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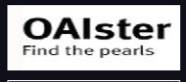
The Association of Otolaryngologists of India
West Bengal



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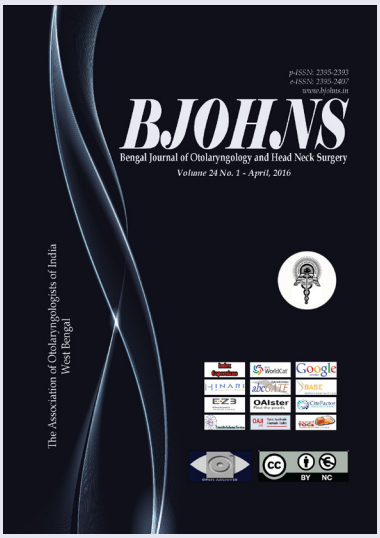

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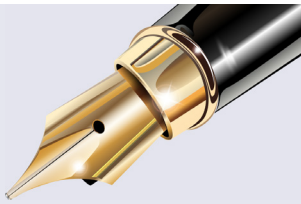
From the Desk of the Editor



Dear Members,

The medical fraternity is very much concerned about the ethical aspects of research and publication. The increased detection of the presence of spurious data in research reports during the last decade and the tendency of unauthorised copying from others' publications have put the credibility of scientific medical literature into question.

I thought it prudent to discuss the issue after detecting incidents of major plagiarism in a number of manuscripts submitted for consideration of publication in our journal.

Wikipedia defines plagiarism as the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work. Plagiarism is not only limited to unauthorised incorporation of material from other publications or plagiarism of idea, but self-plagiarism, collusion and patchwriting have also been recognised as the other forms of the same malady.

The researchers and academicians are under enormous pressure to publish more to maintain their positions and may have very little time at their disposal. Some such resultant articles, written under stress, end up with substantial parts of the data and text lifted from other publications.

Plagiarism is definitely not limited to medical literature. It has reached such an alarming level that the Nature Publishing Group reported in 2010 that they had to reject 23% of the submissions on account of plagiarism. The prevalence of plagiarism in medical literature has been estimated to be in the range of 11-19% in different reports.

I take this opportunity to reiterate that plagiarism is considered as academic dishonesty or fraud, even if it is unintentional (accidental) and carries the same legal or financial penalties as an intentional or deliberate plagiarism.

Plagiarism is detrimental to the reputation of a journal and may even cost the author his entire career. I would recommend the authors to follow the COPE (Committee on Publication Ethics) guidelines on publication ethics for writing their articles. They may also utilize any of the numerous software based plagiarism detecting services, which are available on the internet to avoid unintentional plagiarism.

It is our shared responsibility to ensure publication of only those articles, which are free from the scourge of plagiarism. Let us join hands to make the medical literature authentic and reliable.

With best wishes,

Dr Saumendra Nath Bandyopadhyay
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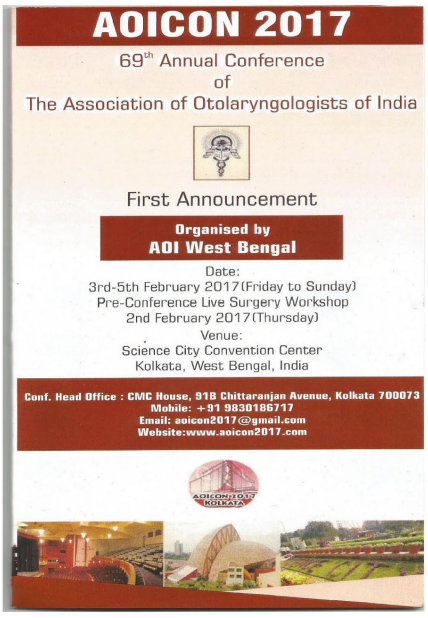

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Recurrent Acute Tonsillitis - The 'Core' Issue

Saikat Samaddar,[1] Diptanshu Mukherjee,[1] Anita Nandi (Mitra),[2] Shyam Sundar Mandal,[3] Nirmalya Roy,[1] Shaoni Sanyal,[1] Swagatam Banerjee,[4] Saumendra Nath Bandyopadhyay[1]

ABSTRACT

Introduction

Today bacteriological and patho-anatomical considerations too are taken into account while treating a case of tonsillitis. Past decade has seen the rise of resistance amongst the common pathogens, as well as rise in the number of unusual offenders. Determination of the true offending organism and prescribing an antibiotic as per the sensitivity pattern is of utmost importance.

Materials and Method

A prospective longitudinal study was conducted in a tertiary care hospital in Kolkata. The study population consisted of patients presenting with recurrent attacks of acute tonsillitis. Determination of throat swab micro flora, ASO titre and core tissue microflora was done and correlated statistically.

Result

There was poor correlation between throat swab and core tissue microflora. Positive predictive value of throat swab was 10%. Pseudomonas is the predominant flora harbouring tonsillar core in our study population. Amoxicillin the most commonly prescribed antibiotic stands out to be the most resistant one. No statistical significance could be reached comparing streptococcal tonsillitis with ASO titre.

Discussion

The real pathology within the tonsil core is not always reflected in routine throat swab and bacteriology of recurrent tonsillitis may differ in different regions. ASO titre estimation adds up to the economic burden if rheumatic fever is not suspected. Judicious use of antibiotics based on true sensitivity pattern is encouraged. In the era of antibiotics Tonsillectomy still holds an important position in the management of recurrent attacks.

Conclusion

Pseudomonas was found to be the most common pathogen in recurrent acute tonsillitis. Core tissue study remains the Gold standard in identifying the pathogenic organism. Oral third generation Cephalosporin was the most efficacious antibiotic for recurrent tonsillitis in our study population.

Keywords

Tonsillitis, Tonsillectomy,Bacteriology, Anti-bacterial Agents, Pseudomonas, Amoxicillin, Cephapirin, Rheumatic Fever

Chronic tonsillitis was largely a clinical concept in the past. Today bacteriological and patho-anatomical considerations too are taken into account. In the era of antibiotics the role of tonsillectomy has often been questioned. The knowledge about the offending organism has led to the selection of specific antibiotics.

Normal throat flora are the common organisms harboured in the tonsillar fossa. 34 to 80% of all cases of tonsillo-pharyngitis have been attributed to bacterial cause.[1,2,3] Commonest pathogenic bacteria being the Group A Beta Haemolytic Streptococcus, accounting for 24 to 65%.[4] Although there has been decline in the number of operative procedure in cases of chronic tonsillitis, the age old technique of Tonsillectomy has stood the test of time. Past decade has seen the rise of resistance amongst the common pathogens, as well as rise in the number of unusual offenders. Probably this scenario calls for a more judicious use of antibiotics and

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restoring to surgical procedure.

Most of the patients attending the Dept of ENT in tertiary care centres with complaint of recurrent sore throat had already been on course of multiple empirical antibiotics. In United States 10% of the antibiotics prescribed for paediatric consultation are given for tonsillopharyngitis.[5] As a routine practice, patients of recurrent sore throat diagnosed with chronic tonsillitis are put to study of tonsillar fossa microflora. This gives an idea about the offending organism and prescribing an antibiotic as per the sensitivity pattern. In spite of the specificity of treatment this patients often revisit with persistent complaint of sore throat, pain in the throat, halitosis. This calls for more specific investigations to identify the cause of such recurrence. Role of immune complex based injury to myocardium and glomerular basement membrane of kidney following streptococcal throat infection is a medical challenge. So there is a need to define the role of ASO titre in investigating Streptococcal tonsillitis. Determining the local flora and the antibiotic sensitivity pattern in recurrent tonsillitis is of utmost importance.

Materials and Methods

A prospective longitudinal study was conducted in Department of ENT of a teaching hospital in Kolkata, between December 2014 and September 2015. Patients presenting with recurrent attack of acute tonsillitis defined as 3 or more attacks per year inspite of antibiotic treatment were considered as study population. Immunocompromised patients and patients with enlarged tonsils due to cause other than infective were excluded from the study population

Detailed history was obtained and clinical examination of the patients was done. Throat swab was collected aseptically with long handle swab sticks and sent for microbiological analysis. In the same sitting, patients' serum was sent for ASO Titre estimation. These patients were subsequently taken for tonsillectomy after the acute episodes subsided.

Extracapsular tonsillectomy by dissection method was performed. Tonsillar core tissue has harvested in aseptic condition and sent for culture. Method of harvesting core tissue consisted of washing the tonsillar tissue in serial solutions of povidone iodine and sterile normal saline. The core tissue was then dissected out with sterile scalpel blade. The tissue was sent for microbiological analysis in sterile container containing normal saline. The data obtained was statistically correlated.

Bacteriology

The specimens were processed as per standard laboratory procedure. Gram staining and subsequent culture on Blood agar and MacConkey agar was done. The pure colony was processed by biochemical tests and antibiotic susceptibility tests. Specimens yielding single pathogenic flora was considered for the study. Commensal organisms of throat were excluded from the study.

Results

Total 60 patients were included in the study. 55% of the subjects were under 14 years of age, 45% above 14 years.(Fig.1) Total number of male patient was 24 and female were 36. The mean age (mean ± s.d.) of the males was 13.75±9.90 years with range 4 - 30 years and the median age was 10.0 years. The mean age of the females was 17.58±8.37 years with range 6 - 35 years and the median age was 14.5 years. Out of the total 60 throat swab culture 54 turned out to be sterile.

Culture positive throat swabs had Klebsiella sp, and Group A Beta Haemolytic Streptococcus in equal proportion.(Fig. 2) Core tissue of the surgically removed tonsils always grew pathological organism. Commonest organism found in Core tissue culture was Pseudomonas sp (35%). Followed by Staphyloccus aureus (30%), Klebsiella sp (15%), Group A Beta Haemolytic Streptoccus (10%), E.Coli (5%) and Coagulase Negative Staphyloccus (5%).(Fig.3) Throat swab yielded normal throat flora in all the cases of pseudomonal and staphylococcal core tissue infection. Only 50 % cases of group A streptococcus could be accurately predicted by throat swab.(Fig.4) The positive predictive value of throat swab is 10%.

The McNemar test was applied to correlation

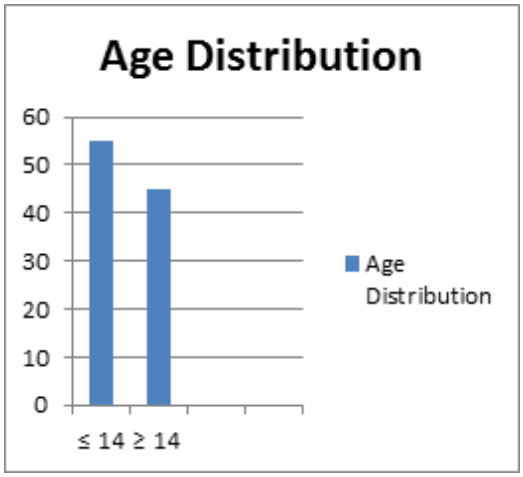

Fig. 1 Age distribution of patients

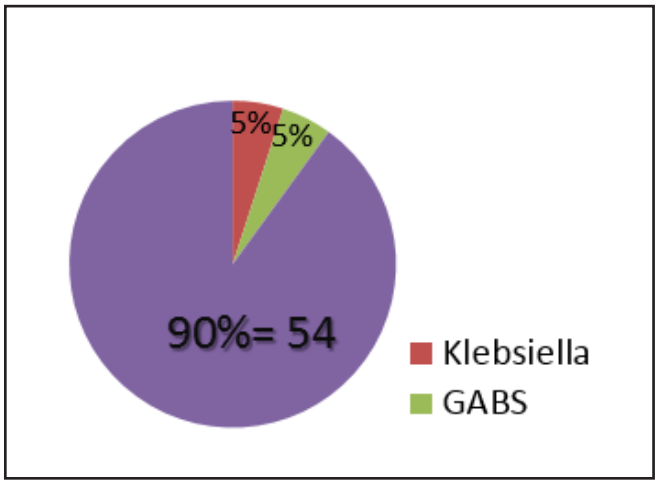

Fig. 2 Throat swab microflora analysis

between throat swab and core tissue culture. It gives the difference between the proportions (expressed as a percentage) with 95% confidence interval. When the (two-sided) P-value is less than the conventional 0.05, the conclusion is that there is a significant difference between the two proportions. The correlation between throat swab and core tissue culture was found to be insignificant.(Table I) 61.7% of the patients had ASO titre above 200.(Fig. 5) The titre remained positive in 85% of patients who did not have active streptococcal throat infection. No statistical significance could be reached comparing streptococcal tonsillitis with ASO titre (p= 0.249). Commonest antibiotic to be resistant in throat swab and core tissue antibiotic sensitivity

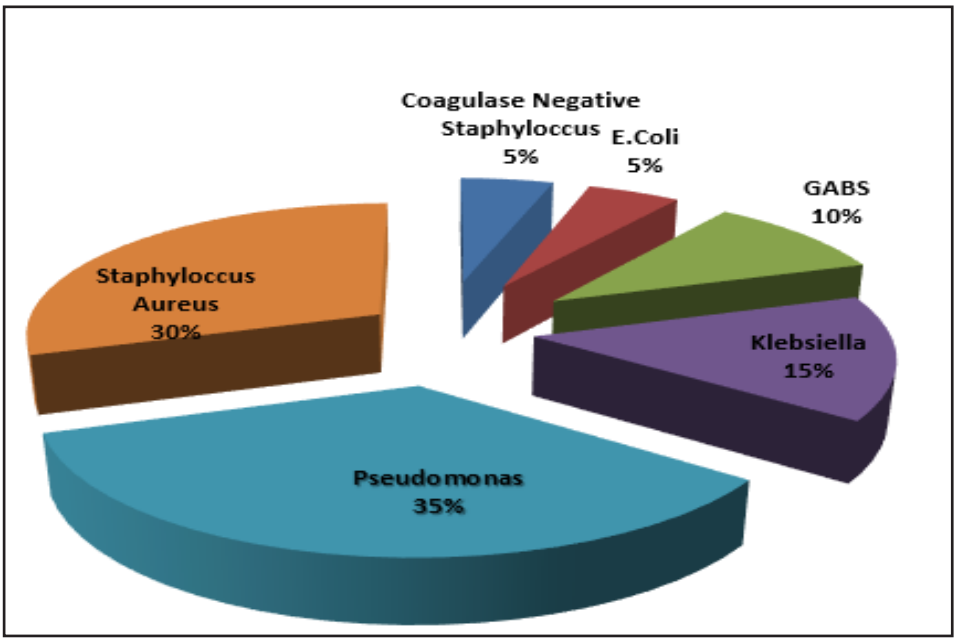

Fig. 3 Distribution of core tissue microflora

pattern was Amoxicillin, followed by Erythromycin and Levofloxacin. Cephalosporins were found to be sensitive in all the cases of pathological core tissue and throat swab.

Discussion

Recurrent attacks of tonsillitis remains a nagging problem and challenge for the Otorhinolaryngologist, in spite of antibiotic administration. The surface and core tonsillar pathogenic flora may be different in recurrent tonsillitis as indicated by several studies.[5] Surow et. al, (1989) noted, the tonsillar disease may arise from the bacteria within the substance of the tonsil, rather than bacteria identified on the surface.[6]

Tonsillar surface culture is likely to grow these organisms. Therefore, it is a matter of emphasis since last few decades that real pathology within the tonsil core is not always reflected in routine throat swab and bacteriology of recurrent tonsillitis may differ in different regions. Similarly in our study no statistical correlation could be obtained between throat swab and core tissue culture (PPV of throat swab is10%, p value 1.094).

Most common organism in core tissue was Pseudomonas followed by Staphylococcus aureus and Klebsiella. All this organisms are notorious for formation of biofilm. Probability of presence of bioshield preventing penetration of antibiotics in the vascular tissue of tonsil should be considered. Chronic fibrotic changes in the tonsillar tissue due to recurrent infection might also be a cause of persistence of pathogens in the core. Study by Shaikh et. al showed commonest organism to be Staphylococcus.[7]

Most common identifiable organism according to Mlynarczyk et. al is group A Beta haemolytic Streptococcus.[4] The variation of the predominant infecting flora depends on the flora in the geographic location of the study population. ASO Titre correlation also proved to be futile in identification of active streptococcal tonsillitis. Routine investigation of ASO titre only adds up to the economic burden of the concerned patients. But in cases of suspected rheumatic fever ASO titre is recommended to investigate and plan further management. Amoxicillin is the most common resistant antibiotic to be found in this current study. Resistance pattern vary amongst different studies.

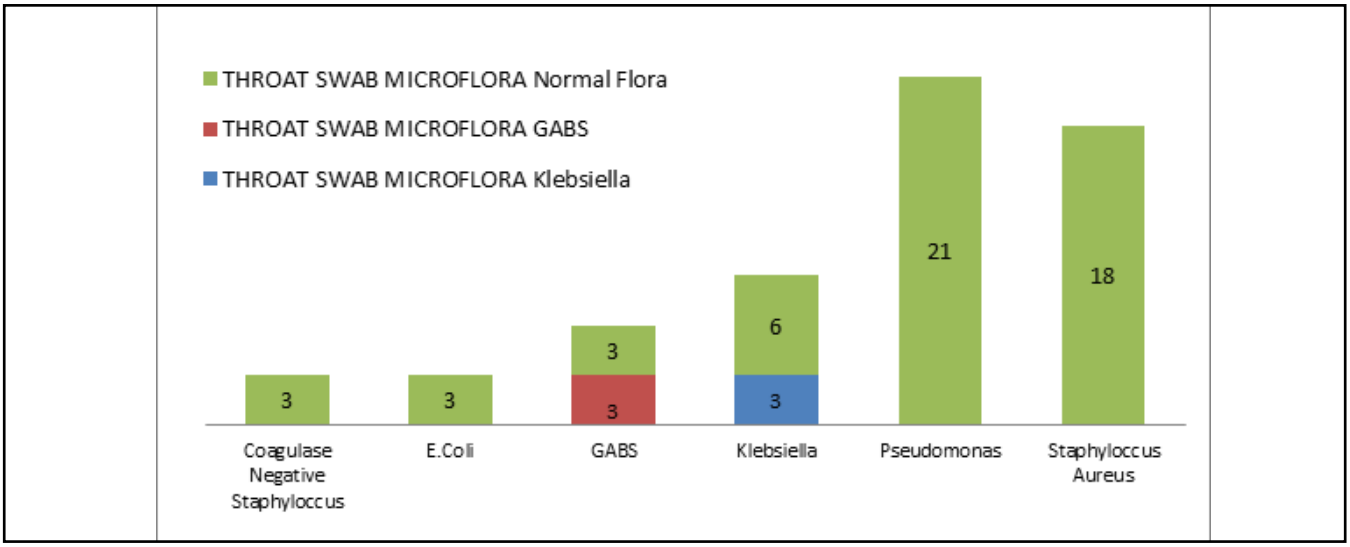

Fig. 4 Correlation between core tissue and throat swab microflora. The ordinate indicates the total number of cases infected by a particular organism determined by core tissue. Green connotes proportion of cases that could not be detected by throat swab. Red and blue indicates correct detection by throat swab.

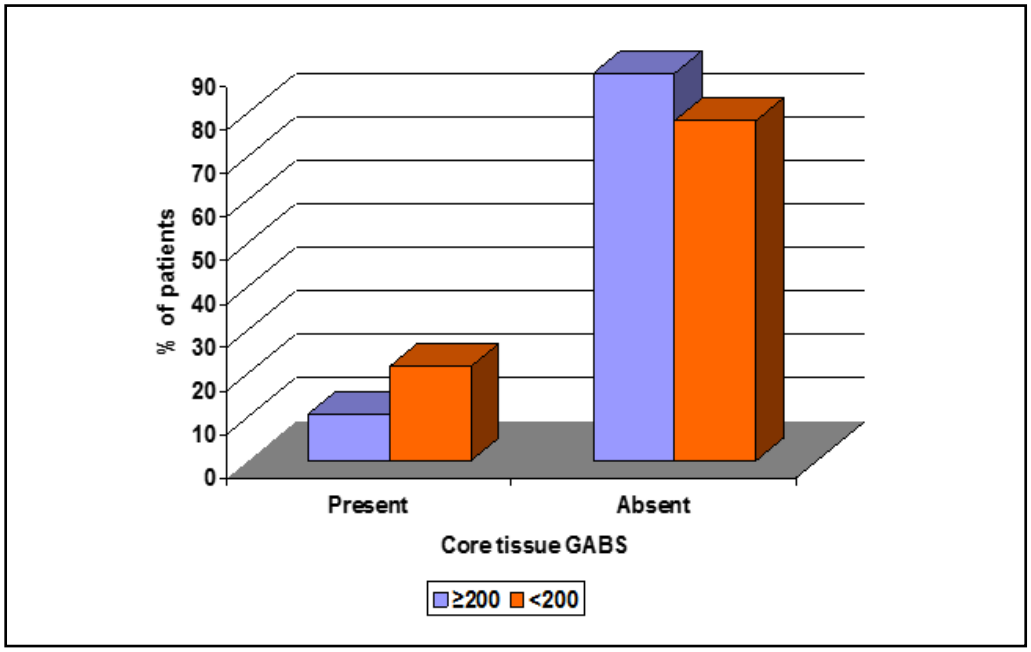

Fig. 5 Correlation of ASO Titre and isolation of streptococcus in core tissue

Numerous studies show efficacy of cephalosporin over penicillin in cases of streptococcal infection.[8] This study shows third generation cephalosporin - Cefpodoxime (among the orally prescribed antibiotics) to be sensitive in most cases.

Conclusion

Throat swab is an inefficacious way to find the bacteriological cause and to plan the treatment of recurrent tonsillitis. It only adds up to the cost of management and delays the treatment. Core tissue

Table I: Results of the Study

		THROAT SWAB		
		YES	NO	PERCENTAGE
CORE TISSUE BIOPSY	YES	6	54	100%
	NO	0	0	0%
		10%	90%	

DIFFERENCE- 90.00%, 95% CI- 78.11%- 90%, EXACT PROBABILITY- P<0.0001

The McNemar test gives the difference between the proportions (expressed as a percentage) with 95% confidence interval. When the (two-sided) P-value is less than the conventional 0.05, the conclusion is that there is a significant difference between the two proportions.

The two-sided P-value is based on the cumulative binomial distribution.

The 95% confidence interval is calculated.

study remains the gold standard as a significant number of pathogens found only in tonsil core cultures were not detected by tonsil surface swab. ASO titre estimation fails to correctly predict the chances of active streptococcal tonsillitis. So it also adds up to the economic burden if rheumatic fever is not suspected. Most common organism to be cultured in core tissue is Pseudomonas, so it forms the predominant local flora in our place of study. Oral third generation Cephalosporin is the most efficacious antibiotic for recurrent tonsillitis in our study population.

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Community Awareness - A Key to the Early Detection of Head and Neck Cancer

Ajay Manickam,[1] Jayanta Saha,[1] Debangshu Ghosh,[1] Shaswati Sengupta,[1] Debabrata Biswas,[1] Sumit Kumar Basu,[1] Satish Kumar,[2] Souradeep Ray[1]

ABSTRACT

Introduction

Mortality and morbidity associated with head and neck cancers have decreased to a great extent in many developed countries of the world due to early diagnosis and treatment with advances in surgical techniques and better availability of radiotherapist and oncologists. But the situation in developing countries like India is quite different.

Aims and Objectives

This study was conducted amongst the patients attending the Otolaryngology department of a teaching hospital in Kolkata to find the incidence of various types and sites of head and neck cancer, to assess time delay from the date of onset of symptom to the final disease confirmation in relation to patients' demographic profile, to assess time delay in histopathological diagnosis after reaching a tertiary care setup and also to correlate tobacco consumption and alcohol intake as risk factors for head and neck cancer and to note the reasons for late presentation, as described by the patient.

Materials And Methods

The descriptive study was conducted at a tertiary level teaching hospital, in the Department of Otorhinolaryngology for a period from August 2013 to August 2015 with a study population of 133.

Observations

An average time lag from the onset of symptom to final diagnosis as malignancy was found to be 6 months to one year in nearly 72% of cases. Most of the patients were uneducated males of more than 50 years of age, hailing from rural areas. Cancer larynx was found to be the commonest of all head and neck cancers (31.6%). More than 65% of the patients were addicted to tobacco chewing or smoking or consumption of alcohol.

Discussion

Poverty, lack of education, poor communication, lack of health care infrastructure in rural areas, community awareness about various risk factors, lack of effective health policy to achieve early diagnosis of head neck cancer were common factors related to delay in diagnosis.

Conclusion

Tobacco use and alcohol intake are the modifiable risk factors of head and neck cancer. Educating the field workers about the danger signs of head and neck cancer may promote early referral of the suspected cases to tertiary health care setup for early detection of cancer.

Keywords

Early Detection of Cancer; Head and Neck Neoplasms; Developing Countries; Risk Factors

Mortality and morbidity associated with head and neck cancers have decreased to a great extent in many developed countries of the world. Early medical advice seeking behaviour, advanced surgical techniques and availability of radiotherapist and oncologists are much better in developed world. But in developing countries like India it's not so.

Mortality due to cancer in India is around 6,82,830. Among them mortality due to head and neck cancer is around 1,08,537 in which 82,290 are males and 26,247

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are females.[1] Although government of India has offered so much of cost effective medical services to the people, there is no screening programme proposed for the sake of head and neck cancer.[2]

Hence health education and proper medical healthcare seeking behaviour of the public is very important in order to decrease the mortality associated with head and neck malignancy. In India head and neck cancers are found to be more related in lower socioeconomic strata. As patients presenting in tertiary care government hospitals mostly belong to the low socio-economic group and also advanced stage disease are commonly seen in rural population,[2] their awareness about cancer has been found to be low. When head and neck cancers are diagnosed at a later stage, survival rate is poor.

In India nearly 1,08,537 people die each year from head and neck cancer.[1] Most of the patients seek medical advice at a very late stage in a tertiary care setup. Head and Neck cancers are the most common cause of deaths due to malignancy in India. Community awareness about cancer and its treatment options is generally very poor. This study deals with the delay in diagnosis and community awareness of head and neck cancer.

Subsites in the head and neck region

In Head and neck cancer the TNM (Tumour, Nodes, Metastases) classification applies to carcinomas of the following sites: lip, oral cavity, pharynx (oropharynx, nasopharynx, hypopharynx), larynx, maxillary sinus, nasal cavity, ethmoid sinus, salivary glands and thyroid gland.[3] Each site is described with rules for classification, anatomical sites and sub sites (where appropriate), the TNM classification, grading for histopathology, staging and summary. The TNM groups then are reassigned to four groups – stage groups (stages one – four). This staging helps the clinician to aid in the planning and evaluation of results and is one of the indicators of prognosis.[4]

Aims and Objectives

1. To find the various types and sites of head and neck cancer
2. To assess time delay from the date of onset of symptom to the final disease confirmation in relation to patents demographic profile
3. To assess time delay in histopathological diagnosis after reaching a tertiary care setup
4. To correlate tobacco use and alcohol consumption as risk factors for head and neck cancer
5. Various reasons as described by the patient for late presentation

Materials and Methods

The study was conducted at a tertiary level teaching hospital in Kolkata in the Department of Otorhinolaryngology from August 2013 to August 2015. This descriptive study was undertaken after getting clearance from the Institutional Ethics Committee and informed consent was obtained from all the participants. The patients meeting the clinical criterion with features of head and neck malignancy were included in the study.

A thorough history was taken as per preformed questionnaire along with detailed clinical examination, endoscopic and radiological evaluation were done. Importance was given to four important dates as follows, (1) date of onset of first symptom, (2) date of seeking first medical advice. (3) date of visiting tertiary care setup, (4) date of final histopathological confirmation as cancer. This health care professional contacted could either be a homeopathic doctor, Ayurvedic doctor, quack, allopathic general practitioner or a specialist. Reasons for the late presentations were also recorded as said by the patient. The patient's socio economic and education status were collected according to the Modified Kuppusamy classification. The site of lesion, histopathological type of the cancer was also individually recorded and the tabulation of results were done.

Patients with clinically suggestive malignancy, who gave consent for the study, were included in the study group. Elderly debilitated patients, who were lost to follow up and those who did not give consent for the study, were excluded. A total of 133 patients were enrolled in this study. Demographic analysis and analysis of variance (ANOVA) charts were made in SPSS software and the results were tabulated.

Observations

Among the study population of 133, 85 patients were male (63.9%) and 48 were female (36.1%) (Fig.1). More than 70% of the study population were of age greater than 50 years (Fig. 2). Majority of the patients were elderly males. Nearly 82.3% of the study population (Fig. 3) was from peripheries of Kolkata (greater than 50 km from Kolkata).

Majority of the study population also belonged to the low socio-economic status (Fig. 4) as they were either daily labourers or farmers (62.5%). More than 65%

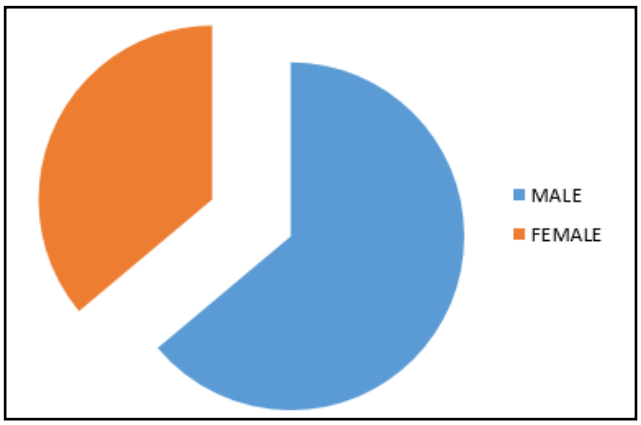

Fig. 1 Distribution according to sex

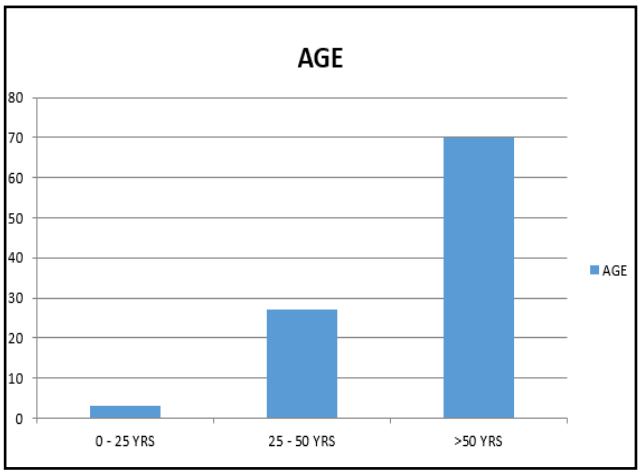

Fig. 2 Distribution according to age

of the population was addicted to tobacco chewing or

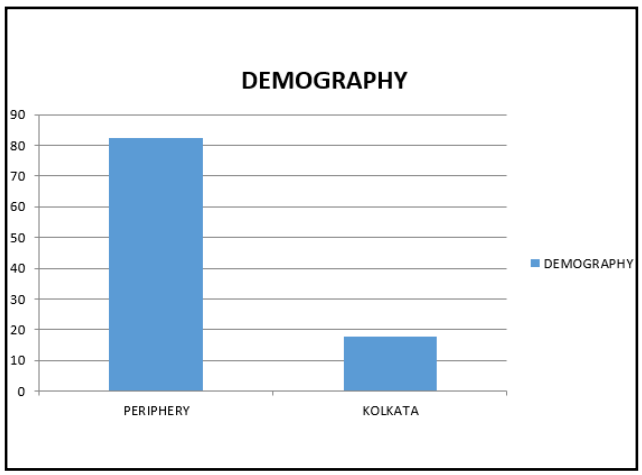

Fig. 3 Demography

smoking or consumption of alcohol. Nearly 53.3% of the study population was having habits of both smoking and alcohol consumption and nearly 9.8% of the population were having habits of both tobacco chewing and smoking. According to modified Kuppusamy scale education status were tabulated. It was found that majority of the population were uneducated (78.9%).

Cancer larynx was the most common of all head and neck cancers (31.6%) and temporal bone cancer (0.8%) was the least common of all (Fig. 5). Among the cancer subtypes, squamous cell carcinoma (Fig. 6) was found to be the most common (82%).

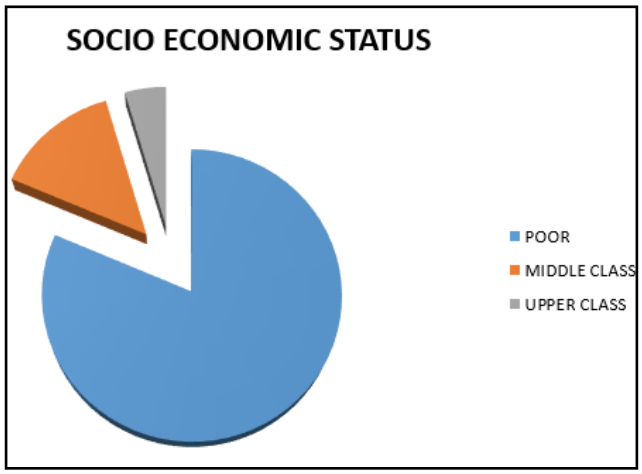

Fig. 4 Socioeconomic status

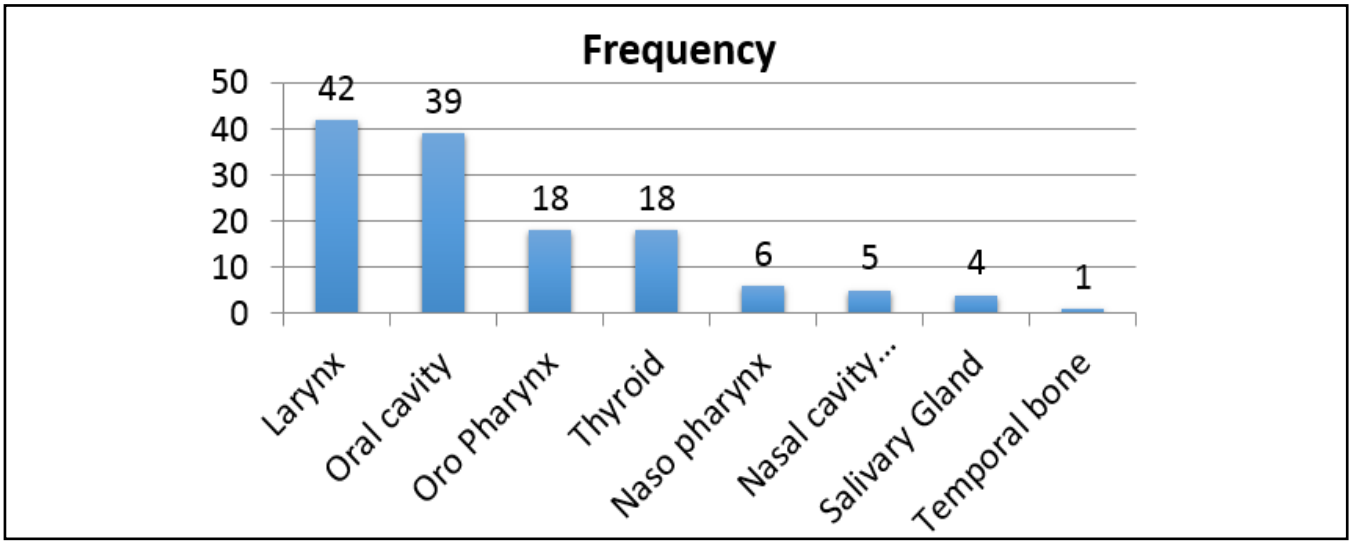

Fig. 5 Sites of Cancer

On calculating the time delay at various intervals, nearly 65.4% population sought medical advice for the first time in less than 6 months of time (Fig. 7) (visiting either a quack, homeopathy doctor, general practitioner or a specialist). After getting this medical advice, nearly 41.4% population took a time period of about 6 months and 30.7% population took a time period of greater than one year to visit a tertiary care hospital.

After reaching a tertiary setup to get finally diagnosed as malignancy, 68% of study population needed another 2 months and 4.2% greater than two months. So an average time lag from the onset of symptom to final

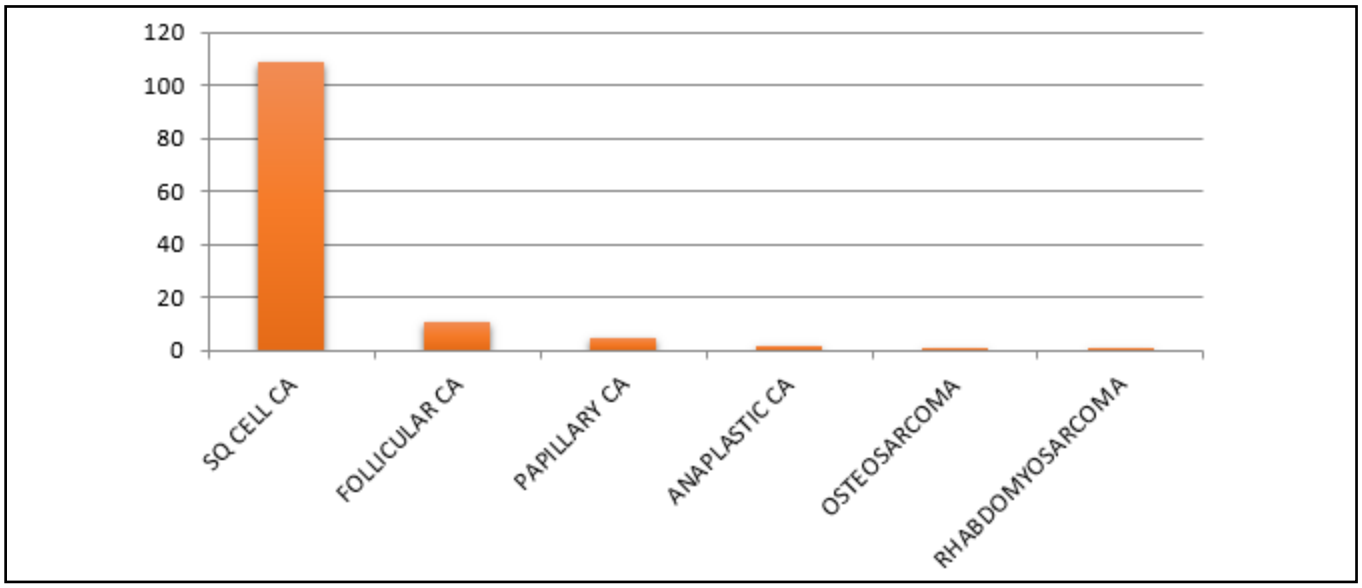

Fig. 6 Histopathological types of cancer

diagnosis as malignancy was found to be at least 6 months to one year in nearly 72% of cases (Table I). Nasopharyngeal cancers were the earliest and thyroid cancers were the last to be diagnosed (Table II).

The relation of this time lag to age, sex, religion, type of cancer, site of cancer, socio-economic status, were all found to be of statistically insignificant value. But the relationship of medical advice seeking behavior (Table III) with education status (p = 0.0441), relationship of time lag with people living near to tertiary care setup (p = 0.0397), were found to be statistically significant. The relationship of tobacco use and alcohol intake with cancer was also found to be statistically significant (p=0.045).

Discussion

Clinicians managing head and neck cancers have a responsibility to assess the outcome and prognosis. In this perspective, collection of data with a thorough preformed questionnaire is very essential. Head and neck cancer includes carcinomas of the following sites: lip, oral cavity, pharynx (oropharynx, nasopharynx, hypopharynx), larynx, maxillary sinus, nasal cavity, ethmoid sinus, salivary glands and thyroid gland.3 Staging the disease helps the clinician to aid in the planning and evaluation of results and is one of the indicators of prognosis.[4]

Head and neck cancers, according to WHO data, are

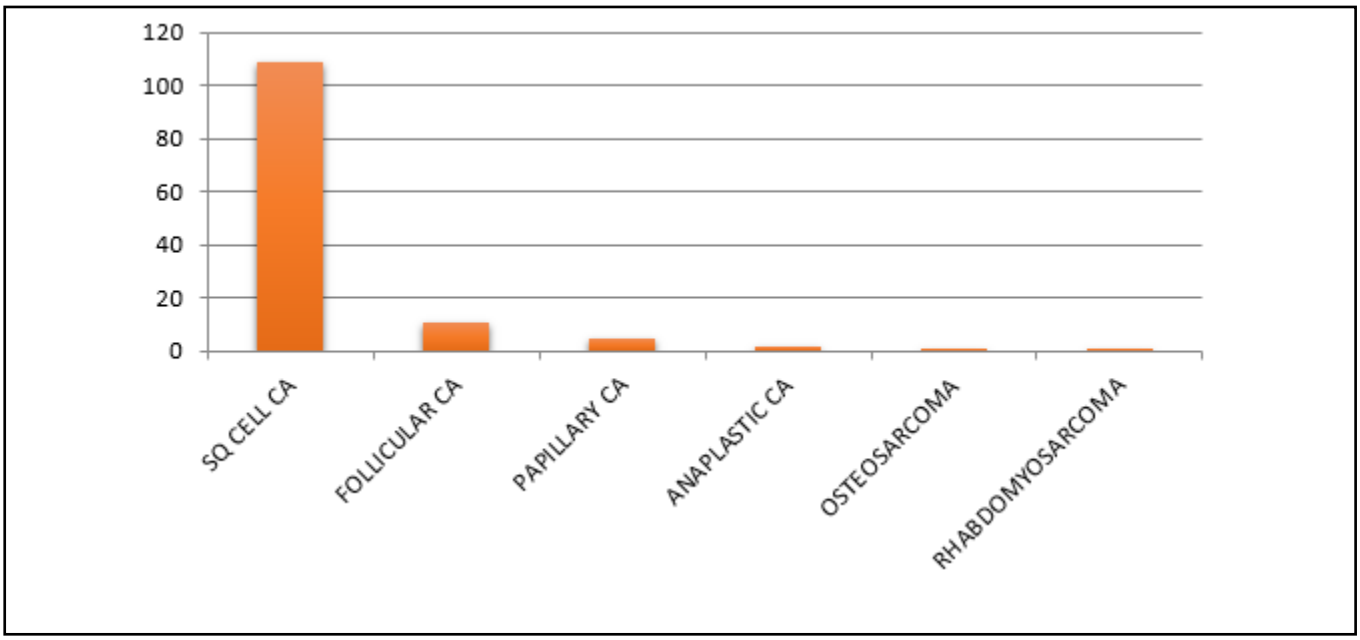

Fig. 7 First point of Healthcare Contact

Apart from the analysis, the reason for late presentation was asked as a direct question to all the study population. They gave multiple answers. All the answers were tabulated. 64.5% of the study population said poor socio economic status to be the commonest cause, followed by 58% people who replied medical services were far away from their place; 36% were also not aware of the gravity of the lesion.

seen more commonly in males compared to females.[5] In our study also it was found that majority of the study population were male (63.9%).

In India, most of the people seeking government tertiary care setup belong to very low socio-economic status.[6] Study group contained about 62.5% population belonging to very poor socio-economic condition.

According to WHO, cancer of the mouth and oral

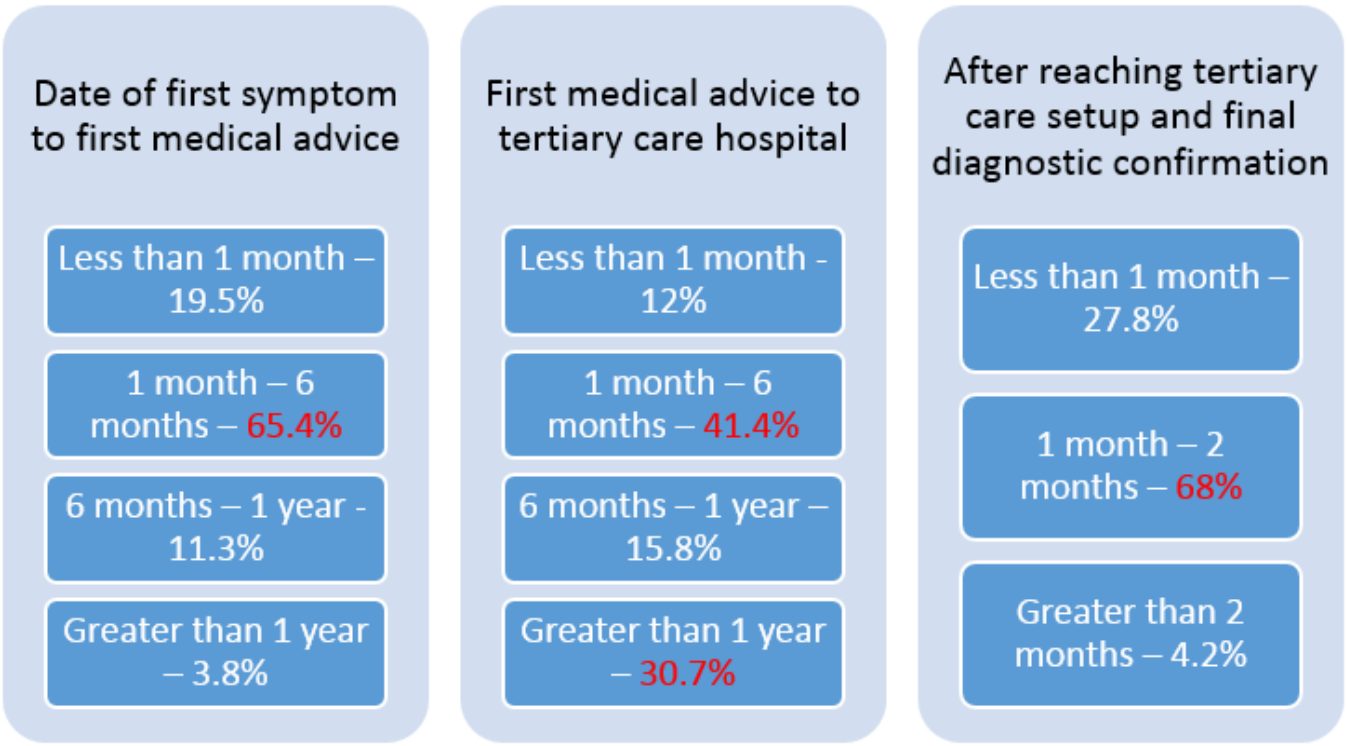

Table I Time lag in reaching a tertiary care centre after the onset of symptoms and the final diagnostic confirmation

cavity are the commonest malignancy in males in India but in females cervical and breast cancers are most common.[7]

In India, two-thirds of the population live in rural areas.[8] Poor communication, poverty, lack of healthcare infrastructure in rural areas, community awareness about various risk factors associated with tobacco use, lack of effective health policy to achieve early diagnosis of head neck cancer are common factors related to delay in diagnosis. Socio-economic and demography play important roles in determining the early medical advice seeking behavior. In this study also majority of the study population belong to places distant from Kolkata (more than 50 km away).

We observed that medical advice seeking behavior of the patient is unsatisfactory. People of rural areas prefer visiting a quack or a homeopath rather than visiting a general practitioner. Majority of the population visits a homeopath, quack or an Ayurveda doctor (69.8%), rather than visiting a PHC or a specialty centre.

It is clearly evident (Table I) that there is a significant delay in the final diagnosis of malignancy from the day of onset of first symptom. Average of 6 months to one year time delay is observed in nearly 70% of the study population.

It is also clear that nasopharyngeal cancer were the earliest to be diagnosed and thyroid cancer was the one with late presentation of about 20 years (Table II).

The commonest reasons, as stated by the patients for late presentation, were socio-economic factors (64%) and demography(58%). 36% of the patients were not aware that it could be a malignancy.

WHO defines a healthy nation according to various morbidity indicators, mortality indicators, health

determinant factors such as tobacco use, alcohol use etc. In India tobacco is not banned. Banning tobacco use can prevent 22 % of death due to cancer. If this same scenario persists, 70% increase in head and neck cancer patients can be expected in the next two decades.[9]

In India there are no cancer screening programmme for head and neck cancer detection. Tobacco use is not completely banned in many of the states in India. In north eastern India nearly 50% of cancer is due to head and neck malignancy.[10] Death due to head and neck cancer is one among the top 10 leading causes of death in India.

This time delay in diagnosing if properly assessed and if community awareness is increased, mortality due to head and neck cancer can be very much reduced. In recent times in India Revised National Tuberculosis Programme, Universal Immunization Programme, National AIDS Control Programme have all met with tremendous success because of field workers. Community awareness about immunization has very much improved.

Hence various suggestions from this study are, danger signs of head and neck cancer must be formulated and cancer screening programme for head and neck malignancy in the high risk group has to be initiated by the government. Studies have proved that effective screening can considerably increase the early detection of cancer.

Field workers should be initiated like various other national programmes, and important danger signs of head and neck cancer such as hoarseness of voice, non-healing ulcer in the oral cavity, swelling in the neck, nasal cavity, all has to be noted up properly by the field workers and they have to be instructed regarding the condition and has to be referred immediately to the tertiary care centre, so that early detection and diagnosis can be established. Cost effective screening which can detect cancers at an early, treatable and less costly stage, is an important part of delivering affordable cancer care in India.[2]

Conclusion

Tobacco use and alcohol intake are the modifiable risk factors of head and neck cancer. Tobacco control can significantly decrease the incidence of head and neck malignancy. Living in rural areas and poor socio-economic conditions are important hindrances in the early detection of cancer. By implementing a community awareness protocol and an effective screening programme for head and neck cancer, it can be easily diagnosed early. Knowledge about danger signs of head and neck cancer among the field workers can ensure early referral to tertiary setup and hence, early diagnosis.

Table II : Types of cancer and their relationship to time taken for the diagnosis

SITE OF CANCER	MINIMUM DAYS	MAXIMUM DAYS
Nasopharynx	17	94
Salivary gland	30	212
Larynx	82	1264
Oral cavity	91	1157
Oropharynx	122	1673
Sinonasal	441	3407
Thyroid	479	6774

Table III : Analysis of variance statistically significant variables

ANALYSIS OF VARIANCE STATISTICALLY SIGNIFICANT VARIABLES	P VALUE
Time lag with people living near to a hospital	0.0397
Medical advice seeking behaviour to education status	0.0441
Relationship of tobacco use and alcohol intake with head neck cancer	0.045

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Effect of Canalplasty on Outcome of Results in Type I Tympanoplasty

Ajay Mallick,[1] Vijay Bhalla,[1] Ravi Roy[1]

ABSTRACT

Background

The aim of the surgical procedure of tympanoplasty is to strive to achieve an intact neo tympanum with normal hearing acuity. Widening of the external auditory canal, called canalplasty, helps in better visualization and hence better placement of the tympanic membrane graft. Aim of this study was to compare effect of canalplasty on the outcome of results of type I tympanoplasty.

Methods

50 cases of patients diagnosed with chronic otitis media mucosal disease with a central dry perforation involving two or more quadrants of the tympanic membrane were included in the study. One group of 25 cases underwent tympanoplasty with canalplasty and was grouped under Group I while the other group of 25 cases underwent tympanoplasty without canalplasty and was called group II.

Results

Analysis was done for graft uptake, hearing improvement and time taken for the surgery. Group I achieved a success rate of 92% graft uptake as compared to group II, which achieved 84%. There was statistically significant improvement in post-operative hearing in cases with canalplasty. Time taken was between the two groups were not statistically significant.

Discussion

33.33% of congenital deaf population detected by UNHS belong to the Non High Risk group. Studies across the world suggest at least 50% chance of missing out a congenital deaf child if Universal Neonatal Hearing Screening is not practiced.

Conclusion

Anatomical and technical factors diversely affect the functional outcome of tympanoplasties. Canalplasty helps in better visualization and placement of the graft. Time spent on drilling in canalplasty is compensated by the time gained in grafting of the neo tympanum. The procedure prevents lateralization of the graft due to the accurate exposure of the annulus. Post operative care is also easier in cases of tympanoplasty with canalplasty.

Keywords

Tympanoplasty; Canalplasty; Ear Canal; Operative Time

Otitis media is a commonly prevalent disease of the middle ear especially in developing countries. Lack of specialized medical care, poverty, poor hygiene, overcrowding and ignorance are some of the common factors in the etiology of this disease. One of the sequel of Chronic Otitis Media (COM) is a persistent perforation of the tympanic membrane. The exposed middle ear mucosa predisposes to exogenous sources of infection and may produce a conductive hearing loss.

As described by Wullstein, surgical procedures to replace the tympanic membrane defect along with assessment of ossicular chain is called as type 1 tympanoplasty.[1] Tympanoplasty nowadays is of one the common ear surgeries to be performed. The aim is to strive to achieve an intact neo tympanum with normal hearing acuity. Many modifications in approach and procedures are performed to achieve this goal. The widening of the external auditory canal called canalplasty, is one such procedure. Widening of the canal removes the bony overhangs in the external canal wall providing complete visibility of the tympanic membrane and annulus. This helps in better placement of the graft material.

In this study, an attempt has been made to study the effectiveness of canalplasty in results of type I tympanoplasty. In all cases, temporalis fascia has been

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used as the graft material. Effectiveness of results has been measured by post - operative graft uptake, hearing improvement achieved and time taken for the surgery.

Materials and Methods

Methodology

Inclusion criteria - Fifty patients diagnosed with chronic otitis media mucosal disease with a central dry perforation involving two or more quadrants of the tympanic membrane were included in the study. Only cases wherein the annulus could not be seen completely, due to bony elevations or humps, were considered in the study. (Fig. 1) Canal wall deformities may not affect the visibility of small perforations, hence single quadrant small perforations were excluded from the study.

Patients aged between 15 to 60 years were included in the study. The cases were assigned into two groups. The group which underwent tympanoplasty with canalplasty were designated Group I.The group which underwent tympanoplasty without canalplasty were labeled Group II. Both groups were assigned 25 cases each. Cases were alternatively assigned to each group. Written and informed consent was taken from all the patients.

Exclusion criteria - Small central perforations of the tympanic membrane, perforations with active discharge, marginal or attic perforations, otitis externa, and revision cases were criteria for exclusion from the study. Patients with hearing loss of more than 50dB which usually indicate ossicular chain discontinuity in a perforated drum were also excluded from the study. Those patients who were found per-operatively to have ossicular discontinuity were also excluded from the study.

Preoperative assessment – All patients were subjected to detailed pre operative history taking and clinical examination including otomicroscopic examination. Tuning fork tests were done to determine type of hearing loss. Degree of hearing loss was determined by the pure tone audiometry. Air bone gap at frequencies 500, 1000, 2000 and 3000 Hz were noted and the 4 tone average was used to calculate the average hearing loss. All patients underwent a pre operative anaesthesia checkup. Patients were admitted to the hospital one day prior to surgery.

Operative procedure - Type I tympanoplasty was done in all the cases. Forty five patients underwent the procedure under local anaesthesia while the rest 5 cases underwent surgery under general anaesthesia. Autologous Temporalis facial graft was used in all cases. All cases were done by the post aural route. All cases were done by the underlay technique with the graft being placed under the annulus and the handle of malleus. Gel foam was placed in the middle ear after placement of the graft.

Technique of canalplasty

Posterior canal wall meatotomy was done by the post aural route and tympanomeatal flap raised from lateral to medial after making incisions at 12’ o clock to 6’ o clock of the canal wall skin. The bony external canal was widened by removing all bony overhangs with suitable sized cutting and diamond burrs. The annulus

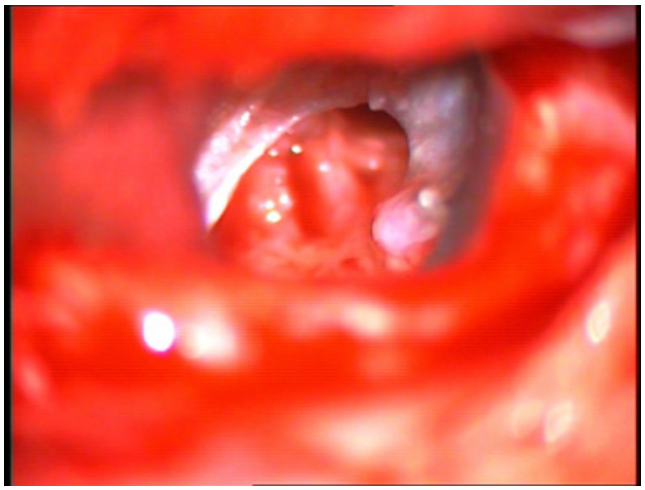

Fig. 1 Preoperative picture showing canal wall obstructing view of annulus and perforation

was raised and middle ear entered. In cases of an anterior bony bulge obstructing the anterior annulus, the skin of the anterior canal was elevated lateral to medial till nearest to the annulus. Then using a diamond burr the anterior bony bulge was gradually reduced avoiding

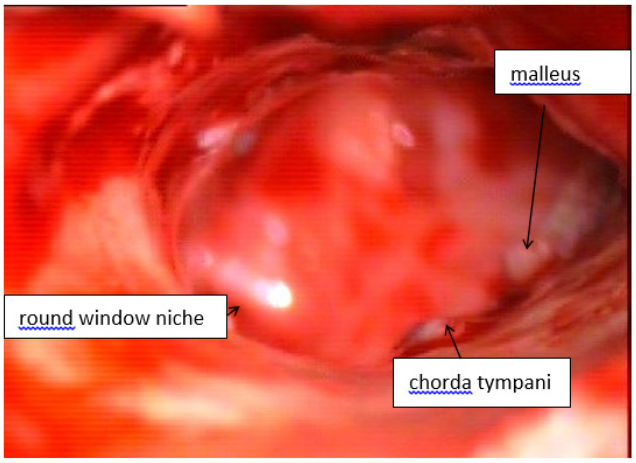

Fig. 2 Post canalplasty picture showing clear of annulus

exposure of the temporomandibular joint. The shape of the EAC appears as an inverted cone at the end of canalplasty. The aim of the canalplasty was to expose and visualize the entire tympanic annulus in one view of the microscope. (Fig. 2)

Wound was closed in two layers and mastoid dressing applied to provide pressure. Antibiotic was given for a period of one week to all patients.

Follow up – Sutures were removed seven days post operatively. First post operative check up done after 21 days for pack removal , subsequent check ups at 2nd 3rd and 6th month. Patients in both the groups were followed up with PTA at 6 months post surgery and otoscopic examination of the neotympanum for its intactness as criteria for formulation of the results. An intact neotympanum with air bone gap closure of 15dB at six months post operative, was considered as a successful result. Presence of a defect in the tympanic membrane or air bone gap more than 15 dB was considered as failure of outcome.

Findings - 50 patients were enrolled in the study. Age of the patients ranged from 15 to 60 years of age. Maximum patients were in the age group 30- 45 years. Group I had 11 males and 14 were females and in group II there were 10 males and 15 females.

Duration of symptoms in Group I cases were, 12 cases had symptoms for 0-6 months,9 cases for 6-12 months, and 4 patients had symptoms for more than 12 months. In Group II, out of the 25 cases, 14 had symptoms for 0-6 months,6 for 6-16 months and 5 cases had symptoms for more than 12 months.

Results

Analysis was based on graft uptake, hearing improvement and time taken for the surgery.

Graft uptake - At 6 month follow up 92% (23 out of 25 cases) had a successful outcome in the group I while the success rate in the group II was 84% (21 out of 25 cases).

Hearing assessment – Preoperative pure tone average was 36.16dB in Group I and 36.2dB in GroupII. Hearing assessment in terms of the air bone gap (ABG) was done in all cases. Preoperative average air bone gap was 28.64dB in the group with canalplasty and 24.04dB in the group without canalplasty. Post-operative audiometry was performed after 6 months in all cases. Post operative pure tone average was 23.24dB in Group I and 24.08dB in Group II. Postoperatively, average ABG in Group I was 17.40dB and in Group II it was 13.68 dB. There was a closure in the air bone gap of 11.4 dB in the group with canalplasty and 10.36 dB in the group without canalplasty. Maximum ABG closure, were in the range of 26-75% (moderate air bone gap closure) in both groups.

Time taken - Average time taken in group I was 54.2min (range 50-70 min) while in group II it was 52 min (range 45- 70 min).

Discussion

The fundamental principles of tympanoplasty were described by Wullstein and Zollner in 1956 and the classification of tympanoplasty was based on type of ossicular chain reconstruction performed.[1]

The present study was conducted on 50 cases of chronic otitis media (mucosal type). All the 50 patients underwent type I tympanoplasty with the post aural approach. A group of 25 patients were randomly

designated tympanoplasty with canalplasty as group I and another group II for tympanoplasty without canalplasty. Temporalis fascia was used as the graft material. These patients were followed up for a period of 6 months and were evaluated for graft uptake and hearing improvement.

The objective of the study was to determine the advantages and disadvantages of canalplasty on the results of type I tympanoplasty. Variations of the external auditory canal anatomy such as bony overhangs, stenosis, or tortuosity etc impede the view of the tympanic membrane. Even with manipulation of the patients head and microscope, sometimes margins of the perforation are not well delineated. Canalplasty

Table I : Summary of findings and results

CRITERIA	GROUP –I (WITH CANALPLASTY)	GROUP –II (WITHOUT CANALPLASTY)
Age (in years)		
15-30	07	05
30-45	10	12
45-60	08	08
Duration of symptoms (in months)		
0-6	14	12
6-12	06	09
>12	05	04
Hearing assessment in dB		
Preop pure tone average	36.16	36.20
Post op pure tone average	23.24	24.08
Preop air bone gap (average)	28.64	24.04
Post op air bone gap(average)	17.40	13.68
Improvement in air bone gap	11.24	10.36
Graft take up		
Taken up	23	21
Not taken up	2	4
Time taken (avg. in min)	54.2	52

helps to remove the distortions in the anatomy of the external canal and improve the view of the operative field. In a properly done canalplasty, the complete tympanic annulus can be viewed in one frame. There is no time wasted in manipulating the patients head, the microscope or the table. However there is a need for more bony dissection and drill work as compared to the non canalplasty procedure at the cost of extra operative time.

Age and sex

While otitis media is primarily considered to be a disease of childhood, the average age in our series was 31.87 years. Studies by other authors varied from approximately 30 years by McGrew et al and 33.2 years by Webb.[2,3] Males are more commonly affected by the disease. In our case there was a female preponderance of 29 :21. Prasad et al. in their study of 86 cases had 52% males and 48% females.[4] However, age does not sifgnificantly affect the outcome of the results in the study.

Graft uptake

Narrow external ear canals and small middle ear structure are known factors which lower the success of tympanoplasty.[5] Bhat reported a success rate of closure of 67% in anterior based perforations and 90% in posterior and infe¬rior quadrant perforations.

A difficult surgical manipulation was one of the major factors in poor success rates in anteriorly based perforations.[6] Certain studies have shown that size of the perforation may affect the graft uptake with large and near total perforations having a lesser success rate.[7] Khan, et al reported a success rate of 88% (65 out of 74 cases) in medium sized perforations and 67% (40 out of 60 cases) in subtotal perforations.[8] B.K.Roychaudhuri showed that failure rates are more in large or subtotal perforations. He achieved 94.44% graft uptake with the three flap technique.[9] However Wasson et al. did not find any correlation of size of perforation to graft uptake.[10] In our study group I had an uptake of 92% and group II an uptake of 84%. Though there was an 8% difference in the graft uptake, the result was not significant statistically.

Hearing result

The American Otosclerosis Study Group has recommended that hearing improvement is best evaluated by the percentage degree of closure of the ABG when calculated as a percentage.[11] Wang et al. and Collins et al. reported 90% and 83% in their study respectively.[12,13] In our study, we could achieve moderate improvement in the percentage closure of ABG. In a study comparing 100 cases of tympanoplasty with canalplasty and 100 cases without canalplasty, Vijendra et al achieved a 9 dB improvement in hearing in cases with canalplasty when compared to cases without canalplasty.[14] Our study achieved approximately 4 dB difference between the two groups which was statistically significant.

Table II : Statistical Analysis- Independent Sample Tests

	t test	p value	Test of significance(p< 0.05)
Improvement in ABG	**2.929**	**0.005**	**Significant**
Graft take up	**-0.859**	**0.394**	**Not significant**
Time taken	**1.249**	**0.217**	**Not significant**

Time taken for surgery

In our study, though there is more bone work involved in tympanoplasty with canalplasty, there was no statistical significant difference in time taken for surgery when compared with cases of tympanoplasty without canalplasty. Time spent on drilling in canalplasty is compensated by the time taken in manipulating the patients head, the microscope or the table when canalplasty is not done.[14]

Technique and effects of canalplasty

The annulus should be visualized all around in one view of the microscope. Taneja reported an increase of graft uptake to 91.3% in cases when tympanoplasty was combined with canalplasty.[15] Thermal injury transmitted from the burr may cause transient facial injury. In a study of 100 cases by Lavy and Fegan, 2% cases had partial, transient and delayed facial palsy.[16] A full, spontaneous recovery of facial function occurred in each case.

Conclusion

Anatomical and technical factors diversely affect the functional outcome of tympanoplasties. This study was carried out to compare effect of canalplasty on the outcome of results of type I tympanoplasty. Canalplasty helps in better visualization and hence facilitates better placement of the graft. Time spent on drilling in canalplasty is compensated by the time gained in grafting of the neo tympanum. It prevents lateralization of the graft due to the accurate exposure of the annulus. Post operative care is also easier in cases of canalplasty.

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Prevalence and Management of Otitis Media with Effusion Amongst the School Going Children of a Rural Area in Puducherry

Sharath Babu K,[1] Jayagar Prabakaran,[2] Shankar Radhakrishnan[3]

ABSTRACT

Background

Otitis Media with Effusion (OME) also known as Secretory Otitis Media, has been identified as the commonest middle ear condition causing deafness in children in developed countries. Neither the indication for surgical treatment nor the types and number of procedures used are uniform. Possible treatment includes myringotomy with or without insertion of ventilation tube either alone or with adenoidectomy and occasionally tonsillectomy.

Aims and Objectives

To assess the prevalence and the different modes of presentation of Otitis Media with Effusion among the rural school children of Puducherry and to assess the improvement in hearing after 6 months of surgical intervention done on patients with Otitis Media with Effusion.

Materials and Methods

A school screening camp was conducted on 600 children in the age group of 5-12 years in a government middle school near our medical college hospital for identifying children with Otitis Media with Effusion. Students with Otitis Media with Effusion were further classified into 4 groups for various interventional procedures namely adenotonsillectomy with bilateral grommet insertion (Group A), adenoidectomy with bilateral grommet insertion (Group B), bilateral grommet insertion (Group C), bilateral myringotomy with wide field incision in the antero-inferior quadrant (Group D).

Result

The prevalence was almost in equal proportions in the age group between 5-12 years and the overall prevalence of Otitis Media with Effusion among the study population was 13.3%. The adenotonsillectomy with bilateral grommet insertion procedure had shown a significant improvement in hearing, which was measured by using pure tone audiometry by assessing the mean air-bone gap, which was 9.81, 8.27 and 6.73 at the end of 6 weeks, 3 months and 6 months respectively, when compared to the other procedures.

Conclusion

Adenotonsillectomy with bilateral grommet insertion should be considered in a child with Otitis Media with Effusion who is at risk for speech/language/hearing loss.

Keywords

Otitis Media with Effusion; Prevalence; Adenoidectomy; Tonsillectomy; adenoidectomy; Grommet Insertion.

Otitis Media with Effusion (OME) also known as Secretory Otitis Media, has been identified as the commonest middle ear condition causing deafness in children in developed countries.[1] It affects children's learning ability through temporary and recurrent hearing loss, permanent hearing impairment and language disorders. Even slight hearing loss, in the order of 10-15 db may be sufficient to impair speech and language acquisition in infants and young children

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and may lead to a generalized educational retardation.[2] Children with hearing loss of more than 30db are significantly retarded in vocabulary level and are placed below their normal grade in school.' The prevalence of Otitis Media with Effusion (commonly known as glue ear) has increased in last 50 years, due to widespread inadequate use of antibiotics for the treatment of acute otitis media. The hearing loss may be latent or overt with the child rarely complaining of it.[3]

Two main theories of the cause of Acute Otitis Media exist. The classic explanation proposes that eustachian tube dysfunction is the necessary precursor. The newer models describe the primary event as inflammation of the middle ear mucosa caused by a reaction to bacteria already present in the middle ear. Indeed, Bluestone and others have shown (using radiographic evidence) that reflux up the eustachian tube is demonstrable in children prone to otitis media.[4] Furthermore, Crapko et al. demonstrated the presence of pepsin in the middle ear space of 60% of children with otitis media with effusion,[5] although this reflux certainly may also occur in otherwise healthy individuals.

Academic skills particularly in reading and other language based subjects may be affected when there is a high demand for attention to verbally presented information.[6] Several studies have shown that Otitis Media with Effusion also occurs in children in the developing countries even though they are not brought for treatment. Most parents pay attention to suppurative problems of the ear. The conductive hearing loss associated with OME must have been missed by parents and teachers.[7]

Neither the indication for surgical treatment nor the types and number of procedures used are uniform. Possible treatment includes myringotomy with or without insertion of ventilation tube either alone or with adenoidectomy and occasionally tonsillectomy. However diagnosis of these patients at an early stage can be a difficult task even for the clinician.[8] More difficult is choosing a surgical treatment considering the complications associated with each of these procedures.

This study hence attempts to throw light on the different modes of presentation, the various modalities of management and the improvement in hearing after surgical management of Otitis Media with Effusion.

Aims and Objectives

1. To assess the prevalence and the different modes of presentation of Otitis Media with Effusion among the rural school children of Puducherry
2. To assess the improvement in hearing after 6 months of surgical intervention done on patients with Otitis Media with Effusion.

Methodology

A prospective longitudinal study was carried out by the department of Otorhinolaryngology of a medical college and hospital in Puducherry. A school screening camp was conducted on 600 children in the age group of 5-12 years in a government middle school near our medical college hospital. Children with nasopharyngeal tumors, cleft lip and palate and students with sensorineural hearing loss were excluded from the study.

Adequate history was taken from all the 600 students as per the proforma. Detailed ear, nose and throat examination was performed and recorded. Otoscopic findings were confirmed with examination under microscope. Hearing threshold of both the ears as determined by pure tone audiometry was recorded. The type of tympanogram and the stapedial reflex was recorded. The students who had been diagnosed as having Otitis Media with Effusion had further underwent other relevant investigations like X-ray nasopharynx, X-ray mastoids and X-ray paranasal sinuses as per the requirement.

Out of 600 students 80 students were found to have secretory otitits media and those 80 were randomly grouped into 4 groups. Group A had 20 cases of Otitis Media with Effusion and underwent adenotonsillectomy and bilateral grommet insertion (Shepherd. Group B consists of 20 cases and underwent adenoidectomy with bilateral grommet insertion (Shepherd). Group C had 20 cases and underwent bilateral grommet insertion (Shepherd) and finally Group D with 20 cases underwent bilateral myringotomy with wide field incision in the antero-inferior quadrant. All the cases which were operated were discharged on the same day or in the first

post-operative day.

All the operated cases were followed up for a period of 6 months. Pure tone audiometry was performed on all these cases at the end of 6 weeks, 3 months and 6 months of surgery and the hearing improvement was assessed at the end of 6 months in each group and between groups.

Results

The age wise prevalence of Otitis Media with Effusion among the study population was shown in Table I. The prevalence was almost in equal proportions in the age group between 5-12 years and the overall prevalence of Otitis Media with Effusion among the study population was 13.3%. Similarly among the gender (Table II) the prevalence of Otitis Media with Effusion was 14.3% among males and 12% among females and it did not show any statistical significant difference between males and females (p=0.837).

Table I : Age wise prevalence of Otitis Media with Effusion among the study population

AGE GROUP (IN YEARS)	TOTAL NUMBER OF STUDENTS	TOTAL NUMBER OF CASES WITH OTITIS MEDIA WITH EFFUSION	PERCENTAGE
5 – 6	88	15	17%
6 – 7	85	14	16.4%
7 – 8	82	11	13.4%
8 – 9	84	12	14.2%
9 – 10	89	10	11.2%
10 – 11	86	9	10.4%
11 – 12	86	9	10.4%
Total	600	80	13.3%
p value (by Chi Square test)		0.761	

Pure tone audiometry was used to measure the pre-operative hearing loss among the patients with Otitis Media with Effusion according to the type of interventions they had been planned to undertake (Table III). The mean air-bone gap was used as a measure to assess the amount of hearing loss in the patients. The pre-operative air-bone gap measured by pure-tone audiometry among the patients who had been assigned to various modes of intervention was almost similar and there was no statistically significant difference in the readings between them (p = 0.639).

The audiometry recording was done 3 times post operatively, in the 6th week, 3 months and at the end of 6 months for all the patients who had undergone the various modes of interventions and it was compared with their pre-operative audiometry readings (Table IV). It was reported that in all the procedures namely, adenotonsillectomy with bilateral grommet insertion (Group A), adenoidectomy with bilateral grommet insertion (Group B), bilateral grommet insertion (Group C), bilateral myringotomy with wide field incision in the antero-inferior quadrant (Group D), the readings of the air-bone gap had significantly reduced during the follow-up period when compared to the pre-operative readings (p<.0001).

Table II : Gender wise prevalence of Otitis Media with Effusion among the study population

GENDER	TOTAL NUMBER OF STUDENTS	TOTAL NUMBER OF CASES WITH OTITIS MEDIA WITH EF-FUSION	PERCENTAGE
Male	334	48	14.3%
Female	266	32	12%
Total	600	80	13.3%
p value (by Chi Square test)		0.837	

Table III : Preoperative hearing loss among the patients with Otitis Media with Effusion according to their mode of intervention

GROUP	MODE OF INTER-VENTION	MEAN AIR-BONE GAP	SD
A	Adenotonsillectomy + Grommet insertion	31.15	6.4
B	Adenoidectomy + Grommet	29.4	6.4
C	Bilateral grommet insertion	28.35	5.85
D	Bilateral myringotomy	27.5	4.88
p value (ANOVA)		0.639	

The hearing improvement was also measured between the groups (Table V). The adenotonsillectomy with bilateral grommet insertion procedure had shown a significant reduction in the air-bone gap when compared to the other procedures and this was followed by adenoidectomy with bilateral grommet insertion.

Discussion

In our study a total of 600 students were checked for ear pathologies in which 334 were males and 266 were females. The disease prevalence of Otitis Media with Effusion was seen in 80 students, i.e. 14.2% were males and 12% were females with overall percentage of 13.3% among the rural school going children.

A study done by Okolugbo et al.[9] on prevalence of Otitis Media with Effusion amongst primary school children in Benin city Nigeria had shown the prevalence as 15.9%. This value was quite close to that of Ijaduola et al.,[10] 18.6% and 18.2% which was obtained by Nwawolo et al.[11]

Adhikari[12] in his study over 1245 students in Kathmandu valley during the calendar year of 2008, found Otitis Media with Effusion as 3.7%. Shah[13] found incidence Otitis Media with Effusion as 8.31%, of which 8.50% were males and 7.49% were females. Maximum number of cases were in 6 to 7 years of age group which is 13.21%. In our study the prevalence of Otitis Media with Effusion is 13.3% and is maximum in the age group of 5 to 6 years.

Amusa et al.[14] in 2005, found Otitis Media with Effusion to be less than 1% in 600 children in 0-12 age group of tropical African population. Shaheen et al.[15] in the year 2008, found Otitis Media with Effusion from 5 different rural primary schools of Palash Upazilla of Narsingdi district as 9.8%. Mozaffarinia[16] found the prevalence of Otitis Media with Effusion as 5.7% amongst 1001 students of kindergarten schools of Kerman city, Iran in year 2010 in which 50% were asymptomatic.

A study done by Yadav et al.[17] on prevalence of Otitis Media with Effusion among the government school children in Haryana found that 20.75% of children in the age group 7-12% had Otitis Media with Effusion and also quoted that lower socio economic status and poor hygiene as the major contributing factors, which was almost in par with our results.

The prevalence of Otitis Media with Effusion in our study was comparatively higher than the previous studies, as almost all the students in our study belong to a low socio-economic status studying in a government school and their personal hygiene was very poor.

Climatic conditions also have an influence in the development of Otitis Media with Effusion. A study done by Kowen,[18] Silvia[19] and Liu-Li-Min[20] reported higher prevalence of 24%, 27% and 30% respectively, however, they studied children in the age group of 2-4 years.

In the present study, on comparing the various treatment modalities for students with Otitis Media with Effusion, adenotonsillectomy with grommet insertion had best results followed by adenoidectomy with grommet insertion. In 2004, Coyle,[21] in a study compared the effects of adenoidectomy, adenotonsillectomy and

Table IV : Comparison of pure tone audiometry readings before and after various interventions among the study population

MODE OF INTERVENTION	MEAN AIR – BONE GAP				P VALUE (ANOVA)
	PRE-OP	6 WEEKS	3 MONTHS	6 MONTHS	
Adenotonsillectomy + Grommet insertion	31.15	9.81	8.27	6.73	<.0001
Adenoidectomy + Grommet	29.4	13.27	9.04	7.5	<.0001
Bilateral grommet in-sertion	28.35	13.12	11.04	10.83	<.0001
Bilateral myringotomy	27.5	13.96	13.96	13.12	<.0001

Table V : Comparison of pure tone audiometry readings among various interventions among the study population

MODE OF INTERVENTION	MEAN AIR – BONE GAP		
	6 WEEKS	3 MONTHS	6 MONTHS
Adenotonsillectomy + Grommet inser-tion	9.81	8.27	6.73
Adenoidectomy + Grommet	13.27	9.04	7.5
Bilateral grommet insertion	13.12	11.04	10.83
Bilateral myringotomy	13.96	13.96	13.12
P value (ANOVA)	<.001	<.001	<.001

ventilation tube. They found that at 6 months after surgery there was an average of 15.40 dB improvements in hearing threshold after adenoidectomy with tube insertion, 12.18 dB in adenoidectomy and 15.15 dB in ventilation tube insertion. There was just 3.60 dB improvement in the no surgery group. On long term follow up they found adenoidectomy results in long term sustained resolution while grommet insertion produces immediate resolution.

A study conducted by Ryding[22] compared myringotomy, tympanostomy tube and medical line of treatment. He found that tympanostomy tube and myringotomy produced significant improvement in hearing when compared to the medical line of management.

In a prospective randomized study in 2007 by Vlastarakos,[23] the mean threshold level after adenotonsillectomy with grommet decreased from 32.5 dB to 16.0 dB after 6 months. The mean hearing threshold after adenoidectomy with grommet insertion, adenoidectomy, adenotonsillectomy and grommet insertion decreased from 33.2 dB to 16.4 dB, 33.2 dB to 20.4 dB, 32.6 dB, 18.8 dB and 31.3 dB to 17.5 dB respectively after 6 months of surgery. Therefore there is a better clearance after adenotonsillectomy with grommet insertion than after plain adenoidectomy

with grommet insertion. Even adenoidectomy or adenotonsillectomy without grommet too produces good amount of improvement in hearing at 6 months. Similar type of results was also shown by Kouwen.24

Conclusion

The prevalence of Otitis Media with Effusion in the present study was 13.3% and poverty and poor hygiene were the major factors contributing to the development of the otiits media. Among the treatment options adenotonsillectomy with grommet insertion had shown a better improvement in hearing followed by adenoidectomy with grommet insertion and myringotomy grommet only. It is recommended that surgical intervention should be attempted as early as possible when the medical management fails to respond. Among the various surgical intervention adenotonsilectomy was found to have a better improvement in hearing in our study.

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Vertigo, Can It Be Redefined?

Bhabani Kumar Choudhury[1]

ABSTRACT

Background & Objectives

Vertigo, a clinical symptom complex is not infrequent in our patients. Its diagnosis too is controversial. Majority of these cases run from hospital to clinics, some times to Otolaryngologists to get rid of this bizarre experience. Sometimes they get benefit but otherwise they experience a destitute life.

Our aim was to treat them by Physical Therapy in the light of Cervical Spondylosis that is commonly associated with vertigo.

Material & Methods

This is a prospective case study done in PMR department (OPD) of a teaching institute over a period of 6 months time period. 20 OPD patients of both sexes (14 ladies and 6 gents) with definite Cervical Spondylosis (CS) along with complain of vertigo or dizziness, pain at cervical spine were accounted for the study. Only extreme aged persons or patients with other major co-morbidity were excluded. These 20 patients were treated with conventional Physical Therapy for CS. Medications were prescribed as and when required.

Results

After Physical Therapy, that included lifestyle modification, isometric cervical exercise, intermittent cervical traction, application of Ultrasonic Therapy (UST) to cervical region and proper posture care of cervical spine along with use of cervical orthosis (where needed), majority of the patients become symptom free.

Conclusion

Physical Therapy may be considered as an alternative method of treatment of Vertigo patients, who are otherwise not responding satisfactorily to pharmaceutical agents.

Keywords

Vertigo; Dizziness; Spondylosis; Cervical Vertebrae; Vertebral Artery; Physical and Rehabilitation Medicine; Exercise Therapy; Ultrasonic Therapy; Traction; Life Style.

Cervicogenic Dizziness or Vertigo is an infrequent human manifestation. Sometimes confusion arises- are these two terms synonymous? More or less they are almost similar but commonly we often use the term "Dizziness".

Cervicogenic Vertigo or Dizziness tends to be a controversial diagnosis, because there are no definite diagnostic tests to confirm that vertigo or dizziness is solely due to the presence of any pathology at the Cervical Spine.

Normally it is a diagnosis that is linked to the persons who have trauma to Cervical Spine along with pain and dizziness, in which other common causes of dizziness have been ruled out. Definitely the numbers of such cases are less but now-a-days in clinics and hospitals it is in vogue.

Cervical Vertigo or Dizziness that is provoked by a particular neck posture no matter what the orientation of the head is to the gravity as it occurs by turning the head about the vertical axis while sitting upright. Seventy years ago Ryan and Cope postulated about the same. When Cervical Vertigo or Dizziness is diagnosed, the usual symptoms are vertigo or dizziness associated with neck movements, contrary to BPPV. There should not be any aura, tinnitus, hearing loss or otalgia etc.

Brandt (1996) had reviewed this topic from a diagnostic perspective.[1] Several other authors like Wrisely (2000) reviewed the Physical Therapy approach towards its management.[2] Brandt (1996) have extensively worked on it. Unfortunately, there is still no consensus judgment

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how does one come to the diagnosis of Cervical Vertigo. Literatures too show poorly carried out studies regarding the diagnosis as well as the necessary management.

Cervical Spondylosis or the commonly known degenerative condition of the cervical spine (Here I would like to spare the term Osteoarthritis of Cervical Spine) is common feature of middle aged or pretty aged persons. Now it is becoming common among young men and women especially in those who work at IT sector or BPO offices. In this degenerative state, the cervical vertebrae become soft, deformed of their normal shape and subsequently new bony out growth or osteophytes appear on the vertebral bodies. Ultimately the normal height of each involved vertebra is reduced so also the total height of cervical vertebral column. In addition to the above changes the corresponding facetal joints can also be involved. As a result the vertebral arteries passing through the vertebrae will be effected i.e. reduction in the length of the arteries or compression by the osteophytes as in Bow-Hunter syndrome. This results into either neurological or vascular symptoms. A vascular manifestation turns into transient insufficient flow of blood to the cerebral cortex, resulting to dizziness or vertigo.

Vertigo is presently considered a problem when there is mechanical compression during head rotation along with musculo-tendinous insertions and osteophytes starting from C1 to C6 level. Dynamic cerebral angiography is the preferred method of documenting this but it is seldom done due to the associated hazards and minimum positive findings. It is to mention here that Subclavian Artery Syndrome is not always a likely cause of cervical dizziness, though enlarged Cervical Rib as in Thoracic Outlet Syndrome may cause pressure upon Subclavian Artery which feeds the vertebral artery that may lead to Vertigo. Nystagmus along with vertigo occurring during turning of trunk, in relation to head, clearly points to wards a cervical origin of vestibular vertigo.

Non-vestibular causes of Dizziness

Dizziness or vertigo can be linked to a wide array of conditions linked to blood flow irregularities. Dizziness may appear from an aneurism, arrhythmia, atherosclerosis, carotid sinus reflex and persons with degenerative arthritis of the spine with or without bony spurs pressing on the vertebral arteries and interfere with blood supply to the brain. Many poorly informed persons hold that cervical vertigo does not exist. But the incidence is not very low rather it is estimated that 20% -58% of patients who sustain closed head injuries or whiplash, experience late onset symptoms of dizziness, vertigo and disequilibrium. According to Takasaki, Jhonston et al. (2011), Whiplash Associated Vertigo (WAV) occurs in 73% persons having vertigo or dizziness.[3]

Different views on causation are there like kinking of vertebral artery by osteophytes, proprioceptive loss of facet joints etc for the initiation of dizziness or vertigo in persons having cervical spondylosis resulting into vertebro-basilar ischemia.

Therefore Cervical Vertigo is a matter of considerable concern. When it is diagnosed, the usual symptoms are dizziness associated with neck movement but there should not be any hearing disturbance or hearing loss (other than tinnitus) but there may be otalgia. So scientists like Wrisely (2000)[2] reviewed Physical Therapy approach as a modality for treatment of vertigo.

Diagnosis of Cervical Vertigo

Before going for investigations, it is always necessary to carry out a clinical examination at the cervical spine. Active as well as passive range of movement (ROM) in all direction at the cervical spine is carried out. Tenderness along the para-spinal area is elicited.

In order to establish cervical vertigo it is always necessary to go for plain Roentgenography of cervical spine with antero-posterior and lateral view. Some times right or left oblique views are necessary. Presence of degenerative changes in cervical vertebrae, osteophyte formation and change in cervical curvature are prominent features of cervical spondylosis. It is necessary to rule out presence of cervical ribs, hypertension and hypothyroidism.

Once diagnosis is made that cervical spondylosis is the probable cause of vertigo or dizziness, necessary therapeutic management is planned. The mainstay of management is Physical Therapy.

Material and Methods

20 patients which included 14 ladies and 6 gents were selected from the OPD patients attending Physical Medicine & Rehabilitation department having vertigo as the chief complain with or without pain along cervical spine. This study was conducted for duration of six months.

Each patient's problem was noted and they were clinically examined meticulously as described above. Radiological investigations, computerized tomography of cervical spine were also done to establish cervical spondylosis. Anatomical curvatures of cervical spine were also noted.

Management - Physical Therapy (Physiotherapy)

Physical Therapy incorporates Therapeutic Exercises, Postural Care for Cervical Spine, Intermittent Cervical Traction, use of Therapeutic Ultrasound and use of neck immobilizer such as Cervical Orthosis commonly known as Collars.

Commonly therapeutic exercises include isometric or static cervical exercises. It is done for 10 repetitions for10 seconds each in flexion, extension, right and left rotations and right and left lateral tilt. Side by side shoulder girdle exercises are to be performed.

Posture care is the proper anatomical position of cervical spine. And such use of low height pillow during sleep is advised to the patient. Nowadays, orthopedic pillows are available in the market. Besides deep breathing exercise also help in adequate oxygenation in the circulation.

In addition to exercise therapy cervical traction is a modality of Physical Therapy. It is usually applied in lying position with a traction force of 2 kg in intermittent manner i.e. 8 seconds of distraction along with 2 seconds of relaxation for a time period of 10 to 15 minutes preferably two times daily for 5 days a week for 2 weeks. Along with therapeutic exercises and intermittent cervical traction therapeutic Ultra-Sound is applied to cervical area. This therapy acts as micro massage to the soft tissues at the cervical spine thereby it increases the blood supply to the local area as well as to the cerebral cortex.

For minimizing cervical spine movement it is sometimes necessary to use cervical orthoses known as collars. But it should be used as and when necessitates.

Results

Out of 20 patients, 17 patients were relieved of their problems of reeling head. Their symptoms reduced gradually over a period of about three weeks. Pain around cervical spine also diminished significantly in persons having pain as additional symptoms. This was a subjective observation as no tool is available to measure objectively.

These patients were advised to continue therapeutic cervical exercises for long time and maintain cervical curvature by postural care. Some of the patients had been advised for lifestyle modification and physical ergonomics.

Conclusion

Earlier view of "Cervicogenic Vertigo" a myth has now been observed as realty. Time has come that we have to think otherwise beyond internal ear i.e. vestibular problems.

So it is to be seen that a fairly good number of patients having Cervical Spondylosis, may present vertigo or dizziness as major complainant before the family physicians or the specialists. Treatment with conventional Physical Therapy for cervical spondylosis along with co-medications like Cinnarizine, Prochlorperazine Betahistine, Meclizine etc may be incorporated in order to make the patients symptom-free. Hence now onwards we would like to rethink the other way of management, for these few persons suffering from such uncomfortable condition.

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An Arrow Penetrating the Globe and the Sinonasal Complex – A Case Report

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ABSTRACT

Introduction

Foreign bodies represent on average 11% of all ENT emergencies. Associated eye trauma represents 5% of all cases of blindness in developing countries. Accidental and homicidal arrow injuries presenting to an otorhinolaryngologist are still a stark reality in this modern era.

Case Report

A 22 year-old female presented with an accidental arrow injury in her left eye; extending into the nose. On examination, she had no light perception in left eye and a penetrating injury of the sclera. CT scan showed extensive injury to ipsilateral nasal cavity, floor of left orbit and the maxillary sinus and anterior ethmoid cells. Multidisciplinary approach ensured removal of the unusual foreign body from the orbit, nose and paranasal sinuses.

Discussion

Accidental injury in ear, nose or throat with sharp projectiles presents a challenge. Arrowhead may be poisoned and thus exploration is delayed until the systemic effect of the poisoned is reduced. An injury such as this involves a multidisciplinary approach. As ENT surgeons we must be aware such challenges and equip ourselves with the knowledge to tackle them.

Keywords:

Emergencies; Foreign Bodies; Developing Countries; Arrow; Orbit; Blindness; Ethmoid Bone; Nose; Paranasal Sinuses.

The use of bow and arrow simply for acts of play despite its lethal uses can often lead to a fatal outcome. Its use for hunting and wars have been a tradition amongst the tribals of India. Due to this scenario, accidental and homicidal arrow injuries are still a stark reality in this modern era. This leads to loss of life and other forms of morbidity such as blindness. We present a case of non-fatal transorbital arrow injury to the eye and paranasal sinuses.

High velocity projectile injuries merit certain management adaptations from gunshot or low velocity stab wounds. This case highlights the necessity for retrograde removal of the arrow in the direction of its line of trajectory. There is need for colleagues in various disciplines to be aware of such injuries because managing these patients requires a multidisciplinary approach.

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Case report

A 22 year-old female from a remote rural area of Gangarampur, Balurghat, sustained an accidental arrow injury in her left eye extending into the nose (Fig. 1). The arrowhead got stuck and she developed pain, redness, bleeding from the injured eye, loss of vision and epistaxis from both nostrils. She was brought to the nearby rural health centre, the shaft was cut and then she was referred to Ophthalmology Emergency Room of a Tertiary Care Hospital. After ophthalmological evaluation the patient was referred to Otorhinolaryngology Department for subsequent assessment nearly 16 hours after being injured.

On examination, the unaided visual acuity in her right eye was 6/6 (Snellen's chart) and other examinations were normal. She had no light perception in the left eye. On further examination, the left eye had a tear in the upper eyelid and a penetrating injury of the sclera, a few millimetres away from the limbus extending from the 1 o'clock to the 3 o'clock position, and uveal tissue prolapse. About 1 cm of the arrowhead was visible

Fig. 1 The patient at presentation with the stem of the arrowhead peeping near the lateral canthus of the left eye (white arrow)

Fig. 2 Arrow seen penetrating the left eye

from the outside (Fig. 2). On manipulation, the arrow did not show any movement and appeared to be fixed to deeper structures. The cornea was hazy and there was hyphaema. The pupil was round, dilated and did not respond to light. Nasal examination revealed that the arrow had breached the left lamina papyracae, entered the ipsilateral nasal cavity passed across the nasal septum to enter the contralateral maxillary sinus. A CT scan of orbit, nose and paranasal sinuses was performed to corroborate the examinational findings. The floor of the right orbit and maxillary sinus were not involved. Anterior ethmoidal cells on the left were involved. Lower third of the nasal septum was breached and pushed to the right side. Medial wall of the opposite maxillary sinus was involved (Fig. 3). There was no systemic involvement.

It was decided to explore the wound, but keeping in mind that arrowheads are often poisoned, enough time was allowed to pass before exploration. On exploration under general anaesthesia, the arrowhead was found fixed to the medial wall of the orbit. As the globe was already ruptured, partial evisceration of the left eye was performed by the ophthalmologists and the patient handed over to the Otolaryngologists. After removal of the uveal tissues, the wide flange of the posterior end of thr arrow was seen within the globe. A cruciate incision was made lateral to the left lateral canthus at the point of entry in order to release the end of the arrow. The arrowhead was pulled out by firmly gripping it and dislodging it from the medial wall of the orbit

Fig. 3 CT Scan showing arrowhead traversing the left orbit and nasal cavity

and the nasal cavity without much bleeding. Rotatory or twisting movements were avoided as they could have resulted in extensive fracture of the orbital wall. The rear portion of the arrowhead (the widest part) was gently negotiated through the scleral wound and finally the entire arrowhead was removed (Fig. 4). Evisceration was completed.

Nasal endoscopy using 0 and 45 degree endoscopes was done to evaluate the nasal cavity. Fortunately, there was minimal bleeding from the septum and lateral wall of the left nasal cavity with minimal tissue loss. The septal perforation was small and did not call for repair. Nasal packing was done with Merocel (Tm) was done to prevent synechiae. The canthal injury was repaired. The arrowhead measured 10 cm in length, 9 cm of which was inside the point of entry. The breadth of the arrowhead inside the orbit was 15 mm (widest part) (Fig.5). The patient was treated with systemic and topical antibiotics and analgesics. The post-operative period was uneventful. Follow up was done at 1 and 3 months postoperatively by clinical examination and nasal endoscopy which did not reveal any synechia or feature of sinusitis.

Discussion

Foreign bodies represent a frequently encountered pathology in emergency ENT practice. According to Dutta et al., these represent on average 11% of all ENT emergencies.[1] Eye trauma represents 5% of all cases of blindness in developing countries.[2] Rarely, foreign bodies traverse the orbit into the cranium or to the adjacent paranasal sinuses causing extensive damage to the surrounding structures. The orbit measures about 3.5 cm vertically and 4 cm horizontally. Occasionally, a sharp thin foreign body traverses the globe to reach the recesses of the orbit, particularly if it enters with sufficient force and is of sufficient size to gain great momentum. In these circumstances, it may cause damage beyond the confines of the orbit. The orbital walls could get fractured - usually the greater wing of sphenoid, the petrous portion of the temporal bone and the sella turcica are affected. After traction of the orbital walls, the foreign body may enter the frontal sinus, the sphenoid bone or the nose. Metallic arrowheads have been described in the literature by Hirschberg (3.2cm long) and by Steindorff (2.5cm long).[3]

In our case, nearly 9 cm of the arrowhead was inside the point of penetration. The CT scan of the orbit demonstrated that it had reached the contralateral nasal cavity. While retained foreign bodies in the nasal cavity are not in themselves unusual, the route which this foreign body traversed makes it an interesting case study. Based on the wound location and extent of injury, it was inferred that the arrow punctured the eyeball at 1 o'clock to 3 o'clock positions. It narrowly missed the cribriform plate. Conservative treatment was not considered as there were comprehensive effects on the

Fig. 4 Delivery of arrow from the orbit

Fig. 5 The arrowhead after removal from the orbit

Fig. 6 Clinical photograph (3 months post-operative)

eyeball and communication was established with the ethmoidal sinus, maxillary antrum and the nasal cavity. As the patient had no light perception in the injured eye and there was possible risk of sympathetic ophthalmia, a partial evisceration and endoscopic examination of the nose and sinuses were done. However, in such cases pyogenic infection is always a risk, leading to the onset of periostitis and fistula formation. There may also be a risk of gas gangrene formation, development of tetanus, chronic sinusitis (when a sinus is involved), meningeal infection or cerebral abscess formation (if cranial cavity is involved). In this case, the 3 months follow-up period was uneventful. (Fig.6)

Conclusion

Penetrating injury to the orbit and nose by an arrowhead in our present scenario is a rare challenge for any surgeon. High velocity projectile injuries merit certain management adaptations from gunshot or low velocity stab wounds.[4] Certain salient features must be kept in mind when dealing with such cases. Firstly, unlike other projectiles, the arrowhead may be poisoned and thus exploration is delayed until the systemic effect of the poison is reduced.[5] Secondly, this involves a multidisciplinary approach. As ENT surgeons, we must be aware such challenges and equip ourselves with the knowledge to tackle them.

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A Rare and Unusual Cause of Epistaxis

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ABSTRACT

Introduction

Leeches are blood sucking parasites of the phylum Amelida subgroup Hirudinea. Leech infestation is known as hirudiniasis. Endoparasitic infestation by leech is rarely reported in literature. The parasites enter the body by bathing or drinking infected water. They attach to the mucosa of the aerodigestive tract and suck blood whereby greatly increasing in size, with resultant clinical symptoms.

Case Report

A 52 year male presented with unilateral epistaxis and nasal obstruction. Nasal examination revealed a live leech. The leech was found lodged in the nasopharynx. The patient was unaware of the leech in his body. The leech was removed alive with the use of a nasal endoscope under local anaesthesia.

Discussion

Leech infestation is a rare cause of epistaxis. Absence of pain and difficult visualisation make the diagnosis difficult and delayed. There are various methods described in literature to remove leeches from the body. General anaesthesia may be required for its removal especially in children and when the leech is lodged in the tracheobronchial tree.

Conclusion

The aim of presentation is to report a rare unusual cause of epistaxis, leech infestation of the nasopharynx and method of removal of the leech safely under local anaesthesia.

Keywords

Leeches; Epistaxis; Nasopharynx.

Leeches are Annelids belonging to the subgroup Hirudinea.[1] Leech infestation is known as hirudiniasis. Endoparasitic infestation by leech is rarely reported in literature. The parasites enter the body by bathing or drinking infected water. They attach to the mucosa of the aerodigestive tract and suck blood whereby greatly increasing in size, with resultant clinical symptoms.[2] Leeches abound in springs, streams and pools, mostly in tropical countries.[3] They are known to enter the body through various orifices, especially the nose and mouth and cause intermittent bleeding.

Leeches attach themselves to human tissues with intention of sucking blood. The saliva secreted by leech contains hirudin, an anticoagulant, and a histamine like vasodilator by which it sucks and feeds from the tissue it attaches.[4] Though it can cause serious and life threatening complications, leeches have been used to stimulate circulation to salvage grafts in reconstructive surgery.[5]

Diagnosis is difficult and delayed due to lack of suspicion of the condition and difficult visualisation. Removal should be done gently to remove the leech in toto and prevent bleeding, usually requiring general anaesthesia.[6]

Presented is a rare case of epistaxis due to leech infestation of the nasopharynx, the presence of which the patient did not know or suspect. With proper visualisation and technique, we were able to remove the leech completely under local anaesthesia.

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Case Report

A 52 year old male, resident of Ranikhet, Uttaranchal, India, presented to the outpatient with a three day history of bleeding from the left side of the nose. He also had an intermittent feeling of nasal obstruction in the left nostril. He visited a local practitioner who started him on anti-hypertensive therapy for mild hypertension (Tab.

Atenolol 50mg once a day). However, since his epistaxis persisted and was getting worse, he was referred to the ENT outpatient as a case of hypertension with epistaxis.

The individual gave no history of pain, sneezing, nasal discharge or altered smell sensation. There was no history of trauma or habit of nose picking. He gave no history of visual disturbance, headache or facial pain. There was also no history of any aural symptoms like fullness in the ears, tinnitus or hearing loss. No difficulty in breathing or swallowing was present. The patient gave no history of easy bruising, or taking any anticoagulants. There was no previous history of similar bleeding episodes. There was no family history of any bleeding disorder or hypertension.

On general examination, the individual was averagely built and nourished. His vitals were stable, Blood pressure was 130/80mmHg (on anti-hypertensive). He had no pallor or icterus. Investigations done the previous day, showed a Haemoglobin level of 12.5gm%. His coagulation parameters were all within normal limits.

Endoscopic examination done under local anaesthesia (4% Lignocaine) revealed a blackish slimy mass in the left nasal cavity. On touch it was seen to wiggle! Under endoscopic vision a Tilley's forceps was introduced into the nose along the septum. The mass was gently pulled out with forceps and was found to be alive 9cm x 1 cm leech. (Fig.1) It was attached to the nasopharynx. There was no appreciable bleeding on removal. The right nostril, nasopharynx and throat were clear.

Upon enquiry, the patient disclosed that he had bathed in a freshwater spring about a week prior to the onset of symptoms.

Discussion

Leech infestation is a rare cause of epistaxis. It is not commonly mentioned as a cause of epistaxis in textbooks.[7] Till date there are very few cases of leech infestation of the nasopharynx have been reported in literature.

The leech is a blood sucking annelid. Both aquatic and land leeches are known to attack humans. Aquatic leeches are found in freshwater springs and streams. Our patient had a swim in a freshwater spring a week preceding his symptoms. The leech enters the orifices and attach to the mucosal surfaces of the aero-digestive tract (nasopharynx, pharynx, oesophagus and even trachea) or the lower genitourinary tract (urethra or vagina). The leech has a pair of powerful clinging suckers. It injects an anaesthetic so that its presence is not detected and anticoagulant (Hirudin) in order to keep the wound oozing.

They present with signs of bleeding such as epistaxis, haemoptysis or anaemia[8] and features of local obstruction or irritation. Unprovoked recurrent unilateral epistaxis is the commonest presentation of leech infestation of the nose.[3] Leeches can ingest blood upto nearly 90% of its body weight leading to severe anaemia with the need of giving blood transfusions. Asphyxiation may occur if the leech lodges in the larynx, hypopharynx or the laryngeal inlet. A case of hirudiniasis of the eye and a case of bilateral nasal hirudinasis have been reported in literature.[9,10] Hence it is imperative to examine other common sites of leech infestation also in cases of endoparasitic infestation by leeches.

Various methods have been used to remove the foreign mass such as hypertonic saline,[11] glycerine phenice[12] or by applying a sharp pull.[13] It is imperative to grasp the

Fig. 1 Live leech removed from the nasopharynx

leech as close to its attachment to the tissue as possible. Leaving the mouth parts can cause persistent oozing, hence one should not tug of pull the leech forcefully.[14] General anaesthesia is preferred in leech removal in children[3] and tracheobronchial tree.[8] In our case local

anaesthesia and a gentle traction with the Tilley's forceps was sufficient to pull the whole leech out.

Conclusion

Leech infestation of the nasopharynx is a very rare entity as a cause for epistaxis and should always be kept in mind while treating a case of epistaxis in a patient belonging to an area where springs are common. Removal is best done under anaesthesia, local or general, with a gentle pull. Other sites of the aero-digestive and genitourinary tracts must also be examined in cases of nasal hirudiniasis for other sites of infestation.

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Large Neurilemmoma of Buccal Mucosa in a Child – A Rare Entity

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ABSTRACT

Introduction

Neurilemmoma or Schwannomas are benign tumour arising from the nerve sheath of myelinated nerve. Head neck neurilemmomas are not uncommon but intraoral region is very uncommon for this type of tumour.

Case report

A very rare case of buccal neurilemmoma in an eleven year old child, but much larger than other reported case is reported in the present article with review of literature.

Discussion

Among the intraoral subsites, very few cases of neurilemmoma are reported to be situated in the buccal mucosa. Diagnostic dilemmas due to Fine needle aspiration cytology with features often resembling that of pleomorphic salivary adenomas are reported. The size of the tumour was larger than the cases reported in literature till date. The age of the patient was also much younger than the other reported cases, which made the present case unique.

Keywords

Neurilemmoma; Cheek; Magnetic Resonance Imaging; Histopathology.

Neurilemmomas are benign tumors arising from the Schwann cells of peripheral, cranial and sympathetic nerves. The terms Neurilemmoma and Schwannoma are often used interchangeably.[1] One-fourth of Extracranial neurilemmomas occur in cervicofacial region but intraoral neurilemmomas are extremely rare with only 1% incidence.[2] Tongue is the most common intraoral subsite,[3] but neurilemmoma in buccal mucosa are seldom reported. Due to scarcity of the reported cases, no specific clinical features are described in texts, and the final diagnosis can only be arrived after histopathological examination or sometimes immunohistochemistry. One such extremely rare case in an 11 year old boy is reported in the present article along with literature review.

Case Report

An eleven year old male patient presented in outpatient department with a swelling in left cheek for the last one year. There was no history of trauma or surgery. The swelling was painless, gradually progressing in size, and not associated with any signs of inflammation.

On inspection, a single large swelling of about 6x2 cm was present in the left cheek pushing the angle of mouth inferiorly. The skin over the swelling was normal. Intraoral examination revealed that the swelling was submucosal at the inner aspect of upper lip and extended up to the buccal mucosa opposite to the left second molar tooth.(Fig.1)

The gingivolabial and the gingivobuccal sulcus were not involved. Oro-dental hygiene was well maintained and dental status was appropriate for the age.

On palpation, there was a single, non-tender swelling of 6x2 cm size. It was firm, bosselated, mobile and not fixed to the buccal mucosa or the overlying skin. The cervical lymph nodes were not palpable.

The patient was subjected to fine needle aspiration cytology (FNAC) shows epithelial cells and myoepithelial cells arranged in a background of fibromyxoid stroma giving a likely impression of pleomorphic minor salivary

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gland tumour.

Magnetic resonance imaging was then advised to assess the extent and other soft tissue involvement

Fig. 1 Clinical photograph of the patient

which showed a lobulated hyperintensed soft tissue lesion involving anterior portion of left cheek without much perilesional oedema.(Fig. 2)

Complete excision of the mass under general anaesthesia was planned. Wide excision of the tumour along with rim of normal tissue was done via intra-oral route. Macroscopically, it was a rubbery, tan-white, lobulated mass with size of 7x3 cm.(Fig. 3)

Microscopically, there were hypercellular areas (Antoni A) composed of monomorphic spindle shaped schwann cells forming verocay bodies in focal spaces interspersed with hypocellular (Antoni B) areas. Some thick hyaline walled blood vessels were also seen.(Fig. 4)

Based upon the presentation, clinical, radiological and histopathological findings the diagnosis of Neurilemmoma of the buccal mucosa was made. At 15 days post-operative follow-up, surgical wound was healed completely and the swelling was resolved. (Fig. 5) The patient was followed up for 12 months further without any recurrence.

Discussion

The term 'Schwannoma' had been attributed in the past either for neurofibroma or neurilemmoma. But the present concept is that, the first one originates from perineural cells and the latter one from Schwann cells and the term schwannoma can be interchangeably used

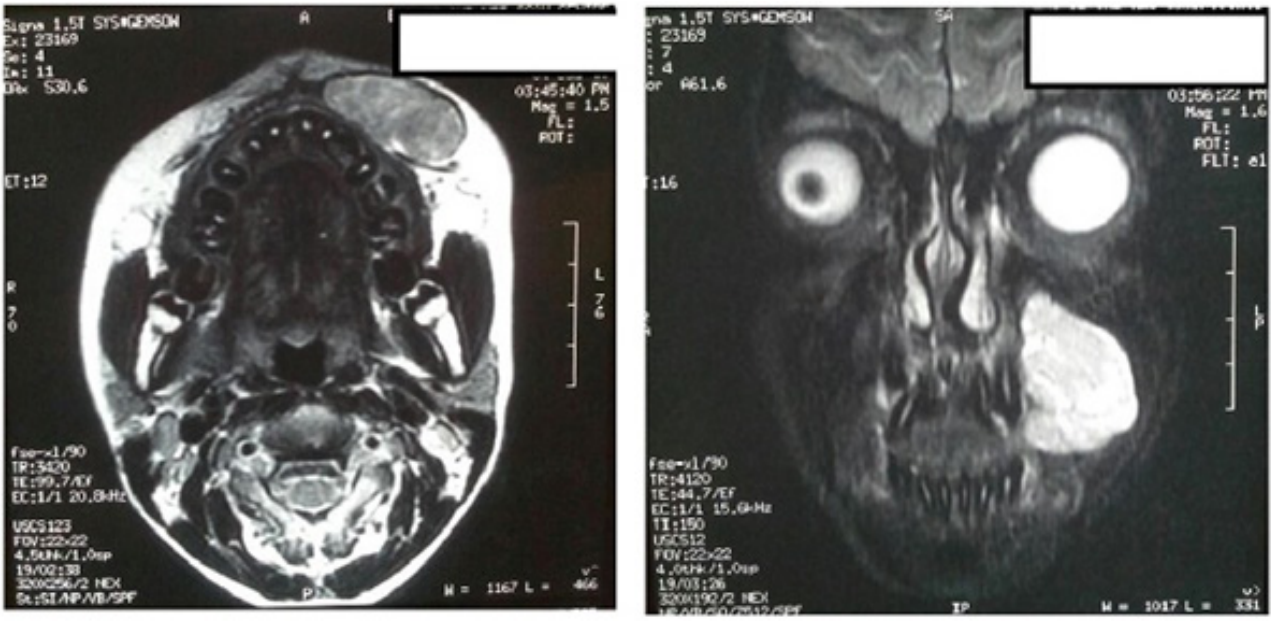

Fig. 2 Magnetic resonance imaging (axial and coronal views)

with neurilemmoma.

Verocay in 1910 first described a group of neurogenic tumours, termed as 'neurinomas'.[4] In 1935, Stout proposed that these tumours arose from nerve sheath

Fig. 3 Macroscopic view of the tumor

elements and they were termed 'neurilemmomas.[5] So any myelinated nerve fibre, which have Schwann cell can give rise to schwannoma (neurilemmoma). There is a predilection for the head, neck, and flexor surfaces of the upper and lower extremities.[6] 25% of the extracranial neurilemmomas are reported in head and neck region but only 1% in intra-oral region.[2] Clinically, intraoral

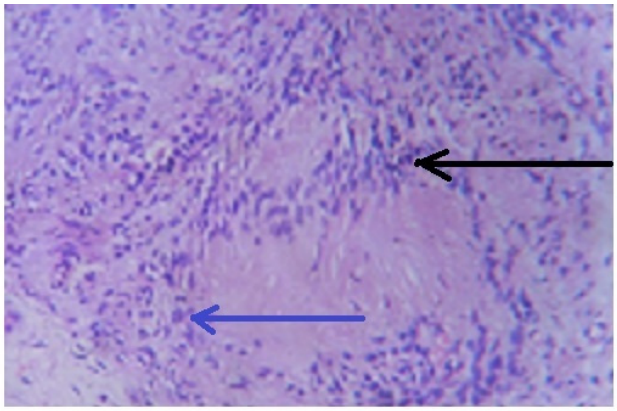

Fig. 4 Histopathology showing Antoni A (Black arrow) and Antoni B (Blue arrow) areas

schwannoma can be of two types—an encapsulated or non-capsulated lesion. But histologically, there are five varieties—common, plexiform, cellular, epithelioid, and ancient schwannomas.[7,8] Among the intra oral sites affected by neurilemmomas, tongue is the most common.[3,9] Cheek is much rare site of this type of tumour. Gallo et al. analyzed 157 cases found in literature, where 45.2% of the cases involved the

Fig. 5. Clinical Photograph of the patient after 15 days

tongue and only13.3% involved the cheek.[10] Due to rarity of the cases of intraoral neurilemmoma, there is no epidemiological data regarding it. Sanchis et al. described 12 cases of intraoral neurilemmoma, where the mean age was 29.5 ± 12.1 years and minimum age was 16 years with equal gender distribution.[11]

The present case is much younger than most of the reported cases. Most of the cases were presented with only painless swelling[3,11,12] as the present case. Nakayama et al. reported a maximum diameter of lesion to be 55 mm in a female patient;[13] Dayan et al. reported ancient schwannoma with a maximum diameter of 31 mm.[14] Sanchis et al. in their series reported 12 cases with maximum size of 4 cm.[11] The present case was much larger than most of the reported cases of intraoral neurilemmoma.

There are no specific symptoms or signs suggestive of this type of neoplasm. Fine needle aspiration cytology (FNAC) often inconclusive.[11,15] Dey et al. in their study concluded that, though FNAC is a very useful diagnostic tool in cases of neck masses but in cases of tumors of neurogenic origin it is often have a low accuracy.[16] FNAC often missed the diagnosis of intra oral neurilemmoma and mostly reported as pleomorphic adenoma.[13] The same had occurred in the present case.

The present reported case is unique in some aspects. It

a case of intra oral neurilemmomas in a patient of much younger age than other reported cases whereas the size is much bigger than other reported cases in English literature till date. A diagnostic dilemma was there due to FNAC report as pleomorphic adenoma but the histopathological pattern with presence of Antoni A and B areas and Verocay body confirmed the diagnosis. The patient was successfully treated with surgical excision without any recurrence after one year of follow up.

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Unusual Presentation of Granulomatosis with Polyangitis (Wegener's Granulomatosis)

Anirban Ghosh,[1] Somnath Saha,[2] Sarbani Chattopadhyay[3]

ABSTRACT

Objective

To present a case of unusual presentations of granulomatosis with polyangitis (Wegener's granulomatosis) with parotid swelling and intractable otitis externa.

Materials And Method

A 22-year-old male patient presented with left sided otitis externa with left sided parotid swelling and bilateral nasal obstruction for last two weeks. CT scan of paranasal sinuses showed homogenous mass in both maxillary antra and nasal cavities. FNAC from the parotid swelling was suggestive of granulomatous disease and endoscopic biopsy from the nasal mass showed features of granulomatosis with polyangitis (Wegener's granulomatosis). CT scan of chest revealed multiple cysts within the lung parenchyma; urine examination showed RBC and pus cells. Renal biopsy showed focal segmental glomerulonephritis. c-ANCA was highly positive and thus the diagnosis of Wegener's granulomatosis was made.

Result

Patient received cyclophosphamide and prednisolone immunsuppressive therapy for one year, which showed marked clinical improvement.

Conclusion

Granulomatosis with polyangitis (Wegener's granulomatosis) is not an uncommon entity for otolarygologists. Its usual presentation mimics chronic rhinosinusitis; but presentations like otitis externa and parotid swelling are rare for this disease.

Keywords

Granulomatosis with Polyangiitis; Otitis Externa; Nasal Obstruction; Parotid Gland; Endoscopy; Biopsy; Glomerulonephritis; Antibodies, Antineutrophil Cytoplasmic.

Granulomatosis with polyangitis (Wegener's granulomatosis) is a distinct clinicopathological entity characterised by granulomatous vasculitis of the upper and lower respiratory tracts with glomerulonephritis. It is extremely rare in blacks as compared to whites. Usual presentations of Granulomatosis with polyangitis (Wegener's granulomatosis) are facial pain over the paranasal sinuses, purulent or blood mixed nasal discharge, proteinuria, and haematuria with or without cough, haemoptysis due to cavitary infiltrates in lungs. In addition to the classic triad of above symptoms, virtually any organ can be involved with vasculitis, granuloma or both. Histopathological hallmark of this disease is vasculitis of small arteries and veins with intravascular and extravascular granuloma formation. Granulomatosis with polyangitis (Wegener's granulomatosis) presenting with otitis externa and parotid swelling is extremely rare. Biopsy from lung tissue, upper airway and kidney, high c-ANCA and clinical findings establish the diagnosis of Granulomatosis with polyangitis (Wegener's granulomatosis). Oral steroid and immunosuppressive drugs have proven therapeutic role in this disease.

Case Report

A 22 year-old young man from eastern part of rural India presented with excruciating left earache, globular mass in left infra-auricular parotid region and nasal obstruction for last 2 weeks. He had also history of purulent and occasionally blood mixed nasal discharge for the same

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duration. Conservative medical treatment did not relieve the symptoms. Otomicroscopy revealed that external auditory canal is completely occluded due to severe oedema of the canal wall skin. Anterior rhinoscopy reveals red congested nasal mucosa, ulcerations over septal mucosa.

CT scan of nose and paranasal sinuses (Fig. 1) revealed a homogenous mass in both maxillary antra and nasal cavities. Nasal endoscopy revealed mass in both nasal cavities; biopsy taken from the mass and endoscopic debridement of the mass was done with the help of a microdebrider. Histopathological examination of the mass suggested necrotising vasculitis and granuloma formation of small vessels (Fig. 2). His routine blood examination revealed anaemia (Hb. 8 gm %), neutrophilic leukocytosis (total count- 23000/

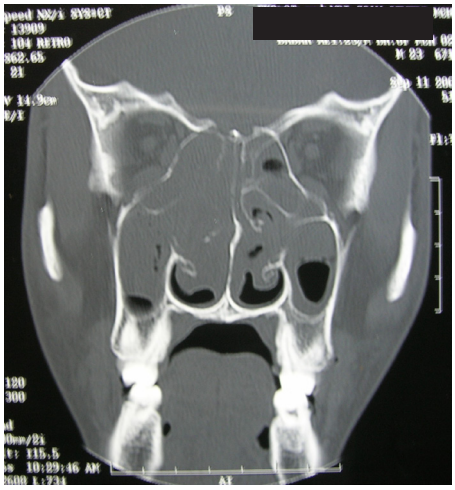

Fig. 1 Coronal CT scan of PNS showing a homogenous opacity in both nasal cavities, maxillary antra, anterior and posterior ethmoidal cells

ml, neutrophils-71%), thrombocytosis (4 lakh/ml) and elevated E.S.R (60 mm/1st hr). His plain skiagram of chest was within normal limits. Urine examination revealed microscopic hematuria and proteinuria. CT scan of chest showed cavitary lesions present in both lung fields (Fig. 3). c-ANCA (Anti Neutrophil Cytoplasmic Antibody) was highly positive (42 Units; Normal <6 Units). CT-guided renal biopsy was performed which showed focal segmental necrotising glomerulonephritis (Fig. 4).

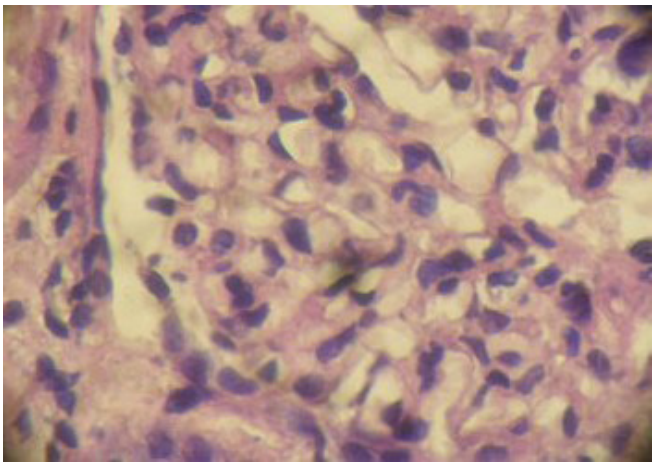

Fig. 2 Histopathology of the mass from nasal cavity showing vasculitis, granuloma formation and mononuclear cell infiltrate (H&E, 400X)

Based on these reports, the patient was diagnosed as a case of Granulomatosis with polyangitis (Wegener's granulomatosis) and prompt treatment with oral Cyclophosphamide (2 mg/kg/day) along with Prednisolone (1 mg/kg/day) started. But he developed skin lesions around lips and lower part of nose (Herpes labialis) with severe abdominal pain. Immunosuppressive therapy had to be discontinued for 2 weeks and conservative treatment was started and these symptoms subsided. A second course of Cyclophosphamide and Prednisolone was started subsequently. He is on immunosuppressive therapy for last one year and showing marked clinical improvement.

Discussion

Granulomatosis with polyangitis (Wegener's granulomatosis) is a distinct clinical entity affecting predominantly Caucasian population with an annual incidence of 3 per 1,00,000. It is extremely rare in blacks as compared to whites. Mean age of occurrence is 41 years (range 9-78 years) with equal sex preponderance. Heinz Klinger first described this disease entity in 1931 and Friedrich Wegener gave detailed description in 1936 and 1939. Churg and Godman carried out the clinicopathological study regarding this disease entity in 1950s and the treatment protocol with cyclophosphamide

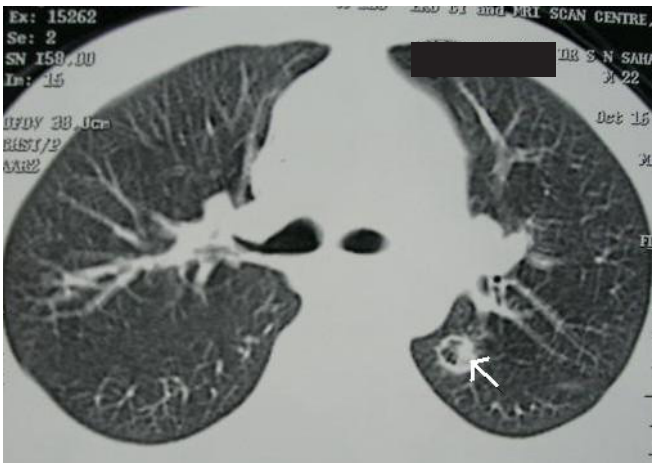

Fig. 3 HRCT of chest showing cavitary lesion on left lung parenchyma (white arrow)

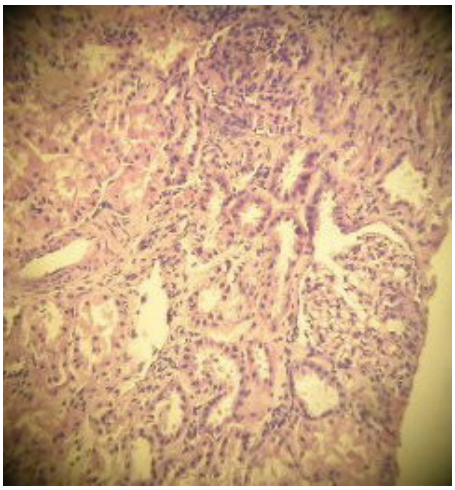

Fig. 4 Histopathology of kidney showing vasculitis (H&E, 100X)

and prednisolone was postulated by Wolf and Fauci in 1973.

Granulomatosis with polyangitis (Wegener's granulomatosis) is characterized histologically by necrotising vasculitis of small arteries and veins. The most commonly affected organs are the upper respiratory tract, the lungs and the kidneys. One third of the patients present with locoregional form of this disease,[1] which lasts from few months to maximum few years before it progresses to generalized form, with mean survival of few months if left untreated.[2] The most common cause of death is renal insufficiency and/or uncontrollable sepsis.[3]

In Granulomatosis with polyangitis (Wegener's granulomatosis), ear is frequently affected. Otalgia, aural discharge, aural polyp, deafness may be the first symptom to bring the patient to medical attention. The otological manifestation of this disease ranges from 19% to 45%. De Remee et al. reported a case series of 50 patients of Wegener's granulomatosis in which the ear was the most frequently affected site followed by lung and kidney.[4] D' Cruz et al reported 22 cases in which 11 had otalgia as their presenting complaint and 3 had otitis externa.[5] Common otological symptoms of Wegener's granulomatosis are serous otitis media (90%), 33% of that is bilateral, followed by sensorineural hearing loss (43%), and chronic otitis media (24%).

Serous otitis media is the most common cause for conductive deafness whereas cochlear vessel vasculitis, immune complex deposition and/or granulomatous involvement result in sensory neural hearing loss.[6] Another important but rare otological manifestation is facial nerve palsy, which may be due to cranial neuropathy or due to compression within temporal bone.[6] Several authors describe a 'limited' type Wegener's granulomatosis, which presents with otological manifestations only.[7]

Parotid gland or any other salivary gland enlargement, as found in this case, as a presenting feature of Granulomatosis with polyangitis (Wegener's granulomatosis) is even rare. Granulomatosis with polyangitis (Wegener's granulomatosis) may present as unilateral parotid gland enlargement,[8] bilateral parotid and submandibular gland enlargement or a parotid abscess.[9]

The diagnosis of Granulomatosis with polyangitis (Wegener's granulomatosis) should be based on biopsy from suspected lesions of the nose, nasopharynx, kidney, or lungs.[10] Abnormal tissues from external canal, middle ear or mastoid cavity most often does not yield diagnosis.[1]

The estimation of c-ANCA titre in the serum with immunofluroscence technique provides a reliable diagnosis, though it is contributory to tissue biopsy but not an alternative to it. Cytoplasmic pattern (c-ANCA)

is highly specific for Granulomatosis with polyangitis (Wegener's granulomatosis), whereas perinuclear pattern (p-ANCA) correlates with other types of vasculitis. Estimation of ANCA can also be done by immunosorbent assay with myeloperoxidase and proteinase[3] roughly correspond to p-ANCA and c-ANCA respectively.[10] In cases of locoregional involvement, the sensitivity of this method is 60%, whereas in the generalized form it is 93%.1 There are reported cases in which estimation of c- ANCA was negative in the beginning and became positive in the course of the disease.[11]

The treatment of Granulomatosis with polyangitis (Wegener's granulomatosis) with cyclophosphamide and prednisolone provides a 70% to 85% remission rate to an otherwise fatal disease.[12]

Close follow-up and expectation for complete cure should be the routine if there is no histological proof of the disease.[13] B cell depletion therapy using rituximab, a chimeric anti-CD20 monoclonal antibody, has been shown to be effective for certain refractory Granulomatosis with polyangitis (Wegener's granulomatosis), which causes diminished granuloma and reduced ANCA titers, allowing steroids to be tapered. No adverse effects were detected.[14]

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An Uncommon Experience During Removal of a Foreign Body from the Ear of a Child

Sanjoy Kumar Ghosh,[1] Abir Chaudhury [1]

ABSTRACT

An oblate spheroid bead was removed from the middle ear through post-auricular approach by threading the foreign body with polypropylene suture material.

Keywords

Foreign Bodies; Ear, Middle; Child; Polypropylene.

A two year old male child was presented to our medical college hospital on August 19, 2015 with the history of accidental introduction of foreign body in right ear. According to his mother the foreign body was a bead of her necklace. The bead was spherical in shape but flattened on two sides like the shape of our Earth. Geometrically we can say it was oblate spheroid or oblate ellipsoid in shape. The child was taken to a nearby medical facility, where doctors tried to remove the foreign body by aural syringing initially and then with the help of microscope through an endaural approach. The foreign body could not be removed as it was deep inside the ear canal and the patient was referred to tertiary health care centre.

Foreign bodies in the ear canal are very common. We generally remove a solid foreign body from ear by aural syringing especially when the foreign body resided lateral to the isthmus of external ear canal. A foreign body residing medial to the isthmus of external auditory canal can be removed by microsurgical instruments, especially if the foreign body is spherical in shape.

Here, in this case when we examined the patient's ear with aural speculum we could not appreciate any foreign body because of blood clots occluded the ear canal mixed with discharge. So we admitted the child and started conservative management for 5 days. The ear was examined under general anaesthesia with the help of an operating microscope. The tympanic membrane was found ruptured and top of foreign body could be seen through the perforation with great difficulty (as the ear canal of the child was very narrow and oedematous). So, we first made a post-aural incision from the highest attachment of the pinna following the curve of the retro-auricular groove 1cm behind it slanting posteriorly (as in tympanoplasty).

After elevating the tympanomeatal flap, we found that the foreign body was in the middle ear cavity medial to bony annulus within the hypotympanum and inferior to handle of malleus. We first used micro cup forceps and alligator forceps but with these forceps we could not grasp the ellipsoid shaped bead. Then we tried a curved needle by introducing the tip of the needle to one the openings that were present at both pole of the bead. But what we experienced that when we tried to pull the foreign body away from handle of malleus, tendency of the foreign body was to rotate it's another surface and slips into postero-inferior portion of hypo tympanum and used to stick against the bony annulus. We repeatedly tried with the same instrument but all attempts went in vain. Then we had left two option either we had to drill the bony annulus or we had to sacrifice the ossicular chain to remove the foreign body. But we didn't want to drill out the annulus as it may distort normal anatomy

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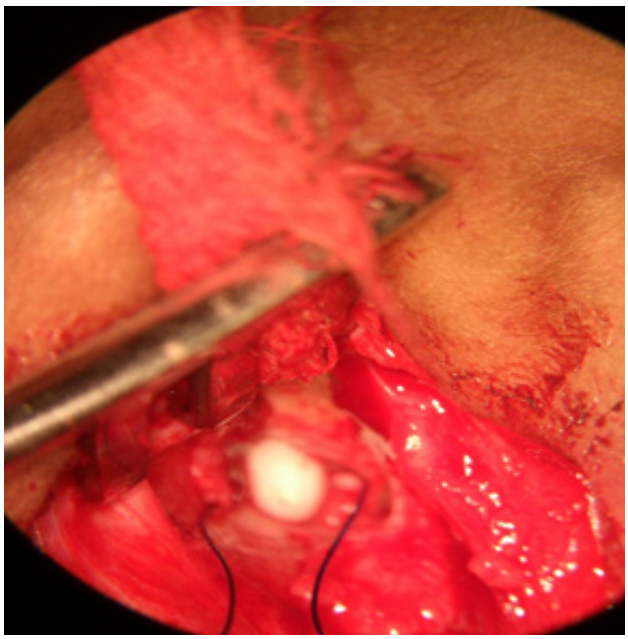

Fig. 1 The bead is being extracted by pulling the polypropylene thread

causing post-operative blunting of tympanic membrane.

Then, we all appreciated the fact that if the bead could be positioned so as to equator of the oblate spheroid foreign body looked directly towards outside we could easily remove the foreign body. But we didn't have such forceps to hold the foreign body in aforesaid position and remove it. We got an unique idea from our fellow surgeon that if we would be able to pass a Prolene® thread into the hole passing through the centre of the bead and then remove it from other side of the bead, we could easily solve the problem. We took a 4-0 Prolene® thread, held it with an alligator forceps and passed it through the centre hole and grasped it from other side as it is seen in the photograph. Then a gentle pull of the thread was all we needed to do (Fig.1). The foreign body came out very easily from middle ear cavity without forcing handle of malleus. Post-operative ossicular chain was completely intact. We packed middle ear cavity with gel foam.

After 3 weeks follow up, patient's tympanic membrane was healed with features of OME and after 6 weeks follow up, effusion disappered, there was no blunting and cone of light came back, moreover, the patient was very happy without complaining of impairment of hearing. From that incident what we got lesson is that we can always modify surgical steps with judicious thinking keeping the surgical principal intact to achieve a better goal in long time.

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