



## Clinico-Etiological Study of Hoarseness of Voice of the Patients Attending to Otolaryngology Department of Teaching Hospital

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### Abstract

**Background & Aims:** The etiology of hoarseness of voice ranges from benign to malignant disease and should not be avoided. To treat the underlying pathology, proper knowledge and clinicopathological profile of hoarseness of voice are required. This study was conducted at a tertiary care teaching institute to identify clinical and etiological risk factors for voice hoarseness.

**Materials & Methods:** This retrospective study was conducted on 255 patients who had complained of hoarseness of voice for more than 15 days. All demographics, clinical history, pre-and postoperative video-laryngoscopic, and histopathology data were collected for 5 years.

**Results:** Hoarseness of voice occurred in 0.46% of total attendees. The majority of patients (49.8%) were between the ages of 41 and 60 years, and 64.7% were men. Laborers and farmers were the most affected (21.56%). Smoking was observed in 20.4% of the patients, and tobacco chewing was observed in 17.65% of them. Palsy (6.27%), abductor palsy (3.13%), sulcus (3.13%), and papilloma were the most common causes of hoarseness (1.97%). The nonvocal/nonprofessional group was the single largest group (74.11%). 25.5% of hoarseness cases were caused by functional voice disorders.

**Conclusion:** If hoarseness lasts more than 15 days, a referral to a voice specialist is recommended. Because etiological data varies by geographical area, each case should be thoroughly evaluated to ensure early diagnosis of underlying pathology and accurate treatment. The identification of the role of addictions such as smoking, tobacco chewing, and alcohol highlight the need to warn the public about the consequences such as cancer.

**Keywords:** Clinicopathological, Hoarseness of Voice, Functional Voice Disorders Profile

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### Introduction

Hoarseness is a symptom, not a disease, and refers to a change in normal voice quality that is rough, grating,

harsh, lower in pitch, and more or less discordant. The hoarse voice may have unvoiced air, but it also has fricative voices that originate in the larynx (1). Voice

hoarseness can be caused by a variety of diseases, ranging from inflammatory conditions to neoplasms which can be benign or malignant, and to neurological conditions. Hoarseness can also be caused by vocal cord pathology or abnormal vocal cord movement. Raucous is a literal Latin word for 'hoarseness,' but it also means 'loudness,' and it refers to a naturally coarse crude voice (2). There are two types of hoarseness: acute and chronic (3). The most common cause is inflammations such as acute laryngitis, but other causes include viral infection, smoking, vocal abuse, laryngeal trauma, or thyroid surgery (4).

Chronic onset is caused primarily by a vocal cord nodule, polyp, laryngeal papillomatosis, vocal cord tumour, functional dysphonia, smoking, vocal abuse, laryngopharyngeal reflux disease, post-nasal drip, vocal abuse, neoplasm of thyroid, esophageal, or lung, chronic granulomatous diseases such as tuberculosis, or systemic diseases such as diabetes mellitus (5,6). Long-term hoarseness may indicate a serious disease, so it should not be ignored (7,8).

The study's goal is to examine the clinical profile of hoarseness, etiological factors, and the relationship of predisposing factors with hoarseness.

## Materials & Methods

The data was obtained from the medical records of ENT Department over a period of five years. A total of 255 patients in the study period, who had complained of hoarseness of voice for more than 15 days were included in this study. All demographics, clinical history, pre- and postoperative video-laryngoscopic and histopathology data were collected and analysed.

A general examination of the nose, oral cavity, nasopharynx, and ears was performed. A detailed clinical history, etiology, routine and special investigations, and final diagnoses were documented. All video-laryngoscopy diagnosis data from patients were collected. Collected data is represented as frequency percentage.

## Results

Out of 55,000 OP cases, 255 patients presented with hoarseness of voice, with an incidence 0.46%. The majority of patients (27.84%) were between the ages of 41 and 50, with ages ranging from 20 to 70. Hoarseness of voice is more common in men, with a male-to-female ratio of about 1.83:1. 74.5 % of the patients were from rural areas.

According to the study, the incidence is higher among laborers/farmers (21.56%), homemakers (19.24%), private job/businessman (16.47%), and teachers (9.41%).

In our study, 60% of the patients had hoarseness for at least 3 months. Only 7.45% of the patients had hoarseness for more than a year.

Smoking was identified to be the most important predisposing factor for the development of hoarseness (22.35%), with tobacco alone being a causative factor in 20.4% of the patients and alcohol being a predisposing factor in 17.65% of patients. Palsy was found in 16 (6.2%) of the 255 patients with hoarseness, abductor palsy in 8 (3.13%), sulcus in 8 (3.13%), and papilloma in 5 (1.96%). The most common type of voice disorder (25.5%) was functional voice disorders.

Table 1 summarizes general characteristics of the studied individuals.

**Table 1.** General characteristics of the studied individuals

Characteristics	Frequency	Percentage
Male/females	165/90	64.7/35.3
Age distribution (11 - 78 yr)		
<30 yr	40	15.69
31-40 yr	58	22.79
41-50 yr	71	27.84
51-60 yr	56	21.96

61-70 yr	30	11.76
Incidence of Hoarseness of Voice OPD (5 yr)	255/55,000	0.46
<b>Profession</b>		
Homemakers	49	19.24
Laborer/farmer	55	21.56
Private job/businessman	42	16.47
Teacher	24	9.41
Student	20	7.84
Retired person	15	5.88
Factory worker	12	4.72
Other (politicians+ army +singer +sportsman)	38	14.91
<b>Vocal Professionals- classification by Koufman and Isaacson</b>		
Level I- elite vocal performers	4	1.57
Level II- professional voice users	14	5.5
Level III- nonvocal professionals	48	18.82
Level IV- nonvocal nonprofessional	189	74.11
<b>Clinical presentation</b>		
Vocal fatigue	12	4.72
Aphonia	2	0.78
Dysphagia	16	6.27
F.b.sensation/irritation/throat clearing	16	6.27
Neck swelling/secondaries	7	2.74
Dyspnea	4	1.57
Laryngeal trauma	4	1.57
Halitosis	7	2.74
Otalgia	2	0.78
Painful vocalization/difficulty in speech	4	1.57
<b>Duration of Hoarseness</b>		
< 3 months	153	60
3 to 6 months	63	24.70
6 to 12 months	20	7.84
>1 year	19	7.45
With/without Predisposing Factors		

Koufman and Isaacson classification divided hoarseness into 4 categories.

Level I (elite vocal performers): This category includes sophisticated voice users such as singers and

actors, for whom even minor vocal difficulties can have serious consequences for their careers.

Level II (professional voice users): Individuals for whom even moderate vocal difficulty would impair job performance. Clergy, lecturers, teachers, politicians,

public speakers, and telephone operators are examples of this voice users. Teachers and lawyers are examples of Level III (nonvocal professionals). They can work with minor or moderate voice problems; only severe

dysphonia jeopardizes job performance.

Laborers, homemakers, and clerks are examples of Level IV (nonvocal/nonprofessionals). These are the people who are not hampered from doing their jobs when they have dysphonia.

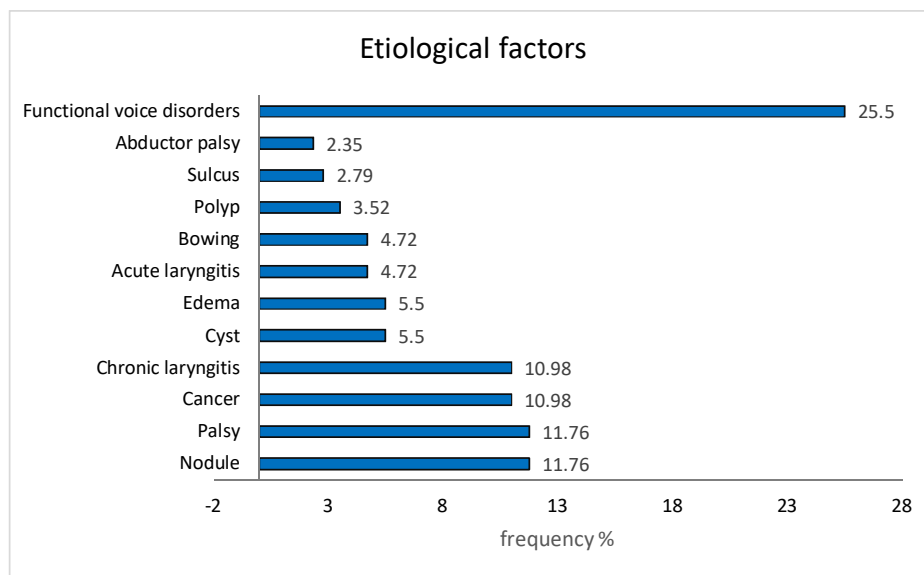


Fig. 1. Etiological factors in hoarseness of voice

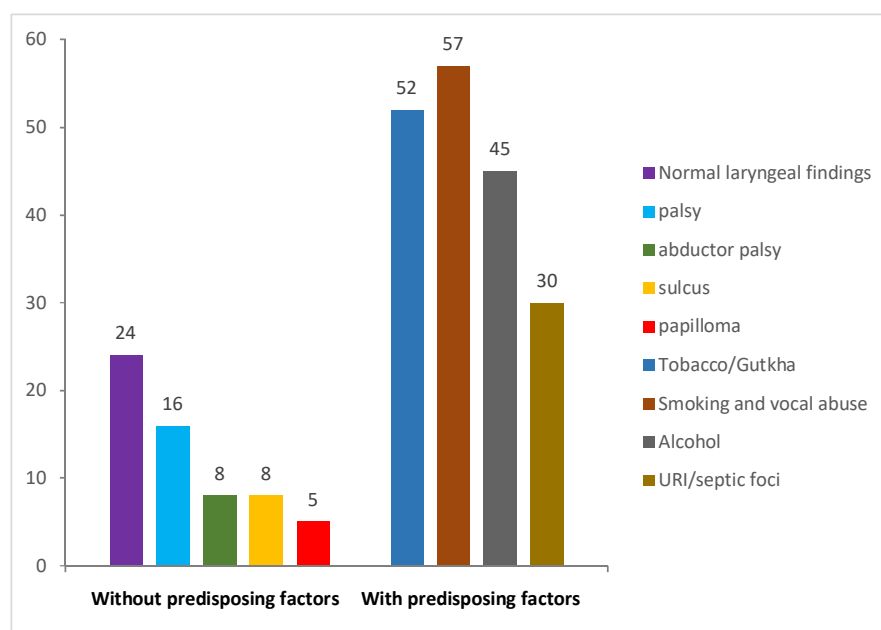


Fig. 2. Comparison between without and with predisposing factors in the patients with hoarseness of voice

## Discussion

In our study, the incidence of hoarseness of voice in total OPD was 0.46%, and the incidence among new cases was 0.65%. Other studies found similar results, such as 0.51% in Rao et al., 0.66% in Sambu Baitha et al., and 0.3% in Prabhu study (9-11). The varied results were due to various etiologies as well as a lack of awareness of the condition that caused the hoarseness. In this study, males were affected more than females, which is consistent with other reports (10-14). Male predominance may be explained by various habits, such as smoking, chewing tobacco with lime, and alcohol consumption. Males were subjected more to occupational hazards than women who spend the majority of their time indoors (1). In our study, the most common age group with hoarseness of voice was 41–60 years old (49.8%). Soni et al., observed a higher incidence (55%) in the people aged 50–70 years (1). The most common benign laryngeal lesion was observed. This could be explained by the fact that when combined with occupational exposure, this age group is more prone to verbal abuse. Cancer of the larynx is uncommon in Indians under the age of 30. According to Herrington-Hall et al, laryngeal pathologies are more common in the elderly, with carcinoma and vocal fold paralysis being the most common causes of vocal dysfunction in the elderly.

In the current study, 20.4% of the total cases were smokers, and 17.65% of the cases with hoarseness were tobacco/Gutkha consumers. Whereas 60% of the cases in Soni et al. study was smokers, Pal et al. study showed 33% of smokers with hoarseness (1, 15). Also, 21.56% of our population is rural, poor, illiterate, and farmers and laborers who are mostly oblivious to changes in voice and seek medical attention only when they have more distressing symptoms.

Chronic mucosal irritation caused by heavy smoking, excessive alcohol consumption, and tobacco chewing play an important role in the etiology of hoarseness in Asian countries. Lower economic status, poorer nutrition, poorer general health, different food habits, vocal habits, smoking and drinking habits, unhealthy environment, and different social customs

have all been observed to influence the incidence of hoarseness in India and other developing countries (12).

Boominathan et al. surveyed 400 voice professionals and observed that 86% of politicians and 74% of vendors had voice issues. When compared to teachers and singers, politicians and vendors had the highest point prevalence of voice problems. Voice problems were reported by 59% of the singers and 49% of the teachers (16).

According to this classification, 1.57%, 5.5%, 18.82%, and 74.11% of Level I, II, III, and IV Vocal Professionals were found in our study. According to Batra et al., 52.9% of the patients have level IV vocal usage, i.e., nonvocal/nonprofessional (14). The remaining three levels each had a distribution of 15.7%.

The association between vocal abuse and upper respiratory tract infection does not always exist. Despite the frequent absence of unknown inflammation, trauma, toxins, and infection were suspected causes.

Hoarseness was explained in the case of vocal cord polyps by the fact that a lesion involving the free margin of the cords inevitably disrupts the vibratory function of phonation. In our study, the majority of patients with hoarseness of voice complaints had it for 3 months (60%), 3–6 months (24.7%), 6–12 months (7.84%), and 7.45% had it for more than a year. According to the Banjara et al. study, the majority of patients (61.3%) had complaints for at least three months. 25.1% of the complaints last after 3–6 months, 10.76% after 6–12 months, and 20.72% after more than a year.

Soni et al., identified that the majority of patients had complaints for 3 months (45%), 3–6 months (28%), 6–12 months (23%), and 4% had complaints for more than 1 year (17).

The most common etiology was a normal vocal fold found nodule, which was found in 25.5% of cases with functional voice disorders. Vocal cord palsy was another common pathology. It was the most common pathology observed in males. According to other studies, it is between 3 and 9%.

In our study, the other etiology was chronic laryngitis which had an equal incidence (9.56%).

Dysphagia was found to be associated with hoarseness of voice in 6.27% of the patients in our study. Patients with dysphagia had laryngeal growth involving the hypopharynx because the supraglottis shares its lateral wall. Other symptoms in the current study included foreign body sensation (6.27%), vocal fatigue (4.72%), neck swelling (2.74%), dyspnea (1.57%), laryngeal trauma (1.57%), and aphonia (0.78%).

In the current study, the majority of patients were referred for speech therapy and psychotherapy, as well as vocal conservation and vocal hygiene maintenance. Medical therapy and speech therapy were recommended for infectious lesions, reflux laryngitis, acute and chronic laryngitis, and tuberculosis. Cases with cancer etiology were referred to radiotherapy. Patients with vocal palsy were advised to have a chest, cardiovascular, and neurological exam to rule out any pathology (18).

### Conclusion

When hoarseness lasts more than 15 days, a referral to a voice specialist is recommended. Any suspicious area should be biopsied for malignancy diagnosis. There was a male predominance, and housewives were the most affected among females. The most common symptoms were functional voice disorders followed by vocal nodules. Because etiological data varies by geographical area, each case should be thoroughly evaluated to ensure early diagnosis of underlying pathology and accurate treatment.

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None declared.

### Data availability

The raw data supporting the conclusions of this article are available from the authors upon reasonable request.

### Conflict of interest

None declared

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