

## Clinico-Pathological Study of Hoarseness of Voice In Adults-A Review of 126 Cases

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**Abstract:** Hoarseness of voice is one of the commonest symptoms in otorhinolaryngological practice and it indicates diseases ranging from totally benign condition to the most malignant condition. This is a study to know the etiology, predisposing factor, and clinical profile of patients having hoarseness of voice. A prospective study comprising of 126 cases of Hoarseness was carried out in the department of Otorhinolaryngology and Head and neck surgery, Gauhati Medical College and Hospital, Guwahati from June 2016 to May 2017. Stroboscopic evaluation was done to reach the diagnosis. Age of patients ranged from 18 years to 80 years. Male to female ratio was 1.2:1. Trader constituted single largest group (22.2%). Majority of cases were from rural areas (65%). Duration of hoarseness of voice ranged from 2 weeks to 52 years. Commonest cause of hoarseness was of inflammatory or infectious nature constituting (56.3%)

**Key words:** Hoarse voice, aetiology, stroboscopy.

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### I. Introduction:

Voice may be defined as a laryngeal tone which can be heard or measured. The normal voice should possess certain characteristics of pitch, loudness and quality which make clear meaning and elicits an emotional response to ensure a pleasant tonal effect upon the listener. The human voice is an extraordinary attainment, which is capable of conveying not only complex thought but also subtle emotion. Hoarseness is the term used to describe a change in normal voice quality. Hoarseness can be defined as a quality of voice, that is rough, grating, harsh, more or less discordant and lower in pitch than normal. Hoarseness is obviously a symptom and not a disease. . Complaints of hoarseness may represent serious disease, therefore, should not be ignored (Garrett et al, 1999) [1]. In the words of Chevalier Jackson "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" (Parikh, 1991) [2].

### II. Aims And Objectives:

1. To study the etiological factors of hoarseness of voice.
2. To study the prevalence of hoarseness of voice in various age groups.
3. To study various risk factors.

### III. Materials And Methods:

- Informed and written consent was taken.
- *Study Design* – Hospital based observational study.
- *Study population*- Patients attending ENT-OPD, and those admitted in ENT ward of Gauhati Medical College & Hospital.
- *Study period*- 1 year.
- *Data collection technique*- Data will be collected by using pre designed and pre tested schedule followed by through history, clinical examination, videolaryngoscopy and radiological investigations. Routine investigations like Hb, BT, CT, TLC, DLC, Urine for albumin and sugar were carried out in all patients. X-ray chest- PA view and X-Ray soft tissue neck- AP and lateral view, histopathological examination of suspected malignancies were done whenever required.

#### *INCLUSION CRITERIA:*

All the patients presenting with hoarseness of voice, age>18 years

#### *EXCLUSION CRITERIA:*

Age group below 18 years.

Other voice disorders like rhinolalia clausa, rhinolalia aperta, articulation disorders and central nervous system causes like bulbar palsy, Wegner’s granulomatosis, multiple sclerosis, stroke and Parkinson’s disease.

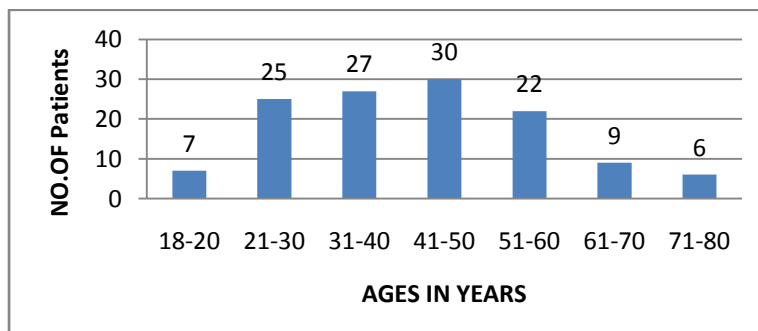
**IV. Observations And Results:**

The population of patients studied was 126 with an age range of between 18 to 80 years and Mean age was 38.2 years. The majority of patients had a peak age distribution of 21-60 year (82.53%) and M:F ratio of 1.2:1. The results show varied causes. The commonest cause of Hoarseness of Voice was found to be due to inflammation or infections of upper aero-digestive system (56.3%), followed by malignant neoplastic changes of the larynx(25.4%), functional voice disorders(12.7%), vocal cord paralysis (3.2%), and congenital laryngeal web(0.8%). Others were leukoplakia which was found in 2 patients (1.6%). Among those with inflammatory or infectious origin were TB Laryngitis (7.1%), chronic simple laryngitis (8.7%), vocal/singer’s nodules (15.1%), laryngeal polyps (4%), laryngeal/respiratory papillomas (7.1%) and laryngitis due to GERD/LPR (14.3%). of majority of patients were from rural areas (65%), patients from urban areas were (35%). Patients were also assessed on their level of voice usage and vocal environment. According to Koufman the morbidity associated with voice disorders is highly variable and depends to a great extent upon the patient’s level of vocal usage. Four levels were adopted by Koufman et.al[3] for convenience in refining an approach to voice disorders. There was only one level I patients in this study i.e. elite vocal performer like actors or musicians. Majority of the patients were level IV voice users (68.3%). These are non-vocal non-professionals which comprised of manual laborers, subsistence farmers and traders. This group comprised the majority the majority of our patients. Level II (17.5%) represented professional voice users like teacher, administrators and preachers. Level III (13.5%) were non vocal professionals like physiotherapist, Laboratory technicians and Lawyers.

**Table I:** Etiological Factors of 126 patients inducted in the study

Etiology		Frequency	Valid Percent	
Inflammatory	Chronic laryngitis			
	Specific : TB laryngitis	9	7.1	
	Non specific			
	Chronic simple laryngitis	11	8.7	
	Vocal cord /Singers nodule	19	15.1	
	Laryngeal polyp	5	4.0	
	Respiratory papilloma	9	7.1	
	Laryngitis-GERD/LPR	18	14.3	
	Neoplastic	Ca larynx	32	25.4
		Vocal cord paralysis	4	3.2
Congenital Disorder	Congenital laryngeal web	1	0.8	
	FVD	16	12.7	
Others	Leukoplakia	2	1.6	
Total		126	100	

The commonest occupation was being a trader (22.2%), subsistence farmer (15.1%), manual laborer (15.1%) and a teacher (11.9%). Occupation appears to predispose one to the level of voice use or vocal environment that increases the chance of getting a voice disorder. The symptoms associated were cough in 30.2% of patients, odynophonia (21.4%) and throat pain (27.8%). Other symptoms were odynophagia, airway obstruction, epigastric pain, retrosternal pain, stridor, throat clearing and hemoptysis. The duration of hoarseness of voice since onset of the symptoms and the first treatment given either at primary, secondary or even at referral unit ranged from 14 days to 18980 days (52 years). Majority of patients presented in months i.e. under six months 38.9%. The diagnosis of the commonest conditions causing hoarseness of voice was due to inflammatory or infectious conditions accounting for 57.14% of all patients. Cancer of the larynx was second commonest (25.4%) while functional voice disorder was 12.7%. Other findings were congenital laryngeal web (.8) and Leukoplakia (1.6%).



**Table II:** Frequency table of commonest associated Symptoms/signs.

	No. of complains	Percentage of patients
Cough	38	30.2
Throat pain	35	27.8
None	29	23.3
Odynophonia	27	21.4
Painful swallowing	17	13.5
Epigastric pains	17	13.5
Airway obstruction	14	11.1
Retrosternal pains	11	8.7
Difficulty swallowing	10	7.9
Hemoptysis	2	1.6
Stridor	1	0.8
Regurgitation	1	0.8
Throat clearing	1	0.8
Aphonia	1	0.8
Headache	1	0.8
Aspiration	1	0.8
Abdominal pains	1	0.8



**Fig-1.** Stroboscopic picture showing a left vocal cord nodule. **Fig-2.** Stroboscopic view showing phonatory gap

### V. Discussions:

In our study, majority of patients were seen in age group of 41–50 years (23.8%) and 31–40 years (21.4%) followed by 3rd decade (19.8 %). Baitha et al. [4] also found majority of patients (28.18 %) in the age group of 31–40 years. Hansa et al. [5] stated majority (22.31 %) group fall between the ages of 31–40 years. Herrington-Hall et al. [6] 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. M:F ratio of 1.2:1. In a study by Baitha et.al [3] of 110 patients with HOV, he found an age range of 6-71 years and peak distribution of between 21-50 years (61.81%) with a Mean of 40.4 years. The Male: Female ratio was 2:1. . The commonest cause of Hoarseness of Voice was found to be due to inflammation or infections of upper aero-digestive system (56.3%), followed by malignant neoplastic changes of the Larynx (25.4%) , Functional Voice Disorders ( 12.7%), Vocal cord paralysis (3.2%) , and Congenital Laryngeal web (0.8%). Khavasi and Prabhu S(2005) [7] mentioned the most common pathology as carcinoma larynx (40%) followed by chronic laryngitis (36.36%) while Baitha S (2004) [4] documented chronic non specific laryngitis (43.63%) as the most pathology of hoarseness followed by acute laryngitis(23.63%),carcinoma larynx (14.54%),vocal cord palsy (9.09%) and tubercular laryngitis (5.45%). Banjara et al (2011) [5] mentioned functional lesions (16.33%) to be most common etiology followed by vocal nodule (11.95%), vocal palsy (11.16%),cancer and chronic laryngitis (9.56%each).

### VI. Conclusion:

There was male predominance of 1.2:1, with a mean age of 38.2 years. The age range was 18-80 years, with peaks between 2nd and 6th decade. The mean duration of hoarseness of voice from onset to any medical treatment was 374 days or 1.04 years. The etiological factors of Hoarseness of voice were due to inflammatory or infectious origin (56.3%). This included TB Laryngitis (7.1%), chronic simple laryngitis (8.7%), vocal cord/ singers nodules (15.1%), Laryngeal polyp (4.0%), respiratory/ laryngeal papillomas (7.1%) and laryngitis due to GERD (14.3%). Neoplasm as a result of cancer of the larynx (25.4%). Neurological due to vocal cord paralysis

(3.2%), Hoarseness of voice was commonest in patients from rural areas. The commonest level of voice use was that of non-vocal non-professional level (68.3%), while commonest vocal environment amongst all the patients was Dusty (42.86%), Dry conditions (18.25%) and Noisy (16.67%). Traders were the commonest affected group (22.2%) followed by Subsistence farmers (15.1%) and Manual labourers (15.1%). Hoarseness of voice is just a symptom with a very diverse etiology. The etiological data varies in different geographical location and from one center to other, so every case should be carefully and thoroughly evaluated to know the diagnosis and underlying pathology for early and prompt management. Stroboscopy is helpful in establishing a diagnosis and/or improving the clinical assessment of patients with chronic voice disorders.

#### **References:**

- [1]. Garrett CG, Ossoff RH( 1999): Hoarseness. Medical Clinics of North America , 83 (1) : 115 - 123.
- [2]. Parikh N P. Aetiological study of 100 cases of hoarseness of Voice. Indian Journal of Otolaryngology and Head and Neck Surgery; 1991; 43(2):71-73.
- [3]. Koufman J.A, Isaacson G: Voice disorder Otolaryngologic Clinics of North America vol 24 Oct 1991,985 -1253.
- [4]. Baitha S, Raizada RM, Kennedy Singh AK, Puttewar MP, Chaturvedi VN (2002) Clinical profile of hoarsens of voice. Indian J Otolaryngol Head Neck Surg 54(1):14-18
- [5]. Banjara H, Mungutwar V, Singh D, Gupta A (2011) Hoarseness of voice: a retrospective study of 251 Cases. Int J Phonosurg Larungol 1(1):21-27
- [6]. Herrington-Hall BL, Lee L, Stemple JC, Niemi KR, MC Hone MM (1988) Description of laryngeal pathologies by age, sex, and occupation in a treatment-seeking sample. J Speech Hear Disord 53:57-64
- [7]. Khavasi , Prabhu S. Aetiological study of hoarseness of voice. A thesis submitted for master of surgery (otorhinolaryngology) Rajiv Gandhi University of Health sciences,Bangalore, Karnataka ; 2005.

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