

**A Clinical Study on Etiopathogenesis of Hoarseness of Voice****Y. Sailaja<sup>1</sup>, Qazi Abdul Bari Siddique<sup>2</sup>**<sup>1</sup>Assistant Professor, Department of ENT, Ayaan Institute of Medical Sciences, Kanakamamidi Village Moinabad Mandal Hyderabad, Telangana State<sup>2</sup>Assistant Professor, Department of ENT, Ayaan Institute of Medical Sciences, Kanakamamidi Village Moinabad Mandal Hyderabad, Telangana State

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**Abstract:****Background:** Hoarseness of voice, characterized by changes in the pitch, volume, and quality of the voice, is a common clinical symptom that can significantly impact an individual's communication abilities and quality of life.**Aim and Objectives:** to analyze the clinical profile, incidence of common etiological factors and the association of common predisposing factors for hoarseness of voice.**Materials and Method:** This prospective clinical study was conducted in the Department of Otolaryngology at Ayaan Institute of Medical Sciences, Hyderabad over a period of 1 year. The study population comprised 80 patients who presented with complaints of hoarseness of voice after following inclusion and exclusion criteria and after getting informed consent.**Results:** The majority of patients (47.5%) are between 41 and 60 years old, males (53.75%) were more than females, most common occupations are labourers (37.5%), most common habits are smoking (30%). Laryngeal malignancy most common aetiology, affecting 32.5% of patients. The most common finding, observed in 45% of patients observed Squamous cell carcinoma (keratin pearls),**Conclusion:** Laryngeal malignancy (squamous cell carcinoma) was found to be the most common cause of hoarseness of voice. Smoking was found to be the most common etiological factor for squamous cell carcinoma of Larynx (22%).**Keywords:** Hoarseness of voice, Laryngeal malignancy, Squamous cell carcinoma etc.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

The human voice is an extraordinary attainment which is capable of conveying not only complex thought but subtle emotions too. Production of voice is a complex mechanism. It is produced from larynx, also known as "voice box" as it houses the vocal folds which constitute the vibrator that generates the voice during speaking. The vocal folds produce tone that becomes modified by pharynx, palate, tongue and lips to generate the individual sounds of speech. Larynx must operate in close synchrony with other parts of speech production apparatus if intelligible speech is to be produced.[1]

Hoarseness of voice, characterized by changes in the pitch, volume, and quality of the voice, is a common clinical symptom that can significantly impact an individual's communication abilities and quality of life. The etiopathogenesis of hoarseness is multifactorial, involving a wide range of causes from benign vocal cord lesions to malignancies,

and from acute laryngitis to chronic neurogenic disorders. Understanding the underlying causes and contributing factors is crucial for accurate diagnosis, effective management, and prevention of potential complications.

Teachers and older adult were the common group of people where hoarseness is more prevalent. But both genders and all age groups can be affected. It is caused by benign or malignant condition. The laryngeal dysfunction produces symptoms which can vary from mild hoarseness to life threatening stridor. It is a most common presenting symptom for more serious conditions which warrants immediate diagnosis and management [3]. Benign conditions are more common than malignant [3]. Jackson and Jackson (1930) feel that hoarseness is the most important symptom of laryngeal disease and it is only absent when the cords and the motor mechanism are entirely free from disease.[4] However, it should be re-emphasized that

hoarseness is not a disease in itself, but rather a symptom of disease or disturbance in the larynx or along the course of the laryngeal motor nerve. It is often the first and only signal of serious local or systemic disease (Von Leden, 1958).[5]

The present study is an attempt to analyze the clinical profile, incidence of common etiological factors and the association of common predisposing factors for hoarseness of voice.

### Materials and Method

This prospective clinical study was conducted in the Department of Otolaryngology at Aayan Institute of Medical Sciences, Hyderabad over a period of 1 years. The study population comprised 80 patients who presented with complaints of hoarseness of voice. Inclusion criteria were patients of all ages and genders with a history of hoarseness lasting more than two weeks. Exclusion criteria included patients with a history of recent intubation, voice abuse, or those who declined to participate in the study.

Demographic data (age, gender, occupation) and detailed clinical history (duration of hoarseness, associated symptoms, habits such as smoking or

alcohol consumption) were collected using a structured questionnaire. Informed consent was obtained from all participants.

All patients underwent a thorough physical examination, including indirect laryngoscopy to assess vocal cord mobility and identify any visible lesions or abnormalities. Additional tests, such as stroboscopy or videolaryngoscopy, were performed as needed to further evaluate the vocal cords. Patients with suspected lesions underwent direct laryngoscopy under general anesthesia for a more detailed examination and biopsy if indicated. Histopathological examination of the biopsy specimens was conducted to determine the underlying pathology. The data were analyzed using statistical software [specify software]. Descriptive statistics were used to summarize the demographic and clinical characteristics of the study population. The distribution of etiological factors was analyzed, and the relationship between demographic factors and etiologies was assessed using chi-square tests or Fisher's exact tests as appropriate. A p-value of less than 0.05 was considered statistically significant.

### Observation and Results

**Table 1: Distribution of demographic profile**

Parameters	Frequency	Percentage
Age		
< 20 Years	14	17.5
21 - 40 Years	20	25
41 - 60 Years	38	47.5
> 60 Years	8	10
Gender		
Male	43	53.75
Female	37	46.25
Occupation		
Farmer	22	27.5
Labourer	30	37.5
House Wife	8	10
Students	12	15
Others	8	10
Habits		
Smoking	24	30
Tobacco	16	20
Alcohol	7	8.75
Both Alcohol Smoking	6	7.5
Others	27	33.75

The majority of patients (47.5%) are between 41 and 60 years old, followed by 21-40 years old (25%), <20 years old (17.5%), and >60 years old (10%). Slightly more males (53.75%) than females (46.25%) are in the study. Most common occupations are labourers (37.5%) and farmers

(27.5%), followed by students (15%), housewives (10%), and others (10%). Most common habits are smoking (30%), followed by tobacco use (20%), alcohol consumption (8.75%), both alcohol and smoking (7.5%), and others (33.75%) shown in above table.

**Table 2: Distribution of Etiology**

Etiology	Frequency	Percentage
Laryngeal malignancy	26	32.5
Chronic laryngitis	18	22.5
Vocal cord paralysis	12	15.0
Vocal cord nodules	8	10.0
Tuberculosis of larynx	6	7.5
Vocal cord papilloma	4	5.0
Vocal cord polyp	2	2.5
Vocal cord cyst	2	2.5
Laryngeal trauma	2	2.5

Laryngeal malignancy most common aetiology, affecting 32.5% of patients followed by chronic laryngitis Affecting 22.5% of patients. Vocal cord paralysis (15%), Vocal cord nodules (10%), Tuberculosis of larynx (7.5%) Vocal cord papilloma (5%) Vocal cord papilloma (5%), Vocal cord polyp (2.5%) Vocal cord cyst (2.5%).

**Table 3: Distribution of Histopathology**

Histopathology	Frequency	Percentage
Squamous cell carcinoma (keratin pearls)	36	45%
caseating granuloma and acid-fast bacilli	9	11%
Hyperplastic stratified squamous epithelium with pigment laden macrophags	26	33%
Squamous papilloma	5	6%
Dense fibrin deposition with stellate cells with hemorrhages	3	4%

The most common finding, observed in 45% of patients observed Squamous cell carcinoma (keratin pearls), followed by Hyperplastic stratified squamous epithelium with pigment laden macrophags (33%), caseating granuloma and acid-fast bacilli (11%), Squamous papilloma (6%) and Dense fibrin deposition with stellate cells with hemorrhages (4%)

### Discussion

Hoarseness is considered a presenting symptom of a disease and not a disease by itself. It is one of the most common symptoms in conditions affecting laryngeal apparatus. Usually Benign pathologies are more common than malignant pathologies in patients with hoarseness and early diagnosis and treatment aids in good voice quality. Hoarseness lasting longer than two weeks needs complete evaluation to rule out malignancy as a cause.

In our study, majority patients were in 21 to 60 years (72.5%) age group, followed by < 20 years (17.5%) age group. Our observation is supported by Ghosh et al, Batra et al and Baitha et al. [6,7] who reported the incidence in the age group of 20-50 years to be 66%, 70% and 61.81% respectively. It is known that individuals in younger age group are more ambitious, active and use their vocal skills maximally.

Male: female ratio of 1.16: 1 was observed in our study. Our finding is in confirmation with Banjara et al (1.9:1), Baitha et al (2:1) and Khurshid et al (1.37:1).[8,9] Male preponderance was observed by Ghosh et al, 56% male and 46% females.[6] In the present study majority of patients of about 30 cases were of labourer class and least i.e. 8 cases were in

the others group. In a study by Shambhu Baitha al the same observation was made i.e. majority of patients were of labourer class (36.36%).

On videolaryngoscopic examination commonest finding was – Ulceroproliferative growth involving larynx and laryngopharynx which was seen in 38% of cases. And the rare finding is the vocal folds cyst and submucosal haemorrhage of vocal folds and false cords were noted in 2%. In a study by Shambhu Baitha [1], congestion of vocal cords noted in 34.54%, growth in only 9% of cases on IDL examination. This was contrast to the present study. This may be due to patients' habits.

In the present study, commonest etiology observed was malignancy of larynx and laryngopharynx in about 32.5% of patients, next common etiology was chronic laryngitis 18cases. Third common etiology was vocal cord paralysis noted in 12 cases. Fourth common etiology was vocal cord nodules, 8 cases, followed by Tuberculosis of larynx, Vocal cord papilloma, Vocal cord polyp, Vocal cord cyst and Laryngeal trauma its similar to study conducted by, Shambhu Bhaitha [1], Kadambari [10], Swapan Ghosh [6], Parikh [3].

### Conclusion

Laryngeal malignancy (squamous cell carcinoma) was found to be the most common cause of hoarseness of voice. Smoking was found to be the most common etiological factor for squamous cell carcinoma of Larynx (22%). In the present study, male patients were found to be affected more in laryngeal carcinoma than females with male female ratio of 1.26:1.

Rural population and patients in low socio-economic status were the most affected. Finally, it can be concluded that, the symptom of hoarseness of voice should not be ignored as it might be an indication of laryngeal malignancy.

Any patient with hoarseness should be thoroughly investigated to rule out laryngeal malignancy that might cause respiratory distress leading to life threatening complications.

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