



E-ISSN: 2616-3470

P-ISSN: 2616-3462

© Surgery Science

www.surgeryscience.com

2022; 6(4): 82-85

Received: 14-06-2022

Accepted: 19-07-2022

Dr. G Sankaranarayanan

Professor and HOD, Sree
Mookambika Institute of Medical
Sciences, Kulasekharam, Tamil
Nadu, India

Dr. Kiren T

Assistant Professor, Sree
Mookambika Institute of Medical
Sciences, Kulasekharam,
Kulasekharam, Tamil Nadu, India

Dr. Elizabeth Anna Samuel

Junior Resident, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kulasekharam,
Tamil Nadu, India

A clinicopathological study of hoarseness of voice in a tertiary care center in Kanyakumari District

Dr. G Sankaranarayanan, Dr. Kiren T and Dr. Elizabeth Anna Samuel

DOI: <https://doi.org/10.33545/surgery.2022.v6.i4b.954>

Abstract

Objective: Hoarseness of voice can develop due to various etiology. The present study aimed to evaluate the causes and correlation of various factors causing hoarseness of voice.

Materials and Methods: The study was done in the department of ENT, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu. Among the 72 patients who attended ENT OP with hoarseness of voice was included based on the inclusion and exclusion criteria. Study procedure and purpose was explained to each patient and informed consent was obtained. All the patients demographic and clinical data were collected and analyzed with SPSS software 20.0 version.

Results: The study included 72 patients. More number of patients were in the age between 51-70 years, Maximum number of patients were males. Manual Laborers showed more hoarseness in voice compare to other profession. Benign causes were more than malignant causes. 25% of patients were smokers. 33.3% patients had VC polyp.

Conclusion: Hoarseness of the voice may be due to various pathological changes. Even a slightest of delays can lead to a drastic change in staging of the patients. All patients should be evaluated thoroughly. An appropriate history, complete and through physical examination and appropriate investigations can lead to appropriate and timely diagnosis of the underlying cause.

Keywords: Alcoholic, benign, edema, larynx, malignant, smoker

Introduction

Hoarseness of voice is a defect of voice quality. Any condition that alters the regular, repetitive synchronous vibrations of vocal cord in conjunction with the breath stream that activates them may create the sounds that are called hoarseness [1]. Hoarseness is defined as rough voice resulting from variations of intensity or periodicity of consecutive sound waves. The vocal apparatus consists of the larynx, respiratory system, and the supraglottic vocal tract [2]. Hoarseness can be breathiness, roughness, voice breaks or unnatural changes in pitch. Garrett *et al.*, 1999 has stated that Complaints of hoarseness may represent serious disease, therefore, should not be ignored. Chevalier Jackson has stated that "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" [3]. Hoarseness of voice is one of the commonest symptoms in otolaryngological practice and it indicates diseases ranging from totally benign condition to the most malignant condition [4]. Few of the most common etiologies of hoarseness of voice are acute laryngitis, chronic laryngitis, polyps, cysts and nodules, laryngeal carcinoma, paralysis of the vocal cords, functional causes. Other causes that can lead to hoarseness of voice are medications like diuretics, anticholinergics and antihistamines. Hormonal disorders like thyroid and growth hormone problems, Anabolic steroids, Intubation (during anaesthesia) and ageing [5]. Laryngeal visualization is necessary to determine the status of the vocal folds. It can be done either with indirect, direct (both flexible and rigid) laryngoscopy or with stroboscopy. As hoarseness is a common presentation in ENT OPD, its evaluation using appropriate tools is of utmost importance.

Materials and Methods

Study settings and study period

Cross sectional study conducted in Department of ENT, Sree Mookambika Institute of Medical Sciences, Kulasekharam for the period of 18 months.

Corresponding Author:

Dr. Elizabeth Anna Samuel

Junior Resident, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kulasekharam,
Tamil Nadu, India

Inclusion criteria

- Patients presenting with hoarseness of voice to the department of ENT.

Exclusion criteria

- Voice disorders other than hoarseness like rhinolalia aperta, rhinolalia clausa, snoring, stertor etc.
- Patient with mental retardation and patient with mental illness who are noncooperative.
- Patient was not available for follow up.
- Severely debilitated and unconscious patients.
- Children < 10 years.

Procedure

The patients who fulfilled the inclusion criteria were included in the study. Total 72 patients were observed. Study procedure was explained to each patient and informed consent was obtained.

Statistical analysis

The data was expressed in number, percentage, mean and standard deviation. Statistical Package for Social Sciences (SPSS 20.0) version was used for analysis.

Results

Total 72 patients were included in the study. Male were more compared to females (table 1). Maximum number of patients were in the age group between 51-60 years (table 2). Maximum patients had benign lesions 23.6% (Table 3). 25% were smokers and 55.6% patients had no irritant exposure (Table 4). 33.3% patients had VC polyp and 6.70% had VC keratosis (table 5). 1% had history of direct trauma (table 6, graph 1). 36.1% patients did not have any associated symptoms along with hoarseness of voice (Table 7). Maximum patients 61.1% had benign and 38.9% patients had malignant lesions (table 8). 61.1% were manual labourers in comparison to other occupations (Table 9).

Discussion

In the present study out of 72 cases, 64% (46) are male and 36% (26) are female. A study that was done by Gaurav Kataria *et al.* in which the study population was 180 the male: female ratio was found to be 1.7:1. Majority of literature on hoarseness of voice also concluded that there was a male preponderance in general. In contrast, Brodnitz has reported an almost equal number for both sexes with a slight preponderance of males but the individual conditions exhibited marked difference [6, 7].

The present study majority of patient were in the age group of 31-40 years (25%) In a study conducted by Gaurav Kataria *et al.* which was done on 180 patients, showed that the age group of 31-40 years (29.44%) as a majority group that was affected. And a study conducted by Baitha *et al.* also found that the majority of the patient 28.18% in the age group 31-40 years³. Another study by Kumar *et al.* concluded that majority of the patients were in the age group of 31-40 years (31%) [8]. A study done by an Indian Babu VS also reported that majority of patients 22.31% were in the age group of 31-40 years [9].

In the present study benign lesions of VC accounted for majority of clinical diagnosis with hoarseness of voice as the cardinal symptom. Benign lesion of VC account for 23.6% [17], followed by LPRD 22.2% [16], Carcinoma Glottis 13.9% [10], VC palsy 12.5% [9], VC fixity due to other malignancies 9.7% [7], acute laryngitis 6.9% [5], Carcinoma supra glottis and CA hypopharynx each accounted for 4.2% [3] and other cause of hoarseness being 2.8% [2] cases. In a study that was done by Baitha *et al.* found

that laryngitis is the leading cause for hoarseness followed by vocal cord nodule and vocal cord polyp, which is almost similar to the findings of our present study [3]. Studies done by Reiter R and Kataria G *et al.* also found that laryngitis contributes to the highest number of cases which is contrary to our study [6]. Chopra and Kapoor (1997) found that the incidence of benign glottic lesions undergoing microlaryngeal surgery in the age group of 20-50 years to be around 73.14%. Contrary to this, Saxena and Gode (1975) found a low incidence of 58% in the above age group in their study on cases that were subjected to microlaryngeal surgery.

In the present study it was found that people who didn't have any addictions were (55.50%) and among people who have addictions, smoking 25% was the majority followed by smoking and alcoholic 11.10%, pan chewing 4.20%, alcoholic 2.80%, smoking and pan chewing 1.40%. A study by Gaurav *et al.* found that smoking habit was seen in 41.67%⁸. A study by Banjara *et al.*, showed the incidence of smoking was 43% of the total study population [10]. In a study by Broek *et al.*, he has also found that cigarette smoke was the important predisposing factor for hoarseness [11]. According to Hansa *et al.* commonest habits contributing to hoarseness of voice was smoking in 108 cases (43%) followed by vocal abuse (31%), alcohol intake (29.48%) and tobacco/ gutkha chewing (29.48%) [8].

In the present study of it was found that the most common benign cause of hoarseness of voice was vocal cord polyp 33.30% followed by vocal cord nodule 26.70%, vocal cord cyst and Reinke's edema accounting for 20% each, vocal cord keratosis being 6.70%. In our study of benign lesions of larynx, vocal cord polyps were the commonest. This is in accordance with Dikkers *et al.* Shaw *et al.* had an incidence of vocal polyps of 71.2%, Kambic *et al.* had an incidence of 68.3%. However Chopra *et al.* had an incidence of 16% only. In their series, the incidence of vocal nodules was 33.33% [12].

The study found that people who presented with hoarseness of voice, among 72 cases only 1% had a history of direct trauma due to partial hanging. Rest 99% (71) did not have any trauma history.

In the present study it was found that people who develop hoarseness of voice majority did not have any other associated symptoms (36.1%). Among those who had associated symptoms, the majority of the symptom was found to be heartburn (22.2%), weight loss (11.1%), dysphagia (9.7%), dyspnoea and nasal regurgitation being 4.2% each, stridor and cough 2.8% each, CAD, hawking sensation and others 1.4% each. According to Ghulam *et al.* hoarseness of voice (100%) as the most common presenting feature followed by dysphagia (63%), dyspnoea (36.95%) and pain throat (48.91%). Banjara *et al.* (2011) reported change in voice (95.61%) as most common complaint followed by dysphagia (16%), foreign body sensation (16%) and vocal fatigue (10%) [13].

In the study 72 patients who presented with hoarseness of voice as the cardinal symptom, 61.1% had benign conditions (inclusive of benign lesions of vocal cord, acute laryngitis, LPRD, VC palsy due to benign causes and other benign conditions) whereas malignant lesions accounted for 39% of all the patients, out of which 13.9% had carcinoma larynx(glottis). A study conducted by Kataria G *et al.* study showed 11.67% patients with carcinoma of larynx [10]. Baitha *et al.* study showed 16% patient with carcinoma of larynx in a study population [3]. Banjara *et al.*, study showed 9.56% patients of carcinoma larynx [13]. Whereas in a study that was done by Badra K incidence of malignancy was 18%, in another study done by Swapan Ghosh incidence of malignancy was only found to be 8% [14]. And in

another study by Parikh, the incidence of malignancy was 12%. When compared to the other studies, incidence of malignancy in our study (39%) was found to be high this may be due to their socioeconomic status and habit related [10, 11, 15, 16, 17].

In this study it was found that patient who had presented with hoarseness of voice majority of the patients were labourers (61.1%) followed by teachers (20.83%) and others being 18.0%. A study that was conducted by Gaurav Kataria *et al.* also showed that the manual labourer 26.11% are the largest group affected followed by Housewives 23.89% and Farmer 14.44% [6]. A study by Baitha *et al.* that was done on 110 patients showed that manual labourer 36.36% were more affected followed by housewives 21.81%, Student 14.54% and Teacher 10% [3].

Table 1: Distribution of Gender

Gender	Frequency (Percentage)
Male	46 (64%)
Female	26 (36%)

Table 2: Distribution of Age

Age Category	Frequency (Percentage)
20-30	4 (5.6%)
31-40	18 (25%)
41-50	12 (16.6%)
51-60	17 (23.6%)
61-70	17(23.6%)
71-80	4 (5.6%)

Table 3: Distribution of clinical diagnosis

Clinical Diagnosis	Frequency (Percentage)
Acute Laryngitis	5 (6.9%)
CA Glottis	10 (13.9%)
CA Hypopharynx/PFF	3 (4.2%)
CA Supra glottis	3 (4.2%)
Benign lesions	17 (23.6%)
Others	2 (2.8%)
LPRD	16 (22.2%)
VC Fixity Due to Other Malignancies	7 (9.7%)
VC Palsy	9 (12.5%)

Table 4: Association of Hoarseness of Voice with Exposure to Irritants /Addictions

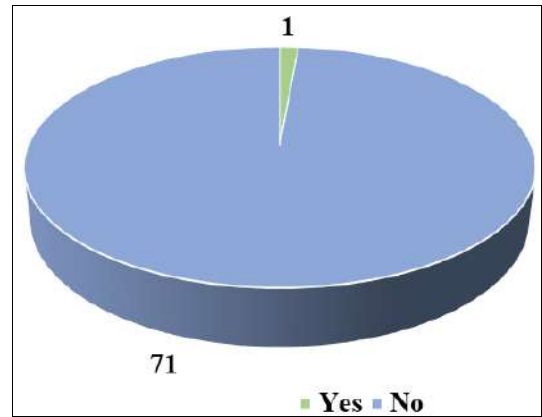
Addictions	Frequency (Percentage)
Alcoholic	2 (2.8%)
Smoker	18 (25%)
Pan Chewing	3 (4.2%)
Smoker + Alcoholic	8 (11.1%)
Smoker + Pan chewing	1 (1.4%)
Nil	40 (55.6%)

Table 5: Benign Causes of Hoarseness of Voice

Benign	Frequency (Percentage)
VC Polyp	5 (33.30%)
VC Cyst	3 (20%)
VC Nodule	4 (26.70%)
VC Keratosis	1 (6.70%)
Early Reinke's Edema	3 (20%)

Table 6: Association of hoarseness of voice and history of direct trauma

History of Direct Trauma	Frequency (Percentage)
Yes	1 (1%)
No	71 (99%)



Graph 1: Hoarseness of Voice with Reference to History of Direct Trauma

Table 7: Hoarseness of voice and associated symptoms

Associated Symptoms	Frequency (Percentage)
Nil	26 (36.1%)
Dysphagia	7 (9.7%)
Dyspnoea	3 (4.2%)
Stridor	2 (2.8%)
Heartburn	16 (22.2%)
Weight loss	8 (11.1%)
Loss of apatite	2 (2.8%)
Nasal regurgitation	3 (4.2%)
Hawking sensation	1 (1.4%)
Cough	2 (2.8%)
Cad	1 (1.4%)
Others	1 (1.4%)

Table 8: Benign lesions VS malignant lesions

Type of lesions	Frequency (Percentage)
Benign conditions	44 (61.1%)
Malignant lesions	28 (38.9%)

Table 9: Association of Hoarseness of Voice and Occupation

Occupation	Frequency (Percentage)
Teacher	15(20.83%)
Labourer	44(61.1%)
Others	13 (18.0%)

Conclusion

A person's voice is the most important tool used for his day today communication and is a part of his being. Any change in voice should be an alarm bell for both the patient as well as the doctor.

The clinician should immediately go for direct laryngoscopy if a definitive diagnosis cannot be made by indirect laryngoscopy or fibreoptic laryngoscopy. Associated clinical features with hoarseness of voice included heartburn, weight loss, dysphagia, dyspnoea, nasal regurgitation, stridor, cough, CAD and hawking sensation.

Conflict of Interest: Nil

Funding Source: Self

Reference

1. Agrawal A, Qureshi S, Kumar A, Jadia S, Ahlawat B, Prasad S. Differential diagnosis of hoarseness of voice in the present scenario: A clinicopathological study. Indian J Sci Res, 2016, 179-83.
2. Gupta A, Jamwal PS. Clinical study of 100 cases of

- hoarseness of voice: A hospital based study. *Int J Otorhinolaryngol Head Neck Surg.* 2018;4(06):1355-8.
3. Baitha S, Raizada RM, Singh AK, Puttewar MP, Chaturvedi VN. Clinical profile of hoarseness of voice. *Indian J Otolaryngol Head and neck surgery.* 2002;54(1):14-8.
 4. Pal KS, Kaushal AK, Nagpure PS, Agarwal G. Etiopathological study of 100 patients of hoarseness of voice: in a rural based hospital. *Indian J Otolaryngol Head Neck Surg.* 2014;66(1):40-5.
 5. James S, Menon SS, Kumar KS, Das D. Aetiopathology and clinical profile of patients with hoarseness. *J Evolution Med Dent Sci.* 2017;6(19):1529-33.
 6. Kataria G, Aditi S, Baldev S, Sanjeev B, Ravinder S. Hoarseness of voice: Etiological spectrum. *Online J Otolaryngol.* 2015;5:13.
 7. Brodnitz FS. Goals, results and limitations of vocal rehabilitation. *Archives of Otolaryngol.* 1963;77(2):44-52.
 8. Kumar H, Seth S, Kishore D. Aetiological study of 100 cases of hoarseness of voice. *Gujrat J Otolaryngol Head Neck Surg.* 2011;8(1):23.
 9. Babu VS and Shaik S. Hoarseness of Voice: A Retrospective Study of 251 Cases. *Indian Journal of Applied Research.* 2016;6(6):458-62.
 10. Smullen JL, Lejeune Jr FE. Otolaryngologic manifestations of gastroesophageal reflux disease. *J La State Med Soc.* 1999;151(3):115-9.
 11. Shaw H. Tumours of Larynx In: Scott - Brown; Diseases of Ear, Nose and Throat, 4th edn edited by Ballantyne and J. Groves. London; Butterworths, 1979, 421-428.
 12. Hegde MC, Kamath MP, Bhojwani K, Peter R, Babu PR. Benign lesions of larynx: A clinical study. *Indian Journal of Otolaryngology and Head and Neck Surgery.* 2005 Jan;57(1):35-8.
 13. Bajwa RA, Jalil S. Hoarseness of voice: Clinicopathological profile of 100 cases. *Cough.* 2012;20:20.
 14. Ghosh SK, Chattopadhyay S, Bora H, Mukherjee PB. Microlaryngoscopic study of 100 cases of Hoarseness of voice. *Indian journal of otolaryngology and head and neck surgery.* 2001 Oct;53(4):270-2.
 15. Gregory ND, Chandran S, Lurie D, Sataloff RT. Voice disorders in the elderly. *J Voice.* 2012;26(2):254-8.
 16. Kambič V, Radšel Z, Žargi M, Ačko M. Vocal cord polyps: incidence, histology and pathogenesis. *J Laryngol Otol.* 1981;95(6):609-18.
 17. Vashistha M, Shukla N, Mishra A, Kumar S, Dwivedi M. Clinico-pathological study of patients of hoarseness of voice in adult of north India region. *MedPulse Int J ENT.* 2019;10(3):36-39.

How to Cite This Article

Dr. G Sankaranarayanan, Dr. Kiren T and Dr. Elizabeth Anna Samuel. A clinicopathological study of hoarseness of voice in a tertiary care center in Kanyakumari District. *International Journal of Surgery Science* 2022; 6(4): 82-85.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.