

A Clinical Study on Etiopathology of Hoarseness of Voice

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Abstract:

Background: Hoarseness of voice is generally due to change in quality of voice. The etiology of hoarseness of voice varies from benign conditions to malignant disease, hence should not be ignored. All cases of hoarseness of voice persisting for more than 3 weeks should be investigated for the underlying disease. Proper knowledge and clinicopathological profile is important to treat the underlying pathology. The main objective of this study was to know the age and sex incidence ,etiopathological & predisposing factors causing hoarseness of voice.

Materials and methods:

This prospective case study was carried out in 100 patients presented in Department of ENT, Guntur Medical College, Guntur from April 2019 to April 2021 patients of both sexes with hoarseness of voice for more than 3 weeks duration were included. Hoarseness of voice due to congenital diseases, nose and nasopharyngeal pathology, oral and oropharyngeal pathology, CNS lesions were excluded from the study. All patients were subjected to detailed history, complete ENT examination, laryngoscopic examination, micro laryngeal excision or biopsy was taken to arrive at the diagnosis and management was done accordingly.

Results: Most common age group affected are 5th to 6th decade with male to female ratio of 4:1. Labourers were the most common occupation presenting with hoarseness in our study.Malignancy is the commonest cause, smoking and vocal abuse were major etiological factors.

Conclusions: In middle aged and elderly persons with hoarseness of voice more than 3 weeks duration should not be ignored and to be investigated further to rule out malignancy.

Keywords: Etiopathology, Hoarseness of voice

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I. Introduction

Hoarseness of voice is one of the widely found symptom in otolaryngological practice and is invariably the earlier manifestation of laryngeal involvement directly or indirectly. It may be due to various diseases ranging from inflammatory conditions –neoplasm, which may be benign or malignant – to neurological conditions. Hoarseness of voice is described as change in normal voice quality. It may indicate breathiness, roughness, voice breaks, or abnormal changes in the pitch(1). The hoarseness can be divided into acute or chronic (2)The acute onset is more common and mainly caused by inflammation like acute laryngitis whereas other causes could be viral infection, smoking, vocal abuse, laryngeal trauma or thyroid surgery (3). The chronic onset is mainly caused by vocal cord nodule, polyp, laryngeal-papillomatosis, tumor of the vocal cord, functional dysphonia, smoking, vocal abuse, laryngopharyngeal reflux disease, post nasal drip, neoplasm of thyroid, esophagus, lung, chronic granulomatous disease like tuberculosis or systemic disease like diabetes mellitus (4-6) The complaints of hoarseness of long duration may imply serious disease, so it should not be ignored (7)

II. Materials And Methods

Study Design: Prospective case study

Study Location: This was a tertiary care hospital based study done in Department of ENT , Government General Hospital ,Guntur ,Andhra Pradesh

Study Duration: April 2019 to april 2021

Sample size: 100 patients

AIMS AND OBJECTIVES :

1. To study the various etiological factors in hoarseness of voice.
2. To study the age and gender distribution of the various cases of hoarseness

3. Relation of hoarseness with respect to various occupations
4. To study the clinical presentation of the patient with hoarseness of voice

Subjects & selection method: This prospective interventional case series included patients who had hoarseness of voice of more than 3 weeks duration. Detailed history for symptoms like cold, cough, pain in the throat, dryness of throat, dyspnoea, stridor, swelling in the neck, history of any trauma, or any other complaints, if present were also noted. The mode of onset and the progression of disease were noted. Past history of chronic sinusitis, recurrent hoarseness of voice, history of surgery, past history of radiation to neck, history of TB, syphilis, or leprosy was noted. Personal history and family history were enquired. The general condition of patients, external examination of the neck, systemic examination were done. Local examination of the nose, oral cavity, nasopharynx, and ears was done. Indirect laryngoscopy was done. The detailed history, clinical examination, routine as well as special investigation (flexible nasopharyngolaryngoscopy and direct laryngoscopy) were performed to find the diagnosis.

Inclusion criteria:

1. Either sex
2. Age range 5-70 years
3. All those patients presenting with hoarseness of voice for more than 3 weeks.
4. Patients who are willing to undergo indirect laryngoscopy, direct laryngoscopy, and biopsy were included in the study.

Exclusion criteria:

1. Patients below the age of 5 years and above the age of 70 years were not included in the study.
2. Patients who are having Hoarseness of voice for <3 weeks & due to congenital diseases, nose and nasopharyngeal pathology, oral and oropharyngeal pathology, CNS lesions were excluded from the study.
3. Patients who are not willing to undergo indirect laryngoscopy, direct laryngoscopy, and biopsy.

Procedure methodology:

All the 100 cases who presented with hoarseness of voice were initially examined by indirect laryngoscopy in the out patient department followed by video laryngoscopic examination. The benign lesions like vocal nodules were managed medically and some of the cases underwent micro laryngeal surgery and the lesions were sent for histopathological examination. For all the cases suspicious of malignancy and T.b larynx direct laryngoscopic examination was done and biopsy was taken and sent for histopathological examination. Based on the histopathological report the lesions were categorized.

III. Observations And Results:

Table-1 :Age Distribution

Age group	No.of cases	Percentage of cases
<10 yrs	2	2%
11-20 yrs	6	6%
21-30 yrs	10	12%
31-40 yrs	24	24%
41-50 yrs	16	16%
51-60yrs	35	35%
61-70 yrs	5	5%

Table-2: Sex Distribution

Sex	No.of cases	percentage
Male	80	80%
Female	20	20%

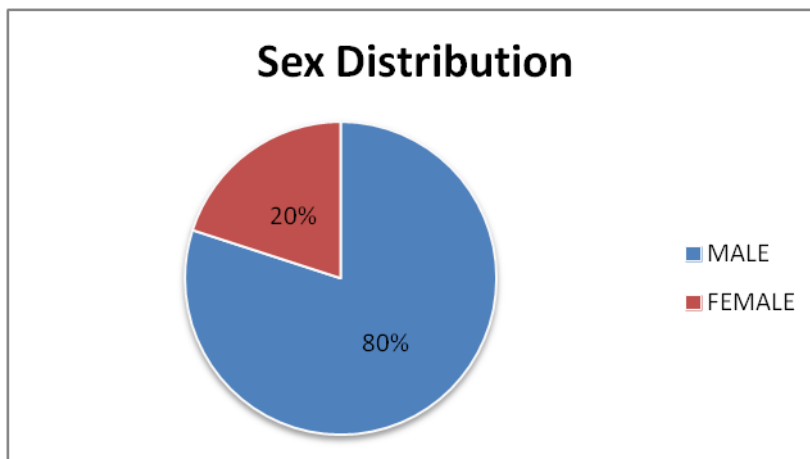


Table-3 : Occupation

Occupation	No.of cases	Percentage
Laborers	40	40%
Students	5	5%
Housewives	5	5%
Farmers	25	25%
Singers	8	10%
Vendor	7	7%
Teacher	7	7%
Driver	1	1%

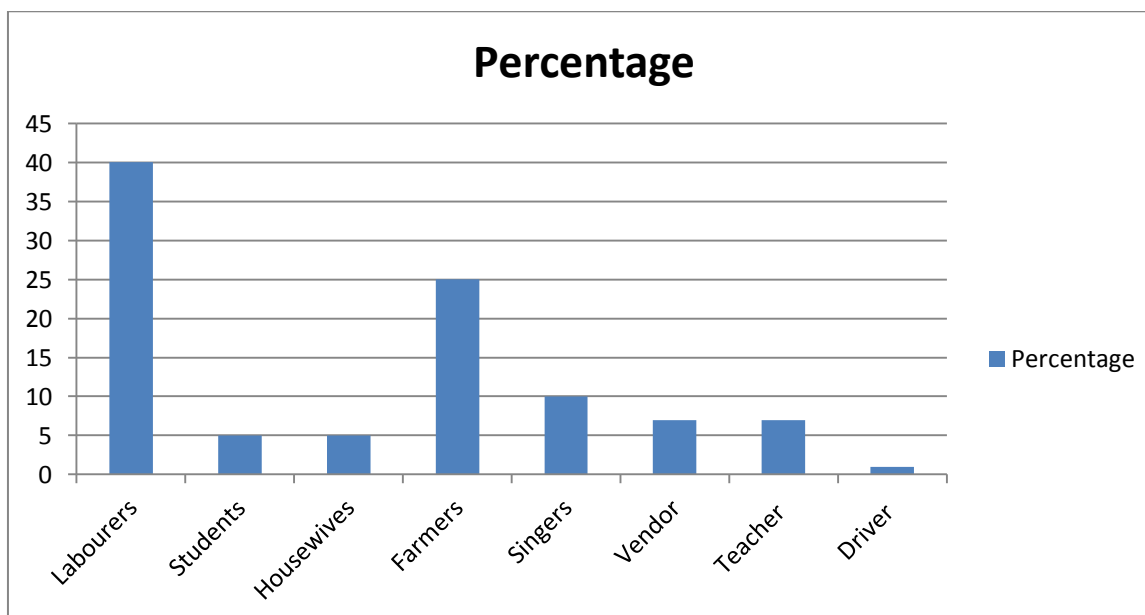


Table-4:Predisposing Factors

Predisposing factor	No of cases	Percentage
Smoking	35	35%
Alcohol	5	5%
Tobacco chewing	10	10%
Smoking+Alcohol	6	6%
Smoking + Tobacco	6	6%
GERD	5	5%
Vocal abuse	25	25%
URTI	8	8%

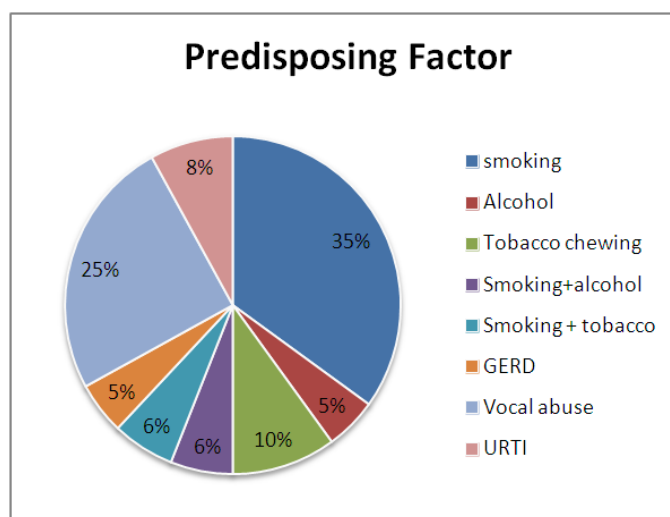


Table-5:Clinical Presentation

Clinical presentation	No.of cases	Percentage
Change in voice	100	100%
Dysphagia	12	12%
Foreign body sensation/throat clearing	10	10%
Dyspnoea	15	15%
Cough	13	13%
Neck swelling	20	20%
Vocal fatigue	15	15%
Halitosis	5	5%
Otalgia	6	6%
Pain in throat	4	4%

Table -6:Causes Of Hoarseness Of Voice

Etiology	No. of cases	Percentage
Carcinoma larynx &Hypopharynx	35 & 5	40%
Acute laryngitis	5	5%
Chronic non specific laryngitis	11	11%
Chronic specific laryngitis(TB)	6	6%
Vocal nodule	15	15%
Vocal polyp	8	8%
Vocal cyst	1	1%
Reinkes oedema	2	2%
Vocal cord palsy	10	10%
Functional	2	2%

IV. Results :

In our study maximum number of cases were in the age group of 51-60 yrs with the youngest patient being 9 yrs and the eldest being 70 yrs. Out of 100 patients 80 were male and 20 were female with a ratio of 4:1. The study shows incidence being more common in laborers with 40% and farmers with 25% . Smoking is found out to be the most common predisposing factor (35%) for the development of malignancy and vocal abuse (25%) is the next most common predisposing factor for the development of benign lesions. The most common clinical presentation was neck swelling (20%) followed by dyspnoea(15%) and vocal fatigue(15%). Out of the 100 cases in our study malignancy (40%) was found to be the most common cause of hoarseness of voice with squamous cell supraglottic cancer being more common followed by vocal nodules(15%) being the next most common and benign cause associated with hoarseness. The benign lesions after direct laryngoscopic examination and confirmation were excised by micro laryngeal surgery and were sent for histopathological examination(HPE) and for malignant lesions ,direct laryngoscopy was done and a biopsy was taken and sent for HPE.

V. Discussion :

In the present study, the most common age group presented with hoarseness was 51-60 yrs. In a study conducted by **Dr. Prashant Nanwani et al** (8) the most common age group with hoarseness of voice was also 51-60 yrs and found that vocal cord pathologies are common in the elderly since vocal cord palsy and carcinoma of the larynx are more common in elderly and this signifies our study also.

In our study, Male: Female ratio was 4:1 and in a study conducted by **Parikh NP et al** (9) also found that hoarseness was more common in males with a male-to-female ratio of 2.03: 1. The male predominance can be explained by the reason that men are having habits like smoking, alcohol, and vocal abuse as compared to females as they are most commonly involved in household activities.

In the present study conducted on 100 cases the most common occupation involved is laborers and farmers. In a study conducted by **Sambhu Baitha et al** (10) laborers constituted the single largest group of patients (36.36%) in their study followed by housewives comprising 21.81% cases. This could be explained by the reason that ours is a tertiary care hospital catering services to all the nearby rural areas farmers and labourers who constituted the major group.

In the present study conducted on 100 patients, the most common predisposing factor associated with the hoarseness of voice is smoking followed by vocal abuse. In a study conducted by **Smita Soni et al** (11) the most common predisposing factor was also smoking this could be explained by the fact that most of the cases in our study are elderly population with malignancy as the most common cause followed by polyps or nodules of vocal cords, and hoarseness was explained by the fact that lesions involving the free margin of the cords inevitably disrupts the vibratory function of phonation (12).

In our study, the most common clinical presentation was neck node which is the commonest followed by other symptoms like dyspnoea, vocal fatigue, foreign body sensation/throat clearing, cough, vocal fatigue. In a study conducted by **Smita Soni et al** (11) dysphagia was the major associated symptom with hoarseness of voice found in 51% of patients. Sambhu Baitha et al also found similar associated symptoms in patients with hoarseness of voice (10).

In our study the most common etiology for hoarseness of voice was Malignancy. In a study conducted by **Amarnath SB et al** (13) commonest etiology observed was, malignancy of the larynx in 60 cases (40%) in which 45 cases (44.55%) were males and among females, malignancy of the larynx was 30% (15 cases). In the study by Kadambari incidence of malignancy was 18% and in a study by Ghosh incidence of malignancy was only 8% and in Parikh incidence of malignancy was 12% (14,15,10). This could be explained by the most common age group involved and the risk factors like smoking, alcohol intake, and tobacco chewing which are most commonly associated with malignancy.

In our study the next most common cause was Vocal Cord Nodules. In a study conducted by **Amarnath SB et al** (13) the vocal nodules were the most common lesion reported next to malignancy. The reason for the most common benign lesion being the vocal nodules is because of the 2nd most common predisposing factor in our study which was vocal abuse. In the case of polyps or nodules of vocal cords, hoarseness was explained by the fact that lesion involving the free margin of the cords inevitably disrupts the vibratory function of phonation (12).

Management:

In our study all the cases of acute laryngitis (5%) and chronic non specific laryngitis (11%) were managed medically. All the cases of malignancy underwent direct laryngoscopic examination and biopsy was taken and sent for histopathological examination. According to the stage of tumor the malignancy cases were managed by radiotherapy and cordectomy in the early stages and advanced cases concurrent chemoradiotherapy and either partial or total laryngectomy were done followed by voice rehabilitation.

Some of the benign lesions were managed medically and micro laryngeal surgery was done for cases that required surgery and the specimen was sent for HPE in case of vocal nodules, polyps, and cysts and the voice improvement was 100% in all cases following surgery. For vocal cord palsy, the etiology was identified and treated accordingly.

In a study conducted by **Amarnath SB et al** (13) similar treatment modalities were used and among 6 cases of vocal nodules all are gone for medical management and 100% improvement was noted, Chronic laryngitis was the common condition treated medically.

VI. Conclusion :

Voice is an important tool for communication. Any disruption in the quality of voice has a great impact on an individual's personal and social life. Management of hoarseness can be a challenge to treating otolaryngologists. Proper diagnosis through detailed history and examination is paramount. Referral to a voice specialist is indicated when hoarseness continues to persist for more than 3 weeks.

Direct laryngoscopy and fiberoptic flexible endoscopy (FOFE) proved to be useful methods in detecting various

causes of hoarseness of voice. Biopsy should be taken from any growth or any suspicious area for the confirmation of diagnosis so that proper management can be given. Stroboscopy is another important tool for studying the mucosal wave pattern of the vocal cord in patients of hoarseness of voice in whom no obvious lesion is seen.

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