X, Jiang D, Chen W, Sun Bs, T. Sheng Z. Pseudoepitheliomatous hyperplasia formation after skin injury. *Wound Repair Regen.* 2007; 15:39-46.
2. Campbell S.M, Curnow A. Extensive vulvar intraepithelial neoplasia treated with a new regime of systemic photodynamic therapy using meta-tetrahydroxychlorin (Foscan) J. *Eur. Acad. Dermatol. Venereol.*

- 2008; 22:502–503.
3. Photomed Laser Surgery 2011feb; 29(2):127-30. Epub 2010 Oct 22
4. Smucler R. Jatsova E. Comparative study of aminolevulinic acid photodynamic therapy plus pulsed dye laser versus pulsed dye laser alone in treatment of viral warts. Photomed. Laser Surg. 2005; 23:202-5.
5. Kulak Burun Bogaz Lhtis Derg; KBB journal of ear nose throat 2008 Sep-Oct 18(5); 323-5)
6. Murray N , Fitzpatrick P, Guarisco JL . Powered partial adenoidectomy .Arch otolaryngol Head neck surgery 2002;128;792-6).
7. Schroeter C.A. Kaas L. Waterval J.J. Bos P.M. Neumann H.A. Successful treatment of periungual warts using photodynamic therapy: a pilot study. J. Eur. Acad. Dermatol. Venereol. 2007;21:1170–1174.
8. R Datta , VP singh , Deshpal Conventional versus Endoscopic Powered Adenoidectomy :A comparative study .MJAFI 2009; 65:308-12).
9. Gollnick S.O. Evans S.S. Baumann H. Role of cytokines in photodynamic therapy-induced local and systemic inflammation. Br. J. Cancer. 2003; 88:1772–79.
10. Lohmann C.M. Solomon A.R. Clinicopathologic variants of cutaneous squamous cell carcinoma. Adv. Anat. Pathol. 2001; 8:27–36.
11. Feng Y.Yin S comparison of the powered assisted adenoidectomy with adenoid curette adenoidectomy. Lin Chuang Er Bi Yan Hou Ke Za. Zhi 2006;20;54-7.

Role of Video Documentation in Otolaryngology Practice

Syed Nusrat Raza, Muhammad Riaz Khokhar , Jehangir Afridi

ABSTRACT: To analyse the effect of video documentation in ENT outdoor practice with regards to patient satisfaction. Type of Study: Retrospective Observational study. Place and duration of study: ENT outpatient department of CMH Quetta from December 2011 to March 2012, and ENT department of CMH Multan from April 2012 to June 2012. Materials and Methods: A standard micro-CCTV camera with optical coupler attached to rigid or fiberoptic endoscope and connected to USB TV device was used to record image of any pathology found on patient's ENT examination. Patients were shown recordings of their ENT pathology and were explained suggested treatment. After surgery, fresh recordings were taken. A set of questions was asked from the patients and results were deducted after assessment of the patient's response card. Results: In the opinion of 67.5 % of patients, their understanding of this disease was complete after seeing the video. Interestingly out of those who consented for surgery, 42.5 % opined that they would have not consented for surgery so quickly if they had not been shown video evidence of their disease. 91.7 % said that serial videos made them more reassured about progress and current status of their disease. Conclusion: Video documentation definitely increases patient's confidence, his understanding of disease, saves time and subsequent visits. It greatly adds to the patient's reassurance before and after surgery.

KEYWORDS : Video Endoscopy; Video Documentation; Photo documentation, Patient satisfaction

INTRODUCTION: The present era of rapid technological advancement has made its inroad into all walks of life and medical profession is no exception. Patients have become more aware of their disease and want much greater reassurances than were previously required. The advent of internet has transgressed continental boundaries and patients often seek opinion of doctors located thousands of miles away sitting on other side of globe. Use of video in ENT outdoor department has not only greatly enhanced the patient's understanding of his disease in much lesser time but also provides the information file to the patient that he can use to get expert opinion of anyone anywhere. Video / photographic documentation is far superior to words alone and has been termed photodocumentation¹.
MATERIALS AND METHODS : Inclusion criteria. All patients with some video or photographically recordable ENT finding who reported to ENT outpatient department of CMH Quetta from December 2011 to March 2012, and ENT department of CMH Multan from April 2012 to June 2012 (As the first author moved from Quetta to Multan) were included in the study.

Exclusion Criteria : Patient's refusal to enter into the study. Patients reporting to ENT outpatient during the above period first underwent initial scrutiny by conventional ENT examination. The patients with positive ENT finding (perforation of drumhead, vocal nodules, growths or papillomas of larynx, nasal polypi, angiofibroma or long standing inorganic foreign body nose) then underwent video or photographic recording of their finding. A standard micro-CCTV camera with optical coupler (total approximate cost Rs. 50,000) was used to make video of the finding after attaching it to appropriate endoscope (zero degree rigid endoscope for nasal and drumhead pathology, and 90 degree rigid

laryngoscope / fiberoptic nasolaryngoscope for laryngeal pathology). Recording was made on computer hard disc, while a simple USB TV device (approximate cost Rs. 1500) connected to laptop computer was used as recording device (see fig 1 & 2). Patients were made to understand their disease by showing the recorded video. Patients were offered appropriate surgery (myringoplasty, microlaryngoscopy, nasal polypectomy or any surgery that may be required). They were offered a copy of their video if desired. They were then given a proforma (consisting of seven questions) to fill. In case the patient consented for surgery, a sufficient time after surgery was given for wound to heal, after which many patients desired a new video to be made so as to get reassured that the pathology has been removed. After the video had been made they were again given proforma to fill. At the end of above period the record was analyzed and

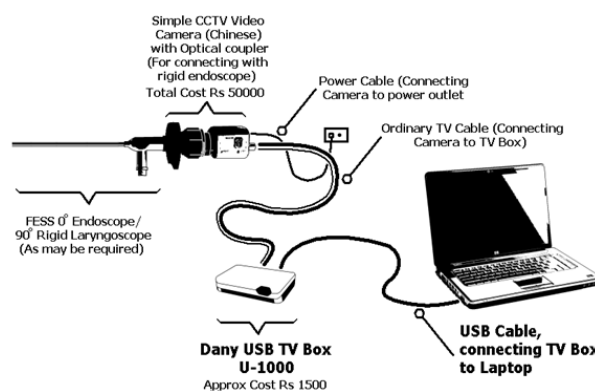


Figure 1 : Circuit diagram.



Figure 2 : A patient viewing his drumhead on laptop with the circuit described in Fig. 1

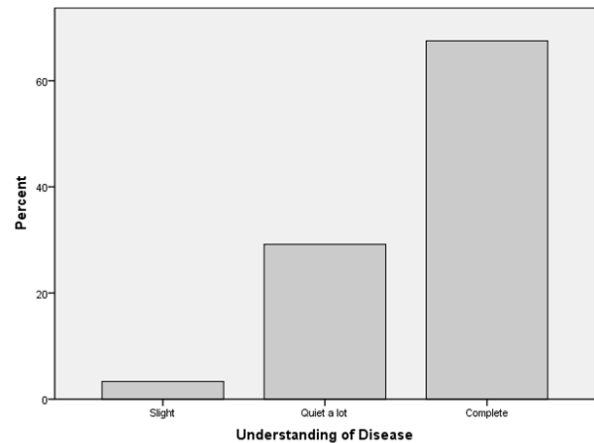


Chart 1 : Understanding level of disease in patients with video documentation.

No.	Questions	Yes	May be	No.
1.	If you had been explained about the disease in detail but not shown the video, would your understanding level about the disease been still the same?	3 (2.5%)	40 (33.2%)	77 (64.2%)
2.	After showing the video, were you suggested surgery?	97 (80.8%)	-	23 (19.2%)
3.	Did you consent for the surgery?	82 (68.3%)	-	38 (31.7%)
4.	If your disease been explained in detail without showing the video, had you still consented to surgery?	30 (25.0%)	39 (32.5%)	51 (42.5%)
5.	Did you demand a fresh video about your disease to be made and shown again after the surgery?	87 (72.5%)	-	33 (27.5%)
6.	Did you feel the same amount of reassurance about the success of surgery after seeing the video which you would have felt even without seeing the video?	9 (7.5%)	-	111 (92.5%)
7.	In your opinion do you think this video documentation made you feel more reassured about the serial progress of your disease?	110 (91.7%)	-	10 (8.3%)

Table 1 : Analysis of patient response cards about the effect of video documentation

the observations made as shown in results. **RESULTS :** A total of 120 consecutive patients with some photographically recordable finding were enrolled in this study with wide range of diseases of ear, nose or throat region. The results can be seen from the Table-1 given at the end. Their understanding level of disease with video documentation is graphically represented in Chart-1. Interestingly 64.2 % of patients thought that their understanding of the disease would not have been so complete if they had not been shown the video. After the video was shown, 80.8 % of patients were suggested surgery (this percentage is high because only the patients with some recordable ENT finding were subjected to video documentation). Out of those who were suggested surgery, 68.3 % consented for the operation. Interestingly out of those who consented for surgery, 42.5 % opined that they would have not consented for surgery so quickly if they had not been shown video evidence of their disease. Out of those who underwent surgery, 72.5 % demanded a fresh post-surgery video, of which 92.5 % said that after seeing post-surgery video they felt more reassured about success of surgery. To the last question asked about serial progress of the disease, 91.7 % said that serial videos make them more reassured about progress and current status of their disease.

DISCUSSION : A simple and reasonably economical circuit for recording and making videos of ENT findings is shown in fig 1 & 2. Making such video does not take more than 2-3 minutes, and saves a lot of time that may

have otherwise been lost in educating and counselling the patient. In personal experience of the author, video documentation in ENT outpatient has the following advantages-Real time video can be paused and then zoomed out at any stage, and very fine details of pathology (drumhead perforation, vocal or nasal pathology) analyzed. Provides greater understanding to the patients regarding the disease they are suffering from. Saves the time of Otolaryngologist and the patient by lessening the time required for patient's education and counseling. A printout of still images can be taken out and hard copy given to the patient or kept in patient's record file. Provides a video file to the patient which the patient can use for Getting opinion of distant otolaryngologist on internet. Gauging the progress of his disease by comparing with serial videos. Maintaining his own record file about the disease. Reassures the patient about success of surgery by showing post-op video. At times it may be used to remove patient's phobia about harboring a cancer of larynx or perforation of eardrum. Provides a reproducible record to clinician for subsequent clinical audit. Video documentation of clinical record is a subject that has now generated quiet an interest among the clinicians for number of reasons. In the field of ENT, it was first used in Japan in 1954. Its use was limited initially for documentation, understanding and patient's education of vocal fold movement, and hence called video stroboscopy. It was then taken up by ENT's closest neighbor i.e. the dentist,

this time the reason was to document serial progress of the maloccluded teeth to orthodontic treatment². Due to the advantages of this meticulous record keeping its use has now extended to involve other specialties. Considering the overwhelming advantages of video and photographic documentation of ENT pathologies, its use in ENT outdoor is certainly very beneficial both for the patient and clinician. However a limiting factor is the very high cost of video recording equipment coupled with extremely expensive endoscopes particularly those of branded companies. Numerous improvisations have been suggested to overcome this 'cost barrier'. In one study a digital camera (Nikon CoolPix 950 and CoolPix 990) was placed in contact with Zeiss and Leica microscope's one ocular lens³. However this technique recorded only microscopic image. In another study, endoscopic images were monitored by attaching a flexible or rigid endoscope to a camera by special adapter screws onto the lens top⁴. In yet another improvised modification a VMS-001 USB Microscope (a webcam designed for higher magnification) was attached to endoscope using a disposable camera head drape⁵. In another technique for video recording of ENT pathologies, a JVC GX-N8U color video camera was connected to Hopkins endoscope using a Karl Storz quick connect adapter. This improvisation was however expensive⁶. In a slightly different technique, Barr GD suggested a low cost improvisation. A Nikon Coolpix 4600 4 megapixel camera was attached to endoscope using modified blue bottle top of mineral water bottle as a connector / adapter⁷. Now coming to the printout of videos and still images of ENT pathologies, a study suggested that the pictures produced by the color video printers (Sony UP 5000 & Sony CVP G500) were of unexpectedly high quality and compared very favorably with those produced by conventional color film photography in color, image sharpness and resolution. The video printouts made with the recorder on 'pause' mode produced unwanted electronic horizontal lines either on the top or bottom of the printouts. This could be avoided by making the print of the desired image

while the videotape was running⁸. The circuit used to record ENT pathologies in our study may not produce very high resolution pictures, but it certainly has the advantage of being extremely cheap and therefore easily accessible and affordable in countries like Pakistan with low income economy. The picture quality is reasonable enough for clear visualization and documentation of any ENT pathology, both for clinician and patient. Moreover the study shows that the level of patient satisfaction is much greater with this form of documentary evidence.

CONCLUSION : Video documentation in ENT outdoor practice definitely increases the patient's confidence, his understanding of the disease, saves the patient's time and subsequent visits and greatly adds to patient's reassurance before and after surgery. Moreover new locally improvised techniques have overcome the 'cost barrier'. Apart from its professional and academic advantages, cost effective equipment for video documentation of ENT pathologies also enormously enhances the general image and reputation of ENT department in any setup.

REFERENCES:

1. Judd O, Repanos C. Digital photography in Otolaryngology. *The Otolaryngologist*. 2007; 1:127-31.
2. Qazi HS, Qazi SH, Ceylanoglu C. Digital imaging for an efficient orthodontic practice. *Pak Oral Dental J* 2006; 26:23-8.
3. David SH, Brian AM, Peter r, Garth TO. Digital microphotography: a simple solution. *Laryngoscope* 2003; 113:152-6.
4. Tsunoda K, Tsunoda A, Ozawa H, Fujimine T. High quality video recording and monitoring system for endoscopes. *Laryngoscope* 2005; 115:1520-1.
5. Howes BW, Repanos C. A low-cost, endoscopic, digital, still and video photography system for ENT clinics. *J Laryngol Otol* 2010; 124:543-44.
6. Yangisawa E, Carlson RD. Telescopic Video Otoscopy using a compact home video color camera. *Laryngoscope* 1987; 97:1350-55.
7. Barr GD. Low cost digital endoscopic photography. *J Laryngol Otol* 2009; 123:453-6.
8. Mambrino L, Yanagisawa E, Yanagisawa K, Gallo O. Endoscopic ENT photography: a comparison of pictures by standard color films and new color video printers. *Laryngoscope* 1991; 101:1229-30.

The 8th SAARC ENT CONFERENCE

The 8th SAARC ENT conference was held at Hotel Sheraton, Karachi from 19th to 21st December, 2013 it was the 2nd SAARC conference in Pakistan. As always it was a big task and ask. The reason being Karachi has been the trend setter of these conferences and the organizers did not let down the audience.

Prof. S.M. Tariq Rafi was the Chairman of this conference and was amicably assisted by Prof. M. Umar Farooq who was the secretary General and Prof. Abbas Zafar who was the Chairman Scientific Committee.

The true flavour of an international conference was witnessed in this event, as it was widely attended by stalwarts from all over the globe. The guest faculty came from USA, UK, India, Nepal, Iran, Egypt, Muscat, Bangladesh and UAE, To mention a few Prof. Jatin Shah from Sloan Kettering Memorial, New York, USA, Prof. Bimal Kumar Sinha (Nepal) President SAARC ENT, Prof. Taneja President Indian Society of Otolaryngology,

The conference had such a comprehensive and dynamic start that for the first time in Pakistan, 03 pre Conference workshops were held simultaneously at three different centers in Karachi.

1. The advanced Rhinology workshop by Prof. Reda Kamil(Egypt) at Jinnah Sindh Medical University.
2. The workshop on otology by Prof. Ravi Ramalingam (India) and Phono Surgery by Prof. K.K Handa(India) at Aga Khan University Hospital.
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The Inauguration ceremony took place on 19th December, 2013. Prof. S.M Rab a famous academician, scholar, author was the chief guest.

- Prof. Jawaid Alam Memorial Lecture was given by Prof. Jatin Shah on “Multidisciplinary Treatment of Head & Neck Cancer”
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The conference had 3 state of the art lectures, 12 guest lectures, 03 instructional courses, 03 panel discussions encompassing almost all topics of professional interest.

A special “Prof. Jawaid Alam Memorial Award” was announced by his son for the best scientific paper presentation by a resident. The amount of Rs. 50000/= was awarded to Dr. Rameez of AKUH.

The business meeting was also held in this conference chaired by Prof. Bimal Sinha President SAARC ENT Society, in which it was unanimously decided to increase the scope of conference and to introduce a SAARC ENT Journal, preparation and selection of venue for next SAARC conference. Prof. S.M Tariq Rafi was elected as President of SAARC ENT Society, Prof. M.Umar Farooq was elected Vice President from Pakistan and Dr. Sameer Qureshi and Dr. Usman as councilor from Pakistan.

A Gala Dinnar was also organized which was well attended by dignitaries from the Medical fraternity and eminent citizens. A special color was also given by famous Pakistan Qawwal Amaja Sabri who amused the august gathering by singing poetry of famous sufi saints.

Altogether, it was a very successful events, well attended and provided enough food for thought for all those who attended this mega event, that take home message was these scientific event, are a platform for all to integrate, share skills and teach and train for the betterment of humanity.

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The 8th SAARC ENT Conference, Karachi, Pakistan

Sameer Qureshi

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The conference had 3 state of the art lectures, 12 guest lectures, 03 instructional courses, 03 panel discussions encompassing almost all topics of professional interest. More than 60 free papers were also presented during the conference.

A special "Prof. Jawaid Alam Memorial Award" was announced by his son for the best scientific paper presentation by a resident. The amount of Rs. 50,000/= was awarded to Dr. Rameez of AKUH.

The business meeting was also held in this conference chaired by Prof. Bimal Sinha President SAARC ENT Society, in which it was unanimously decided to increase the scope of conference and to introduce a SAARC ENT Journal. Preparation and selection of venue for next SAARC conference was also discussed. Prof. S.M. Tariq Rafi was elected as President of SAARC ENT Society, Prof. M. Umar Farooq was elected Vice President from Pakistan and Dr. Sameer Qureshi and Dr. Usman as councilor from Pakistan.

A Gala Dinner was also organized which was well attended by dignitaries from the Medical fraternity and eminent citizens. A special color was also given by famous Pakistani Qawwal Amjad Sabri, who amused the august gathering by singing poetry of famous sufi saints.

Altogether, it was a very successful events which also very well attended and provided enough food for thought for all those who attended this mega event. The take home message was, these scientific event, are a platform for all to integrate, share skills and teach and train each other for the betterment of humanity.

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