

Clinicopathological Evaluation of the Patients with Hoarseness of Voice: A Prospective Study

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Abstract

Introduction: A world of complicated circumstances makes it nearly difficult to imagine a life without communication, but the human voice is a remarkable gift. The human voice is utilised to convey a variety of thoughts and feelings in addition to spoken language. The human voice has many different aspects, including crying, singing, and expressing. A change in the typical quality of voice is referred to as hoarseness.

Method: From June 2020 to December 2021, this cross-sectional study was done at Nalanda Medical College in Patna, Bihar. Regardless of their age, gender, or length of illness, 150 individuals who presented with hoarseness of voice were included in the study. An extensive clinical, ENT, and history evaluation was performed. According to the classification created by Kaufmann and Isaacson, vocalists were divided into four tiers.

Results: A total of 150 cases were examined, with a male to female ratio of 1.67:1. Ages of the patients ranged from 12 to 80. Hoarseness was most frequently reported among labourers (42.05%), with vocal cord paralysis being the most common cause (23.00%) and smoking being the most prevalent risk factor (64%).

Conclusion: Hoarseness can be caused by anything from minor infections to dangerous cancers. Most of the patients that visit the OPD at our tertiary centre, which is on the outskirts of the city, are from rural areas, and the majority of these patients work as labourers and have a habit of smoking cigarettes.

Keywords: Vocal Cord Paralysis, Human Voice, Workers.

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Introduction

In a world with a complicated environment, it is practically hard to imagine a life without communication. The human voice is a unique gift. The human voice is utilised to convey a variety of thoughts and feelings in addition to spoken language [1]. The human voice has many different aspects, including crying, singing, and expressing. A change in the

typical quality of voice is referred to as hoarseness. Hoarseness can indicate roughness, breathiness, gaps in the voice, or unnatural fluctuations in pitch. The phrase "Hoarseness is a symptom of highest significance and calls for a distinct consideration as a subject because of the frequency of its occurrence as a distant indication of malignancy and other conditions" [2] is used to describe this

ailment. . Human voice production is a complicated process that involves phonation, breathing, and articulation. The two main categories of voice abnormalities are functional and organic. The vocal cord structure and Reinke's space morphology are unaffected by the functional group of voice disorders, and voice abnormalities are secondary to diseases of muscle tension [3]. In order to properly assess a patient with hoarseness, a thorough history, physical examination, and laryngoscopy are often required. Any patient who experiences hoarseness for more than two weeks without an obvious benign reason needs to have their larynx thoroughly examined using direct or indirect laryngoscopy. Vocal hygiene, voice therapy, detection and treatment of any underlying disorders, and targeted treatment of vocal cord lesions are all included in the management of hoarseness [4,5]. Common causes of benign lesions include vocal abuse, misuse, overuse, speaking in odd tones, exposure to irritants such as smoke, dust fumes, alcohol, etc., and vocal abuse, misuse, and overuse. Infections of the larynx, such as the respiratory papillomatosis caused by the human papilloma virus, and allergies may also contribute to the formation of such lesions [6].

The study's goal was to determine the prevalence, clinical characteristics, common risk factors, and etiology of hoarseness of voice.

Method

This prospective observational study was carried out for a period of 12 months in Nalanda Medical College in Patna, Bihar with the agreement of the institutional ethics committee and protocol review committee. In total, 150 individuals who underwent open cavity mastoidectomy and were included in the study totaled 150 patients. All of the patients who were included in this study provided written informed consent, and a purposive sample method was adopted.

Methodology

Each patient was added to the study after providing their informed permission and meeting the inclusion requirements. Each subject was assessed in accordance with the study's proforma. They were evaluated mostly based on their symptoms, followed by a cavity check. Each patient had follow-up visits every two weeks for up to three months. In this study, a full epithelialization of an open mastoid cavity was given a borderline healing duration of 2-3 months. Therefore, any patient presenting with symptoms after this time was considered to have a cavity problem. Clinical symptoms were examined in relation to the cases. Basic clinical exams were performed. Cavity inspection was used to identify any of the proven predisposing factors in each patient.

Results

Between June 2020 and December 2021, 350 ENT OPDs were recorded. 150 of the patients out of this group had hoarse voices. Therefore, 0.65 of all cases and 1.14% of new OPD cases were computed as the incidence. Most patients with hoarseness were in the middle and older age groups, and 33.32 percent of them were in their fourth decade of life. Patients' ages ranged from 12 to 81 years (Mean age - 44.6 yrs). The majority of the 150 patients (62.68%) were men, while the bulk of the patients (71.41%) were from rural areas.

Patients were primarily from the labourer class (42.05%), followed by housewives (31.73%). Vocal specialists were grouped in accordance with Koufman and Isaacson's classification [6]. Level I or the top vocal performers (singers) makes up 4 (3.95%), Level II or the professional voice users (businessmen) makes up 1 (7.13%), Level III or non-vocal professionals (teachers) makes up 7 (5.54%), and Level IV or non-vocal nonprofessionals (labourers, housewives, and students) makes up 128 (83.33%).

In as many as 23.01% of patients, vocal cord paralysis was the main cause of hoarseness. Malignancy (16.66%) and

vocal nodules (15.07%) were their immediate successors [Table 1].

Table 1: Etiology-wise distribution

Etiology	Percentage of Patients
Acute laryngitis	4.75%
Vocal cord paralysis	23.0%
Vocal nodules	15.06%
Reinke's edema	4.75%
Malignancy	16.65%
Functional	3.95%
Chronic non-specific laryngitis	11.91%
Vocal polyp	7.13%

Smoking continues to be the single most significant predisposing factor seen in as many as 64% of patients, despite the fact that the majority of patients with hoarseness of voice were exposed to numerous predisposing factors. In 39% of patients, GERD is still the second-most significant predisposing factor [Table 2].

Table 2: Predisposing Factors:

Factors	Percentage of patients
Smoking	64%
Vocal abuse	30.94%
Gastroesophageal reflux disease	39%
Upper respiratory infection	6.33%
Trauma to neck	4.75%
Thyroid surgery	3.16%
Intubation	1.57%
Systemic Illness	19.03%
Idiopathic	12.68%
Tobacco	32.52%

Discussion

In our study, 150 patients who had hoarse voices for a year participated. The incidence of new OPD cases was 1.14% and 0.65 percent of all cases, respectively. In a different study, the prevalence of hoarseness was 0.44% for all OPD and 0.63% for newly diagnosed patients. Patients in our study ranged in age from 12 to 81 years (Mean age - 44.6 yrs). Patients between the ages of 60 and 71 (23.81%) and 30 to 41 (33.32%) made up the bulk of those seen. The majority of patients, or 28.18%, were found to be between the ages of 31 and 40, according to Baitha et al. According to Hansa et al., the bulk of this group (22.31%) is between the ages of

31 and 40. This might be because people are more vocally active in this decade. These results are all comparable to what we found. According to Herrington-Hall et al., age is a factor that should be taken into consideration. Because vocal fold paralysis and cancer are the most often identified causes of vocal impairment in the elderly [7], it is obvious that laryngeal disorders are more common in the older age group. 71.41% of the patients in our study were from rural backgrounds, whereas 28.56% came from urban backgrounds. Baitha et al study had 75.5% of their patients from rural backgrounds and 24.5% from urban backgrounds, respectively[8]. In our study, farmers or labourers made up the

majority of cases (42.05%), followed by housewives (31.73%). Our research is consistent with a study by Baitha et al. that included 57% domestic workers and labourers. Laborers (24%) were the single largest category in the study, according to Kumar et al. The fact that our hospital is located on the outskirts of the city and primarily serves the village population, which is primarily made up of farm labourers, may help to explain why there is a high incidence of hoarseness among workers in our study [9]. Vocal nodules were the third most frequent cause of hoarseness of voice in our study, appearing in 15.06% of cases. They were bilateral in every instance. In patients with persistent laryngitis, Parikh observed that vocal cord nodules were the most frequent finding (50%) and that they were bilateral in 91% of cases. Vocal cord nodules were discovered in 12.72% of patients in a different investigation by Baitha et al., and they were bilateral in every instance (100%) [10]. As much as 64% of individuals presenting with hoarseness of voice in our study had smoking as a predisposing factor. Following it, GERD and voice abuse were observed in 64% and 30.9 percent of cases, respectively. [11] About 3/4 of the patients in our study were from rural areas, and the majority of them were labourers who smoked bidis frequently, which may help to explain the strong link between smoking and GERD. According to a research by Pal et al., smoking accounted for 33% of instances, followed by urinary tract infections (24%), alcohol consumption (22%), chewing tobacco (22%), and voice abuse (17%). Similar to this, Hansa et al study 's found that the most frequent behaviours were smoking in 108 instances (43%) followed by verbal abuse (31%), alcohol consumption (29.48%), and chewing tobacco or gutkha (29.48%). Our data are consistent with this findings.

Conclusion:

Patients visiting the ENT OPD frequently experience hoarseness as a symptom. The incidence that was determined in our study was 0.66 of all cases and 1.14% of new OPD cases. Hoarseness can be caused by anything from minor infections to dangerous cancers. Its genesis, risk factors, and clinical characteristics differ depending on the location. The bulk of patients visiting the OPD at our tertiary centre, which is located on the outskirts of the city, come from rural areas, hence 71.41% of cases who arrive with hoarseness have a rural background. The majority of these patients (42.05%) work as workers and have a smoking habit (64%).

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