

Spectrum of Otorhinolaryngological Diseases in Remote Rural Western Nepal

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ABSTRACT

The spectrum as well as the gravity of otorhinolaryngological diseases increase with poor socio-economic status and lack of health care facilities. We conducted a one week medical camp at Mugu, which is a remote and under-developed district of Nepal, from 7th April to 14th April 2013. The study was done in 616 patients, out of which, 54.22% were males and 45.78% were females. The most commonly affected group was from age group of 1-25 years, in which there were 58.28% patients. Ear diseases were present in 74.51% patients. The most prevalent disease among all the ENT diseases was chronic otitis media- mucosal type, present in 32.62% patients. Sensory neural hearing loss was seen in 16.07% patients. Throat and nasal diseases were seen in 13.31% and 12.18% patients respectively. High prevalence of chronic otitis media with ear discharge was observed in this rural area, which is a very dangerous sign and can lead to high mortality and morbidity. Implementations aimed at improving the socioeconomic status, health education should be advised.

Key words: Spectrum, Otorhinolaryngological diseases, camp, remote, far-western, Nepal

INTRODUCTION

Nepal is a developing country with a population of 30 million, however, a big proportion of the population (30.9%) lies below the poverty line.¹ Mugu District covers an area of 3,535 km² and has a population of 55,286. Mugu is the most remote district in far-western Nepal, as well as the least developed. Ear, nose and throat diseases are serious public health problems affecting all age groups. The spectrum as well as the gravity of the diseases increase with poor socioeconomic status and lack of health care facilities. Fortunately, the mortality is very low but the rate of complications is still on the rise despite improvements in health care facilities.^{2,3} According to World Health Organization, 42 million people (> 3 years of age) have hearing loss. The major cause of hearing loss is otitis media, which is second only to common cold as a cause of infection in childhood.⁴ Otitis media is also the commonest cause of persistent mild to moderate hearing impairment in children and young adults in developing countries. In the Nepalese context, approximately 16% of the population above the age of 5 years suffers from otitis media. More than 55% of these cases occur in school going children, most of them belonging to the lower socio-economic class.

⁵The knowledge of prevalence of these ear, nose and throat diseases in remote areas like Mugu, can help the administrators and policy makers of the community to make adequate health plans. It will also assist the educational sector to de fine a better medical curriculum for training in otorhinolaryngology, head and neck surgery in the developing countries.

MATERIALS AND METHODS

This is a cross sectional study undertaken among the remote and rural population of Western Nepal, during a one-week medical camp, from 7th April to 14th April 2013. The study subjects constituted all 616 patients and sampling was done by snow ball sampling. Informed consent was obtained after the patients were explained. The patients were subjected to a general physical and systemic examination followed by a detailed ENT examination, including tuning fork tests. Hearing assessment by Rinne's, Weber's and absolute bone conduction tests were done using 512 Hz tuning forks. Descriptive statistics were calculated using SPSS Version 17.

RESULTS

Total number of patients were 616. Among them, 334 (54.22%) were males and 282 (45.78%) were females. The male, female ratio was 1.18:1 (Table 1)

Table 1: Distribution of population

Gender	Frequency	Percent
Male	334	54.22
Female	282	45.78
Total	616	100.0

The most commonly affected group was from age group of 1-25 years, in which there were 359 (58.28%) patients. There were 144 (23.38%) patients in the age group of 26-50 years. There were 87 (14.13%), 22 (3.57%) and 4 (0.65%) patients in the age group of 51-75 years, less than one year and more than 76 years respectively. (Table 2)

Table 2: Age-wise distribution of population

Age group	Frequency	Percent
<1	22	3.57
1-25	359	58.28
26-50	144	23.38
51-75	87	14.13
>76	4	0.65
Total	616	100.0

Ear diseases were the most prevalent among the ENT conditions comprising of 449 (74.51%) patients. Among the ear diseases chronic otitis media-mucosal type was present in 201 (32.62%) patients. Sensory neural hearing loss was seen in 99 (16.07%) patients. Wax was present in 34(5.52%) patients. Chronic otitis media - squamosal was seen in 29(4.71%) patients. Eustachian tube dysfunction (ETD) without middle ear effusion was seen in 24(9.10%) patients. Otomycosis was seen in 22 (3.90%) patients. Otitis media with effusion and acute otitis media were seen in 18 (2.92%) and 16 (2.60%) patients respectively. Keloid and preauricular sinus, each were found in 5 (0.81%) patients. Bell's palsy and post aural dermoid cyst, each were found in 3 (0.49%) patients. Throat diseases were present in 82 (13.31%) patients. Acute tonsillitis, Acute pharyngitis, and cervical lymphadenitis were seen in 37 (6.01%), 20 (3.25%), and 12(1.95%) patients respectively. Acute parotitis and ranula, each were seen in 3 (0.49%) patients. Acute laryngitis, aphthous ulcer and vocal cord palsy, each were present in 2(0.32%) patients. Carcinoma of larynx was seen in only one patient. The nasal diseases were seen in 75 (12.18) patients. Deviated nasal septum and chronic rhinosinusitis were most prevalent and seen in 37(6.00%) and 20(3.25%) patients respectively. Allergic rhinitis, nasal polyposis, epistaxis and adenoid facies were seen in 7 (1.14%), 5(0.81%), 3(0.49%) and 3 (0.49%) patients respectively (**Table 3**)

DISCUSSION

Prevalence of ENT diseases had been studied and reported from various countries as well as various parts of Nepal at different time period shows large regional differences in disease pattern. Multiple social and environmental factors are considered to be etiological factors of these diseases in developing countries. Major problems being faced by this rural health sector are inadequate primary health care, high inadequacy of funding and trained manpower. The negligence of rural healthcare system is largely due to lack of doctors in the rural sector. The major cause for hearing retardation was otitis media, which

Table 3: The prevalence of ear, nose and throat diseases

Diagnosis	Frequency	Percent
Ear		
Chronic Otitis Media- mucosal	201	32.63
SNHL	99	16.07
Wax	34	5.52
Chronic Otitis Media-squamosal	29	4.71
ETD	24	3.90
Otomycosis	22	3.57
Otitis Media with Effusion	18	2.92
Acute Otitis Media	16	2.60
Keloid	5	0.81
Preauricular sinus	5	0.81
Bells Palsy	3	0.49
Post aural Dermoid cyst	3	0.49
Subtotal	459	74.51
Nose		
Deviated Nasal Septum	37	6.01
Chronic Rhinosinusitis	20	3.25
Allergic rhinitis	7	1.14
Nasal Polyposis	5	0.81
Epistaxis	3	0.49
Adenoid Facies	3	0.49
Subtotal	75	12.18
Throat		
Acute tonsillitis	37	6.01
Acute Pharyngitis	20	3.25
Cervical lymphadenitis	12	1.95
Acute Parotitis	3	0.49
Ranula	3	0.49
Acute laryngitis	2	0.32
Aphthous ulcer	2	0.32
Vocal cord palsy	2	0.32
Ca. Larynx	1	0.16
Subtotal	82	13.31
Grand Total	616	100.0

was second only to common cold as a cause of infection in childhood. ⁵Respiratory tract symptoms such as cough, sore throat, and earache were also frequent in children. ⁶Upper respiratory tract infections predispose a child to complications such as otitis media, tonsillitis, and sinusitis that further contribute to morbidity.⁷ The overall otological diseases were seen in 459 (74.51%) patients, likewise the throat and the nasal diseases were seen in 82 (13.31%) and 75 (12.18%) patients respectively. Among all the diseases, the chronic otitis media-Mucosal type was the most common, seen in 32.63%, followed by SNHL which was seen in 16.07%. Acute tonsillitis and Deviated nasal septum, each were seen in 6.01%. Wax, Chronic Otitis media-Squamosal and ETD were

seen in the 5.52%, 4.71%, and 3.90% respectively. In a study from Pakistan, chronic tonsillitis (37%), chronic suppurative otitis media (CSOM) (14%) and rhinitis due to deviated nasal septum (67%) were the most common group of ENT diseases,⁸ whereas in Greece, SOM incidence was 29%, followed by chronic tonsillitis and nasal symptoms.⁹ In the studies by Pin *et al* and Dri O *et al*, the incidence of chronic tonsillitis was on the top.^{10, 11} Otitis media is the most common morbid condition of the ear and a leading cause of hearing loss. Adhikari,¹² in a study conducted among 2000 children aged between 5 and 13 years in Nepal found wax followed by chronic suppurative otitis media and otitis media with effusion as the most common ear diseases in rural school children. In retrospective study conducted at Maharashtra, India, diseases of auditory system (57.3%) were the most common group of ENT problems among the paediatric population, followed by pharyngoesophageal (27.4%) and nasal disorders (15.3%).¹³ Hatcher *et al* also found chronic suppurative otitis media, wax and hearing loss among major form of ear diseases.¹⁴ A study among Malaysian school children revealed a prevalence of middle ear disorders at 7.26%.¹⁵ Jacob in a study from rural school of south India diagnosed otitis media in 17.6% of children.¹⁶ Otitis media as a result of infection has been more common among rural population as against urban children.¹⁷ Chronic suppurative otitis media (CSOM) is a major health problem throughout the world in developing countries including Nepal.^{18, 19} It is the most common cause of persistent mild to moderate hearing impairment in children and young adults²⁰. The Akinpelu *et al* study showed that a very high prevalence (33.9%) of CSOM in Nigerian children which is similar finding with our study.²¹ Otitis media with effusion (OME) is the commonest cause of hearing impairment and one of the most frequent reasons for elective admission to hospital for surgery during childhood. In our study, as it was include all age group, Otomycosis was found in 3.57%, OME was seen in 2.92% and Acute otitis media was seen in 2.60%, whereas, study done in rural hospital in India revealed that 20.7% of children had OME.²² Otomycosis was found in 4.7% of the study population. Among the throat disorders, acute tonsillitis is the most common, seen in 6.01% in our study whereas it was higher in some of the study which only includes paediatric patients, done previously in various part of the world. It was 11.76% in rural Indian children.¹³ Recurrent tonsillitis was reported in 11.7% of Norwegian children in one study and estimated in another study to affect 12.1% of Turkish children.²³ Among

airway diseases, acute Laryngitis was seen in 0.32% in our study whereas Laryngotracheobronchal is the most common form of airway obstruction or stridor in children aged 6 months to 6 years.²⁴ Nasal diseases were the third most common diseases found in our study and Deviated nasal septum was the most common seen in 6.01% followed by Chronic rhinosinusitis which was seen in 3.25%. Low socio-economic factors and over crowding which are prevalent in these rural, undeveloped areas might be responsible. Improvement in the housing condition in western world has led to a significant reduction in the incidence of this disease. Epistaxis that is usually due to local irritation in Kiesselbach's plexus, is a less common in our study, may be due to the excessive cold in this region. The most common disorders underlying epistaxis are local inflammatory diseases, infections, and trauma.²⁵ Most of the epistaxis is self limiting, however they can be recurrent. This study suggests that chronic otitis media, sensory neural hearing loss, acute tonsillitis, deviated nasal septum, wax and eustachian tube dysfunction are the most frequent Otorhino laryngological problems in the far-western region of Nepal. High prevalence of chronic otitis media with ear discharge was observed in this rural area which is a very dangerous sign and can lead to high mortality and morbidity. Implementation to improve the socioeconomic status, health education should be advised.

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