

Original Research Article

Aetiological factors of hoarseness of voice in patients attending at tertiary hospital Kashmir

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ABSTRACT

Background: 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. 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. The objective of the study was to evaluate the aetiological factors of hoarseness of voice.

Methods: This is a prospective, non-randomized and longitudinal study conducted from July 2019 to July 2020 in department of Otorhinolaryngology of SMHS Hospital, Kashmir, India. All the patients with history of hoarseness underwent clinical examination, routine as well as special investigation to find out the diagnosis. The final results were analyzed by simple manual analysis with frequency and percentage using Microsoft Excel software 2007.

Results: There were total 140 patients included in the study. Among them the age groups of 21 – 30 years and 31-40 years were mainly sufferers from hoarseness. Similarly, among 140 patients 100 (71.45%) were males whereas 40 (28.6%) were females with male to female ratio of 2.5. The most common cause as per the distribution was acid peptic laryngitis with frequency of 37.8% whereas papillary carcinoma of thyroid and papilloma of vocal cord accounts for only 0.4% each.

Conclusions: There was etiological variation in hoarseness ranging from simple laryngitis to malignancies. So it is important not to ignore the hoarseness and precise history, examination and investigations should be done.

Keywords: Hoarseness, Laryngitis, Tuberculosis

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.²⁻⁴ 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 one of the common symptoms encountered by otorhinolaryngologists in their practice. The hoarseness could be divided into acute or chronic.⁶ The

acute onset is more common and mainly caused by inflammation like acute laryngitis whereas other cause could be viral infection, smoking, voice abuse, laryngeal trauma or thyroid surgery.⁷ The chronic onset is mainly caused by vocal cord nodule, polyp, laryngeal papillomatosis, tumor of vocal cord, functional dysphonia, smoking, voice abuse, laryngopharyngeal reflux disease, post nasal drip, voice abuse, neoplasm of thyroid, esophagus, lung, chronic granulomatous disease like tuberculosis or systemic disease like diabetes mellitus.⁸⁻¹⁰ The complaints of hoarseness may imply serious disease, so it should not be ignored.¹¹ The main aim of our study is to evaluate the frequency and aetiological factors of hoarseness.

METHODS

This is an observational nonrandomized longitudinal study conducted from August 2019 to August 2020 in the department of otorhinolaryngology of SMHS Hospital, Kashmir, India.

Inclusion criteria

All the patients who presented with history of hoarseness were included in the study.

Exclusion criteria

Patients who were critically ill, patients who have undergone laryngeal surgeries, tracheostomy and history of neck injuries were excluded. Those who could not be a part of the study due to any other reason were excluded.

Patients of all the age groups who presented with hoarseness were explained about the procedure and involvement in this study and a voluntary informed consent was obtained for the same. All the patients who fulfilled the inclusion criteria consented to be a part of the study. The detailed history was taken, clinical examination, routine as well as special investigation (flexible nasopharyngolaryngoscopy and direct laryngoscopy) was performed to find the underlying aetiological factors associated with hoarseness. A list of factors was prepared accordingly and the final results were analyzed by Statistical package for social sciences (SPSS) 11.5 software.

RESULTS

There were total 140 patients included in the study. Among them the age groups of 21-30 years and 31-40 years mainly suffered from hoarseness as shown in table 1.

Similarly, among 140 patients 100 (71.45%) were males whereas 40 (28.6%) were females with male to female ratio of 2.5: 1 as shown in table 2. The table 3 showed the distribution of hoarseness as per etiology. Among them, the most common cause was acid peptic laryngitis with

frequency of 37.8% whereas papillary carcinoma of thyroid and papilloma of vocal cord accounts for only 0.4% each.

Table 1: Age distribution of patients.

Age (years)	Number of patients (%)
0-10	0 (0)
11-20	14 (10)
21-30	39 (27.8)
31-40	40 (28.5)
41-50	20 (14.2)
51-60	14 (10)
>60	13 (9.2)

Table 2: Sex distribution.

Sex	Number of patients (%)
Male	100 (71.4)
Female	40 (28.6)

Table 3: Distribution of patients according to aetiology.

Aetiological factors	Number (%)
Inflammatory	
Acute laryngitis	48 (34.2)
Chronic laryngitis	
Acid peptic laryngitis	53 (37.8)
Chronic simple laryngitis	13 (9.28)
Vocal nodule	6 (4.28)
Reinkes odema	3 (2.14)
Vocal cord polyp	2 (1.4)
Neoplastic	
Ca larynx	7 (5)
Papillary carcinoma thyroid	1 (0.4)
Papilloma vocal cord	1 (0.4)
Neurological	
Traumatic intubation granuloma	1 (0.7)
Endocrinal hypothyroidism	2 (1.4)

DISCUSSION

In this study, the frequency of hoarseness in age group ranged from 21-40 years was 56.4% which is similar to study performed by Baitha et al, Kumar et al, Saeed et al, but differs from the study performed by Khan et al in which maximum number of patients with hoarseness falls within 5-15 years.¹²⁻¹⁵ The maximum number of patients with hoarseness in our study was within productive age group because they were mostly involved in voice abuse and also more concerned regarding their problem. In our study, the male: female ratio was 2.5:1, like that of study performed by Kumar et al Baitha et al, Saeed et al and Banjara et al but in contrast with study done by Brodnitz which showed almost equal number of male to female ratio.^{12-14,16,17} Such a huge difference between male and female in our study could be because of male dominated

society and they involved in smoking, exposure to pollutant and voice abuse whereas female from rural areas are unaware of their health problem.

In the present study, the frequency of acid peptic laryngitis was 37.8% which contrast with the study performed by Baitha et al which showed only 1.81%.¹⁸ Such higher frequency in our study could be because most of our patients suffer from gastro-esophageal reflux disease. Likewise, the frequency of acute laryngitis was 34.2% in our study which is comparable to study performed by Baith et al and Khan et al but contrast with the study performed by Kumar et al.^{12,13,15} The frequency of chronic simple laryngitis was 9.28% in our study which is similar to other studies.¹²⁻¹⁸ The frequency of vocal nodule, Reinke's edema and vocal polyp was 4.28%, 2.14% and 1.4% respectively. The findings were different from other studies which showed somehow higher frequencies of these Diseases.^{12,13,15} The neoplastic and neurological cause reported to be 5.8% and 2.1% in our study. The frequencies were lower than other different studies.^{12,15,20} In our study, the frequency of intubation granuloma was 0.7%. The results were comparable to study performed by Baitha et al but very lower than the other studies.^{9,14,21-24} The lower frequency in our study could be timely elective tracheostomy of needy patients. The hypothyroidism was 1.4% in our study like that of Saeed et al but differ from Ahmed et al which showed 83.3%.^{14,25} It could be in our place the prevalence of hypothyroidism is not so high.

Limitations

Though there were 140 participants, the target population of the study was relatively small as it was mainly based on this centre for 1 year duration, which was regarded as major limitation.

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. There was variation in etiologies in hoarseness ranging from simple laryngitis to malignancies. So it is important not to ignore the hoarseness and precise history, examination and investigations should be done.

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