

Original Article

Hoarseness of Voice : An Etiological Study

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Abstract:

Hoarseness of voice is one of the commonest symptom in otolaryngological practice and it indicates diseases ranging from totally benign condition to the most malignant condition. The aim of this study was to analyze clinical profile, to find out common etiological factors and association of common predisposing factors leading to hoarseness of voice. The study was carried out in the department of ENT, CMB, BAF Dhaka, from February 2014 to July 2016. A total of 130 patients having hoarseness of voice were selected coming to the OPD. All the patients then underwent a detailed history, ENT examinations and investigations to reach a diagnosis. Out of total 130 patients 76(58.47 %) were males and 54 (41.53) were females. Male predominance was observed with male female ratio of 1.49: 1. Common age group involved was 31- 40 years in 29 (20.7%) cases. Common etiology included chronic laryngitis in 37 (28.46%) cases, vocal nodules in 20 (15.38%), vocal cord polyp in 18 (13.84%), acute laryngitis in 10 (7.69%), vocal cord cyst in 9 (6.92%), hypothyroidism in 7 (5.38%) and Carcinoma larynx in 6 (4.61%) patients. Most of the etiopathological factors found in this study were treatable disease. So, early diagnosis can reduce the morbidity and mortality.

Key words: Hoarseness of Voice, aetiology, fiber optic laryngoscopy.

Introduction:

Voice is an auditory perceptual term that means the audible sound produced by the larynx, which embodies such parameters as pitch, loudness, quality and variability. It is the natural medium, well adapted to communicate emotion.¹ Hoarseness generally refers to a change in voice quality that may be manifested as a voice that sounds breathy, strained, rough, raspy, tremorous, strangled, or weak, or a voice that has a higher

or lower pitch.^{2,3,4} It is most often associated with abnormalities of the vibratory margins of the vocal folds.⁵ However the term can reflect abnormalities anywhere along the vocal tract from the oral cavity to lungs. Ideally the term "Hoarseness" refers to laryngeal dysfunction caused by abnormal vocal cord vibration.² Hoarseness is a symptom and not a disease.⁶ Hoarseness, a common voice disorder, due to vocal cord lesions, may be either benign or malignant.⁷ Possible causes of hoarseness are numerous and stem from many sources: anatomic, functional, neurologic, infectious, environmental and neoplastic. Common causes of hoarseness such as voice abuse or viral laryngitis can be benign and self-limited but other causes such as laryngeal cancer can be life-threatening. These factors make the evaluation and treatment of a hoarse

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patient challenging and at times, downright daunting.^{8,9} Hoarseness is more common in certain professions such as teachers, singers, salesmen, preachers and leaders who have excessive use and misuse of voice.⁴ In children vocal abuse in the form of screaming and shouting is quoted as one of the most widely quoted factor associated with hoarseness¹⁰. Although hoarseness of voice is frequently encountered in the otolaryngology outpatient department, Ortner's syndrome also known as cardiovocal syndrome is a rare cause of hoarseness of voice.¹¹ Complaints of hoarseness may represent serious disease. Therefore should not be ignored. In the words of Chevalier Jackson "Hoarseness is a symptom of utmost significance and calls for a separate consideration as a subject because of the frequency of its occurrence as a distant signal of malignancy and other conditions".¹² It is often the first and only sign of serious disease directly or indirectly affecting the voice apparatus or systemic disease. Good vocal hygiene can prevent and treat some pathologies, and voice therapy is a cornerstone of management in some cases of hoarseness.

Methods:

This observational study was conducted at CMB, BAF Dhaka during the period from February 2014 to July 2016. A total of 130 cases of hoarseness of voice attending at the outpatient department of ENT were included. Patients with critically ill patients, patients who have undergone laryngeal surgeries, tracheostomy and history of neck injuries were excluded. All the patients involved were explained about the procedure and involvement in this study and a voluntary informed consent was obtained for the same. Each patient underwent through clinical history, physical examination, ENT examinations which includes indirect

laryngoscopy, fiber optic laryngoscopy, endoscopic rods, and other relevant routine investigations to reach a diagnosis. All the data was collected on a predesigned data sheet and subsequently the data were analyzed.

Results:

A total of 130 patients were included in this study. Sex distribution of the patients is shown in table-I. Among the 130 cases, 76(58.47 %) were males and 54 (41.53) were females. Male predominance was observed with male female ratio of 1.49:1.

Table I
Sex distribution of patients (n= 130)

Sex	No. of patients (%)
Male	76(58.47 %)
Female	54 (41.53)
Total	130

Age range was between 9 years to 78 years and majority, 28 (21.5%) patients were presented between 21-30 years, followed by 27 (20.7%) between 31-40 years and lowest number 02 (1.6%) were >70 years (table- II).

Table II
Age distribution of patients (n=180)

Age (years)	No. of patients (%)
0-10	03 (2.30%)
11-20	18(13.84%)
21-30	26 (20.00%)
31-40	29 (22.30%)
41-50	25 (19.23%)
51-60	23 (17.69%)
61-70	04 (3.07%)
> 70	02 (1.53%)
Total	130

Table-III showed the distribution of etiological factors of hoarseness. Among them, the most common cause was chronic laryngitis 37(28.46%) followed by vocal cord nodule 20 (15.38%), Vocal cord polyp 18 (13.84), acute laryngitis 10 (7.69%), vocal cord cyst 9 (6.92%), hypothyroidism 7 (5.38%), carcinoma larynx 6 (4.61%), vocal cord palsy, functional, sulcus vocalis, tuberculosis, Reinke's oedema, leukoplakia and Laryngeal papilloma.

Table-III
Etiology of hoarseness of voice

Etiology	No. of patients (%)
Chronic laryngitis	37 (28.46%)
Vocal cord nodule	20 (15.38%)
Vocal cord polyp	18 (13.84%)
Acute laryngitis	10 (7.69%)
Vocal cord cyst	9 (6.92%)
Hypothyroidism	7 (5.38%)
Carcinoma larynx	6 (4.61%)
Vocal cord palsy	5(3.48%)
Functional	4(3.07%)
Sulcus vocalis	4(3.07%)
Tuberculosis	3(2.30%)
Reinke's oedema	3(2.30%)
Leukoplakia	2(1.53%)
Laryngeal papilloma	2(1.53%)

Change in voice was a predominant symptom present in all 130 (100%) patients followed by vocal fatigue, foreign body sensation/irritation in throat, cough, heart burn, fever, weight loss, dysphagia, neck swelling and dyspnoea, (Table-IV).

Table IV
Clinical presentation of patients with hoarseness

Presentation	No. of cases (%)
Change in voice	130 (100%)
Vocal fatigue	73(56.15%)
Foreign body sensation/ irritation/pain	53(40.76%)
Cough	41 (31.53%)
Heart burn	28(21.53%)
Fever	07 (5.39%)
Weight loss	06 (4.61%)
Dysphagia	03 (2.30%)
Neck swelling	02 (1.53%)
Dyspnoea	02 (1.53%)

Discussion:

With increasing stress in day to day life, rising levels of pollution, changing habits and life style, hoarseness and voice disorders are becoming more and more prevalent.

In the present study among 130 cases, 76 (58.47%) were male with male to female ratio of 1.49:1 is comparable to the finding of Adobamen PO (2015).¹³ Similar results were also observed by studies done by Anwar K (2012) *et al.* and Wani AA *et al.* (2012) where males were affected more than females.^{2,14} The distinct male preponderance could be explained by the fact that, in outpatient department of military hospital males are more than the females and the nature of job of defense persons are voice prone. But in a study done by Sebastian S *et al.* (2012) found majority of cases are female which does not correlate with the present study.¹⁵ This may be due to that the study was done among the teachers but the present study did not confined to a particular profession. Majority of cases 29 (20.7%) were found in age group ranged from 31-40 followed by 26 (21.5%) in

age group from 31-40 years of age in our study, which correlates with the study by Vengala RR *et al* (2015), Banjara H *et al* (2011) and Shrestha BL *et al* 2013.^{16, 17, 18} In another study done by Babu VS from India also observed that majority of patients (22.31%) were in age group of 31 to 40 years of age.¹⁹ In the present study, we found laryngitis including chronic and acute as highest in 47 (36.15%) cases, followed by vocal cord nodule, vocal cord polyp, vocal cord cyst, hypothyroidism and carcinoma larynx etc. In a study done by Baitha *et al* found laryngitis as highest number followed by vocal cord nodule and vocal cord polyp, which is almost similar to the findings of the present study.²⁰ Studies done by Reiter R and Kataria G *et al* found also laryngitis as the highest number of cases, which support the results of the present study.^{1,21} Other studies done by Shrestha BL *et al* and Baitha S *et al* showed their findings regarding the distribution of etiology of hoarseness, some of the findings match and some do not match with the present study.^{12,18}

In our study, change in voice was found in all patients (100%). Other symptoms were vocal fatigue, foreign body sensation/irritation in the throat, cough, dysphagia, heart burn, weight loss, neck swelling, dyspnoea and fever. In a study done by Kumar H and S Seth found change in voice in 100% of cases, besides change in voice other associated features were also nearly similar to the present study.^{22,23} Other studies done by Baitha and Kataria G *et al* also found change in voice in all 100% patients and other symptoms were also comparable with our study.^{1,12}

Conclusion:

Hoarseness is an early symptom and indicates some underlying cause. The etiology ranges from viral infections to life threatening malignancies which vary in

different geographical location and center to center. So, every case should be carefully and thoroughly evaluated to know the early diagnosis of underlying pathology for prevention and accurate management. Avoidance of vocal abuse, cessation of smoking, tobacco and alcohol can lead to significant reduction in burden of hoarseness. Whether the patient notices vocal fatigue or says that it's harder to go with a worsening voice as the day progresses, the underlying cause of hoarseness must be found. Proper knowledge of clinicopathological profile is important to treat it competently and to bring patient's voice back.

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