

Original Research Article

A Prospective Study of Clinicopathological Evaluation of the patients with Hoarseness of Voice**C.Shekhar Singh^{1*}, Lakshmi Sameeri²,Aarti Singh³**¹*Associate Professor, Department of ENT, Maheshwara Medical College and hospital, Chitkul (V), Near Isnapur X Roads, Patancheru(M), Sangareddy Dist, Telangana, India*²*Assistant professor in ENT, Maheshwara Medical College and hospital, Chitkul (V), Near Isnapur X Roads, Patancheru(M), Sangareddy Dist, Telangana, India*³*PG in ENT, Prathima Institute of Medical Sciences, Karimnagar, Telangana, India*

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Abstract

Introduction: Human voice is an exceptional gift, and in a world of complex environments, it is almost impossible to think of a life without communication. The human voice is not only used for dialogue but to express various thoughts and emotions. Various aspect of human voice includes crying, singing, and expression. Hoarseness is the term used to describe a change in normal voice quality. **Materials and Methods:** This cross-sectional study was conducted in the ENT OPD of Maheshwara Medical College and hospital, Hyderabad, from January 2020 to December 2020. A total of 252 patients presenting with Hoarseness of voice were included in the study irrespective of their age, sex, and duration of disease. A thorough history, clinical, and ENT examination were made. Vocal professionals were classified into four levels according to Kaufmann and Isaacson's classification. **Results:** A total of 151 cases with a male: female ratio of 1.68:1 were analyzed. Patients' age ranged from 13 to 82 years, with the majority of patients presenting in the 4th decade. Most commonly, Hoarseness was seen in laborers (42.06%), with the most common cause being vocal cord paralysis (23.01%) and the majority of patients having smoking as the commonest predisposing factor (65%). **Conclusion:** The etiology of Hoarseness varies from trivial infections to serious malignancies. In our tertiary center, which is at the outskirts of the city majority of the patients coming to OPD are from rural areas, and most of these patients are laborers by occupation and have a habit of a smoking bid is.

Keywords: Human voice, laborers, etiology, vocal cord paralysis

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Introduction

The human voice is an exceptional gift, and in a world of a complex environment, it is almost impossible to think of a life without communication. The human voice is not only used for dialogue but to express various thoughts and emotions[1]. Various aspect of human voice includes crying, singing, and expression. Hoarseness is the term used to describe a change in normal voice quality. Hoarseness may imply breathiness, roughness, voice breaks, or unnatural changes in pitch. In other words, "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"[2]. Voice production in humans is a complex mechanism involving phonation, respiration, and articulation. Voice disorders are most commonly divided into functional and organic. The functional group of voice disorders involves voice abnormalities where vocal cord structure and Reinke's space morphology remain normal, and voice abnormalities are secondary to muscle tension disorders[3]. Evaluation of a patient with Hoarseness includes a careful history, physical examination, and in many cases, laryngoscopy. Any patient with Hoarseness lasting longer than two weeks in the absence of an apparent benign cause requires a thorough evaluation of the larynx by direct or indirect

laryngoscopy. The management of Hoarseness includes identification and treatment of any underlying conditions, vocal hygiene, voice therapy, and specific treatment of vocal cord lesions[4,5]. The common factors responsible for the development of benign lesions are vocal abuse, misuse, overuse, speaking in unnatural tones, exposure to various irritants like smoke, dust fumes, alcohol, etc. Allergy and infective conditions of the larynx (as Human papilloma virus in respiratory papillomatosis) are also responsible alone or in combination with other factors for the development of such lesions.⁶ The objective of the study was to find incidence, clinical profile, common predisposing factors, and etiology of Hoarseness of voice.

Materials and Methods

This cross-sectional study was conducted in the ENT OPD of Maheshwara Medical College and hospital, Hyderabad, from January 2020 to December 2020. A total of 252 patients presenting with Hoarseness of voice were included in the study irrespective of their age, sex, and duration of disease. A thorough history, clinical, and ENT examination were made. Vocal professionals were classified into four levels according to Kaufmann and Isaacson's classification. Level I (elite vocal performers), level II (professional voice users), level III (non-vocal professionals), Level IV (non-vocal non professionals). Routine investigations like CBC, B.sugar, routine urine, X-ray chest- PA view, and X-ray soft tissue neck- AP and lateral view were done. The larynx was examined by fiberoptic laryngoscopy and, if needed, by micro laryngoscopy followed by a biopsy if the suspicious-looking area was seen. Data were entered in Microsoft Excel. The data was further analyzed using SPSS version 21.

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Results

Total ENT OPD from January 2020 to December 2020 was 18898 (10946 new and 7952 old). Out of this, 256 patients presented with

Hoarseness of voice. Thus, the incidence calculated was 0.66 of all cases and 1.15% of new OPD cases.

Table 1: Age distribution

S.No	Age group (in years)	N (%)
1	11-20	7 (5.55)
2	21-30	11 (8.73)
3	31-40	42 (33.33)
4	41-50	17 (13.49)
5	51-60	14 (11.11)
6	61-70	30 (23.80)
7	71-80	3 (2.38)
8	81-90	2 (1.58)

Hoarseness was seen mostly in the middle and elderly age group, with the majority of patients was in the 4th decade of life (33.33%). The age of patients ranged from 13 to 82 yrs (Mean age - 44.7 yrs).

Table 2: Sex distribution

S.No	Total patients	Male (%)	Female (%)
1	251	158 (62.69)	94 (37.31)

Out of 151 patient's majority were male patients (62.69%).

Table 3: Demographic distribution

S.No	Total patients	Urban (%)	Rural (%)
1	251	72 (28.57)	180 (71.42)

Around 3/4th patients (71.42%) belonged to rural areas.

Table 4: Duration of symptom

S.No	Duration of symptom	N (%)
1	3 months	66 (52.38)
2	3-6 months	25 (19.84)
3	6-12 months	21 (16.66)
4	>12 months	14 (11.11)

More than half of the patients (52.38%) presented within 3 months of the appearance of the symptom.

Table 5: Occupation distribution

S.No	Occupation	N (%)
1	Laborer	53 (42.06)
2	Housewife	40 (31.74)
3	Teacher	7 (5.55)
4	Vendor or hawker	6 (4.76)
5	Singer	5 (3.96)
6	Private job	9 (7.14)
7	Student	6 (4.76)

Table 6: Etiology wise distribution

S.No	Etiology	Patients (%)
1	Acute laryngitis	6 (4.76)
2	Vocal cord paralysis	29 (23.01)
3	Vocal nodule	19 (15.07)
4	Reinke's edema	6 (4.76)
5	Malignancy	21 (16.66)
6	Functional	5 (3.96)
7	Chronic non-specific laryngitis	15 (11.90)
8	Tb laryngitis	8 (6.34)
9	Trauma	4 (3.17)
10	Keratoses	4 (3.17)
11	Vocal polyp	9 (7.14)

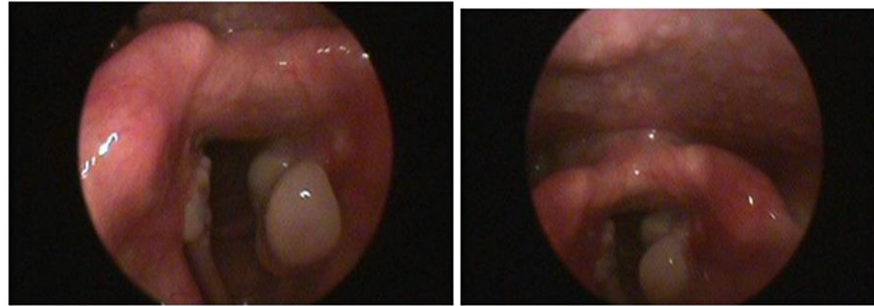


Fig 1:Laryngeal Polyps

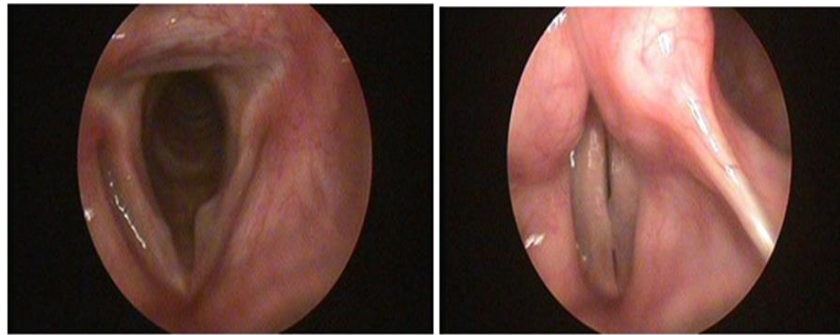


Fig 2:Vocal Polyp

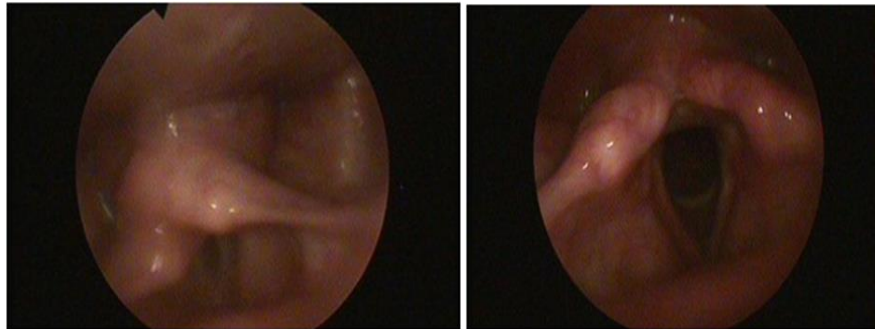


Fig 3:Vocal Cord Paralysis Laryngitis

Laborer class constituted the single largest group of patients (42.06%), followed by housewives (31.74%). Vocal professionals were categorized according to the classification by Koufman and Isaacson.6 Level I or the elite vocal performers (singers) 5 (3.96%), level II or the professional voice users (businessmen) 9 (7.14%), level III or non-vocal professionals (teachers) 7 (5.55%), level IV or

non-vocal nonprofessionals (laborer, housewives, students) 105 (83.33%). Vocal cord paralysis was the leading cause of Hoarseness seen in as many as 23.01% of patients. It was followed by malignancy (16.66%) and vocal nodule (15.07%).

Table 7: Predisposing factors for hoarseness

S. No	Predisposing factors	N (%)
1	Smoking	82 (65)
2	Voice abuse	39 (30.95)
3	Gastroesophageal reflux disease	51 (40)
4	Upper respiratory infection	8 (6.34)
5	Trauma to neck	6 (4.76)
6	Thyroid surgery	4 (3.17)
7	Intubation	2 (1.58)
8	Systemic illness (TB, DM, thyroid disorders)	24 (19.04)
9	Idiopathic	16 (12.69)
10	Tobacco	41 (32.53)

Most of the patients with Hoarseness of voice were exposed to multiple predisposing factors, but smoking remains the single most important predisposing factor seen in as many as 65% of patients. GERD remains the second most important predisposing factor seen in 40% of patients.

Discussion

In our study, 251 patients presented with Hoarseness of voice in a year. The incidence calculated was 0.66 of all cases and 1.15% of new OPD cases. In another study, the incidence of Hoarseness among total OPD was 0.45% and among new cases was 0.64%. In our study, the age of patients ranged from 13 to 82 yrs (Mean age - 44.7 yrs). The majority of patients were seen in the age group of 31 to 40 years (33.33%) and 61 to 70 years (23.80%). Baitha et al. also found the majority of patients (28.18%) in the age group of 31 to 40 years. Hansa et al. stated majority (22.31%) group fall between the ages of 31 to 40 years. This may be due to the vocal activeness of a person is seen mostly in this decade. All these findings are comparable to our study. Herrington-Hall et al. stated that taking the variable of age into account. It is clear that laryngeal pathologies occur most frequently in the older age group because carcinoma and vocal fold paralysis being the most commonly found cause of vocal dysfunction in the elderly[7]. In our study, 71.42% of patients were from a rural background, and 28.57% were from an urban background. Our study correlates with the study of Baitha et al. with 75.5% patients with a rural background and 24.5% patients with urban background[8].

In our study, laborer or farmer comprised a majority of cases (42.06%), followed by 31.74% of housewives. Our study correlates with a study of Baitha et al. with around 57% laborers and housewives. Kumar et al. also found laborers (24%) as the single largest group in their study. The high incidence of Hoarseness among laborers in our study may be explained by the fact that our hospital is situated on the outskirts of the city and caters mostly to the village population comprising mostly of farm laborers[9]. In our study, vocal nodules were seen in 15.07% of cases, and they were the third most common cause of Hoarseness of voice. In all the cases, they were bilateral. Parikh reported vocal cord nodule as the most common finding (50%) among patients with chronic laryngitis, and the nodules were bilateral in 91% of cases. In another study by Baitha et al., vocal cord nodules were seen in 12.72% of patients, and they were bilateral in all the cases (100%)[10].

In our study, smoking was the commonest predisposing factor seen in as much as 65% of cases presenting with Hoarseness of voice. It was followed by GERD and voice abuse which were seen in 40% and 30.95% cases, respectively. In our study, around 3/4th patients belonged to rural areas, and most of them were laborers who have a habit of smoking bidis which might explain the high association between smoking and GERD. In a study by Pal et al., smoking was seen in (33%) cases followed by URI (24%), alcohol intake (22%), chewing tobacco (22%), and vocal abuse (17%). Similarly, in a study

by Hansa et al. commonest habits noted were smoking in 108 cases (43%) followed by vocal abuse (31%), alcohol intake (29.48%), and tobacco or gutkha chewing (29.48%). These data are in concordance with our data.

Conclusion

Hoarseness is a very common symptom in patients coming to ENT OPD. In our study, the incidence calculated was 0.66 of all cases and 1.15% of new OPD cases. The etiology of Hoarseness varies from trivial infections to serious malignancies. Its etiology, predisposing factors, and clinical profile vary from place to place. In our tertiary center, which is at the outskirts of the city majority of the patients coming to OPD are from a rural area, and hence 71.42% of cases presenting with Hoarseness belong to the rural background. Most of these patients are laborers by occupation (42.06%) and have a habit of a smoking bid is (65%).

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