

Analysis of Clinical Profile, Different Etiological Factors of Hoarseness of Voice: A Cross-Sectional Study**Sandhya¹, Chitranjan Kumar², Umesh Kumar³**¹Senior Resident, Department of ENT, Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar.²Senior Resident, Department of ENT, Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar.³Associate Professor, Department of ENT, Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar.

Received: 01-04-2026 / Revised: 15-05-2026 / Accepted: 21-06-2026

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Conflict of interest: Nil

Abstract**Background:** In ENT practice, hoarseness of voice is one of the most common presenting complaints. To generate a regular voice, vocal cords must be able to accurately approximate one another, be the proper size and stiffness, and be able to vibrate consistently in reaction to the air column. The current study's objective was to evaluate the causes and connections among the many factors that lead to hoarseness of voice.**Methods:** This study was carried out in the ENT department of ANMMCH in Gayaji, Bihar, between February and July of 2025. 144 patients who came to the ENT OPD with hoarseness of voice were included based on the inclusion and exclusion criteria. Each patient received an explanation of the study's methodology and goal, and their informed consent was acquired. SPSS software 24.0 was used to gather and evaluate all patient demographic and clinical data.**Results:** The clinical study included 144 participants. Most of the patients were between the ages of 51 and 70, and most of them were men. Benign causes outnumbered malignant ones. Of the patients, 25% were smokers. 33.3% of patients had VC polyps.**Conclusion:** Voice hoarseness can be caused by a variety of clinical problems. Even the slightest delays might have a significant impact on the patients' stage. A thorough evaluation is required for each patient. A complete history, physical examination, and pertinent investigations may lead to an accurate and timely diagnosis of the underlying cause.**Keywords:** Alcoholic, Benign, Edema, Larynx, Malignant, Smoker.**DOI:** 10.25258/ijcpr.18.7.64

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Introduction

Hoarseness is one aspect of poor vocal quality. Any condition that alters the regular, recurring synchronous vibrations of the vocal cords and the breath stream that causes them might result in hoarseness.[1] Hoarseness is a harsh voice brought on by variations in the periodicity or strength of successive sound waves. The vocal apparatus consists of the larynx, respiratory system, and supraglottic vocal tract [2].

Breathiness, roughness, voice breaks, or abnormal pitch fluctuations are all examples of hoarseness. According to Garrett et al. (1999), complaints of hoarseness should not be disregarded because they may indicate a serious illness. "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," according to Chevalier Jackson [3]. One of the most prevalent symptoms in otolaryngological practice is hoarseness of voice, which can be a sign of anything from completely benign conditions to the most serious ones [4]. Acute laryngitis, chronic laryngitis, polyps, cysts, nodules, laryngeal cancer, vocal cord paralysis, and functional reasons are some of the most frequent causes of hoarseness of voice. Medications such as diuretics, anticholinergics, and antihistamines can also induce hoarseness of voice.

Anabolic drugs, thyroid and growth hormone issues, intubation (during anesthesia), and aging are examples of hormonal disturbances [5]. To assess

the condition of the vocal folds, laryngeal visualization is required. It can be performed via stroboscopy, indirect laryngoscopy, or direct laryngoscopy (rigid and flexible). Hoarseness is a common presentation in ENT OPD, hence it is crucial to assess it with the right instruments.

Material and Methods

This cross-sectional study was carried out between February and July of 2025 in the ENT department of the Anugrah Narayan Magadh Medical College and Hospital in Gayaji, Bihar. This study included 144 individuals who came to the ENT department complaining of hoarseness of voice. Patients with

voice problems other than hoarseness, such as rhinolalia aperta, rhinolalia clausa, snoring, stertor, etc., mental retardation, noncooperative, seriously disabled, and comatose patients, as well as children under the age of ten, were not included in this study. Each patient received an explanation of the study's methodology and gave their informed consent.

Number, percentage, mean, and standard deviation were used to express the data. The study was conducted using the Statistical Package for Social Sciences (SPSS 24.0) version.

Results

Table 1: Distribution of Gender

Gender	No. of cases	Percentage
Male	92	64%
Female	52	36%

The study involved 144 patients in total. There were more male (92, or 64%) than female (52, or 36%) (Table 1).

Table 2: Distribution of Age Groups

Age Group (in yrs.)	No. of cases	Percentage
20-30	8	5.6%
31-40	36	25%
41-50	24	16.6%
51-60	34	23.6%
61-70	34	23.6%
71-80	8	5.6%

Maximum number of patients 34 (23.6%) were in the age groups between 51-60 and 61-70 years (table 2).

Table 3: Distribution of clinical diagnosis

Clinical Diagnosis	No. of cases	Percentage
Acute Laryngitis	10	6.9%
CA Glottis	20	13.9%
CA Hypopharynx/PFF	6	4.2%
CA Supraglottis	6	4.2%
Benign lesions	34	23.6%
Others	4	2.8%
LPRD	32	22.2%
VC Fixity Due to Other Malignancies	14	9.7%
VC Palsy	18	12.5%

Maximum patients had benign lesions 34(23.6%) (Table3).

Table 4: Association of Hoarseness of Voice with Exposure to Irritants/Addictions

Addictions	No. of cases	Percentage
Alcoholic	4	2.8%
Smoker	36	25%
Pan Chewing	6	4.2%
Smoker+Alcoholic	6	11.1%
Smoker+Pan chewing	2	1.4%
Nil	80	55.6%

36(25%) were smokers and 80(55.6%) patients had no irritant exposure (Table 4).

Table 5: Benign Causes of Hoarseness of Voice

Benign	No. of cases	Percentage
VC Polyp	10	33.30%
VC Cyst	6	20%
VC Nodule	8	26.70%
VC Keratosis	2	6.70%
Early Reinke's Edema	6	20%

10(33.3%) patients had VC polyp and 2(6.70%) had VC keratosis (Table5).

Table 6: Association of hoarseness of voice and history of direct trauma

History of Direct Trauma	No. of cases	Percentage
Yes	2	1%
No	142	71%

2(1%) had history of direct trauma (Table6).

Table 7: Hoarseness of voice and associated symptoms

Associated Symptoms	No. of cases	Percentage
Nil	52	36.1%
Dysphagia	14	9.7%
Dyspnoea	6	4.2%
Stridor	4	2.8%
Heart burn	32	22.2%
Weight loss	16	11.1%
Loss of appetite	4	2.8%
Nasal regurgitation	6	4.2%
Hawking sensation	2	1.4%
Cough	4	2.8%
Cad	2	1.4%
Others	2	1.4%

52(36.1%) patients did not have any associated symptoms along with hoarseness of voice (Table 7).

Table 8: Benign lesions VS malignant lesions

Type of lesions	No. of cases	Percentage
Benign conditions	88	61.1%
Malignant lesions	56	38.9%

Maximum patients 88(61.1%) had benign and 56(38.9%) patients had malignant lesions (Table8).

Table 9: Association of Hoarseness of Voice and Occupation

Occupation	No. of cases	Percentage
Teacher	30	20.83%
Labourer	88	61.1%
Others	26	18.0%

88(61.1%) were manual labourers in comparison to other occupations (Table 9).

Discussion

Of the 144 cases in this study, 64% (92) are male and 36% (52) are female. In a study with 180 participants, Gaurav Kataria et al. found that the male to female ratio was 1.7:1. Most studies on hoarseness of voice also concluded that men were generally more likely than women to experience it. In contrast, Brodnitz reported almost equal numbers for both sexes, with a slight male preponderance; nonetheless, there was a notable disparity between the individual situations.[6,7] The majority of patients in this study were between

the ages of 51 and 60 and 61 and 70 (23.6%). According to a study by Gaurav Kataria et al. on 180 patients, the majority of those affected were in the 31–40 age range (29.44%). Additionally, a study by Baitha et al. discovered that 28.18% of patients were in the 31–40 age range.[3] According to a different study by Kumar et al., 31% of the patients were between the ages of 31 and 40. [8] According to a study conducted by an Indian Babu VS, 22.31% of patients were between the ages of 31 and 40.[9] Hoarseness of voice was the primary symptom in the current investigation, and benign lesions of VC accounted for the majority of clinical diagnoses. 23.6% of cases are benign lesions of VC [17], followed by LPRD 22.2% [16], Carcinoma

Glottis 13.9% [10], VC palsy 12.5% [9], VC fixity due to other malignancies 9.7% [7], acute laryngitis 6.9% [5], Carcinoma supra glottis and CA hypopharynx each accounting for 4.2% [3], and other causes of hoarseness account for 2.8% [2]. Similar to the results of our current investigation, a study by Baitha et al. discovered that laryngitis is the primary cause of hoarseness, followed by vocal cord nodules and vocal cord polyps [3]. Contrary to our findings, studies by Reiter R. and Kataria G. et al. also discovered that laryngitis accounts for the greatest number of cases. [6]

According to Chopra and Kapoor (1997), 73.14% of patients in the 20–50 age range had benign glottic lesions that required microlaryngeal surgery. In contrast, Saxena and Gode's (1975) study of patients undergoing microlaryngeal surgery revealed a low incidence of 58% in the age category mentioned above.

According to the current survey, the majority of those with addictions were smokers (25%), followed by smokers and alcoholics (11.10%), pan chewers (4.20%), alcoholics (2.80%), and smokers and pan chewers (1.40%). According to a study by Gaurav et al., 41.67% of participants had a smoking habit. According to a study by Banjara et al., 43% of the participants in the study were smokers.[10] He also discovered that cigarette smoke was a significant risk factor for hoarseness in a study conducted by Broeket al.[11] Hansa et al. found that smoking was the most common behavior causing hoarseness of voice in 108 cases (43%), followed by alcohol use (29.48%), vocal abuse (31%), and chewing tobacco or gutkha (29.48%).[8]

According to the current study, the most frequent benign cause of voice hoarseness was vocal cord polyp (33.30%), followed by vocal cord nodule (26.70%), vocal cord cyst and Reinke's edema (20% each), and vocal cord keratosis (6.70%). Vocal chord polyps were the most prevalent benign laryngeal lesions in our investigation. According to Dikkerset et al., the incidence of vocal polyps was 71.2% for Shaw et al. and 68.3% for Kambicet al.

However, the incidence for Chopra et al. was only 16%. Vocal nodules occurred 33.33% of the time in their series. [12] According to the study, only 1% of the 72 individuals who complained of hoarseness of voice had previously experienced direct damage from partial hanging. The remaining 99% (71) had no history of trauma. According to the current study, the majority of people who have hoarseness of voice (36.1%) do not exhibit any additional symptoms. Heartburn (22.2%), weight loss (11.1%), dysphagia (9.7%), dyspnea and nasal regurgitation (4.2% each), stridor and cough (2.8% each), CAD, hawking feeling, and others (1.4% each) were the most common symptoms among

those with concomitant symptoms. The most frequent presenting characteristic, according to Ghulam et al., is hoarseness of voice (100%), which is followed by dysphagia (63%), dyspnea (36.95%), and sore throat (48.91%).

According to Banjara et al. (2011), the most frequent complaint was voice alteration (95.61%), which was followed by dysphagia (16%), foreign body sensation (16%), and vocal fatigue (10%).[13]

61.1% of the 72 patients in the study who had hoarseness of voice as the primary symptom had benign conditions (such as benign vocal cord lesions, acute laryngitis, LPRD, VC palsy from benign causes, and other benign conditions), while 39% of the patients had malignant lesions, of which 13.9% had carcinoma of the larynx (glottis).

According to a research by Kataria G et al., 11.67% of patients had laryngeal cancer [10]. According to a study by Baitha et al., 16% of the sample population had laryngeal cancer.[3]

According to a research by Banjara et al., 9.56% of patients had laryngeal cancer [13]. In contrast, the incidence of cancer was 18% in a study conducted by Badra K and just 8% in a study conducted by Swapn Ghosh.[14] Additionally, the incidence of cancer was 12% in another Parikh study.

Our study's incidence of cancer (39%) was found to be higher than that of the other studies; this could be because of their socioeconomic status and habits [10,11,15,16,17]. According to this study, the majority of patients with hoarseness of voice were laborers (61.1%), followed by teachers (20.83%), and others (18.0%).

According to a study by Gaurav Kataria et al., the greatest group impacted is manual laborers (26.11%), followed by housewives (23.89%) and farmers (14.44%).[6] According to a research by Baitha et al. on 110 patients, manual laborers were most impacted (36.36%), followed by housewives (21.81%), students (14.54%), and teachers (10%).[3]

Conclusion

A person's voice is an essential part of his identity and the most important tool he employs for communication in daily life. Both the patient and the doctor should be concerned about any change in tone. The clinician should immediately do direct laryngoscopy if neither fiberoptic laryngoscopy nor indirect laryngoscopy can yield a definitive diagnosis. Hoarseness of voice was linked to clinical features like heartburn, weight loss, stridor, coughing, CAD, hawking feeling, nasal regurgitation, dysphagia, and dyspnea.

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