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Prevalence of Ear and Nasal Diseases in Bangladeshi Patients

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Abstract

Background: The magnitude of health problems related to ear and nose in Bangladesh has not been estimated in a larger scale and very little is known about the prevalence and types of ENT diseases. Commonest cause of hearing impairment in our country is middle ear infection. Conductive type of deafness mostly occurs due to otitis media with or without its complications. Goal of primary health eare services is to achieve "Sound hearing by 2030" will never be achieved if we could not find out possible association of middle ear disease with other health conditions. ***Objective:*** To determine the prevalence of ear and nasal diseases in Bangladeshi patients. ***Methods:*** Two hundred patients complaining of middle ear discharge and or nasal symptoms were included in this study, to see the association of COM with nasal disorders. This cross sectional study was conducted in Dhaka Medical College Hospital from July 2012 to June 2014.Sample was taken by purposive sampling. Sample was divided into four groups as exposed and diseased, exposed and not diseased, not exposed diseased and not exposed and not diseased. ***Results:*** Two hundred patients were studied in the department of ENT and Head Neck Surgery of Dhaka Medical College Hospital complaining of either COM or Sinonasal disease. Among them 107 were female and 93 were male and male female ratio was 1:1.15. On analyzing age distribution it was ranging from 10 years to 50 years with mean age 30±7.86% clustering around 25 years. This study revealed that 65 % of COM is in the age group of 10-30 years. ***Conclusion:*** A study on the prevalence of the Ear Nose throat and Head and Neck diseases in developing country like Bangladesh can provide basic data which can be relevant and beneficial to the development of medical ENT curriculum in the regional setup and subsequent medical practice.

Keywords: Middle ear, nose, nasal function, chronic purulent middle ear disease.

INTRODUCTION

Common cause of hearing impairment in general is middle ear effusion. It is usually mild to moderate but may be severe when Otitis media is infected and complicated or remain neglected and untreated or maltreated for a long time, which intern lead to Chronic Otitis media [1]. It is very much true in our country because of poor economics, illiteracy, superstitions and negligence.

Nose and nasopharynx act as predisposing factor for developing the disease or turning it into a complicated one, Upper airway catarrh plays important role in developing middle ear inflammation and deviated nasal septum causing nasal obstruction, allowing having persistent infection in the nasal cavity and transmitting it to the middle ear which rnay be responsrble for chronic middle ear disease [2]. A deviated septum is a condition in which the nasal septum ~ the bone and cartilage that divide the nasal cavity of the nose in half — is significantly off center, or crooked, making breathing difficult. 80% of people, most unknowingly have some sort of misalignment to their nasal septum. Severe imbalances cause significant breathing problems and require treatment. Some people are born with a deviated nasal septum and others due to trauma to the nose that may occur at any time in their life. Most of the septal deviation has hypertrophy of inferior turbinate as a result of compensatory mechanism which is another important cause of nasal and Eustachian tube obstruction. A person with a deviated septum will typically have issues with improper nasal drainage. This can cause fluid to enter

into the sinuses and middle ear, which can lead to COM and smusitis [3].

Deafness is an invisibie disability in human. In Bangladesh, a country of more than 150 million peoples, more than 13 million are sutfering from deafness of different types and severiry [4]. It Is our honest responsibility to take appropriate steps to reduce mass burdens (i,e. disabilities) of society, It is true that the otorhinolaryngologist, medical or scientific professional alone cannot accomplish the successful implementation of wide scale effective programme for the prevention & control of deafness & hearing impairment. In such a situation we need to identify etiological factors or at least associated factors reflected to the development of hearing impairment. It may be an effort to find out the association of deviated nasal septum to middle ear disease which may lead to hearing impairment. So far as I know such study was not carried out in our country in the past and result of this study will help our colleagues in this regards.

Chronic otitis media when not responding to conservative treatment and if there is nasal pathology such as allergie rhinitis, nasal polyp, sinusitis, eustachian tube dysfunction and DNS then treatment plan need to include correction of these factors. Endoscopie exatnination and surgery of nasal cavity offers better treatment result [5].

The outcome of otitis media with effusion (OME) in children is generally good. However, it is less clear in adults. AH adult patients who had a ventilation tube inserted for OME at the Ipswich Hospital between 1996 and 1997 were studied* of 53 patients studied, 28 had a previous history of ventilation tube insertion. Furthermore, at 15-27 months following ventilation tube insertion, the ventilation tube had already extruded *m* 31 patients and the OME had already recurred in 19 of these. Endoscopie exatnination revealed that many patients stili had DNS (26.4 per cent) and inflammations at the Eustachian tube orifice (51 per cent). There is also a strong history of atopy in the studied group and the skin prick test was positive in 57 per cent of the patients. This study shows that many patients with adult-onset OME have underlying pathology that could lead to recurrence of OME following ventilation tube extrusion [6].

A nationwide survey was carried out to see the prevalence of OM and allied diseases in Korea. The survey revealed otitis as a common disease in Korea which was more ($P<0.05$) common in patients having septal deviation. Otitis media was also more prevalent *($P<0.05$)* in subjects sufferlng from allergie sytnptoms inespertive of age and sex [7].

Objective

General Objectives: To determine the prevalence of ear and nasal diseases in Bangladeshi patients

METHOD

Typeof Study	Cross sectiona study
Place of Study	Dhaka Medical College Hospital, Dhaka
Periodof study	July 2012 to June 2014
Study population	Patient with COM attending in ENT department.
Study sample	Patient of COM and DNS fulfilling the inclusion criteria attending to the department of ENT & Head Neck surgery of Dhaka Medical College Hospital.
Sample size	200 cases were taken for this study

Selection Criteria

Inclusion Criteria:

1. Patient suffering from chronic Otitis media.
2. Patients complaining of symptoms of DNS.
3. More than 18 years of age.

Exclusion Criteria:

1. Patient having history of traumatic perforation or specific causes of COM e,g Tuberculosis,
2. Patient who refused to be included in the study,
3. Patient who were not mentally sound.
4. Patient who was without attendants or who could not give consent or information

Data Collection Method:

After taking informed written consent of the subject or from the guardian, data was collected through a structured questionnaire (appendix-I) and clinical examination with certain investigation. Age, sex, habit, habitam, occupational history was taken. Type and duration of complain regarding both ear and nasal pathology was asked, Full ENT examination was done. Endoscopie examination of ear and nose were conducted.PTA, Tympanometry, X- ray PNS, X-ray Mastoid and in some cases CT scan were done. After accumulating of all data 200 patients were divided into 4 groups. Data were analyzed by SPSS method.

RESULTS

200 patients were enrolled for this sludy. 100 patients were complainmg of ear problem and 100 nasal symptoms, They were classified as COM with DNS, COM without DNS, DNS without COM and no DNS no COM-

Table I: Sex distribution of the patient (n-200)

SEX	COM (N)	+DNS (%)	COM WITHOUT (N)	DNS (%)	DNS WITH NO COM (N) (%)	NO COM NO	(N)	DNS	N	TOTAL (%)
Male	60	54.55	15	50	8	26.7	10	33.33	93	64
Female	50	45.45	15	50	22	73.3	20	66.7	107	36
Total	110	100	30	100	30	100	30	100	200	(100

53.5% of Patient sufferings from COM were female

Table II: Age distribution of COM with or without DNS (n-140)

Age (years)	COM with (n)	DNS (%)	COM without (n)	DNS (%)	(n)	Total n(%)
10-20	30	48.10	10	19.04	40	35.6
21-30	40	36.70	12	59.52	52	30.5
31-40	20	11.39	05	14.28	25	18.4
41-50	20	3.80	03	7.14	23	15.2
Total	110	100	30	100	140	(100)

53.5% of Patient sufferings from COM were female

Table III: Distribution of Ear Diseses and Nasal Pathology (n-140)

Ear Disease	DNS	AR	Sinusitis	Polyp	No. Nasal Pathology	Total (%)
COM (TT)	49	6	10	2	7	74
Failed Tympanoplasty	2	1	1	0	0	4
COM(AA)	8	2	2	0	3	15
Retraction	19	5	2	1	2	29
OME	12	1	1	1	1	18
Total	90	16	12	4	13	140

54.05% of COM(TT) had DNS while 9.29% of Patient without any Nasal Pathology were suffering from COM,

- Adhesive Otitis Media
- Operation definition CSOM

Table IV: Frequency of Ear Symptoms (n-200)

Ear Symptoms	Com		DNS	
	(n-100)	(%)	(n-100)	(%)
Blockage	28	28	44	44
Earache	18	18	38	38
Hearing Impairment	46	46	28	28
Tinnitus	12	12	12	12
Discharge	85	85	-	-
No Ear Symptoms	-	-	45	45
No Nasal Symptoms	25	25	-	-

- 85% of COM Patient were complaining ear discharge

Table V: Frequency of Nasal Septal Deviation (n-140)

Type of Septal Deviation	FREQUENCY	PERCENTAGE (%)
Anterior Dislocation	10	7.14
C-Shaped	72	51.43
S-Shaped	38	27.14
Septal Spur	12	8.57
Septal thickening	8	5.71
Hypertrophied Turbinate	85	60.71
	225	

> 100% means same patient having multiple pathology e.g. DNS with HIT

Table VI: Type of of Nasal obstruction (n-140)

Ear Disease	Unilateral Nasal obstruction		Bilateral Nasal obstruction		Total	
	n	(%)	n	(%)	n	(%)
Unilateral COM	65	76.47	33	60	98	70
Bilateral COM	20	23.53	22	40	42	30
Total	**85**	**60.71**	**55**	**39.29**	**140**	**100**

DISCUSSION

Two hundred patients were studied in the department of ENT and Head Neck Surgery of Dhaka Medical College Hospital complaining of either COM or Sinonasal disease. Among them 107 were female and 93 were male and male female ratio was 1:1.15.This result is similar to the result of National UK study on hearing. The UK National Study of Hearing examined the relationship of COM with age and sex. There was no sex difference in the prevalence of COM in UK, In this study female were suffering a little more than male because in our country number of female patients are higher than male. Data from developing countries revealed more tendencies towards the female [8].

On analyzing age distribution it was ranging from 10 years to 50 years with mean age 30±7.86% clustering around 25 years. This study revealed that 65 % of COM is in the age group of 10-30 years, .This is the age of working in our society. This result do not correlate with study result of the UK National study of hearing where individuals in the 41-50year-oId age group were twice as likely to bave COM as those in the 18-40-year age group. It was due to separate living of elderly people and having less exposure to Medical facilities in the UK. This present result correlates with study result of Thailand, Vietnam and India where 60% Of COM patient are in the age group of 15 to 25 years [9]. It might be due to Illiteracy, neglegence, poverty and superstition.

The commonest ear disease was chronic otitis media, tubotympanic type, Out of 140 COM 74(52.86%) were COM (TT) variety, This was followed by retraction in 29(20.71%), COM atticoantral type in 15(10.71%), failed Type I tympanoplasty in 2.86% and otitis media with effusion (OME) in 18(12.86%). Among 140 patients of COM 90(64.29%) had DNS and remaining patient were with other sinonasal pathology. Out of 4 failed cases of Type-I Tympanoplasty 50% had association with DNS, Out of 29 retractions 19 patients had DNS (Table-III). Some patients had bilateral ears affected with different pathologies. 60 patients had normal ear with or without pathology in nose and paranasal sinuses, This finding of the present study is comparabie with the Dwigbt Grady study and Prayaga N *et al.*, who conducted a study in India.

Out of 100 COM patient enrolled for the study 85% were complaining of ear discharge at different times of their life time 46% patient were complaining of hearing impairment and others were complaining of blockage of ear (28%), earache(18%), and tinnitus (12%) (Table-IV). In a study in USA complaining of hearing impairment (84%) was followed by hearing impairment (69%) [10]. In our country most of the patient was suffering from unilateral ear disease with normal hearing in the contralateral ear, that's why usually they are ignored of hearing ailments Present study result correlate with the study result of Nayak, D.R *et al.*, in India in 2002 [9].

Study on the frequency of nasal obstruction and type of septal deviation 72(51.43%) patients were seen to suffer from C type of deviation and 38 patients were suffering from S type deviation Hypertrophied inferior turbinate are usual result of compensatory mechanism developed in 85 patients, HIT may also develop in allergie rhinitis or Rhinitis medicamentosa. They may also cause Eustachian tube dysfunction especially if hypertrophy involves the posterior part.

CONCLUSION

Improvement of health education, socioeconomic status and health facilities will be helpful in reducing the prevalence of ENT diseases. A study on the prevalence of the Ear Nose throat and Head Neck diseases in developing country like Bangladesh can provide basic data which can be relevant and beneficial to the development of medical ENT curriculum in the regional setup and subsequent medical practice.

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