PAKISTAN JOURNAL OF

VOLUME 29 NUMBER 1 ISSN 0257-4985

OTOLARYNGOLOGY

HEAD & NECK SURGERY

APRIL 2013

Contents

Pakistan Journal of Otolaryngology 2012; 29 : 01-02 Editorial

Use of Citation Management Software for Bibliography and Citation in Medical Writing

Iqbal Hussain Udaipurwala

Bibliography also known as bibliology, is traditionally defined as the academic study of the books as a physical and cultural object. This word is derived from a Greek word bibliographia, which literally mean "book writing". The word bibliographia was used by the Greek writers in the first three centuries AD to mean the copying of books by hand. In the 12th century, the word started being used for "the intellectual activity of composing books". While in the 17th century, there was an emergence of a modern meaning and that is “description of books”. Currently, the field of bibliography has expanded to include studies that consider the book as a material object.

Bibliographic work differs in the amount of details depending on the purpose and it is generally divided into two categories: enumerative bibliography and analytical bibliography. Enumerative bibliography is also called compilative, reference or systematic bibliography. It is a systemic list of books, journal or any other research work. Analytical bibliography is also called as critical bibliography and it is the study of production of books. In the earlier times, bibliography was mostly focused on books but now it also includes audio recordings, motion pictures, videos, graphic objects, databases, CD-ROMs and websites.

A citation is a reference to a published or sometimes unpublished material and it is not always necessarily the original source. More precisely, a citation is an abbreviated alphanumeric expression embedded in the body of an intellectual work that denotes an entry in the bibliographic references section of the work for the purpose of acknowledging the relevance of the work of others to the topic of discussion at the spot where the citation appears. Generally the combination of both the in-body citation and the bibliographic entry constitutes what is commonly thought of as a citation. Citation has several important purposes like to uphold intellectual honesty, to avoid plagiarism, to attribute prior work, to allow the reader to determine independently whether the referenced material supports the author's argument in the claimed way, and to help the reader gauge the strength and validity of the material.

There are two main types of citation systems, Vancouver referencing system and Harvard referencing system. Vancouver referencing system is a group of styles that involve the use of sequential numbers in the text which refer to either footnotes (notes at the end of the page) or endnotes (a note on a separate page at the end of the paper) which gives the source detail. They are either bracketed or superscript. In Harvard referencing system also known as parenthetical referencing system, full or partial, in-text citations are enclosed within parenthesis and embedded in the paragraph. Depending on the choice of style, fully cited parenthetical references may not require a section at the end. Alternately a list of the citations with complete bibliographical references may be included in the end which is sorted alphabetically by author's last name. There are so many citation styles which are broadly divided into styles common to the humanities and the sciences, though there is a considerable overlap between them. A number of organizations have created styles to fit their own needs and consequently a number of different guides exist. Individual publishers often have their own in-house variations as well, and some works are so long-established as to have their own citation methods too. Thus there is a lot of confusion for an author who wants to send research articles in any specific medical journal as the citation style of different journals are different. He prepares an article for a journal and suppose if it does not publish there and he now wants to send it to a second journal. Now he has to update and change citation style according to the format of the second journal. Secondly a researcher may want to publish many papers on a particular subject and want to use same citation in multiple papers.

To solve these problem many software have been developed so that a researcher can make his own database on a particular subject and use different citations in different papers. These software are collectively called ‘reference management software’, ‘citation management software’ or ‘personal bibliographic management software’. These software are for scholars and authors to use for recording and utilizing bibliographic citations or references. Once a citation has been recorded, it can be used time and again in generating bibliographies, such as lists of references in books or

ENT department, Bahria University Medical & Dental College, Karachi

articles. The development of reference management software has been driven by the rapid expansion of scientific literature.

These software are normally consist of a database in which full bibliographic references can be entered, plus a system for generating selective lists of articles in the different formats required by publishers or journals. Modern reference management packages can also be integrated with a word processors so that a reference list in the appropriate format is produced automatically as an article is written, reducing the risk that a cited source is not included in the reference list. They will also have a facility for importing the details of publications from bibliographic database. Apart from managing references, most reference management software also enables users to search references from online libraries. Reference management software does not do the same job as a bibliographic database, which tries to list all articles published in a particular discipline or group of disciplines e.g medline. These databases are large and have to be housed on major server installation. Unlike reference management software collects a much smaller database, of the publications that have been used or are likely to be used by a particular author or group, and such a database can easily be housed on an individual's personal computer.

There are so many software available like biblioscape, endnote, bookends, bibliographix, cite smart, reference manager and so on. One of these software is 'endnote' which is very popular among the researchers. I am also personally using this software and found to be very useful for managing all citation related problem. It is very user friendly and can be learned in a very short time. Some of the common tasks that can be very easily performed by the endnote are briefly summarized as follows:

1. It can search online bibliographic references and retrieve them directly into your endnote library. This will be saved in your computer and you can use it anytime in future.
2. It can also import data files saved from a variety of online services, CD-ROMs, and library databases.
3. You can manage your endnote library and can group different references according to your research project.
4. Endnote can locate free full text PDF file and can create a reference when importing a PDF file.
5. Endnote can be integrated with the microsoft word file. You can cite the reference while you write and your reference will automatically come is the reference section at the end.
6. You can automatically change the format or referencing style quickly according to the style of any medical journal.
7. EndNote is a reference and figure database and you can organize images including charts, tables, figures, and equations.

SUGGESTED READING AND WEB SITES

1. http://www.endnote.com
2. http://en.wikipedia.org/wiki/Comparison_of_reference_management_software
3. http://wiki.openoffice.org/wiki/Bibliographic_Software_and_Standards_Information

Pakistan Journal of Otolaryngology 2013; 29 : 03-05 Original Article

Management of Ludwig's Angina : A Multi Centric Study.

*Noor Alam Ansari, **Iqbal A Muhammad Khyani,
***Sultan Ahmed, **Murtaza Ahsan Ansari

ABSTRACT: PURPOSE OF STUDY: To evaluate mode of presentation, management and methods of airway control in the disease. STUDY DESIGN: Multi centric, prospective study. SUBJECTS AND METHODS: 30 patients were included in the study (20 males & 10 females) between the ages of 8 to 78 years (mean 45.5 years) who were presented and treated between January 2010 to December 2011 in the department of Otorhinolaryngology and head and neck surgery of three different tertiary care hospitals. Etiology, microbiology, associated systemic disease, treatment, airway management, duration of hospital stay and outcomes were reviewed. RESULTS: Most common age group involved was 3rd decade (36.6 %) and 66.6% patients were male. Most of the patients were from poor socioeconomic class. Dental infection was documented as most common cause (66.6%) of ludwig's angina. Streptococcus viridance was the commonest organism found on culture and sensitivity of pus. 18 patients presented with airway compromise where surgical decompression was undertaken with satisfactory results. Tracheostomy was not required in any case. No post-operative complications were recorded. All except one patient made uneventful recoveries and they were discharged after 3 to 26 days of hospitalization (mean 14.1 days). CONCLUSION: Prompt diagnosis ,broad spectrum intravenous antibiotic therapy, parenteral anti-inflammatory steroid and surgical decompression can avoid tracheostomy which has its own implications. This significantly reduces the morbidity and mortality in patient suffering from Ludwig's angina.
Key Words: Cellulitis, Ludwig's angina, Surgical decompression, Deep neck space infection.

INTRODUCTION: Ludwig's angina is a deep neck space infection, first described by Von Ludwig in 1837[1]. It is an overwhelming, generalized septic cellulitis affecting simultaneously the submandibular, submental and sublingual spaces bilaterally[2]. It usually follows a submandibular infection due to periapical infection or periodontitis. It may also be seen after dental extraction[3]. It is characterized by brawny induration, the tissues are board like and show no pitting on finger pressure. The floor of mouth is elevated and tongue is protruded making respiration difficult[4]. Causative organisms are usually mixed aerobic and an-aerobic micro organisms[5]. The condition is notorious for its aggressiveness, rapid progression to airway compromise and high mortality when not treated promptly[6]. The purpose of our study was to evaluate the mode of presentation, possible source and alternate methods for airway control that avoids tracheostomy to reduce morbidity and mortality associated with this disease.

SUBJECT AND METHOD: This is a multi centric prospective study carried out from January 2010 to December 2011. 30 consecutive cases of Ludwig's angina seen and managed in the department of otolaryngology and head and neck surgery of tertiary care teaching hospitals of Nawabshah, Karachi and Quetta were included in the study. Patients demographics, causes, duration of infection and clinical features were noted on purpose made Performa. All the patients were subjected to laboratory investigation such as full blood count, blood sugar (fasting and random), urea, creatinine and electrolytes. Microbiology, culture and sensitivity of pus aspirate was done in cases requiring surgical decompression. CT scan of neck and chest was advised where deemed necessary. Post- operative complications were noted in those patients where surgical decompression was done. Mortality rate was evaluated. Data were then tabulated and analyzed on computer base program SPSS-13 using simple frequencies and descriptive statistics.

RESULTS: Over the study period 30 patients presented with clinical features consistent with Ludwig's angina. There were 20 males (66.6%) and 10 females (33.3%). Ages ranged from 08 to 78 years. The most common age group involved was 3rd decade (36.6%) followed 5th and 4th decade (Table 1). Majority of the patients belong to poor socio-economic class (66.6%) (Table 2). At presentation most common symptoms were neck swelling, pain, tenderness and fever (in all patients). More than one symptom was present in all patients. There was associated respiratory difficulty due to gradual progression of the inflammatory lesion to the neck in 18 patients (60%) (Table 3). Odontogenic infection was the commonest etiological factor observed in 20 patients (66.6%). Of those with odontogenic origin, 4 (13.3%) were due to post dental extraction sepsis. (Table 4). 7 patients (23.3%) showed clinical evidence of underlying systemic illness. Out of these 7 patients 4 were the cases of diabetes mellitus (57.1%), 2 cases (28.5%) were with severe anemia of pregnancy and 1 (14.2%) with mental retardation. The results of microbiology, culture and sensitivity tests from pus

*Department of Otorhinolaryngology, Peoples University of Medical & Health Sciences Nawabshah,
**Dow University of Health Sciences Karachi, ***Bolan Medical College Quetta, Pakistan

Age of the Patients	Number of Patients	Percentage
1st Decade	02	6.6%
2nd Decade	02	6.6%
3rd Decade	11	36.6%
4th Decade	05	16.6%
5th Decade	08	26.6%
6th Decade	01	3.3%
7th Decade	01	3.3%

Table 1: Age of the Patients n -30.

Socio Economic Status	Number of Patients	Percentage
Poor	20	66.6%
Middle	07	23.3%
High	03	10%

Table 2: Socio economic conditions n-30.

Symptoms	Number of Patients	Percentage
Neck Swelling	30	100%
Pain & tenderness	30	100%
Fever	30	100%
Dysphagia	10	33.3%
Foul smell	12	40%
Trismus	07	23.3%
Muffled voice	10	33.3%
Respiratory distress	18	60%

Table 3: Common symptoms of patients n-30.

Etiology	Number of Patients	Percentage
Dental Problem	20	66.6%
Post dental extraction sepsis	04	13.3%
Infection in oral mucosa	03	10%
Submandibular infection	03	10%

Table 4: Etiological factor n-30.

Organism	Number of Patients	Percentage
Streptococcus viridance	10	55.5%
Staphylococcus aureus	04	22.2%
E-coli	01	5.5%
No organisms	03	16.6%

Table 5: Microbiology n- 18.

aspirated surgically in 18 patients (60%) revealed streptococcus viridance in majority of cases (55.5%) followed by staphylococcus (22.2%) and E.coli (5.5%). In 3 patients the culture yielded "no growth" (table 5). The anaerobic cultures were not carried out because the facility for routine culture of anaerobes is not available in all our centers. 18 patients (60%) were subjected to surgical decompression under local anesthesia using interrupted submandibular and submental skin incisions, followed by blunt dissection of the facial planes and subsequent insertion of corrugated rubber drains. These remained in place from 24 to 72 hours and removed when there was virtually no further discharge from the incision sites. The drainage was to relief the airway and this proved quite satisfactory in all the patients who presented with airway compromise. None of the patients in this series had tracheostomy. No post- operative complications were noted in this series of patients. There was only one death who expired at presentation from respiratory obstruction due to laryngeal spasm during clinical examination in the emergency room. Maximum hospital stay was between 1 to 4 weeks. They were discharged after 3 to 26 days of hospitalization (mean 14.1 days).

DISCUSSION: Ludwig's angina is potentially life threatening diffuse cellulitis involving the floor of mouth and submandibular regions bilaterally and cause progressive airway obstruction[7]. Our study shows that males are affected more then females and it mainly affects the poor socioeconomic class of the patients. Most common age group involved was 3rd decade of life. Ludwig's angina can arise from various sources such as odontogenic infection[8,9] or complicated cases of submandibular gland sialadenitis and sialolithiasis, tongue base lymphangioma and tongue piercing,[10] but several studies support our finding that there is usually a dental focus of infection[3,7,11,12,13]. In our series 20 patients (66.6%) presented with dental problems. The 2nd and 3rd molars were most frequently involved. This is in accordance with the previous studies which show that 2nd and 3rd molars roots extend below the level of mylohyoid muscle, thus crossing both the sublingual and submandibular spaces[3,7,14]. In a report the role of underlying systemic disease particularly diabetes mellitus in etiopathogenesis of severe orofacial infections was highlighted[15]. Despite the fact that such underlying systemic disease was present in 4 of our cases, the literature is inconclusive as to whether such systemic illness predisposes to Ludwig's angina. How ever such patients are immune- compromised and should thoroughly be evaluated and monitored, as they are readily susceptible to life threatening complications[16]. In the included patients of diabetes mellitus in our series, the sugar levels were managed and monitored in conjunction with consultant physician. The role of microbiology, culture and sensitivity tests in the management of orofacial infections cannot be over emphasized. Over all the isolates in the present study are consistent with findings in previous reports[4,7,15,17]. However, non-availability of the culture for anaerobes restrict our study which might be responsible for negative cultures. The treatment of Ludwig's angina consists of airway maintenance, surgical drainage and broad spectrum parentral antibiotics[18]. A study recommended awake fiberoptic intubation to secure the airway[19]. Tracheotomy under local anesthesia has also been considered the gold standard of airway management in patients with deep neck space infections[20]. In the face of limited equipment for fiberoptic intubation and difficult tracheostomy with all its implications due to cellulitis of the neck, we relied on prompt incision and drainage of facial tissue spaces which facilitated decompression and anti-inflammatory steroid use provided immediate and progressive relief of the airway. In contrast with other reports[21], none of our patient had tracheostomy. Post operative complications were not encountered in any case. Research has also shown that Ludwig's angina has mortality rate of 8% to 10% and this occurs most often due to hypoxia rather than overwhelming sepsis[22]. In our study the mortality was only in one case (3.3%) because of respiratory obstruction due to laryngeal spasm during examination in emergency room.

CONCLUSION : Our findings suggest that in spite of the severity of this condition, prompt and thorough clinical evaluation and definitive care will considerably improve the prognosis. While the need to secure the airway remains paramount, surgical decompression under local anesthesia could be used safely and is quite effective avoiding intubation and tracheostomy due to logistic problem and implication of both the procedures.

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Pakistan Journal of Otolaryngology 2013; 29 : 06-10

Original Article

Evaluation and Comparision of Radiological and Histopathological Diagnostic Consistency with Clinical Diagnosis in Patients of Nasal Polyps.

Vaishali Sangole, Suman Rao, Kalpana Rajiv Kumar, Ashutosh Chitnisi, Rachana Tiwari, Sujata Gawai

ABSTRACT: AIMS: To evaluate the patients of nasal polyps and compare the radiological and histopathological diagnostic consistency with clinical diagnosis. SUBJECTS AND METHODS: Design & Setting: The prospective cohort study was conducted in the inpatient Department of E.N.T, M.G.M. Medical College & Hospital, Kamothe,Navi Mumbai over a period of 3 years from August 2009 to July 2011.Fifty patients with nasal polyps were studied. Samples were collected by complete enumeration method. Apart from diagnostic nasal endoscopy done preoperatively in all the cases radiological examination with C.T. Scan PNS ,with or without contrast was done.All the samples were submitted for histopathological examination. RESULTS: Maximum number of patients were in the third decade with an age range of 10- 80 yrs. A male preponderance was seen. Nasal obstruction (100%) was the commonest symptom followed by nasal obstruction with rhinorrhoea 43(86%). Most of the patients 42(84%) had benign nasal polyps and allergic mucin was seen in 12(24%) on nasal endoscopy. The radiological diagnosis was consistent with clinical diagnosis in 39(78%).The histopathological diagnosis correlated with clinical diagnosis in the present study in 38(76%) patients.The diagnosis of allergic fungal polyps can only be made on histopathology. CONCLUSION:A comprehensive management plan incorporating nasal endoscopy,radiology and histopathology remains the most likely means of diagnosing and providing long term disease control for nasal polyps.

Key Words: Nasal polyps,Non-neoplastic,Neoplastic.

INTRODUCTION : A polyp is a pedunculated, soft elongated structure attached to the nasal mucosa by a slim stalk or a broad base. Polyps are usually mobile, have a smooth shiny surface and are of bluish grey or pink translucent appearance[1]. Nasal polyps diagnosed clinically are not always of inflammatory origin. There are a variety of conditions ranging from benign lesions to malignant nasal tumors which may mimic simple nasal polyps. Non neoplastic conditions such as Wegener's granulomatosis, Sarcoidosis, Rhinosporidiosis; Benign neoplastic conditions such as Inverted papilloma, Capillary hemangioms, Angiofibroma, Chondroma, Plasmacytoma, Menigioma, Leiomyoma, Schwannanma, Meningoencephalocele, Pituitary adenoma;Malignant conditions such as Squamous cell carcinoma, Adenocarcinoma, Malignantmelanoma, Chondroma, Olfactoryneuroblastoma, Rhabdomyosarcoma and Adenoid cystic carcinoma can present as nasal polyps. It is impossible to determine clinically what pathology lies underneath. Radiographic evidence of thickened mucosa, sinusopacification and bone erosion helps us to diagnose different diseases. Thehistopathological examination of the removed tissue helps to determine the actual pathology of the varied conditions labeled as nasal polyps. Therefore, nasal endoscopy, radiology and histopathology are employed to help to reach the diagnosis. With this aim we carried out a prospective randomized study to classify various types of neoplastic and non neoplastic lesions, presenting as nasal polyps and compared radiological and histopathological diagnostic consistency with clinical diagnosis.

SUBJECTS AND METHODS: The prospective cohort study was conducted in the inpatient Department of E. N. T, M. G. M. Medical College & Hospital, KamotheNavi Mumbai over a period of 3 years from August 2009 to July 2011. Fifty patients with nasal polyps were taken. Samples were collected by complete enumeration method. All cases reporting to the ENT OPD with nasal polyps were included as per a predesigned and pretested proforma and later confirmedRadiologically and Histopathologically. All the enumerated records were further analysed computationally. Patients included were; 1. Cases clinically diagnosed as having unilateral or bilateral nasal polyp(s). Patients excluded were;1. Patients presenting with Congenital masses. 2. Patients with nasal mass of intracranial origin. All patients underwent a detailed history, clinical examination(External examination, Anterior and Posterior rhinoscopic, Probe test). Diagnostic nasal endoscopy was done preoperatively in all the cases. A careful and methodical diagnostic nasal endoscopy is the key to understanding anatomical variations and pathological processes in the nasal cavity. It was done using, a 0o rigid endoscope, consisting of all the three passes i. e 1st, 2nd and 3rd. Apart from routine work-up and investigations, radiological examination with C. T. Scan (N. C. C. T.) P. N. S:Axial, Coronal and Sagittal sections was done. C. T. Scan (with contrast)

Department of ENT, Mahatma Gandhi Mission Medical College & Hospital , Kamothe (Navi Mumbai), India.

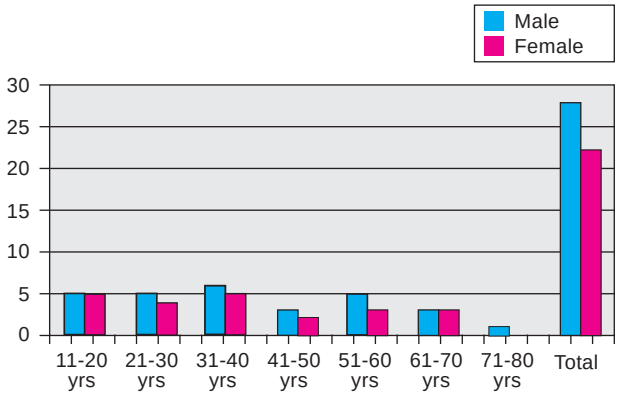

Figure 1: Age sex wise distribution of cases.

Lesion	Total no. of cases (%)
Non neoplastic	
a)Allergic polyps/Ethmoidal	15(30)
b)Allergic fungal polyps	12(24)
c)Non allergicpolyps/Antrochonalpolyps	7(14)
d)Diffuse nasal polyposis with chronic rhinosinusitis	8(16)
e)Mucormycosis	2(4)
Neoplastic(Benign)	
a)Inverted papilloma	1(2)
b)Angiofibroma	2(4)
c)Cemento-ossifying fibroma of nose and PNS	1(2)
Neoplastic(Malignant)	
a)SCC	1(2)
b)Neuroendocrine Carcinoma of Nose &PNS	1(2)
Total	50(100)

Table 1: Overall distribution of different lesions presenting as nasal polyps on Clinical examination (n=50).

Symptoms	Total no. of cases (%)
Nasal obstruction(Unilateral- right)	20(40)
Nasal obstruction(Unilateral- left)	11(22)
Nasal obstruction(Bilateral)	19(38)
Nasal obstruction with Rhinorrhoea	43(86)*
Nasal obstruction with Rhinorrhoea(Bilateral)	20(40)
Nasal obstruction with Rhinorrhoea(Unilateral)	23(46)
Nasal obstruction with headache	36(72)*
Nasal obstruction with headache(Bilateral)	15(30)
Nasal obstruction with headache(Unilateral)	21(42)
Nasal obstruction with epistaxis(Unilateral)	8(16)
Nasal Mass	22(44)
Smell	27(54)
Facial pain	12(24)
Mouth Breathing	10(20)
Change in voice	7(14)
Eye symptoms	6(12)

Table 2: Various symptoms reported by patients (n=50).

Endoscopic Findings	Total No. (%)
Ethmoidal Polyps	12(24)
Antrochonal Polyps	7(14)
Maxillary polyps	3(6)
Polyps with allergic mucin	12(24)
Polyps with mucopurulent discharge	8(16)
Black necrotic turbinate	2(4)
Polypoidal nasal masses	6(12)
Total	50(100)

Table 3(i): Endoscopic findings among the cases (n=50).

Radiological Findings	Total No. (%)
B/L involvement of sinuses	36(72)
U/L involvemnt of sinus	14(28)
Widening , ballooning of OMC	21(42)
Fungus with double density sign	7(14)
Intraorbital extension with expansion of sinus	3(6)
Sinus wall expansion with thining	2(4)
Destruction of medical wall of maxillary sinus	2(4)
Extension into the middle cranial fossa	1(2)
through the nasopharynx with destruction of medial pterygoid plate	1(2)
Pressure erosion of the septum with encroachment on the lateral nasopharyngeal wall	1(2)
Inverted papilloma	1(2)
Pneumocephalus in the right frontal recess with fungal sinus	89*

Table 3(ii): Radiological findings among the cases (n=50).

Histopathological finding	Total No. (%)
Allergic polyps (Eosinophil rich infiltrate)	18(36)
Infective (non specific)polyps	18(36)
Polyps with fungal hyphae	7(14)
Suppurative lesion	1(2)
Angiofibroma	2(4)
Inverted papilloma	1(2)
Neuroendocrine carcinoma of the nose &paranasal sinuses	1(2)
Cementoossifying fibroma of nose & maxillary sinus	1(2)
Well differentiated SCC of the left maxillary sinus	1(2)
Total	50(100)

Table 3(iii): Histopathological findings among the cases (n=50).

Clinical Diagnosis	Radiological Diagnosis Total no(%)
Non specific polyps(N=15)	
Consistent	13(86.6)
Inconsistent	2 (13.4)
Allergic Fungal Polyp(N=12)	
Consistent	8(66.6)
Inconsistent	4 (33.4)
Antrochoanal Polyp(N=7)	
Consistent	7(100)
Inconsistent	0
Diffuse polyposis with chronic rhinosinusitis (N=8)	
Consistent	5(62.5)
Inconsistent	3(43.5)
Mucormycosis (N=2)	
Consistent	2(100)
Inconsistent	0

Table 4: Comparison of Clinically diagnosed cases with Radiological diagnosis in Non-neoplastic cases (n=44).

was done in cases of recurrences. Afterexcision, specimen were sent for histopathology and fungal staining. Besides Hematoxylin and Eosin stain, for specimen staining, L. P. C. B. (Lacto Phenol Cotton Blue), PAS(Paraaminosalicylic acid) stain and Gomori's Methamine Silver(GMS) stain were used. Statistical analysis was performed by using Mean, Chi square tests etc.

RESULTS: A total 50 cases of nasal polyps were studied. Age and sex wise distribution is shown in the Bar Diagram. Age of the patients ranged from 10 yrs to 80 yrs. Mean age was 40. 16 years. Total male

Clinical Diagnosis	Histopathological Diagnosis Total no(%)	P value
Non specific polyps(N=15)		
Consistent	12(80)	NS
Inconsistent	3 (20)	
Allergic Fungal Polyp(N=12)		
Consistent	7(58.3)	NS
Inconsistent	3 (41.7)	
Antrochonal Polyp(N=7)		
Consistent	7(100)	NS
Inconsistent	0	
Diffuse polyposis with chronic rhinosinusitis (N=8)		
Consistent	5(62.5)	NS
Inconsistent	3(43.5)	
Mucormycosis (N=2)		
Consistent	2(100)	NS
Inconsistent	0	

Table-5(i): Comparison of Clinically diagnosed cases with Histopathological diagnosis in Non-neoplastic cases (n=44).

Clinical Diagnosis	Histopathological Diagnosis Total no(%)	P value
Inverted Papilloma (N=1)		
Consistent	1(100)	NS
Inconsistent	0	
Angiofibroma (N=2)		
Consistent	2(100)	NS
Inconsistent	0	
Malignancy of Nose &PNS(N=1)		
Consistent	1(100)	NS
Inconsistent	0	
Juvenila Malignancy of Nose &PNS (N=1)		
Consistent	0	NS
Inconsistent	1(100)	
Malignancy of left Maxilla(N=1)		
Consistent	1(100)	NS
Inconsistent	0	

Table-5(i): Comparison of Clinically diagnosed cases with Histopathological diagnosis in Neoplastic cases (n=6).

patients were 27 (54%) and female were 23(46%). Out of 50 cases studied, 44(88%) were Non –neoplastic while 06(12%) were neoplastic. Among the non neoplastic conditions allergic polyps accounted for 27(54%) of cases. Among the Neoplastic lesions, 4(8%) were benign and 2(4%) were malignant. Nasal obstruction was the commonest symptom. Other symptoms other than nasal obstruction were, Nasal obstruction with Rhinorrhoea in 43(86%) followed by Nasal obstruction with headache in 36 (72%). The commonest endoscopic finding was Nasal polyps in 42(84%), followed by polypoidal nasal masses of neoplastic and non-neoplastic etiology in 6(12%) and black necrotic turbinate suggestive of mucormycosis in 2(4%). In radiological diagnosis, bilateral involvement of sinuses was seen in 36(72%), followed by unilateral involvement in 14(28%). Evidence of fungal disease with double density sign was present in 7(14%). Intraorbital extension with destruction of lamina papyracea was found in 3(6%) and destruction of medial wall of maxilary sinus wall was noted in 2(4%). Extension to the middle cranial fossa and pressure erosion of the septum with encroachment on the nasopharyngeal wall was seen in 1(2%) case each. Radiology was suggestive of Inverted papilloma in 1(2%) case. Pnemocephalus in the Frontal sinus with fungal sinusitis was seen in 1(2%) case. Confirmed histopathological findings were allergic polyps (Eosinophil rich infiltrate) in 18(36%) and infective (non specific) polyps again in 18(36%), followed by polyps with fungal hyphae in 7(14%). Clinically diagnosed cases were compared with Radiological diagnosis in Non-neoplastic cases (n=44) and were categorized into two;1)Consistent with clinical findings and 2) inconsistent with clinical findings. The radiological diagnosis in Nonspecific polyps was consistent with clinically diagnosed cases in 13(86. 6%) while inconsistent in 2(13. 4%). All the cases of antrochoanalpolyp(n=7) and mucormycois(n=2) were correctly diagnosed radiologically. However radiology helped to diagnose Allergic fungal polyps in only 8(66. 6%) with inconsisteny in 4(33. 3%) cases. Radiological diagnosis was consistent with clinical diagnosis of Angiofibroma in 2(100%) and 1(100%) case each of malignancy of Nose and PNS and malignancy of left maxilla. Overall, in Non-neoplastic cases(n=44) radiological consistency was in 35(79. 5%) and inconsistency with radiological diagnosis was in 9(20. 4%). This difference was statistically not significant. Maximum neoplastic cases were consistent radiologically with clinical diagnosis. Histopathological diagnosis in Nonspecific polyps was consistent with clinical diagnosis in 12(80%) cases while inconsistent in 3(20%). This difference was not statistically significant. InAllergic fungal polyps histopathological diagnosis was consistent in 7(58. 3%) and inconsistent in 3(41. 7%). In diffuse polyposis with chronic rhinosinusitis 5(62. %%) and 3(43. 5%) were found consistent and inconsistent respectively with the histopathological diagnosis. All the clinically diagnosed cases of antrochoanal and mucormysis showed consistent reports with the histopathological diagnosis. Comparison of Clinically diagnosed cases with Histopathological diagnosis in Neoplastic cases (n=6) showed only a single case clinically diagnosed of having malignancy of nose and PNS, histopathologically proved as cementoosiifying fibroma of the nose and PNS. Rest all the diagnostic consistency were the same as the clinical diagnosis. Further, it was analysed that in Non-neoplastic cases(n=44) the Histopathological consisteny was in 33(75%) and inconsistency in 11(25%)This difference was statistically not significant.

DISCUSSION: Nasal polyposis is a relatively common condition found in 1-4% of the general population[2]. Our 50 patients of non-neoplastic and neoplastic lesions of the nose presenting as nasal polyps were studied in relation to distribution of different lesions, age-sex distribution, presentingsymptoms, nasal endoscopy, radiological and histopathologicalfindings. We compared the histopathological and radiological diagnostic consistency with clinical diagnosis.

Out of 50 cases studied, 44(88%) were non-neoplastic and 6(12%) were neoplastic. Among the non neoplasticconditions, allergic polyps accounted for 27(54%) of cases. Among the neoplastic lesions, 4(8%) were benign and 2(4%) were malignant. Diamantopoulos et. al[3] conducted a study in 2021 patients presenting as nasal polyps and found 2008 non neoplastic and 13 neoplastic lesions. In our study, age of the patients ranged from 10- 80 yrs. Maximum number of patients were in the age group of 31-40 yrs. Mean age was 40. 16 yrs. A male preponderance of 1. 6:1 was found. In the study of 110 cases conducted by Mysorekar V et. al[4], 66 cases were males, and 44 cases were females. Nasal polyps are more common, in adults than in children under 10 years of age[5]. Marked male preponderance of nasal polyposis has been widely reported[6]. Nasal obstruction (100%) was the commonest symptom in our study followed by nasal obstruction with rhinorrhoea 43(86%). Tahimet. Al[7] also found nasal obstruction in their 100% of cases, while nasal discharge was present in 90% of their patients. A diagnostic nasal endoscopy was performed on all patients before embarking on endoscopic sinus surgery. Most of our patients 42(84%) had benign nasal polyps. Most of the patients (76%) also had ethmoidal polyps in the study by Chopra. H[8]. Nasal endoscopy showed the characteristic allergic mucin resembling peanut butter, cheesy white debris in 12(24%). This was followed by polyps with mucopurulent discharge suggestive of chronic rhinosinusitis in 8(16%) and 7(14%) had antrochoanal polyps. Eight percent had antrochoanalpolyp and cheesy debris was found in 32% of patients in the study by Chopra. H.

CT of the nose and paranasal sinuses is still the ideal imaging method to investigate nasal and paranasal sinus diseases with a high sensitivity. Radiologically in 36(72%) patients bilateral disease was found while unilateral disease was present in 14(28%) patients. Approximately half the cases (51%) occured unilaterally, and many others showed asymmetric involvement (78%) as studied by Mukherji et al[9], by the disease on two sides. Evidence of fungal disease with double density sign was present in 7(14%) patients. Intraorbital extension with destruction of lamina papyracea was found in 3(6%) and destruction of the medial wall of maxillary sinus was noted in 2(4%). Extension to the middle cranial fossa and pressure erosion on the septum with encroachment on the nasopharyngeal wall was seen in 1(2%) case each. Several studies have quoted the incidence of bony erosion with spread of pathology into the adjacent anatomic areas as 20% (Mukherji et. al). Radiology was suggestive of Inverted papilloma in 1(2%) cases. Pnemocephalus in the Frontal sinus with fungal sinusitis as a rare complication of sinusitis was seen in 1(2%) case. On CT, polyps appear as rounded bodies of soft tissue arising from the mucosal surfaces of nose and paranasal sinuses. Rarely a pedicle attaching the polypoid mass to the nasal mucosal lining can be seen clearly in the CT scan (pedicle sign). They never cause bone erosion. If soft tissue mass arising from the nasal mucosa is associated with bone erosion then it is a definite pointer towards the diagnosis of malignancy. The unenhanced CT scan shows a characteristic heterogeneity of signal within the involved sinus, which has been given many names such as 'starry sky', 'ground glass' or 'serpiginous' patterns, but commonly referred to as the 'double density' sign is diagnostic of fungal polyps. This is best appreciated in the soft tissue windows[10]. Nose and PNS malignancies have irregular margins with evidence of thickened mucosa and a mass exhibiting viable enhancement following contrast infusions. Disruption of fascial planes beyond the sinus walls is the most characteristic CT sign for the identification of malignancy. Allergic polyps and Infective (non specific) polyps were proven histopathologically in 18(36%) each. Inflammatory polyps were classified as non-allergic polyps depending upon the predominance of eosinophils. In a study conducted by Mysorekar V et al, out of 110 cases, 72 cases were non allergic polyps and 18 cases were allergic polyps. Polyps with positive fungal hyphae were seen in 7(14%) subjects in our study. Ponikau et. al[11] demonstrated allergic mucin histologically in 96% of their 101 patients, emphasizing the importance of histopathological diagnosis for confirmation. Of the 6 patients with neoplastic lesions, 2(4%) were seen to have Angiofibroma, Inverted papilloma each. Cementoossifying fibroma of the nose and paranasal sinuse, well differentiated SCC of the left maxillary sinus and Neuroendocrine tumour of the nose and paranasal sinus proven with immunohistochemistry was seen in 1(2%) cases each. In a 10 year study of 344 cases, Kate et. Al[12] studied 344 cases and observed 16 neoplastic lesions presenting as nasal polyps, out of which 9 were benign and 7 were malignant. Comparison of clinical and radiological findings in our study showed that there were 39(78%) patients in whom the radiological findings were consistent with that of the clinical suspicion. However in 11(22%), there was a difference in opinion. Out of 44 patients with clinically non- neoplastic benign polyps, consistent radiological findings were given in 35(79. 54%) patients. Of the 6 patients with clinically neoplastic lesions, similar radiological opinion was given in 4(66. 6%) patients. The radiological diagnosis in Non specific polyps was consistent with clinically diagnosed cases in 13(86. 6%) while inconsistent in 2(13. 4%). This indicates that radiological investigation is quite useful in diagnosis of nasal polyps. A similar study by H. Chopra, had 70% patients in which radiological findings were consistent with that of clinical suspicion and in 30% a difference in opinion. In the same study, of the 41patients with clinically non-neoplatsic benign polyps, consistent radiological findings were given in 33(80. 5%). Of the nine patients with clinically neoplastic lesions similar radiological opinion was given in only 2 patients (22. 2%). Comparison of clinical and histopathological findings showed that of the 44 patients with clinically non-neoplastic polyps, allergic polyps (Eosinophil rich

infiltrate) and infective (non specific) polyps were diagnosed in 18(36%) cases each. Out of 6 patients with clinically neoplastic lesions, similar histopathology opinion was given in 5(83. 3%) and in 1(16. 6%) the diagnostic results varied. One case of suspected malignancy in a 12 year old female turned out to be Cementoossifying fibroma of the maxilla on biopsy report. The histopathological diagnosis correlated with clinical diagnosis in the present study in 38(76%) patients. In the study by Kale et al and Diamantopoulos II et al the clinico - histopathological correlation was in 99. 7% and 98. 8% respectively. This relatively lower clinico-pathological correlation in the present study, when compared to the other studies can be attributable to the lesser number of cases included in the study. There was a discrepancy in diagnosing allergic fungal polypi in most cases. They were mainly reported as eosinophil rich polypi (Allergic fungal sinusitis like syndrome). But the management still remained the same as earlier i. e. complete removal of fungus and polypi. This difference could partially be attributed to lack of special stains for fungal hyphae in our centre, which markedly impaired the ability to recognize fungal elements on histopathology. However, histopathology still remains the gold standard for diagnosis in most cases. CONCLUSION: Since a lesion in the nasal cavity clinically presenting as nasal polyp can either be neoplastic or non neoplastic, all nasal polyps excised should be submitted for histopathological examination. A comprehensive management plan incorporating nasal endoscopy, radiology and histopathology remains the most likely means of diagnosing and providing long term disease control for nasal polyps. While radiology proves to be indispensable, as it provides a road map to the endoscopic surgeon and warns one of any existing or impending complications, histopathology gives a confirmatory diagnosis.

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Pakistan Journal of Otolaryngology 2013; 29 : 11-15

Original Article

Can Post-tonsillectomy Pain be Reduced by Topical Bupivacaine? a Prospective Randomized Trial

*Shanila Feroz, **Zafar Mahmood, *Farhan Khatri, *Jawaid Alam, ***Maisam Abbas

ABSTRACT: INTRODUCTION: Post-operative pain and delayed oral intake can delay discharge after day-care tonsillectomy. OBJECTIVE: To assess the effectiveness of topical bupivacaine application in the tonsillar fossae for the relief of post-operative pain after tonsillectomy. STUDY DESIGN: Double blind prospective randomized trial. STUDY SETTING: Liaquat National postgraduate medical center, Karachi. SUBJECTS: 60 patients, aged 7 to 35 years, both male and female, attended otolaryngology clinic with history of recurrent tonsillitis admitted for day-care tonsillectomy. METHOD: After written informed consent from patient or parents/ guardian, patients were randomized into two groups, i.e. Group I and II both comprising 30 patients in each using sealed envelopes. Patients underwent tonsillectomy under general anesthesia according to standard procedure. At completion of procedure, Group I received bupivacaine 0.5% topical application with soaked swab tightly packed in both tonsillar fossae while Group II received topical 0.9% saline in both tonsillar fossae for 5 minutes. Main outcome measures: Postoperative pain in throat (visual analogue scale), need of analgesia, delay in start of oral food and water intake and need of readmission. RESULTS: The bupivacaine group was found to drink ($p<0.001$) and eat ($p<0.001$) earlier than the control group. The pain scores at one ($p<0.001$) three ($p<0.001$) and six ($p<0.001$) hours post-operatively were also found to be lower in the bupivacaine group than control group. Control group patients ask for analgesia earlier and frequently than Bupivacaine group. Duration of stay in hospital was less in bupivacaine group than control group. CONCLUSION: Topical application of 0.5% bupivacaine provides better pain relief for post- tonsillectomy and facilitates early discharge in day-care tonsillectomy as compared to control group.

Key Words: Tonsillectomy; Pain; Postoperative period; Bupivacaine.

INTRODUCTION: Tonsillectomy is one of the most commonly performed procedure in Otolaryngology. Nowadays tonsillectomy is carried out more as a day care surgery and this trend is increasing[1]. Occasionally discharge from the day care surgery unit is not possible in these patients. The factors responsible for this include post-tonsillectomy pain, inadequate oral intake, nausea & vomiting and reactionary hemorrhage. It may cause post-operative depression in children who are unable to express themselves[2]. Published data indicate that about 14-15% of day care tonsillectomy discharges are delayed due to inadequate pain control. Therefore such pain is challenging to manage effectively, and achievement of adequate analgesia is not only important but leads to an early return to eating which further reduces pain[3]. The search for the ideal potent pain relieving drugs continues, although for many years it seemed as if analgesia, emesis, cardio respiratory depression, and addiction go hand in hand and are inseparable[4]. Nowadays the trend towards controlling acute pain after tonsillectomy is increasing and instead of relying on the anesthetist to control pain in the post operative period by giving pain killers and sedatives; newer techniques have surfaced whereby post op pain can be controlled effectively after tonsillectomy. The good postoperative analgesia has attained an important role in oropharyngeal operations like tonsillectomy where quick return of cough relfex is essential with calm, quiet and co-operative patient. Various methods have been recommended to control post tonsillectomy pain e. g. sewing the faucial pillers,[5,6] local anesthetic agents(topical or infiltrate), infiltration with local anesthetic and adrenaline[7,8,9], use of topical or systemic steroids injections[10] and non-narcotic analgesics like diclofenac[11] and paracetamol[12] have also been tried for post tonsillectomy analgesia. All surgical procedures whether minor or major are followed by a degree of postoperative pain and discomfort. Pain begins with local tissue damage during surgery that causes the release of inflammatory substances. These substances lead to generation of electrical impulses at peripheral nociceptors. The electrical impulses are conducted by a delta fiber and C fibers to the spinal cord (transmission). Local anesthetics can block the transmission of the electrical impulses when applied to the wound. It is hypothesized that surgical trauma produces a barrage of pain signals to the spinal cord that act as a primary mechanism in sensitizing the central nervous system. The rationale behind several studies is that by providing analgesia using local anesthesia, these sensitizing neuroplastic changes can be reduced within spinal cord, leading to diminished post-operative pain[13]. Less post-operative pain will result in early response to oral intake and early discharge. Dynamic assessments of pain, such as drinking water or opening the jaw, have been used in

*ENT Department, Sirsyed College of Medical Sciences, **ENT Department, United Medical and Dental College, ***ENT Department, Jinnah Medical and Dental College, Karachi, Pakistan.

past studies, in an attempt to measure pain objectively[14]. We elected to assess the patients' pain by using a Visual analogue scale (VAS) at repeated interval, the overall score of which would represent the contribution of constant pain and dynamic pain. HYPOTHESIS: Topical application of 0. 5% bupivacaine in the tonsillar fosse after tonsillectomy can reduce pain, thus avoiding the use of systemic analgesia and facilitate drinking and eating during immediate post-operative period. SUBJECT AND METHODS: Double blind prospective randomized trial.

SETTING: Liaquat National postgraduate medical center, Karachi. DURATION OF STUDY: The study was completed in one year. SAMPLE SIZE: 60 patients, 30 in each group. To detect significant difference on comparison of two means, considering time patient first drank in minutes m1=104. 3, m2=159. 5, s1=61. 8,s2=48. 8 (1 Hung et al. 2002), keeping power at 90% and significance level 5%, using formula n={(adv)2(s12+s22)}/(m1-m2)2{source: CPSP manual}, a total of 21 patients is required in each group, and we decided to take 30 patients in each group. SAMPLING TECHNIQUE: Non-Probability Convenience Sampling.

SAMPLE SELECTION: INCLUSION CRITERIA:

a) Patients undergoing tonsillectomy as a day care Surgery for recurrent tonsillitis.

b) Patients between ages of 7 to 35 years.

EXCLUSION CRITERIA: Patients were excluded from the study having

a) Known drug allergies or hypersensitivity to bupivacaine.

b) Bleeding disorders

c) Those using regular analgesics medications

d) Patients with language, visual, hearing, and cognitive impairment.

e) Illiterate enough not to understand the VAS

f) Patients undergoing following procedures.

g) Unilateral tonsillectomy

h) Tonsillar biopsy

i) Tonsillectomy for known carcinoma

j) Tonsillectomy in conjunction with palatal surgery

k) Tonsillectomy for peri-tonsillar abscess

l) Surgery in addition to tonsillectomy.

Data Collection Procedure: All the patients were instructed how to complete the VAS, a day before surgery. Proforma was filled in and the patients were instructed to do it in the same manner after the procedure. Patients were randomly assigned by drawing lots. A marked and coded envelops for each patient (either soaked in 0. 5% bupivacaine or 0. 9% saline i. e. isotonic sodium chloride solution) was given to the anesthetist before he entered the operating room to be tightly packed in the tonsillar fossae by surgeon in both the tonsillar fossae for five minutes at the end of the procedure. In group I bupivacaine 0. 5% and in group II a saline swab was used. The surgeon, patient, and other doctor in the ward who collected the data on proforma / questionnaire were all blinded to the solution used on the tonsil swab, as the opening of the sealed envelope and mixing of the swab with local anesthetic agent or saline was performed by anesthetist. Both groups underwent surgery with a standardized surgical and anesthetic technique. The surgical procedure involves removal of both the tonsils by cautery method performed by single surgeon.

DATA COLLECTION TOOL: All relevant information regarding the study was gathered onto the proforma (appendix) before being transferred to the computer for further analysis. MAIN OUTCOME MEASURES:

- Pain scores which were assessed at fixed interval i. e. one, three and six hours postoperatively using visual analogue scale (VAS)
- Time when patient first ate, drink
- Need for systemic analgesia.
- The delay in discharge and need for readmission due to pain were also recorded.

Patients complaining of pain or asking for pain relief were given analgesics drug. In our hospital we routinely prescribed Syrup Brufen (Ibuprofen) for post-operative analgesia after 4 hours when oral intake is allowed or injection I/M Diclofenac sodium, and to evaluate the intake, all the patients were reminded that I/V fluids should be cancelled when they felt well enough to eat.

DATA ANALYSIS: Statistical analyses performed with statistical package for Social Sciences (SPSS) version 13. 0. Results are presented as mean ± SD for continuous variables i. e. age, duration of symptoms and frequency/ percentage for qualitative variables. The Mann-Whitney test is used to compare the bupivacaine and saline groups with respect to the amount of analgesic drugs and need for readmission. The two –tailed unpaired Student t test is used to compare the delay until patient first drink/ate after the procedure. The VAS score of the placebo group and the bupivacaine is compared with a repeated-measures analysis variance. On the remaining variables, chi-squared test is used to compare two proportions. P-Value < 0. 05 is considered significant.

RESULTS: There were 60 patients, 30 in Group I and 30 in the Group II. Age range was 7 to 35 years, Mean

Pain scores

	Bupivacaine Mean ± SD	Control Mean ± SD	Difference
First hr	4.07 ±1.78	6.47 ± 1.54	- 37%
Third hr	2.80 ± 1.24	6.80 ± 1.78	- 59%
Sixth hr	1.67 ± 2.10	5.31± 2.15	- 68%

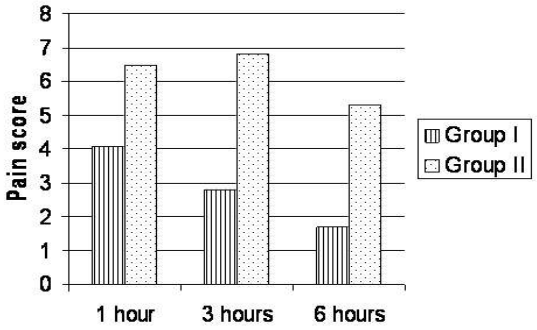

Figure 1: Scores for treatment and control group.

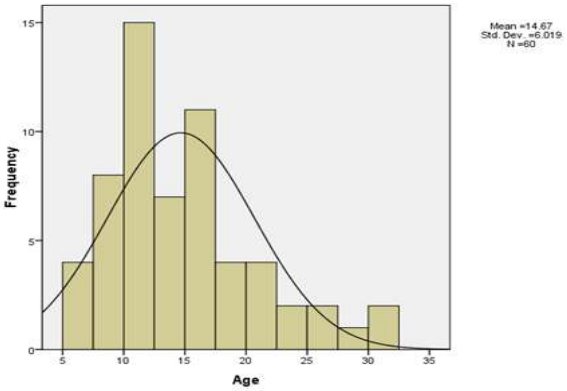

Figure 1 : Mean age of all patients.

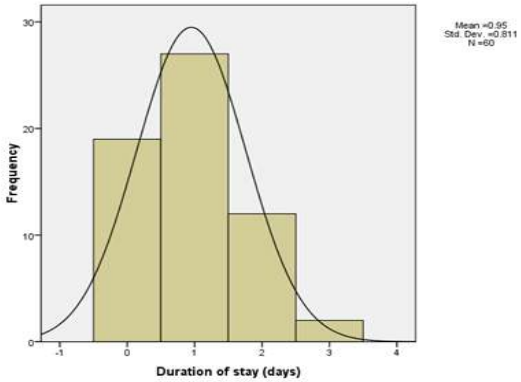

Figure 2 : Mean duration of stay of all patients.

and standard deviation of age bupivacaine group is 14. 20 ± 5. 22 while mean and standard deviation of control group who received 0. 9 percent saline is 15. 13 ± 6. 78. Mean and standard deviation of duration of stay in hospital is 0. 43 ± 0. 62 in bupivacaine group while its 1. 47 ± 0. 62 in control group. So duration of stay in hospital was less in bupivacaine group than control group. The mean (standard deviation SD) of the time of first ate for the bupivacaine group was 4. 80 (SD =1. 267Hours) and for control group was 7. 03 (SD=2. 356 Hours) with p value of (p<0. 001). The mean of the time of first drank for the bupivacaine group was 4. 13 (SD=0. 730 Hours) and for control group was 5. 90 (SD= 1. 971 Hours) with p value of (p<0. 001) which shows significant reduction in mean time first drink and first eating between the bupivacaine group and the control group. There was significant reduction in mean pain score at one hour (p<0. 001), three hours (p<0. 001) and six hours (P<0. 001) post-operatively in bupivacaine group.

Request for analgesia by the patient is one of the indicators for subjective pain. Overall percentage of need of analgesia for 60 patients found out to be 28 patients (46. 7%), whereas 32 (53. 3%) did not need analgesia. Out of these 28 patients Control group 25 patients demanded for analgesia earlier and frequently than Bupivacaine group 3 patients. We found that the pain score was significantly lower in the bupivacaine group compared to control group in day-care tonsillectomy. Patients are more likely to swallow when they are in less discomfort. After starting oral intake post operatively, patients are more likely to eat and drink more comfortably. This study shows that both eating and drinking started earlier following topical application of bupivacaine. Use of bupivacaine did not significantly affect rate of discharge. None out of 60 patients reported any other complication like hemorrhage or readmission due to pain. Because this study is not large enough to assess whether topical application would have an effect on post-operative admission rates. However admission and post-tonsillectomy hemorrhage rates were not the primary outcomes measures in this study.

DISCUSSION: Tonsillectomy is a commonly performed procedure and can be associated with significant morbidity including pain, difficulty in swallowing, dehydration and bleeding. It may cause post-operative depression in children who are unable to express themselves[15]. The raw area left after tonsillectomy operation is a source of pain postoperatively through the release of certain chemicals and enzymes. These allogeneic substances bring about hyperalgesia, characterized by a decrease in pain threshold and often spontaneous pain[16]. The peripheral biochemical mechanism at the site of operation with arachidonic acid metabolites to mediate pain and inflammation may explain the post-tonsillectomy pain[17]. Magnitude

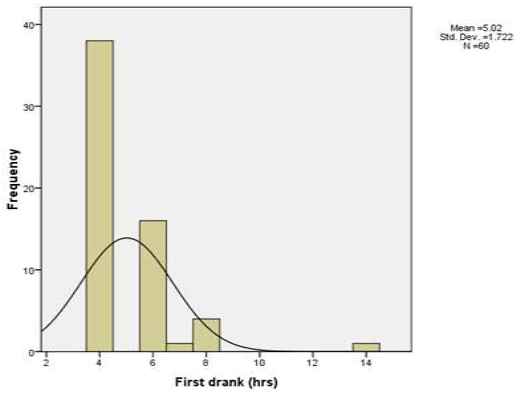

Figure 3 : First Drank in hours of all patients.

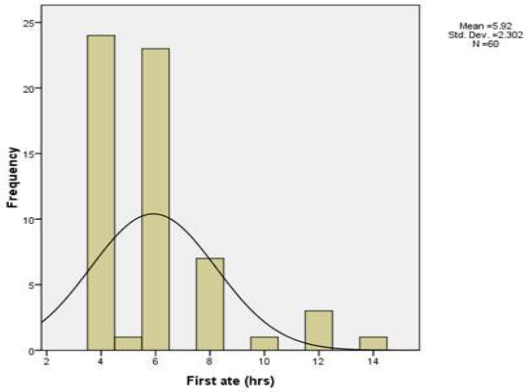

Figure 4 : Return to oral diet in first post-operative day.

of postsurgical pain can be minimized by reducing the tissue damage. Post-operative use of balanced analgesia, regular assessment and assurance of patient can control the pain successfully. Here local analgesic drug in our study that is bupivacaine 0. 5% proved itself to be effective in relieving post-tonsillectomy pain when applied locally as infiltration method caries life threatening risks. This protracted pain relief resulting by single use of bupivacaine cannot be explained by prolonged presence of the local anesthetic in the area of the surgery. An explanation for this long acting pain relief might be that the neural blockade prevents nociceptive impulses from entering the central nervous system immediately after the surgery when applied to raw area and this suppresses formation of the sustained hyper excitable state responsible for the maintenance of post-operative pain. Local anesthetics induce the anti nociceptive effect by acting on the nerve membrane; however, these affect many membrane-associated proteins in any tissue. They can inhibit the release and action of agents like (prostaglandin, lysosomal enzymes, etc.) which sensitize and stimulatie the nociceptors participating in inflammation[18]. Previously, in different studies certain approaches to post tonsillectomy pain reduction were reported which include: Attempts to reduce tissue stimulation and irritation by sewing of faucial pillars have been advocated for post tonsillectomy analgesia[5] but Ramjittan & Singh[6] have reported that suturing of pillars on raw tonsil bed by three zero catgut does not relieve pain and take more time. Sub capsular injection of 10ml of 0. 5% lignocaine with adrenaline in 84 adult tonsillectomy patients halved the blood loss and made the dissection easier[7] but there was a rise of blood pressure and heart rate due to systemic effect of adrenaline. This method would have an additional disadvantage in our setup where we use Halothane for maintenance of general anesthesia. Effect of tonsillar infiltration with local anesthetics Bupivacaine on post tonsillectomy pain has been documented. Molliex et al[8] have shown that post-operative infiltration of 0.25 % Bupivacaine lowers the postoperative pain also supplemental analgesics consumption is reduced while as Strubb et al[9] did not report any reduction in postoperative pain in there study but blood loss was definitely reduced due to the local bupivacaine infiltrated.

A single preoperative IV dose of Dexamethasone for tonsillectomy in children 10 facilitate an earlier return to a full/semi full diet on 3rd/4th postoperative day. There was no difference in postoperative pain and nausea/emesis. Use of anesthetic gargling solutions had been employed to prevent post-tonsillectomy pain but these anaesthetize the pharynx, exposing the patient to the danger of diminished gag reflex and aspiration. Injection of penicillin-steroid local anesthetic mixture into the tonsillar fossae was believed to have ideal analgesic effect but Rundle[8] conclude that this method did not alleviate pain any more than IM injection of Depo-Penicillin. NSAIDS have been employed for post tonsillectomy analgesia. In the treatment of postoperative pain after tonsillectomy the combination of pre and post-operative administration of Diclofenec suppositories resulted in significantly lower consumption of rescue analgesia and is thus preferable to administration solely postoperative[11]. Oral paracetemol has been shown to be superior analgesic than the suppository[12]. Ketorolac has been found to reduce the postoperative use of morphine for post tonsillectomy analgesia. But Jugkin et al[20] have advocated that intraoperative ketorolac should be avoided because in there study of post tonsillectomy bleeding, intraoperative ketorolac caused 17%postoperative bleeding compared to 4.4% and in patients who received traditional opioid analgesic. Tonsillectomy because of its low primary hemorrhage rate (0. 14-3. 5%) was thought appropriate for day care surgery. Pringle[21] showed in his study that 80% parents thought postoperative one night stay is suitable for pain, nausea, and vomiting and postoperative course. In our study we tried to search for an effective method of postoperative analgesia without necrosis and sedation in tonsillectomy. Children below the age of 7 years are excluded as it was difficult to assess the effect of the treatment on postoperative pain. We use VAS scoring using faces and descriptive words to assess the patients' pain at repeated interval. The absolute visual analogue scores can be difficult to interpret, but when focusing mainly on the repeated measures on the same patient, interpretable comparison between different stages can be made. Different researchers use different methods to assess the postoperative pain score, which might be the reason for variance in the result obtained. The operative technique and experience of the surgeon may also cause variance in the results. To avoid these confounding variables, a single surgeon was selected to perform tonsillectomy by means of a fixed protocol. Intra operative blood loss was not quantified because the purpose of the study was only to assess post-tonsillectomy pain. There was no report of excessive bleeding intra operative or any post-operative hemorrhage seen. And it was also noted that patients who were pain free were discharge earlier.

CONCLUSION: Our study has shown that topical use of local analgesic, Bupivacaine 0. 5 % can effectively reduce pain, avoid use of systemic analgesics and allow patients regain consciousness without pain in the throat in early post-operative period following tonsillectomy. In this way patient remains co-operative, approachable and has intact pharyngeal and laryngeal reflexes postoperatively and this facilitates eating and drinking earlier. A larger prospective study of similar design is required to assess whether this could make an impact on day-case tonsillectomy admission rate or shorter hospitalization time.

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Pakistan Journal of Otolaryngology 2013; 29 : 16-18

Original Article

Frequency of Malignancy in Solitary Thyroid Nodule

Israr ud din, Zakirullah, Asghar Ullah, Inayatullah Khan, Muhammad Hafeez

ABSTRACT: OBJECTIVE: To determine the frequency of malignancy in discrete solitary thyroid nodule in 139 patients in a tertiary care hospital of Peshawar during one year period. SUBJECTS & METHODS: This was a cross sectional study made during August 2010 to August 2011 involving 139 patients with solitary thyroid nodule. The patient's demographic data age and gender were recorded. The diagnosis of solitary thyroid nodule was based in clinical examination including palpation and ultrasound was done to confirm the solitary nature of the thyroid nodule patients having multiple nodular goiter and diffuse thyroid swelling was excluded. Subsequently thyroid nodule was removed surgically and examined histopathologically to confirm the presence of malignancy. The data were recorded in a pre-scheduled proforma. RESULTS: Among the 139 patients, male were (N:35) and female (N:104) with a male to female ratio of 1:3. Patients had their age ranging from 17 to 75 years (X= 43.99 + 13.9 SD). Malignancy in the solitary thyroid nodule was found in 22(15.8%) as compared to 117(84.1%) as non malignant. Malignancy was more common in female. Malignancy was more common 50% in the age range from 31-45 years. Papillary carcinoma was more common followed by follicular carcinoma. CONCLUSION: Considering the large number of patients with solitary thyroid nodule having malignancy, it is suggested to screen patients as well as to create awareness for surgery and medical consultation among patients.

Key Words: Solitary Thyroid Nodule, Malignancy, Cold Nodule.

INTRODUCTION: Thyroid swelling is a common and frequently seen clinical condition worldwide. Most of their swellings are multinodular, but a solitary thyroid nodule also not uncommon. About 70% of the discrete thyroid swellings are clinically isolated. The importance of solitary thyroid nodule lies in the significant risk of malignancy compared with other thyroid swellings. Incidence of malignancy within a clinically apparent solitary thyroid nodule is approximately 10%, and in males 31% of nodules are malignant compared with 21% in females. If imaging investigations show the nodule to be truly solitary, then the likelihood of it being malignant increases to about 20%[1]. Discrete thyroid swellings are 3-4 times more common in women than men, but a discrete swelling in a male is much more likely to be malignant than in female[2]. The two most common methods for examination of the condition include palpation and ultrasonography. However ultrasound is very helpful to confirm the solitary nature of the nodule. In 4%–8% adults the condition is confirmed by palpation and in 13%–67% when ultrasound detection has been used. The prevalence of thyroid nodule increases with age[3]. Presentation of nodules during childhood and adolescence should induce caution, the malignancy rate for nodules in young persons is 2-fold higher than in adult patients[4]. Thyroid cancer is the most common endocrine tumor, and the most common way for it to appear a solitary thyroid nodule in a euthyroid patient when the incidence of malignancy is between 10 and 20 percent[5]. Thyroid carcinoma usually presents as asymptomatic thyroid nodule[6]. In a study of 100 cases of solitary thyroid nodules, 66% were non neoplastic and 34% were neoplastic. Among those diagnosed as neoplastic, 21% were malignant and 13% were benign[7]. Thyroid nodules could be adenomas or neoplasms. Most thyroid nodules are benign hyperplasic lesions, but 5 to 20% of these nodules are true neoplasms in nature[8]. The aim of the present study was to determine the frequency of malignancy in patients with solitary thyroid nodule in among patients presenting with a complaint of swelling in the thyroid gland to the Deptt of ENT and Head and Neck Surgery.

SUBJECT & METHODS: This study conducted in the Deptt. of ENT and Head & Neck Surgery, Khyber Teaching Hospital, Peshawar from 12th August 2010 to 17th August 2011. A total 139 patients of all age groups and both gender with solitary thyroid nodule were included . A detailed history and physical examination of all patients was done. Thyroid functions tests and ultrasound neck of all patients done to exclude multinodular and diffuse goiter and confirm solitary thyroid nodule. Also per operative findings and histopathological findings were noted. Inclusion criteria were all patients presenting with solitary thyroid nodules irrespective of the age and sex. Exclusion criteria were patients with multinodular goiter, thyroiditis, diffuse thyroid swellings and with confirmed cancerous condition of thyroid. The entire nodule was surgically excised and sent for histopathological examination. The personal data of the patients as well as the clinical and laboratory findings were entered in a pre-scheduled data collection sheet. The data were computed and analyzed using SPSS Version 10. Descriptive statistics include the gender distribution ages and distribution of the type

Department of Otolaryngology, Head and Neck Surgery, Khyber Teaching Hospital, Peshawar.

Age Groups (in years)	No. of Patients	Percentage of %
<30	19	13.7
31 -45	70	50.4
46-60	28	20.1
61 and above	22	15.8
Total	139	100

Table 1: Distribution of patients (N=139) in the various age groups.

Age Groups	Malignant Nodule	Percentage of Malignancy	Non Malignant	Percentage of Non Malignancy	Total	%
<30	3	2.2%	16	11.5%	19	13.7%
31-45	11	7.9%	59	42.4%	70	50.4%
46-60	6	4.3%	22	15.8%	28	20.1%
61 & above	2	1.4%	20	14.4%	22	15.8%
Total	22	15.8%	117	84.2%	139	100%

Table 2: The distribution of the malignant and non-malignant thyroid nodules in the various age groups of patients (N=139)

Gender Group	Malignant	Percentage of Malignant	Non Malignant	Percentage Non Malignant	Total	%
Male	5	3.6%	30	21.6%	35	25.2%
Female	17	12.2%	87	62.6%	104	74.8%
Total	22	15.8%	117	84.2%	139	100%

Table 3: The gender distribution of the patients (N=139) in the malignant and non malignant solitary thyroid nodules

of lesion was done and the data presented as tables and charts.

RESULTS: Among the 139 patients 35 (25%) were males and 104(75%) as females). The male to female ratio was 1: 3. Age wise distribution of patients is shown in (Table-1). In 22(15.83%) patients the solitary nodule was diagnosed as malignant as compared to 84 %(117) as non malignant. The distribution of malignancy in various age groups is shown in Table 2. It can be seen that 8%(11) patients with their age between 31 to 45 years developed malignancy. The gender wise distribution of malignancy is shown in table 3. It can be seen in that table that 12.2%(17) of the 22 patients with malignant nodules were females. This clearly demonstrates that females are more prone to develop malignancy secondary to solitary thyroid nodule.

DISCUSSION: The prevalence of a clinically detectable thyroid nodules in the literature ranges 4 to10% of the population, but only 5 to 30% of those nodules are malignant[9]. The finding of the present study lie within the repeated prevalence. This shows the necessity of the excision of the lesion at an earlier possible presentation as cytologic interpretation of FNAB material only allows categorization of specimens as benign, malignant and this will require further management strategies including excision of the lesion. The high sensitivity and specificity of thyroid FNAB[10]. A single or multiple thyroid nodules represent a common and important clinical entity. The frequency of thyroid nodules, about half of which are single on physical examination, increases throughout life[11]. The predominantly higher frequency of solitary thyroid nodules in females (75%) is in of the findings of a larger Framingham database, showing that the life time risk for developing a thyroid nodule is between 5% and 10%. In this study population, 4.2% of the patients had a thyroid nodule, and females were afflicted four times more than males. Of nodules removed surgically an estimated 8 to 17% was carcinomas[12]. The incidence of malignancy in our study was 15.8% which is comparable to previously published works. The incidence of solitary nodule that is confirmed malignant on surgical excision ranges from 8 to 33 %[13]. Study has also been shown that thyroid malignancy in females is more common in females but the incidence before puberty and after menopause is equal in both sexes[14]. Similarly discrete thyroid swellings are 3-4 times more common in women than men[15]. In this study 18 patients (30%) gave positive family history of thyroid disease and most of them were from the northern hilly areas of Pakistan. Similar observation were made in local studies carried out in Pathology department of Army Medical College, Rawalpindi between 1993 to 1995[16,17]. Also, Obradovic showed that the presence of thyroid nodules is more frequent in women (91.3%). Similarly, Christensen et al.18 proved that in patients with solitary cold nodules, 83% were females. Nineteen out of 54 patients (35%) with solitary cold nodules were proved to have differentiated thyroid cancer. These results were confirmed by the study of Diaconescu et al[19]. where 25-30% of solitary cold nodules were malignant. Also, Sundram and Mack showed that 24% of solitary cold nodules proved as thyroid cancer[20]. Furthermore, Okumura et al showed that 42% of patients with solitary cold nodules had malignant lesions[21]. In contrast, Hungstated showed that 19.9% of solitary cold nodules were malignant[22]. Moreover, McCall et al showed that the incidence of carcinoma in patients with solitary cold nodules was 17%[23].

We found that classification of thyroid lesions according to the proposed standardized nomenclature yields similar results for risk of malignancy reported by others using the proposed Bethesda or comparable systems. Yassa et al reported their institutional experience using 1997 guidelines by the Papanicolaou Society of Cytopathology[24]. Their yields for malignancy, using the same calculations, were as 10%; benign, 0.3%; atypical follicular lesion, 24%; suspicious for follicular neoplasm, 28%; suspicious for malignancy, 60%; and malignant, 97%. Yang et al[25] reported the following malignancy rates: nondiagnostic, 10.7%; benign, 0.7%; atypical follicular lesion, 19.2%; suspicious for follicular neoplasm, 32.2%; suspicious for malignancy, 64.8%; and malignant, 98.4%. Nayar and Ivanovic[26] performed a similar retrospective study of their institution's history with application of the 6 proposed Bethesda diagnostic categories, with calculated malignancy risks as follows: nondiagnostic, 9%; benign, 2%; indeterminate for neoplasm, 6%; follicular neoplasm, 14%; suspicious for malignancy, 53%; and malignant, 97%. The diagnostic category of AFLUS is heterogeneous, which is acknowledged by committee members of the NCI State-of-the-Science meeting[27]. It is interesting that the frequency of

diagnosis and reported rate of malignancy on surgical follow-up reported by Nayar and Ivanovic146 differ significantly from our findings and the aforementioned studies for AFLUS lesions. Nayar and Ivanovic[26] had 18% of total FNA samples categorized as AFLUS, with a malignancy rate of 6%. The diagnostic frequency of AFLUS was 3.4% in our study. The associated malignancy risk in our study was 17%, similar to the rates found by Yassa et al (24%)[24] and Yang et al (19%)[25]. In most cases with initially non-diagnostic fine needle aspiration biopsy of a thyroid nodule, malignancy is not found subsequently. The FNA remains the first test in majority of cases for the evaluation of thyroid nodule. This necessitates the need for further clinical follow-up and surgical intervention is necessary in patients with non-diagnostic FNAB. To get a clear picture of the validity of the present findings, larger prospective studies are needed to determine the exact therapeutic impact of different options of thyroidectomies on thyroid tumour recurrence rate and survival

CONCLUSION: The incidence of malignancy in solitary thyroid nodule was found quite high specially in females. This highlights the need for to creating awareness among the masses for seeking medical help for proper evaluation and diagnosis so that adequate treatment can be initiated at an earlier stage of the disease.

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Pakistan Journal of Otolaryngology 2013; 29 : 19-21 Original Article

Split-Body Double-Blinded Randomized Controlled Trial of Gelatin foam and Traditional Nasal Pack in Septal Surgery

*Arfat Jawaid, **Masood Akhtar, * Farhan Akbar, *** Muhammad Tahir, * Saad Bin Qamar Mirza

ABSTRACT: OBJECTIVE: To compare gelatin foam versus traditional nasal pack in terms of pain while in place and on removal. STUDY DESIGN: Split-body, double-blinded (patient and assessor blinded), randomized controlled trial. PLACE AND DURATION OF STUDY: Study was carried out in ENT Departments of Combined Military Hospital (CMH) Bahawalpur, Bahawal Victoria Hospital (BVH) Bahawalpur and CMH Multan from Jun 2009 to Jan 2011. PATIENTS AND METHODS: Patients with symptomatic deviated nasal septum undergoing an elective nasal septal surgery were selected and at the end of surgery one side of nose was packed with a traditional nasal pack (Bismuth iodoform paraffin paste- impregnated ribbon gauze/ paraffin-impregnated ribbon gauze/ paraffin gauze roll) and the other side was packed with gelatin foam. Randomization was done to allot traditional pack or gelatin foam pack to the incision side or non-incision side. The patients were kept blinded about the type of pack placed on each side. RESULTS: There was significantly less pain on removal of gelatin foam (mean pain score 1.35 on a visual analogue pain scale of 0 to 10 cm) as compared to traditional nasal pack (mean pain score 4.11; P=0.01). There was no significant difference in pain score between gelatin foam and traditional pack observed at 6 and 24 hours post-operatively (P=0.08 and 0.77 respectively). Both the packs were equally effective in preventing post-operative haemorrhage and septal hematoma. No crusting and adhesion formation was noted at the end of 2nd and 6th weeks with either of the packs. CONCLUSION: Gelatin foam pack is as effective as a traditional nasal pack in preventing post-operative bleeding and septal haematoma. There is no significant difference in pain due to presence of pack in nasal cavity but Gelatin foam causes significantly less pain on removal. There is no significant crusting and adhesion formation associated with either of these packs.

Key Words: Traditional nasal pack, Gelatin foam, Septoplasty.

INTRODUCTION: Nasal packing is done at the end of nasal septal surgery to prevent post-operative bleeding and septal hematoma. Options include traditional nasal packing, a pre-fabricated nasal sponge, an epistaxis balloon, or an absorbable biomaterial[1]. Traditionally used nasal pack is paraffin gauze roll or ribbon gauze impregnated with paraffin/ bismuth Iodoform paraffin paste (BIPP). Nasal packs are uncomfortable for the patient when in place and their removal is associated with a moderate to severe pain. Optimal form of nasal packing is not established and the quest for a painless nasal pack continues. The upcoming trend is to avoid packing if possible however it is not routinely practiced in South West Asia yet[2]. Absorbable haemostatic agents are associated with a high degree of patient comfort and provide haemostasis comparable with traditional techniques[3]. Gelatin foam is being used as an alternative to traditional nasal packs. It liquefies within 5 to 7 days in a nasal cavity thus precluding a need for formal removal but we prefer to remove it by suction clearance on the 1st post-operative day thus restoring a nasal patency earlier[4]. We hypothesized that gelatin foam will be more effective than a conventional nasal pack in preventing bleeding and septal hematoma but will be less painful while in-placed in nasal cavity and on removal.

PATIENTS AND METHODS: It was a multi-centric study carried out in ENT Departments of Combined Military Hospital (CMH) Bahawalpur, Bahawal Victoria Hospital (BVH) Bahawalpur and Combined Military Hospital (CMH) Multan from 11th Jun 2009 to 17th Jan 2011. Study plan was reviewed and approved by the ethical committees of all the three hospitals. An informed consent was taken to include the patients in the study. Patients with symptomatic deviated nasal septum (DNS) undergoing a septal surgery were registered. Children under 12 years of age, Patients undergoing surgery under local anaesthesia and those having a deranged coagulation profile or a known hypersensitivity to gelatin were excluded from the study. Also excluded from the study were the cases that required inferior turbinectomy or those who required posterior nasal packing. Septal surgery (sub mucosal resection/septoplasty) was performed with the usual technique under general anesthesia. At the end of surgery one side of nose was packed with traditional nasal pack (BIPP-impregnated ribbon gauze/ paraffin-impregnated ribbon gauze/ paraffin gauze roll) and the other side was packed with haemostatic gelatin foam. A random number

* Combined Military Hospital, Bahawalpur, **Bahawal Victoria Hospital, Bahawalpur, *** Combined Military Hospital, Multan, Pakistan.

Mean pain score	Traditional pack	Haemostatic gelatin pack	P value (At 95% confidence interval of the difference)
6 hours post -operatively	2.64 (±2.02)	1.7 (± 1.68)	0.08
24 hours post -operatively	2.23 (±2.13)	1.23 (±1.56)	0.077
On removal of pack	4.11 (±2.44)	1.35 (±1.65)	0.01

Table-1 : Mean Pain Score.

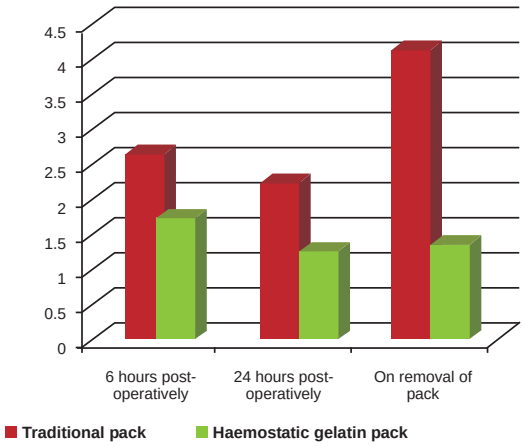

Chart-1 : Mean Pain Score.

table was used to allot traditional pack or gelatin foam pack on the incision side or non-incision side. The patients were kept blinded about the type of pack placed on each side. Packs were removed after 24 hours of surgery. Traditional pack was removed with the help of forceps and the gelatin foam was removed with the help of suction tip. The person assessing the outcome was kept blinded about the type of nasal pack on each side. The primary outcome measures were discomfort/pain due to the presence of packs in the nose (noted on a visual analogue scale of 0 to 10 cm at 6 hours after surgery and at 24 hours) and pain associated with their removal (noted on a visual analogue scale just after removal). Secondary outcome measures were post-operative hemorrhage (noted while the packs were in place and on removal; significant hemorrhage defined as bleeding requiring a re-packing), septal haematoma (assessed by anterior rhinoscopy after removal of pack), crusting and adhesion formation (assessed at the end of 2nd week and 6th weeks after the surgery on anterior rhinoscpy). The data was recorded on a specially designed performa and entered in Statistical Package for Social Sciences (SPSS) version 16 for analysis. Numerical data included age, pain scores at 6 hours, pain scores at 24 hours and pain scores on removal of packs. Qualitative data included gender, type of surgery, bleeding while packs in place, bleeding on removal of packs, crusting and adhesion formation after 2nd and 6th weeks. Mean and standard deviation was calculated for numerical data, and percentage was calculated for qualitative data. The comparison of gelatine foam pack and traditional pack was made regarding pain score at 6 hours, 24 hours and on removal of pack. Statistical significance of observed difference was analyzed by applying paired sample t-test. Similarly comparison of gelatine foam pack and traditional pack was made in terms of bleeding (while pack is in place and on removal of pack), crusting and adhesion formation (after 2nd and 6th weeks). Observed difference was assessed for statistical significance through application of Chi square test. For both the numerical and quantitative data, after application of a test of significance, calculated P value equal to or less than 0.05 % was taken as significant.

RESULTS: Demographics and clinical information

Out of 84 patients 20 fulfilled the inclusion criteria and were enrolled in the study. Three (15%) were females and 17 (85%) were males. The minimum age was 16 years and maximum was 38 years. Mean age was 24.35 with a standard deviation of 5.57. Four patients underwent septoplasty (20%) and 16 patients (80%) underwent sub-mucosal resection of the nasal septum.

Main outcome measure : The main outcome measure was pain which was assessed on a visual analogue scale of 0 to 10 cm. It was recorded at 6 and 24 hours post-operatively and on removal of packs. Six hours after the operation mean pain score for traditional nasal pack was 2.64 with a standard deviation of 2.02. The mean pain score for haemostatic gelatin foam was 1.7 with a standard deviation of 1.68. This difference was not statistically significant (P value=0.08 at 95% confidence interval of the difference). Twenty four hours post operatively the mean pain for traditional pack was 2.23 with a standard deviation of 2.13. Similarly the mean pain for haemostatic gelatin foam is 1.23 with a standard deviation of 1.56. The observed difference is not statistically significant as the P value is not less than 0.05 (P value=0.077 at 95% confidence interval of the difference). The mean for pain on removal of traditional nasal pack was 4.11 with a standard deviation of 2.44. The mean pain for removal of haemostatic gelatin foam was 1.35 with a standard deviation of 1.65. This difference between mean pains is statistically significant as the P value is less than 0.05 (P=0.01 at 95% confidence interval of the difference). Main outcome measures are summarized in table 1 and chart 1.

Other outcome measures: There was no significant bleeding while packs were in place or on removal of packs in any of the patients. There was no septal hematoma in any of the patients. No significant crusting and adhesions were noted at the end of 2nd and 6th weeks post operatively.

DISCUSSSION : Nasal packs are routinely placed after nasal septal surgery to prevent bleeding and septal hematoma. Pain caused by the nasal packs is a major concern and a quest for a painless nasal pack is still on[3]. This study was conducted to test the hypothesis that 'gelatin foam will be more effective than a conventional nasal pack in preventing bleeding and septal hematoma but will be less painful while in-placed in nasal cavity and on removal'. Pain is a subjective phenomenon and inter-individual variation in perception of pain is a major handicap in the trials involving pain as a variable. A split-body

study comparing the right side with the left in the same individual rules out inter-individual variation to some extent. As the right and left nasal cavities are innervated with separate nerves without significant overlap so we took this as an advantage to compare the pain on the right side with the left. Some other authors have also compared two different types of nasal packs in the same individual[3,5,6,7]. Parhabu V et al allotted the two types of nasal packs between right and left side alternatively thus one type of pack was more likely to be placed in the non-incised nasal cavity, the side that would generally be expected to be associated with less pain[7]. We took care of this aspect and randomized the packs between incision side and non-incision side. The mean pain scores observed at 6 and 24 hours post-operatively were less with gelatin foam as compared to traditional nasal packs but the difference was not statistically significant (P=0.08 and 0.77 respectively). Similar studies comparing various types of nasal packs also showed minor differences in mean pain scores that were not statistically significant [3,6,7]. This is because most of the packs caused only mild discomfort while in the nose. We observed that the mean pain score on removal of gelatin foam nasal packs was significantly less than traditional nasal packs (1.35 as compared to 4.11; P=0.01 at 95% confidence interval of the difference). Schoenberg et al also observed that routine nasal packs especially BIPP is associated with increased pain levels[5]. Chandra et al concluded that absorbable haemostatic agents are associated with a high degree of patient comfort[3]. According to Valentine et al traditional nasal packing is uncomfortable for patients thus absorbable biomaterials are being commonly used after endoscopic sinus surgery, both for haemostatic and wound healing considerations[8]. When applied to nasal mucosa gelatin foam liquefies within 2 to 5 day[4,9]. However it is recommended by some authors that the left over material should be debrided with suction clearance[10]. We recommend that the gelatin foam should be completely removed after 24 or 48 hours as it has full-filled its purpose and is no more needed. It will not only restore the nasal patency but will also minimize potential chances of a toxic shock syndrome. The removal of gelatin foam with suction clearance was well tolerated by the patients in our study. The mean pain score for removal of gelatin foam (1.35) was less than the mean pain score due to presence of gelatin foam in the nasal cavity at 6 hours (1.7) and slightly more than the mean pain score due to presence of gelatin foam in the nasal cavity at 24 hours (1.23).

In our study both gelatin foam and traditional nasal packs were equally effective in preventing bleeding and septal hematoma. Chandra et al also concluded that absorbable haemostatic agents provide haemostasis comparable with traditional techniques[3]. Different studies comparing various types of nasal packs showed that most of the packs served the purpose well in preventing bleeding and septal haematoma[3,6,7]. We looked for crusting and adhesion formation at the end of 2nd and 6th post-operative weeks and did not find significant crusting or adhesion formation with either type of nasal packs under study. No significant difference in incidence of adhesions and crusting was noted in studies comparing Rapid Rhino versus Telfa packs and Merocel versus Spiggel packs[6,7]. In another study there was no significant difference in the incidence of adhesions between the groups which received traditional removable packs and those who did not receive any pack[5]. So we can say that the removable packs do not significantly alter adhesion formation or crusting tendency of nasal mucosa. However different self-resorbable biomaterials may incite an inflammatory reaction and may induce differential patterns of mucosal healing, potentially causing increase in crusting and adhesion formation[3,8]. A study comparing thrombin-soaked gelatin and FloSeal (a novel absorbable haemostatic paste used as a nasal pack) showed that FloSeal had clear trends toward increased granulation tissue ($p = 0.007$) and adhesion ($p = 0.006$) formation as compared to thrombin soaked-gelatin foam[3].

CONCLUSION: Gelatin foam pack is as effective as a traditional nasal pack in preventing post-operative bleeding and septal haematoma. There is no significant difference in pain due to presence of pack in nasal cavity but Gelatin foam causes significantly less pain on removal. There is no significant crusting and adhesion formation associated with either of these packs.

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Pakistan Journal of Otolaryngology 2013; 29 : 22-24

Original Article

Nasal Splints After Routine Nasal Surgery: How Justified Is It?

Vanita Sarin, Baldev Singh, Vanika Anand, Jaskaran Singh Gill

ABSTRACT: OBJECTIVE: To evaluate the benefits and ill effects of using intranasal splints (INS) after nasal surgeries. MATERIALS AND METHODS: A prospective study of 124 patients was carried out at Sri Guru Ram Das Institute of Medical Sciences & Research, Amritsar, India. A total of 124 patients undergoing three types of nasal surgeries (Septoplasty, Septoplasty with turbinate reduction, endoscopic sinus surgery with or without septal correction) over a span of 5 years were included in the study. RESULTS: The role of INS was thoroughly investigated. Patient satisfaction after post operative healing was higher in patients with INS as compared with those without INS. Though within 7 days there was more pain, discomfort and nasal obstruction in patients with INS. CONCLUSION: Still, considering the long term benefits our study favours the use of INS after nasal surgeries. we recommend intranasal splints especially in those surgeries in which both lateral wall of nose and septum are simultaneously manipulated

Key Words: Intranasal splints, nasal obstruction, post operative healing, nasal surgery.

INTRODUCTION: Nasal surgery is frequently associated with some amount of morbidity due to adhesions, hematoma formation, crusting, bleeding, pain & discomfort because of nasal antibiotic meshes which are post-operatively inserted. Rarer complications include septal perforations. INS has been widely used by rhinologist to combat these complications. Salinger and Cohen were the first to use INS for surgery of a difficult septum[1]. Several materials have been used in the past, but now preformed splints are available in the market (silicon and soft splints). INS has been mainly used to reduce the adhesion formation between the septum and lateral wall of nose[2]. After the emergence of FESS which was a breakthrough in nasal surgery, the incidence of adhesion formation in the nasal cavity has markedly increased because of simultaneous injury to the septum and lateral nasal wall due to repeated in and out manipulation of the endoscope. Raw surfaces are also markedly increased because of use of microdebriders in nasal surgeries. The prevalence of adhesions (which most otorhinolaryngologists would like to avoid) was reported to be 6-11%[2,3]. It is even higher (36%) following turbinate resection alone, 31% in turbinate resection combined with septal surgery and only 7 % in other procedures[4]. Campbell et al showed that incidence of adhesions following high risk surgery (such as synchronous surgery to septum and lateral wall) was reduced from 26% to 0% by inserting silastic splints at the end of operation and leaving them in place for 7 days[3]. The INS is widely accepted as a good intervention to minimize post-operative complications in patients undergoing various nasal surgeries[5]. However in spite of its wide usefulness some recent studies have created considerable doubt in their effectiveness and morbidity[6]. To evaluate the benefits

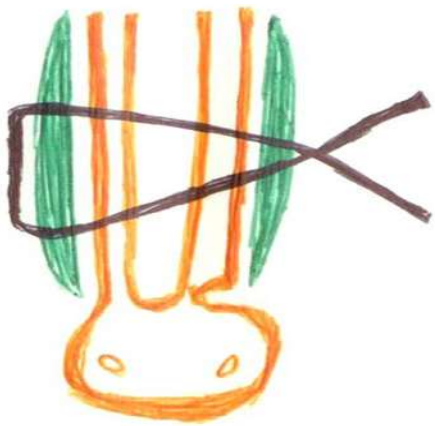

Figure 1: Coronal view of the septum demonstrating a separate through and through horizontal suture (black) passing through both sides of the septal mucoperichondrial flaps (orange) with splints in position in both sides of nasal cavity(green).

Figure 2: Patient showing septal perforation following use of INS.

Department of ENT, Sgrdims Institute of Medical Sciences & Research, Vallah, Amritsar, India.

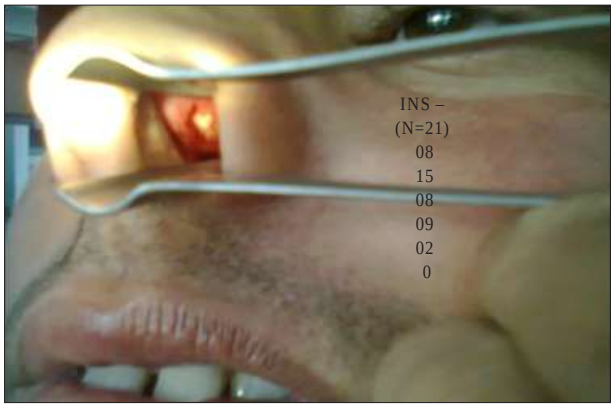

Figure 3: Patient showing area of pressure necrosis due to over tightening of sutures which were later on removed to prevent perforation.

and morbidity associated with INS a randomized prospective study was carried out and it was very helpful in answering majority of questions raised about the wisdom of using INS.

PATIENTS AND METHODS: This study was carried out at Sri Guru Ram Das Institute of Medical Sciences & Research, Amritsar, in the department of ENT. A total of 124 patients undergoing three types of nasal surgeries (Septoplasty, Septoplasty with turbinate reduction, endoscopic sinus surgery with or without septal correction) over a span of 5 years were included in the study. To avoid the operator bias all 124 cases of the study were operated by the same surgeon. The patients in which there was slightest doubt of any intra operative complication such as mucosal tear or septal perforation were excluded from the study to avoid any confounding in the results. The patients were randomly divided into two groups of 62 patients each. In group 1 both antibiotic soaked anterior nasal packing & intranasal splints were used post operatively. While in group 2 only antibiotic soaked anterior nasal packing was done post operatively. The splints were made up of plastic sheets cut from intravenous infusion bottles which were previously sterilized and were fixed with 2-0 silk through the septum (Figure 1). Antibiotic soaked packs were removed in both groups after 48 hours; while the patients of group 2 who had intranasal splints; the splints were kept till 7th post operative day. The patients of both the groups were given systemic antibiotics & alkaline nasal washes with NaCl + NaHCO3 in ratio of 2:1 in 250 ml of water, twice a day, following the removal of anterior nasal packs, till discharge of patient. The patients were evaluated for pain on the basis of history, using a visual analog scale. Adhesions, incidence of perforation (due to intra nasal splint), crusting and hematoma formation were also recorded in each group using 00 nasal endoscope on 7th, 10th & 15th post operative day.

RESULTS: Of the 124 patients included in the study, 68 males and 56 females, the overall mean age group was 32 years. The study was divided into two groups of patients in which group 1 comprised of 62 patients in which INS with antibiotic soaked anterior nasal pack were used and in other 62 patients only antibiotic soaked anterior nasal pack was used postoperatively.

	SEPTOPLASTY(42)		SEPTOPLASTY+TURBINECTOMY(42)		FESS(40)	
	INS + (N=21)	INS – (N=21)	INS + (N=21)	INS – (N=21)	INS + (N=20)	INS – (N=20)
Pain	18	08	19	12	11	05
Bleeding (Soakage)	09	15	21	17	08	09
Synechiae (Adhesion)	02	08	06	11	03	13
Crusting	19	09	17	10	15	08
Septal Hematoma	0	02	0	0	0	0
Septal Perforation	0	0	02	0	1	0

Table 1: Total Number Of Patients : 124 Type Of Nasal Surgeries.

	INS – (N=62)	INS – (N=62)
Pain	48 (77%)	25 (40%)
Bleeding (Soakage)	38 (61%)	41 (66%)
Synechiae	11 (18%)	32 (52%)
Crusting	51 (82%)	27 (43%)
Hematoma	0	2 (3%)
Perforation	3 (5%)	0

Table 2: Effect of INS on Incidence of Various Parameters in Patients Undergoing Various Nasal Surgeries

The patients were subjected to either of the 3 modalities of treatment which was in the form of septoplasty (in 42 patients), septoplasty with turbinectomy (in 42 patients) and bilateral endoscopic sinus surgery (in 40 patients).The results were evaluated on aspects of pain (visual analog scale), bleeding, crust formation, adhesions (synechia), hematoma, septal perforation (Figure 2) in each group and the results have been tabulated below in detail.

DISCUSSION: Intranasal splints are pressure equalization tubes and the most frequently used prosthesis postoperatively in the practice of otorhinolaryngology. These were first used in 1970's by Foxen and Glichrist[7]. To prevent nasal adhesions and till now they have an undisputed role in decreasing the post-operative complications to a significant amount. Although the splints are placed in certain patients to provide the best long term outcomes, it can produce some temporary problems. Often the splint becomes coated with dried mucus or blood; patient may be unable to breathe through their nose if this happens. The splints themselves or the stitch can cause some discomfort in excess of the typical surgical discomfort. Finally, the nose may appear wider with splints in place. All these are temporary changes that resolve once the stitches are removed. One of the most deleterious complications of nasal surgery is the formation of synechia. Their presence leads to persistence of nasal obstruction which often leaves the patient and the doctor dissatisfied. The incidence of various parameters contributing to post-operative morbidity in splinted and non-splinted patients undergoing nasal surgeries has been compared in our study of 124 patients. In our study out of 62 patients who were non-splinted the incidence of synechia formation was 52% while it was drastically reduced to 18% in 62 splinted patients. Out of 62 splinted patients, the synechia were seen more in patients with septoplasty and turbinectomy followed by patients undergoing FESS and septoplasty alone.

This is supported by Campbell et al[3] and Von Schoenberg et al[8] who advised using INS in patients undergoing multiple nasal procedures to prevent the risk of adhesions. In spite of its beneficial effects other parameters showed worsened degree of morbidity[9]. In patients with INS, nasal crusting was found in about 82% and pain in 77% as opposed to 43% and 40% respectively in patients without INS. However crusting was highly significant with the use of INS in the study conducted by Munessar et al[6], the reason being that INS interferes with ciliary function resulting in prevalence of crusting. Repeated nasal toileting is important in reducing the rate of crust formation. Perforation of nasal septum (a well known complication of nasal surgery) had an incidence of 5% in our patients using INS which is similar to study by Von Schoenberg et al[8] and Al Mazrou et al (2.5-3.5%)[10]. The use of INS had increased the rate of septal perforation in our study, probably due to over tightening of the suture which was used to stabilize the splints in position leading to pressure necrosis (Figure 3). Once the suture was applied a bit loosely the incidence of septal perforation reduced markedly. Bleeding i.e. soakage of intranasal packs was more in cases of septoplasty with turbinectomy as compared to the other two surgical procedures.

CONCLUSION: This study as well as other studies have proven now and again that INS had significant role in preventing intranasal adhesions but it definitely increases morbidity by causing pain, discomfort and crust formation. The morbidity factors are temporary and are mainly during first 7 days of surgical procedure and can be managed by medication, regular nasal toileting and patient counselling but adhesion after nasal surgery are a menace; the prevention of which definitely outweighs the above mentioned morbidity factors.

On the basis of present study, we recommend intranasal splints especially in those surgeries in which both lateral wall of nose and septum are simultaneously manipulated

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Pakistan Journal of Otolaryngology 2013; 29 : 25-27

Case Report

Choristoma of Tongue Presenting as a Congenital Sinus -A Diagnostic Dilemma

*Somnath Saha, **Saibal Misra, ***Padmini Saha ,*Sudipta Pal, *Moushumi Sengupta

ABSTRACT: INTRODUCTION: Choristoma is the presence of ectopic tissue in abnormal locations, where only one germinal layer derivative is present. Choristoma of tongue is a rare entity. Lingual choristoma mostly contains osseous, cartilaginous or gastric tissue derivative in the form of a solid or cystic mass lesion over the dorsum of tongue. MATERIALS AND METHODS: We report a case of a 6 year old boy who presented with a midline tongue sinus which was histologically found to be a choristoma containing colonic tissue. CONCLUSION: A colonic choristoma presenting as a congenital lingual sinus has never been reported in world literature. This is a very rare case which provides hitherto unknown information on tongue choristoma.

Key Words: Lingual Sinus, Choristoma, Chromogranin A.

CASE REPORT: A 6 year old boy presented to our opd with a discharging sinus of the tongue. According to the patient the sinus was present over the tongue since birth. It was generally asymptomatic except occasional bouts of inflammation when there was increased discharge from the opening of the sinus along with pain and surrounding edema. The patient had an uneventful birth history and no similar family history. On examination, opening of a sinus was found over the dorsum of the tongue at the midline. The sinus was situated in the anterior 2/3 of the tongue and was located anterior to the foramen caecum as a separate opening [Fig.-1]. Blunt probing of the tract was done and it seemed to extend deep into the tongue musculature. Systemic examination of the boy was within normal limits. A CT sinography was done to confirm the diagnosis as well as the extent of the lesion. The CT revealed a sinus tract extending through the tongue muscles downwards up to the hyoid bone. The sinus ended at the level of hyoid in a blind sac [Fig. – 2, 3]. No relation to any important structure of neck was visible. Surgical excision of the lesion was done under general anesthesia by a rhomboidal tongue incision and subsequently the tract was delivered through a separate neck incision at the level of hyoid. Body of hyoid was removed along with the tract as it was adherent to the hyoid [Fig. - 4]. The specimen was sent for histopathology, and surprisingly presence of colonic tissue was noted in the specimen in H& E Stains [Fig. - 5]. To confirm the findings, the tissue was again stained with Chromogranin A – a specific stain for colonic glands [Fig.-6]. The Chromogranin stain also came as positive for colonic tissue which confirmed the presence of such unusual cells and helped us to reach the diagnosis of Choristoma Tongue [Fig. - 6]. The patient had an uneventful recovery and he is doing fine after 2 years of follow up. DISCUSSION: Choristoma is defined as presence and/or proliferation of histologically normal tissue at an unusual anatomical site[1]. It is the presence of normal tissues at abnormal locations. Choristoma is closely associated

Figure 1: Opening of the sinus in the dorsum of tongue.

Figure 2: CT Sinography showing the sinus tract.

*Department of ENT, Head and Neck Surgery; R G Kar Medical College & Hospital, Kolkata. **Department of ENT, Head and Neck Surgery ;S S K M Hospital, Kolkata. ***Department of Plastic Surgery; R G Kar Medical College & Hospital, Kolkata, India

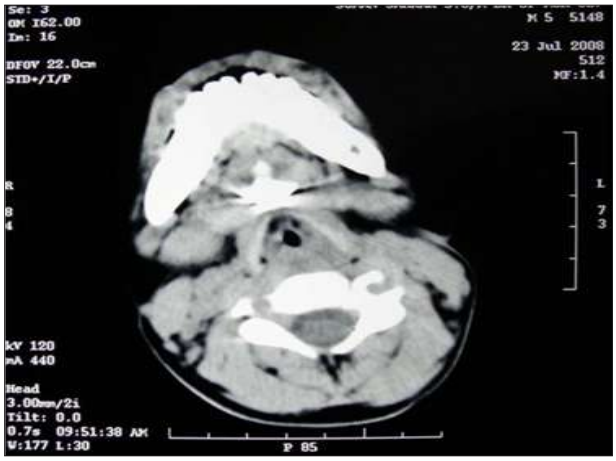

Figure 3: CT Sinography showing the sinus tract ending in front of the hyoid.

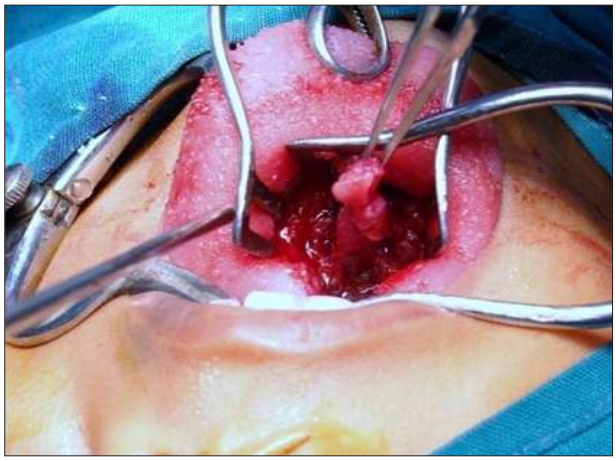

Figure 4: Per operative picture.

with teratoma where three germinal layer derivatives are present histologically, but in choristoma only a single type of tissue is present in the lesion. Choristoma occur mostly in the flat bones of the calvarium or the face and rarely do they affect soft tissues which include that of head, eye, extremities and the tongue[2]. Choristoma of the tongue is a very rare lesion and only a few cases have been reported so far. The first lingual choristoma was reported by Monserrat way back in 1913[3]. Initially it was thought to be a purely osseous lesion but with time choristoma containing other tissues also was reported and the entity was firmly established as a histopathological diagnosis. Batsakis et al classified lingual choristoma as salivary and non salivary types. Nonsalivary choristomas were again sub classified according to their generative tissues as gastroenteric, thyroidal, or sebaceous[4]. However in view of the fact that osseous and cartilaginous choristomas are commoner than the other types hence any classification should include these variants-so a more rational classification would be:

A] Salivary	B] Non Salivary
	i} Osseous
	ii} Cartilaginous
	iii} Gastoenteric – gastric/ colonic
	iv} Thyroidal
	v} Respiratory
	vi } Neural
	vii } Sebaceous

Due to rarity of the cases there is no definite information on the sex predilection of the choristoma patients. Bansal et al in their review of cartilaginous lingual choristoma cases found 15 male and 11 female patients[5]. MJ Ortiz et al reported that patients with gastro intestinal tissue containing choristoma were all males [8 cases] except the one reported by them who was a newborn female[6]. Mir R et al also reported a similar case in a male child[7] whereas VR Naik et al found a female patient having lingual choristoma[2]. Our patient too was a male child going with the observations of the majority of the authors. There is a general consensus that the choristoma is present since birth and the age of presentation depends

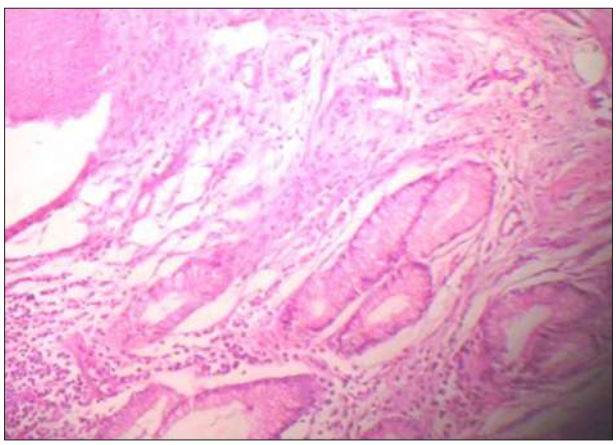

Figure 5: H & E Stain showing colonic glands (200 x).

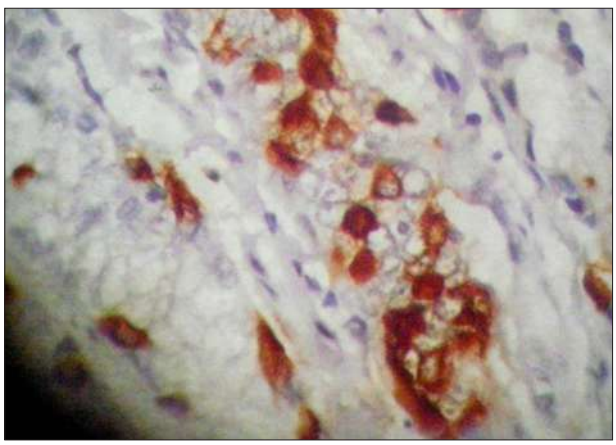

Figure 6: Chromogranin A stain showing cytoplasmic positivity in colonic tissue.

purely on the associated symptoms. The age of presentation varies from birth to 31 years of age in one series[6]. Majority of the authors reported patients who were either newborn or infants presenting very early in life. Generally choristoma is an asymptomatic lesion. However patients may present with a wide range of symptoms; even airway obstruction depending on the size, site and the contained tissues. A review of the related articles revealed that the commonest mode of presentation was as a mass lesion- mostly cystic rarely solid[7]. Apart from our patient only a single paper describes a choristoma presenting as a lingual sinus containing heterotopic gastric mucosa[8]. Osseous or cartilaginous choristoma cases present with a solid lump in tongue which is painless, slowly growing and cause difficulty in speech and swallowing[2,5]. Those having gastric mucosa may come with features of peptic ulceration[8] even with bleeding ulcers[9]. Choristoma of tongue rarely turn malignant except those having origin from thyroid[4]. Sometimes the presenting feature may be due to local inflammation only, like in the present case.

The lesions are hard to diagnose clinically particularly if presenting only as a sinus as in our case. Tc 99 Pertechnate scan has been used by some authors[9] without satisfactory results. In our case we did CT Sinography with surprisingly good visualization of the sinus [Fig.-2, 3]. Treatment is surgical removal in all cases[5, 6, and 10]. The approach is essentially intra-oral but can be combined with external approach depending on the lesion itself. Recurrence is rarely noted.

The present case is unique in view of the fact that here the choristoma presented only as a sinus. So far only a single similar case has been reported[8]. So this is only the second reported case of lingual choristoma presenting as a sinus. Moreover in our patient the generative tissue was from colon, a variant which has never been reported in scientific literature. This being a very unusual finding, the nature of the tissue was reconfirmed with the help of Chromogranin A stain, which came as positive. Chromogranin A stains the cytoplasm of colonic tissue into dark brown colour which is the definitive marker for the presence of colon in the specimen. This case posed with diagnostic dilemma from the very beginning, be it the unusual situation of the sinus, unusual diagnosis of the case as a choristoma and the hitherto unknown presence of colonic tissue in the choristoma. All these factors taken together make this a unique case to be reported for the first time in scientific literature.

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Pakistan Journal of Otolaryngology 2013; 29 : 28-29

Case Report

Kikuchi - Fujimoto Disease - A Rare Case of Cervical Lymphadenopathy

Sudip Kr Das , Shubhrakanti Sen, Saumendra Nath Bandyopadhyay, Bhaskar Ghosh,

ABSTRACT: A rare case of Kikuchi-Fujimoto disease presenting as a slow-growing cervical lymphadenopathy in a 32 year old male patient has been reported with discussion on the problems in diagnosing such a case.

Key Words: Necrotizing lymphadenitis; Kikuchi- Fujimoto disease; Cervical lymphadenopathy.

INTRODUCTION: Kikuchi-Fujimoto disease (KFD; histiocytic necrotizing lymphadenitis) is a rare, benign, and self-limited syndrome characterized by regional tender lymphadenopathy, usually accompanied by mild fever and night sweats. It is an extremely rare disease predominant among Japanese. It is mainly a disease of the young adults (20- 30 years) with female predominance. It was first reported almost simultaneously by Kikuchi and by Fujimoto and associates in 1972 as a lymphadenitis with focal proliferation of reticular cells accompanied by numerous histiocytes and extensive nuclear debris[1].

CASE REPORT: A 32 year old male presented with multiple, slow growing, mildly tender, mobile, firm lymph nodes involving the upper, middle and lower deep cervical region (Fig.1). The patient complained of gradually increasing swelling on the right side of the neck with moderate degree, midday (12 noon- 2 pm) fever which was associated with night sweat, intense itching over the body and multiple joint pain (more in upper extremity than lower extremity) without any signs of loss of appetite, malaise or loss of weight. Systemic examination did not reveal any axillary/ inguinal lymphadenopathy or splenomegaly. Chest X-ray showed upper mediastinal widening (Fig.2) and Ultra sound abdoven showed hepatic enlargement. Other routine tests were within normal limits. As the FNAC was inconclusive, incisional biopsy was planned. The first two biopsies were inconclusive and the 3rd one suggested the diagnosis of Kikuchi-Fujimoto disease characterized by areas of eosinophilic necrosis, leaving behind scanty lymphoid tissue at periphery with partial effacement of architecture, attenuated follicles, prominent histiocytes, eosinophilic infiltrate (Figs.3 & 4). No evidence of granuloma was seen in the specimen. ZN stain did not reveal any acid fast bacillus.

He was treated with 36 mg/ day of methylprednisolone in divided doses with gradual tapering of dose over 1½ months, NSAIDs and antibiotics for three weeks. The patient showed improvement after one months' treatment with dramatic reduction in size of the swellings. The neck nodes disappeared after two months. Intermittent fever still persisted. Joint pain significantly reduced itching is negligible. The patient was kept under surveillance without any medication. After 6 months of regular follow-up, no sign of recurrence could be detected.

DISCUSSION: Kikuchi- Fujimoto disease is an enigmatic, benign and self-limited syndrome characterized by regional lymphadenopathy with tenderness, predominantly in the cervical region, usually accompanied by mild fever and night sweats. Initially described in Japan, it was first reported in 1972 almost simultaneously by Kikuchi[2] and Fujimoto[3] et al as a lymphadenitis with focal proliferation of

Figure 1: Clinical photograph of the patient Kikuchi-Fujimoto disease showing right sided neck swelling and scar of the biopsy procedure.

Figure 2: Chest radiograph shows mediastinal widening.

Department of ENT, BS Medical College, Bankura, West Bengal, India.

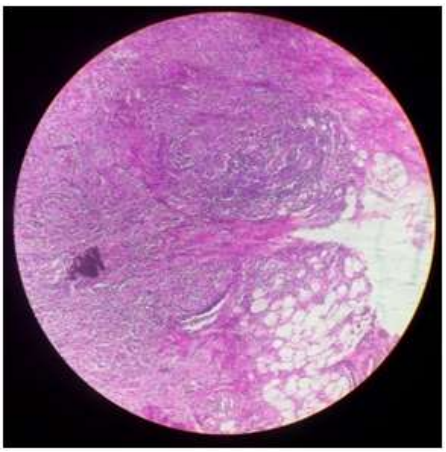

Figure 3: Histopathological section of a cervical lymph node showing areas of eosinophilic necrosis, Attenuated lymphoid follicles with partial effacement of architecture, prominent histiocytes and eosinophilic infiltrate (H&E x 10)

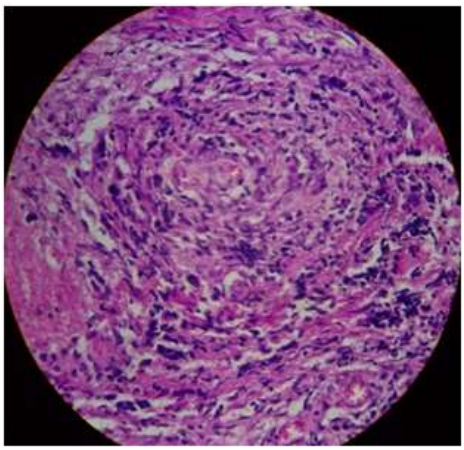

Figure 4: Histopathological section of a cervical lymph node showing eosinophilic infiltrate, areas of necrosis, attenuated follicles, prominent histiocytes (H&E x 40)

reticular cells accompanied by numerous histiocytes and extensive nuclear debris[4]. The age range is wide (11–80 years of age) but the majority of patients are under 30 years of age. Clinically cervical lymph nodes are the principal site of disease and are reported in 70–98% of patients[5]. Involvement of most other nodal areas has been described including axillary, thoracic, abdominal and pelvic. Splenomegaly has also been described[5]. The patient, in this report, was 30 year old male with right sided cervical lymphadenopathy with mediastinal involvement and hepatomegaly without any features of axillary, abdominal, inguinal lymphadenopathy or splenomegaly. Fever is the primary symptom in 30-50% of cases. Less common manifestations include weight loss, chills, skin rash, gastrointestinal symptoms and night sweats[5]. These features are corroborating with our case except absence of any gastrointestinal symptoms. The results of laboratory investigations are often normal. The pathogenesis is unclear but a viral or post viral hyperimmune reaction has been suggested as a possible mechanism. The viral agents implicated based on virological teste are Epstein Barr Virus (EBV), Human Herpes Virus(HHV)[6,7,8], Parvovirus B19[9,10]. Autoimmune studies are usually negative. However, cases associated with systemic lupus erythematosus (SLE) and Hashimoto disease have been reported. Complete spontaneous recovery is usual[5] Kim and Fulcher each described a case of Kikuchi disease with diffuse homogeneously enhancing cervical lymphadenopathy. Intraparotid, supraclavicular and mediastinal adenopathy were also present in one case. The CT features of homogeneously enhancing nodes without significant nodal necrosis make radiological differentiation from lymphoma impossible. Two cases reported in literature with MRI and contrast enhanced CT. One case had similar CT findings to the other reported cases whilst the other showed inhomogeneous enhancement with extensive nodal necrosis[8]. The pathological features may mimic lymphoma in some cases owing to the variable degree of microscopic necrosis found within the lymph nodes as well as the atypical appearance of the histiocytes, which may be confused with the small and large cleaved follicular cells seen in some cases of lymphoma. However, the absence of granulocytes and plasma cells usually allow the differentiation of Kikuchi disease from lymphoma or lymphadenitis caused by bacteria or viruses. The morphological distinction from SLE may be problematic in some cases[4] Spontaneous complete resolution of symptoms usually occurs within 4 months. CONCLUSION: The Kikuchi-Fujimoto disease presents with the features similar to multiple array of diseases and posses a unique diagnostic dilemma. Histopathological examination of lymph node biopsy is the diagnostic procedure of choice and sometimes need multiple biopsies. Conservative treatment with methylprednisolone, NSAIDs and antibiotics usually controls the symptoms.

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Pakistan Journal of Otolaryngology 2013; 29 : 30-31

Case Report

Self Inflicted Styloid Process Fracture Cures Styalgia - A Case Report

*Anupama Kaur, **Amanpreetsingh

ABSTRACT: The treatment of styalgia varies from region to region.The patients are treated medically initially and if not relieved styloidectomy is advised.Styloid process fracture has also given favourable results in many patients.The authors report a 45 year old man who accidentally fractured his own styloid process and got relieved of styalgia.In this case report authors discuss clinical presentation,differential diagnosis of styalgia and various lines of management for styalgia.
Key Words: Styloid process, Styalgia, Styloidectomy.

INTRODUCTION: The styloid process is a cylindrical, long cartilaginous bone located on the posterior lower surface of the petrosal bone. Direction of this process is downwards to the front and slightly to the inside. The normal styloid process length is between 20-30 mm. It develops from the second brachial arch[1]. .Patients can be categorized into two groups:Patients who have classical symptoms of a foreign body sensation in the throat with a palpable mass in the tonsillar region and those with pain in the neck following the carotid artery distribution (carotid artery distribution)[2]. The elongated styloid process can be palpated orally by inserting a finger orally along the occlusal line in posterior tonsillar fossa[3]. If Palpation of the styloid process produces pain which is either referred to ear,head or face it is very likely that styloid process is elongated[4]. Initially clinician should try to decrease any muscle spasm and scar tissue around the styloid process. Some clinicians have also tried fracturing of styloid process with mixed results. Steroid injections have also been injected into affected tissues with varying results[5,6]. If not relieved, traditional method of surgical excision of styloid process is followed. Eagle in 1949 described a syndrome as Eagles syndrome characterised by elongated styloid process or ossified stylohyoid ligament[7]. Here we report a case of a patient who accidentally fractured his styloid process which cured his styalgia.

CASE REPORT: A 45-year-old man farmer by occupation came with the following sequence of events. Around four to five years back patient started having pain in the throat. It was more during swallowing food and predominantly on the left side.With time his symptoms they started to aggravate and he also started to experience pain radiating to ear and sometimes to ipsilateral face and rarely to clavicle. He presented to us with the above mentioned symptoms. Intraoral palpation revealed bilateral enlargement of styloid process.Thinking in terms of styalgia carbamazepine was started with a dosage of 200mg twice a day. Patient was advised to come after 10 days for follow up. He did turn up but after around three months. As his symptoms were not relieved,he went to a quack, who rubbed salt like powder (Locally called as manjun) in the region of palatine tonsils. As the patient describes, it gave him a moment of relief. Patient started rubbing the powder by himself in the tonsillar region for relief. Once while applying the powder he vigorously rubbed and pressed and felt like something snap. He felt severe excruciating pain, which subsided with pain killers in a week. In two weeks time he realised that he has no further pain and its radiation to ear and other regions has also stopped. He presented to us to know whether he has caused himself an unknown trauma. Intraoral palpation still revealed bilateral enlargement of styloid process.X-ray of skull, Townes view was done. In addition to bilateral enlargement of styloid process it also showed a healed fracture of styloid process left side.

DISCUSSION: Normally styloid process is not palpable on bimanual palpation of tonsillar fossa. If palpable it confirms the diagnosis. X-ray of skull Townes view can also be done to confirm the diagnosis.An ossified stylohyoid ligament or an elongated styloid process may not be symptomatic in every patient. Symptoms may vary from foreign body sensation, throat pain, dysphagia, headache, ipsilateral

Figure 1: Circle showing healed fracture of left styloid process.

*Department Of Physiology,**Department Of ENT, M.M Institute of Medical Sciences, Mullana, Ambala, India.

otalgia and sometimes facial and carotid pain[8,9.10]. In medical literature there are not many cases of fractures of ossified ligaments reported. Either these fractures are spontaneous or traumatic[10,11]. Elongated styloid process can be caused by congenital elongation of styloid process due to persistence of cartilaginous analog of styloid and can also be due to calcification of stylohyoid ligament by unknown mechanism and growth of osseous tissue at the insertion of stylohyoid ligament. Glossopharyngeal nerve, vagus and 3rd branch of trigeminal nerve and chorda tympani can be stimulated by styloid process and induce pain. There are various claims that infracture of styloid process can lead to granular tissue formation thus releasing pressure to nearby structures. For symptomatic cases therapy may vary from medical to surgical line of management, depending upon the intensity of pain and dysphagia. Medical line includes anti inflammatory and corticosteroid drugs. Surgery is planned in patients who do not respond to medical line of management. Elongated styloid process can be excised, but some authors do not agree for excision of styloid process[5,6]. Excision of styloid process can be done by Transoral approach or external approach. Nowadays styloid process is also resected endoscopically through transoral route[12]. The advantage of following external approach is proper exposure of styloid process and other vital structures[13]. In spite of medical research going all over the world and new drugs and treatment modalities coming every other day,few diseases still are not satisfactorily treated, Neuralgia being one of them. Our patient was not relieved with the treatment we had advised him to follow. Under the influence of a quack, patient started rubbing salt-like powder in his tonsillar region which on one day led to fracture of styloid process. Patient is now relieved of the pain. These sequences of events highlights on Three major issues. Firstly, to confirm the diagnosis of styloid process enlargement clinically by proper history and examination which should be further consolidated by X-ray Townes view. Secondly, the unsatisfactory treatment of styalgia and asscociated neuaralgias due to the lack of a set of guidelines for the treatment of the same. Treatment ranges from medicines to styloidectomy to fracture of styloid process, and last but not the least the invasion of health industry in India by unqualified and underqualified practitioners. Our patient is relieved of symptoms and he is full of praise for the quack, but we as a medical fraternity should recognize this as a failure on our part. CONCLUSION: Styloid process enlargement is not uncommon. History should be taken thoroughly and in detail and physical examination of head and neck are mandatory. Traditionally,surgical excision of styloid process is the treatment of choice. But there have been cases all over the world in which the patient feel totally relieved of the neuralgic symptoms by infracture of styloid process after tonsillectomy. A patient infracturing a styloid process accidentally and getting relieved of styalgia is a rare and probably the first case in the world.

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Pakistan Journal of Otolaryngology 2013; 29 : 32-34

Case Report

Conservative Management of Facial Nerve Palsy: Face-lift Device

Syed Murtaza Raza Kazmi

ABSTRACT: Facial asymmetry is a common clinical presentation of facial paralysis. Facial nerve may have irreversible damage leading to permanent paralysis and marred facial appearance. Bothe the surgical and conservative treatment modalities have been discussed in literature. Surgical modalities includes micro-neurovascular transfer of a free-muscle transplant, cross-face nerve graft, tantalum strips, fascial strips, and masseter motor nerve. Conservative treatment includes pharmacokinetics, Prosthodontic device therapy, and physiotherapy. Prosthodontic device therapy is sometimes helpful in reducing the facial asymmetry. A case report of a patient is presented in which author has fabricated a removable intra-oral prosthodontic device to lift the sagged facial tissues in order to improve the esthetics, phonetics and mastication. The device also helped in improving the patient's psychological and social behavior.
Key Words: Facial nerve palsy, Conservative management, Face-lift device.

INTRODUCTION: Facial nerve paralysis is an abnormal condition characterized by the partial or total loss of the functions of the facial muscles or the loss of sensation in the face, the degree of paralysis depends on the nerves affected[1]. It has been classified in different ways[1-7]. Acquired facial nerve paralysis may be caused by disease, infection or trauma[8,9]. Patients with facial paralysis may have physical and/or psychological problems. Common physical difficulties associated with facial paralysis include twisted nose, uneven smile, distorted expressions, inability to close the eye or raise the eyebrow on the affected side, moreover, there may also be drooping of muscles on the non-affected side leading to drooping of saliva, difficulty in chewing and poor phonetics[8,10]. Psychologically, the patients are concerned with their disfigured face which may lead to inferiority complex[11,12]. As the affected side has little or no control on bolus during mastication, food may get lodged in the buccal sulcus[12]. Patients also complain of muscular fatigue on the healthy side during facial expression, phonetics and mastication[6]. The goal of the treatment is to restore the facial symmetry, both in static and at dynamic conditions. Unfortunately, this is not always possible. Literature supports both the surgical and conservative treatment modalities. Possible surgical options include micro-neurovascular transfer of a free-muscle transplant, cross-face nerve graft, tantalum strips, fascial strips, masseter motor nerve etc[2,13,14]. The success of surgical options cannot be guaranteed. Conservative treatment options include medications for the possible viral or inflammatory causes, appliance/device therapy[6,8,10,15-18] as a supportive or palliative method and physiotherapy[19]. The non-surgical intra-oral device may be used to improve the aesthetics and functions of the face. This method is comparatively easy to design and the patients may be benefitted by reversible treatment options, minimum morbidity and mortality, cost effectiveness and involvement of the patient in the therapy. The patient involvement may lead to increase in the treatment success. The device may be given to the patients as a solo treatment option or in combination with others. Face lift device may help the patients in improving aesthetics and phonetics as well as in achieving psychological goals. The purpose of this article is to revisit, describe and evaluate a conservative treatment option for patient with permanent facial nerve paralysis where surgical intervention is contraindicated, delayed or differed. This may be given to the patient during recovery phase or in combination with other treatment options.

CASE REPORT : A 55-year old male patient with facial nerve paralysis was referred for the prosthodontic management of the condition. Past medical history revealed that seven years back patient had undergone surgical resection of the acoustic neuroma of the right side. At the time of surgery, the surgeon informed the patient about high risk of permanent facial nerve damage. Other than facial paralysis, patient is in good health. There was no history of diabetes, hypertension, allergy, convulsion or any other physical disability or weakness. He had difficulty in mastication in addition to compromised aesthetics and phonetics. Diagnostic impressions of mandibular and maxillary dental arches were made with irreversible hydrocolloid. Models were poured, surveyed and studied. Metal frame work was planned but patient refused both the teeth preparation and cross arch plate. Definitive impressions were made in polyvinyl siloxane. The heat polymerizing clear acrylic buccal plate was fabricated, which was retained through adam's clasp on tooth 16 and 15 with 0.7 mm wire. A loop was made with 0.7 mm wire and was tagged to lift the lip (fig 1). The patient could not comply with this design and requested for a more convenient device, as he was a teacher by profession and was hesitant about the visibility of any part of the device. So, another buccal plate was designed without lip lifting part. This plate was processed in heat polymerizing pink acrylic and was retained with C clasp on teeth 17 (maxillary right second molar) and 14 (maxillary right first premolar). The buccal plate extended from first premolar to the second molar area on the right side. Wax block was designed on the plate to camouflage the asymmetry (fig 2). Patient was

Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences, Dow University of Health Sciences, Karachi

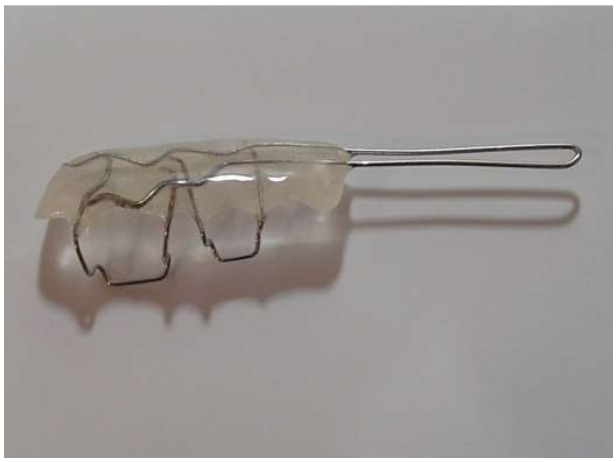

Figure 1 : The heat polymerizing clear acrylic buccal plate was fabricated, which was retained through adam's clasp on tooth 16 and 15. A loop was tagged to lift the lip. This design was rejected by the patient.

Figure 2 : The heat polymerizing pink acrylic buccal plate was fabricated, which was retained through C clasp on 17 and 14. The buccal plate extended from first premolar to the second molar area on the effected side. Wax block was designed on the plate to camouflage the asymmetry

involved throughout the treatment planning and device designing. Wax was added and removed in segments to achieve best outcome. The target was to lift the sagged facial muscles in upward and outward directions. Tissue displacement and repositioning was carried out with consideration that it should not induce tissue irritation especially in the sulcus. The final waxed plate was processed in heat polymerizing pink acrylic resin. After finishing and polishing, the device was inserted into the patient's mouth. There was a substantial difference in patient's aesthetics visible in the pre- and post-insertion pictures (fig 3 and fig 4).

DISCUSSION : Dahlberg[15] used a device to lift the lip which consisted of a translucent plastic. The device connected the rubber band tension to a metal hook that was fastened to the last upper molar on the affected side. Bierman[12] used extra-oral wire to lift the corner of lip. This wire at one end hooked around the ear while the other side hooked and lifted the lip. Lazzari[16], Folkins and MacLeod11 also used extra oral wire loop attached to the intra-oral frame work to lift the lip. Crouch[17] used surgical tape to lift the lip commisure. The extra oral extension of these devices had compromised aesthetics. Larsen[6] mentioned that his patient rejected any wire coming out of his mouth to lift his lips. The author also faced similar patient requirement. The author also shared the similar results as Larsen in facial aesthetics, function and patient's satisfaction. Nevertheless, author supports the endeavors of Dahlberg[15], Bierman[12], Folkins and MacLeod[11] and Lazzari[16] as the initiative for the prosthodontic management of the facial paralysis. Ysunza et al[20] and Yetiser[7] mentioned better prognosis of surgical treatment if carried out within one year of the facial paralysis. Muller[21] found 80 percent patients of Bell's Palsy recover usually without any treatment. Therefore the importance of case selection for surgical intervention is very important. Lazzari[16] suggested that disuse atrophy and fibrosis may be the potential complications. Folkins and MacLeod[11] highlighted the advantage of intra-oral device for facial palsy. According to them the device is comfortable, non-irritating to tissues, does not damage the teeth, easily constructed and maintained[11]. Author's work supported the method used by Folkins and MacLeod as the device could be

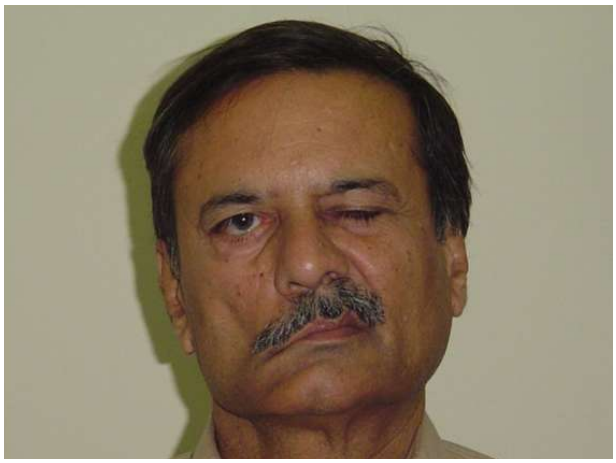

Figure 3 : : Pre-condition without the device. (with the permission of patient).

Figure 4 : After the insertion of Face-Lifting Device.

easily modified. Larsen et al[6] proposed the use of appliance or device even in the recovery phase of facial palsy. Author also proposes the same. Dahlberg[15] lifted the lip with device he called "Plastic Lip Cradle." Bierman[12] named it as splint while Lazzari[16] called it as prosthesis, Folkins and MacLeod[11], Sather[18] considered it as appliance. Author proposes the name for this prosthesis/appliance/splint as "Face-Lift Device". The appliance does not fulfill the definition of either prosthesis or occlusal splint.

SUMMARY:

1. Disuse atrophy and fibrosis are potential and severe complications of facial nerve palsy.
2. Face-lift device may be used for the patients with facial paralysis as adjunct and supportive treatment or as a support in recovery phase.
3. Face-lift Device is helpful in restoring aesthetics and functions of patient's face while in recovery phase or when surgical intervention is delayed.
4. Name of the device may be Face-Lift Device.

ACKNOWLEDGEMENT: Author likes to acknowledge Prof Amit V Naik, Dr. Zahid Iqbal and Dr. Affan Ahmad for proof reading.

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Pakistan Journal of Otolaryngology 2012; 29 : 35-36 Case Report

Huge Pleomorphic Adenoma of Sub Mandibular Gland

Irfan Ul Shamas

ABSTRACT: Pleomorphic adenoma is the most common salivary gland tumor and submandibular pleomorphic adenoma accounts for only 8 % of them. The annual incidence is approximately 2-3.5 cases per 100,000 population.Pleomorphic adenoma occurs in individuals of all ages. However, it is most common in the third to sixth decades; the average age at presentation is between 43 and 46 years.Pleomorphic adenoma is seen more often in females than in males (2:1 ratio). Large masses appear heterogeneous on imaging secondary to hemorrhage, necrosis and cystic changes. Lobulated contour of the tumor favors the diagnosis of pleomorphic adenoma and they appear as multiple adjacent masses rather than single on CT scan. Treatment is essentially surgical with post operative radiotherapy is advisable in larger masses to prevent recurrence.
Key Words: Pleomorhic adenoma, huge submandibular gland, mixed sahivary tumour.

INTRODUCTION : Pleomorphic adenoma is the most frequent benign tumour of the salivary glands. It is a slow growing tumour and is also called mixed tumour because histologically they are solid, tubuloglandular structure alternating with myxoid and chondroid zones. The name pleomorphic adenoma was suggested by Willis.
CASE HISTORY : A 50 yr old male presented with history of swelling over front of the neck from last 15 yrs gradually increasing to present size(15cm by 10 cm approximately). (Fig.1) On examination the large lobulated swelling was seen over front of neck, predominantly on right side and extending into the right submandibular region up to the angle of the mandible. On palpation it was firm to hard in consistency. The patient was referred to radiology department, CSS Hospital, Meerut for ultrasound examination of neck. On ultrasound examination there was a large heterogeneous predominantly echogenic mass seen overlying right side of neck extending up to angle of mandible. Multiple echogenic nodules and anechoic areas were seen within it. Right submandibular gland was not seen separately from the mass. Both parotid glands and left submandibular gland were normal. No lymphadenopathy detected in the neck. Both sided carotid arteries and jugular veins were normal, no evidence of thrombosis seen within them. On ultrasound possibility of a large mass arising from the left submandibular gland was kept and CT scan neck was advised but patient refused citing financial problems.FNAC of the mass suggested the diagnosis of pleomorphic adenoma. The patient was operated at ENT department GMC Srinagar and a large encapsulated mass well separated from the surrounding tissue was removed. (Fig.2) Post operative histopathological examination of specimen confirmed the diagnosis of pleomorphic adenoma arising from the submandibular.
DISUSSION : Pleomorphic adenoma (benign mixed tumor) is the most common salivary gland tumor and represents 70-80 % of all benign tumors of the major salivary glands[1,2,3]. Of all the pleomorphic adenomas over 85% occur in the parotid gland, 8% occur in the submandibular gland, and 6.5% occur in the minor salivary glands and 0.5 % in the sublingual glands[1,3]. The submandibular gland is involved in only 5% to 10% of the salivary gland tumors, and

Figure 1a: Patient 15 years back.

Figure 1b: Patient now.

Ivy Hospital Mohali, India

Figure 2: Operative specimen

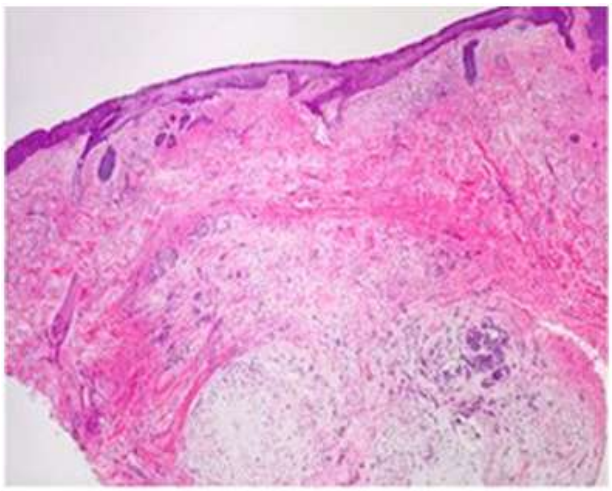

Figure 3: Histopathology suggesting pleomorphic adenoma.

pleomorphic adenoma (PA) is the most common tumor affecting it[4]. Sarcomatous transformation is seen in only 2-5% of cases and is usually associated with tumors that have been present for 10-15 years[5]. Tumors arising in the minor salivary gland account for 22% of all salivary gland neoplasm. Majority of them are malignant with only 18% being benign. Of the benign tumors pleomorphic adenoma is the commonest[5]. The most common site of a pleomorphic adenoma of the minor salivary gland is the palate followed by lip, buccal mucosa, floor of mouth, tongue, tonsil, pharynx, retromolar area and nasal cavity[5]. Pleomorphic adenomas are usually seen in middle aged women and present as a painless slowly growing mass. The lesions are usually solitary, ovoid, well demarcated masses[2]. The larger tumors may have pedunculated outgrowths from the main lesion that grossly simulate multiple masses[1]. On ultrasound they are seen as well defined rounded hypoechoic lesions with lobulated or bosselated contour and may have posterior acoustic enhancement. They may appear heterogeneous secondary to hemorrhage, calcification, and necrosis as seen our case. CT scan is an important diagnostic tool in these tumors because it helps in determining the extent of disease, local spread and also helps to some extent in determining the type of tumor[1]. Presence of intact fat plane helps in distinguishing benign tumors from malignant[1]. Most small tumors are smoothly marginated, spherical having higher attenuation value than surrounding normal gland however low attenuation area mimicking cyst may be seen. The larger masses most often have a heterogeneous appearance with sites of low attenuation representing areas of necrosis, old hemorrhage and cystic changes as seen our case[1]. Localized areas of increased attenuation most often represent sites of recent hemorrhage. Dystrophic calcifications or ossification can occasionally be seen scattered throughout the tumor[1]. Our case showed a single calcific focus. The larger tumors tend to develop a lobulated contour that, when present, is highly suggestive of the diagnosis as seen in our case[1]. Such a lobulated mass on CT appears as multiple adjacent masses rather than a solitary lesion[1]. CT shows well defined enhancing soft tissue mass. Contrast enhanced MR imaging delineates tumor margins better, necrotic and cystic areas can be differentiated from enhancing mass, also skull base invasion and vessel involvement can be better depicted. High grade tumor have intermediate to low signal intensity on all pulse sequences while low grade tumors are dark on T1W and bright on T2W images. The treatment of pleomorphic adenoma is essentially surgical. Though these benign tumors are apparently well encapsulated, resection of the tumor with an adequate margin of grossly normal surrounding tissue is necessary to prevent local recurrence as these tumors are known to have microscopic pseudopod like extension into the surrounding tissue due to “dehiscences” in the false capsule. Postoperative radiotherapy to the parapharyngeal space could possibly reduce the recurrence rate in such tumors[6]. The dose of radiotherapy recommended in such cases is 50 Gy in 15-16 divided doses[6]. It is unusual that despite of such a large mass of long duration which seemed to be originate from left submandibular gland on imaging, turned out to be benign pleomorphic adenoma of submandibular gland. The patient was from a far flung area with no access to medical facilities that is why presented at such an advanced stage.

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Note To, The Authors

PJORL is the official journal of Pakistan Society for Otolaryngology Head & Neck Surgery and has great contribution in the field of research in the region. Now this journal is one of the authentic source for locoregional data and trends. Hence PJORL is getting more and more articles for publication not only from Pakistan but the other countries including India, Nepal, Saudi Arabia, Malaysia etc. We always encourage our local authors to participate as one of the objective of PJORL is to promote research activities in the field of otorhinolaryngology in Pakistan. Some of the articles received are weak in methodology and data analysis, mostly are the audit reports on the basis of which authors draw concrete conclusion with strong statements without applying statistical tests. In our last editorial board meeting it was emphasized that to take steps to improvise these aspects of articles. Editorial board also suggests that apart from subject specialist there will be a separate reviewer to see methodology and statistics of the articles. Keeping these aims in mind the editorial board is willing to extend its full support and cooperation for authors. In this regard if authors need any help, they can contact us.

Ahmad Nawaz Ahmad
Email : drahmadnawaz@yahoo.com
Managing Editor
PJORL

OBITUARY

We griefly announce that

Prof. Jawaid Alam

Chief Editor of PJORL has
passed away in an accident
in Saudi Arabia during Umrah.

He was a great inspiration for
ENT fraternity of Pakistan.
He was a great administrator
dedicated surgeon
and teacher may
Allah rest his soul in peace.

OBITUARY

“Birth and death, the inseparable poles of all lives on earth, should not be a secret to man”

We are deeply grieved on the untimely sad demise of our beloved senior colleague professor Jawaid Alam, his wife and sister while on a trip of spiritual essence. May the souls rest in eternal peace and tranquility. May almighty give strength and courage to the family members, relatives, friends and well wishers to bear this irreparable loss. Professor Jawaid Alam graduated from Nishtar Medical College, University of Punjab in 1972. He joined department of ENT- Head & Neck Surgery, Civil Hospital Karachi in September 1972 as house officer. Then he was registrar in the same department. He was appointed in teaching faculty as senior Registrar at Dow Medical College and Civil Hospital Karachi in the department in July 1976. He did his MCPS in ENT from College of Physician and Surgeon Pakistan (1976) and post graduate diploma in Otorhinolaryngology (DLO) from University of Karachi in 1977. He was promoted to associate professor through assistant professor between1985-2002. He remained as Professor and Head of Department of ENT, Head & Neck Surgery of Dow Medical College of Dow University of Health Sciences & Civil Hospital Karachi from July 2002 till his retirement. During this period he did his fellowship from College of Physician & Surgeon Pakistan (FCPS) and from Royal College of Surgeon at Ireland (FRCS) in March 2000 & April 2003 respectively.

During his tenure he was Chairman of House Job Committee, Literary & Debating Society, Member legal and ethical committee, Member academic Council, Member Syndicate and Senate of Dow University of Health Sciences. He was the Member Board of Governors, NICVD, Member inspection team of PM&DC Islamabad for recognition of Medical and Dental Colleges of Pakistan and Patron of Laryngectomy Club of Pakistan. He was the supervisor and examiner of undergraduate, postgraduate students and trained umpteen of now ENT consultants.

He was the Editor of Pakistan Journal of Otolaryngology, Head & Neck Surgery Since long and continued to be so even after his retirement till his tragic departure. He was an excellent teacher, administrator, organizer and academician. During his tenure as head of department, the department of ENT, Head & Neck Surgery of Dow Medical College, Dow University of Health Sciences was at its peak of academic excellence. He organized plenty of workshops during his stay and was one of the pioneer's of hands-on Temporal bone dissection and micro ear surgery workshops, first ever of its kind in Pakistan. He was modest, meticulous and stead fast, having a pleasant personality, liked equally by his junior colleagues and paramedical staff besides having an excellent rapport with patients and their attendants.

He was a diligent, hard working and dynamic person. His services for upgrading and uplifting of the department will always be remembered. In lieu of his memorial contribution, we wish to confer lifetime achievement award and dedicate seminar room of this department to his name as life time remembrance.

From :
Editorial Board PJORL &
Colleagues
Department of ENT,
Head & Neck Surgery,
Dow Medical College,
Dow University of Health Sciences
& Civil Hospital Karachi-Pakistan.

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PAKISTAN JOURNAL OF
OTOLARYNGOLOGY, HEAD & NECK SURGERY

INDEXED AND ABSTRACTED BY PAKISTAN SCIENCES ABSTRACTS, EXCERPTA MEDICA (AMSTERDAM), IMEMR (INDEX MEDICUS FOR WHO EASTERN MEDITERRANEAN REGION) AND EMBASE, RECOGNISED BY PMDC & HIGHER EDUCATION COMMISSION, PAKISTAN.
ISSN # : 0257-4985

Pakistan Journal of Otolaryngology is published in April, August and December

Address:-
Jawaid Alam
Chief Editor, PJO, Dept. of E.N.T. Head & Neck Surgery, Sir Syed Medical College, Karachi, Pakistan.
Phone: (92-21) 32726925, 0364-4229034 Fax: (92-21) 35340545 E-mail: profjawaidalam@hotmail.com
M. Saleem Marfani
Editor, PJO, Dept. of E.N.T. Head & Neck Surgery, Civil Hospital, Dow University of Health Sciences, Karachi.
E-mail : s.marfani@duhs.edu.pk

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