



ETIOPATHOLOGICAL STUDY OF 100 PATIENTS OF HOARSENESS OF VOICE: IN A RURAL TERTIARY CARE HOSPITAL

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Abstract

Background: Voice production in humans is a complex physiological process. A normal or healthy voice is defined by specific attributes such as pitch, loudness, and quality, which together creates a clear meaning and evoke emotional responses, ensuring a pleasant effect. Hoarseness is one of the common symptoms with which patients present to Otorhinolaryngology OPD and indicates diseases ranging from benign to the most malignant.

Aim: This study aims to evaluate the clinicopathological profile of patients with Hoarseness of voice in the hilly terrain of Northern India and to identify the association of common predisposing factors leading to hoarseness.

Methods: This prospective study was carried out on 100 patients attending the Department of ENT Government Medical College, Doda, Jammu and Kashmir, with Hoarseness of voice from March 2023 to May 2024. A detailed history followed by clinical examination and laryngeal endoscopy was carried out.

Results: Male: Female ratio came out to be 1.9:1 with labourers representing the largest group comprising 26% of total cases. Ninety-five percent patients were from rural areas. Most of the patients presented with a symptom duration of 1 month. Smoking was the commonest predisposing factor (34.5%). Among Benign lesions, Vocal nodule emerged as the leading cause (32%) of Hoarseness of voice.

Conclusion: It is very important to increase public awareness regarding the ill effects of smoking and alcohol consumption on laryngeal health. All patients with hoarseness of voice should undergo laryngoscopy followed, by biopsy for suspicious cases.

Keywords: Hoarse voice, Alcoholic, benign, oedema, larynx, malignant, smoker.

Introduction:

Voice production in humans is a complex physiological process. It is not merely a tool for communication but also acts as a medium to convey our emotions and reflect personality traits.

Every human voice is influenced by anatomical, physiological, cultural, sociolinguistic, behavioural, and biological factors. A normal or healthy voice is defined by specific attributes such as pitch, loudness, and quality, which together creates a clear meaning and evoke emotional responses, ensuring a pleasant effect. Phonation depends on three key components: a pressure gradient generated by expired air, well-structured vocal cords, and a resonating chamber that shapes the sound. Any disruption in this mechanism may result in dysphonia¹.

Hoarseness of voice is defined as a coarse, rough, grating sound due to changes in anatomical structures and pathophysiological processes. It is one of the commonest symptoms in otolaryngological practice and it indicates diseases ranging from totally benign conditions to the most malignant ones. Hoarseness lasting for more than 2 weeks must be completely evaluated².

The etiology of hoarseness is diverse and can vary geographically. In developing countries like India incidence of hoarseness of voice is influenced by social, economic (low socio-economic status) and environmental factors (such as pollution, occupational hazards).³ This study aims to evaluate the clinicopathological profile of patients with hoarseness of voice in hilly terrain of Northern India.

Materials and Methods

This prospective study was carried out in the department of ENT, Government Medical College Doda, Jammu and Kashmir on a total of 100 patients. The duration of study was 14 months, from March 2023 to May 2024. A clinical proforma was completed for each patient including a detailed history, clinical examination, and all relevant investigations. Indirect laryngoscopy followed by 70-degree endoscopy, was carried out in all patients.

Inclusion criteria

1. Patients above 10 years of age with hoarseness of voice

Exclusion criteria

1. Patients ≤ 10 years of age.
2. Patients with congenital laryngeal causes, craniofacial or velopharyngeal anomalies.

All patients underwent a complete preliminary work-up, including a detailed otorhinolaryngologic examination. Routine investigations like complete blood counts, fasting and postprandial blood sugar, Urine albumin and sugar were carried out. X-ray chest (PA view) and X-ray soft tissue neck- (AP and lateral view), and histopathological examination of suspected malignancies were done whenever indicated.

Statistical analysis

The data was expressed in number, percentage, mean and standard deviation. Statistical Package for Social Sciences (SPSS 20.0) version was used for analysis.

Results:

Table 1: Age distribution of study patients

Age	Number	Percentage
11-20	8	8%
21-30	10	10%
31-40	24	24%
41-50	10	10%
51-60	22	22%
61-70	18	18%
>71	8	8%
Total	100	100%

In our study, the majority of patients were in the age group of 31-40 years (24%) followed by 51-60 years (22%). The eldest patient was 86 years of age (Table 1). Out of 100 patients, 66 were male and 34 were female, with male: Female ratio of 1.9:1 (Fig.1). Labourers (26%) constituted single largest occupational group, with least belonging to homemakers (10%) (Table 2). Most of the patients, i.e., 40% presented to OPD within 1 month of symptom onset. The most common finding on laryngoscopy was vocal cord nodule (32%), followed by vocal polyp in 18% of patients with trauma being least common finding, seen in 3% of patients (Table 4).

Fig. 1 Sex distribution of the study sample

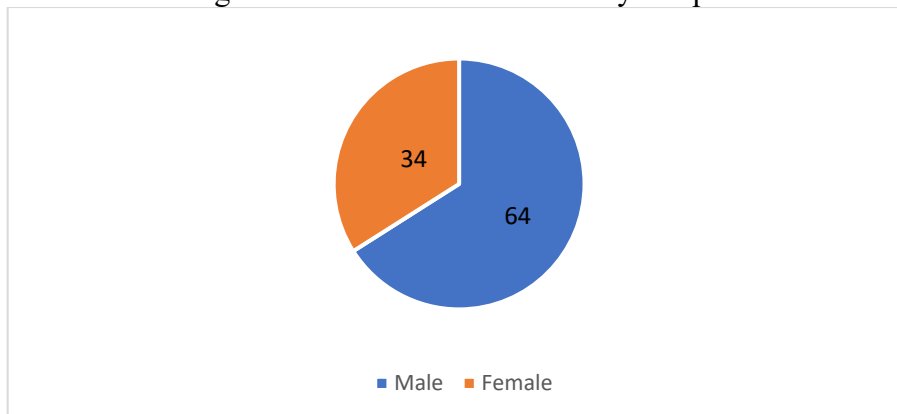


Table 2: Occupation

Occupation	Male	Female	Total
Labourer	26 (39.4%)	0	26 (26%)
Farmer	13 (19.7%)	0	13 (13%)
Home maker	0 (0%)	10 (41.2%)	10(10%)
Student	10 (15.15%)	6 (17.65%)	16 (16%)
Teacher	7 (10.6%)	8 (23.5%)	15 (15%)
Others	10 (15.15%)	10 (17.65%)	20 (20%)
Total	66 (100%)	34 (100%)	100(100%)

Table 3: Duration of hoarseness

Duration in months	Frequency	Percentage
<1 month	40	40%
1-3 months	26	26%
4-6 months	8	8%
7-9 months	16	16%
>12 months	10	10%
Total	100	100%

Table 4: Personal habits predisposing to Hoarseness of voice

Habits	Number	Percentage
Alcohol	22	18.96%
Smoking	40	34.5%
Tobacco	20	17.24%
None	34	29.3%
Total	116	100%

Table 5: Aetiology of Hoarseness of voice

Diagnosis	Number	Percentage
Vocal Nodule	32	32%
Vocal Polyp	18	18%
Vocal cord Palsy	10	10%
Malignancy	12	12%
Laryngitis	14	14%
Keratosi	7	7%
Trauma	3	3%
TB Larynx	4	4%
Total	100	100%

Discussion

Hoarseness of voice is a very common symptom of voice disorders and can result from a variety of laryngeal causes, ranging from benign to malignant ones. When hoarseness persists for more than 2 weeks, it should be thoroughly evaluated to rule out malignancy. Its evaluation includes, a detailed history followed by clinical examination.

In our study, the majority of patients presenting with hoarseness of voice were seen within the age group of 31–40 years and 51–69 years. Similarly, Kamana et al.² and Khurshid et al.⁴ reported most patients in the age group 31–40 years. Vivek et al.³ also noted maximum number of patients in the age group of 31–49 years (22.9%) and 51–60 years, consistent with findings in our study.

The gender distribution in the present study was 1.9:1, indicating a male predominance. This aligns with prior studies done by Srirangam Prasad K⁵ (1.7:1) and Baitha et al.⁶ (2:1). In contrast, Rajat et al.⁷ observed an equal gender distribution (M: F=1:1). The observed male predominance in our study is in accordance with the literature, which often attributes this finding due to higher rates of smoking, tobacco chewing and alcohol consumption. Also, there is more exposure to occupational hazards among males.

Labourers comprised the single largest occupational group among patients (26%), with housewives being the least common (10%). Males were predominantly labourers, whereas females were mostly homemakers. This distribution is consistent with the study done by Kamana et al.⁴, who found housewives to be the majority among female patients (30%) and labourers among males (33%). Baitha et al.⁶ and Srirangam et al.⁵ similarly reported labourers as the most common occupation, accounting for 36.6% and 36%, respectively. In regards to occupation, manual labourers were the largest group, followed by farmers. A significant majority (95%) of patients were from rural areas, with only 5% residing in urban areas. This is similar to a study done by Sambu Bhatia⁶ with rural patients (75.5%) and urban (24.5%) with a ratio of 3:1. Our tertiary healthcare centre is in the hilly terrain of northern India, mainly catering to the rural population of the region.

There was a close association between hoarseness of voice and both smoking and alcohol consumption. In our study, 40 patients (34.5%) were smokers and 22 (18.96%) were alcoholics. These figures are comparable to the findings by Kumar et al.⁸, who reported 32% smokers and 21% alcohol consumers in a study group of 100 patients. A similar finding was seen by Banjara et al.,⁹ with 43% as smokers.

Among patients with benign lesions, vocal nodules emerged as the most frequent cause of hoarseness of voice, accounting for (32%), followed by vocal polyps (18%). Other findings noted on endoscopic examination included laryngitis (14%), malignancy (12%), vocal cord palsy (10%) and keratosis in 7% of patients. Chinthapeta et al.¹⁰ conducted a study on 50 patients and reported similar results, identifying vocal nodules as the most common etiology (24%). In another study done by Sriranga Prasad k⁵, chronic laryngitis was identified as the most common etiology (22%), followed by acute laryngitis (21%), vocal nodule (12%), vocal polyp (5%), tubercular larynx (6%), vocal cord paralysis (10%), and carcinoma (3%). Laryngeal malignancy was reported as the most common etiology by Amarnath et al.,¹¹. Laryngeal malignancy was mostly reported in males with a history of bidi smoking and alcohol consumption.

Out of 10 cases of vocal cord palsy, left recurrent laryngeal nerve palsy was observed in 8 patients and no case of bilateral vocal cord palsy was noted. Vocal cord palsy was seen in 8 males and 2 females with a ratio of 2:1, consistent with findings of a study by Luke L M et al.¹², who also documented a male preponderance. In our study, Laryngeal trauma was identified in only 3 cases, and tuberculosis of the larynx in 4 cases, reflecting a decreased incidence likely due to earlier diagnosis and prompt treatment of pulmonary tuberculosis, as noted by Shrestha et al.¹³.

Most Patient in our study presented with symptom duration of less than 1 month (40%) followed by 3 months. Banjara et al.⁹ also reported presenting complaints within 3 months in 61.35% (22%). Voice abuse history was noted in 39% of patients, in concordance with Vivek s et al.³(41%).

Conclusion

Hoarseness of voice is a symptom with diverse etiologies that vary in different geographic regions. In our study, the majority of patients presenting with hoarseness of voice were seen within the age group of 31–40 years and 51–69 years, with a male predominance. Labourers had the maximum incidence of hoarseness of voice (26%). Smoking was the most encountered habit, followed by alcohol consumption. The etiology of hoarseness of voice, in decreasing order were vocal nodules, vocal polyps, laryngitis, malignancy, vocal cord palsy, keratosis, laryngeal tuberculosis and trauma. Hence, it is very important to increase public awareness regarding the harmful effects of smoking and alcohol consumption on laryngeal health. All patients with hoarseness of voice should undergo laryngoscopy, followed by biopsy for suspicious cases.

Conflict of interest: Nil

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