

Clinical study of cases of hoarseness of voice at a tertiary hospital

V S A V Ramana Rao

Associate Professor, Department of ENT, KIMS Medical College, Chaitanya Nagar, Amalapuram 533201, Andhra Pradesh, INDIA.

Email: gent.mch@gmail.com

Abstract

Background: Hoarseness is defined as a change in the quality of voice which is caused by abnormal vocal cord movement. Present study was aimed to study clinical profile, incidence of common etiological factors and the association of common predisposing factors for hoarseness of voice. **Material and Methods:** Present study was single-center, prospective, observational study, conducted in patients of age 6-70 years, either gender, presenting with hoarseness of voice. When the findings were inadequate to arrive at a clinical diagnosis, direct laryngoscopic examination with or without biopsy, micro laryngoscopy with or without biopsy, flexible endoscopy with or without biopsy was performed. **Results:** In present study, 112 patients presented with hoarseness of voice were studied. Majority cases were from 51-60 years age (28.57 %) and 41-50 years age (25.89 %), mean age was 52.97 ± 14.64 years. Male to female ratio was 2.3:1, male (68.75 %) outnumbered females (31.25 %). Common habits observed in patients were tobacco components (36.61 %), smoking (28.57 %), alcohol (23.21 %) and vocal abuse (9.82 %), while no habits noted in 45 patients (40.18 %). After complete evaluation, clinical diagnosis was finalized. Common diagnosis was chronic laryngitis (21.43 %) followed by malignancy (17.86 %), vocal cord palsy (14.29 %), acute laryngitis (12.5 %), vocal cord nodules (9.82 %), vocal polyp (8.04 %), Reinke's edema (5.36 %), vocal cord cyst (5.36 %), functional voice disorder (2.68 %), tubercular laryngitis (1.79 %) and reflux laryngitis (0.89 %). Among malignancies, carcinoma supraglottis (9.82 %), carcinoma glottis (5.36 %) and carcinoma subglottis (2.68 %) were noted. **Conclusion:** Hoarseness of voice as a symptom should never be ignored as its etiology may range from simple infection to malignancy. Early diagnosis is the key to improve the outcome of treatment.

Keywords: Hoarseness of voice, laryngitis, malignancy, laryngoscopy

*Address for Correspondence:

Dr V S A V Ramana Rao, Associate Professor, Department of ENT, KIMS Medical College, Chaitanya Nagar, Amalapuram 533201. Andhra Pradesh, INDIA.

Email: gent.mch@gmail.com

Received Date: 09/11/2018 Revised Date: 20/11/2018 Accepted Date: 26/12/2018

DOI: <https://doi.org/10.26611/1016838>

Access this article online

Quick Response Code:



Website:

www.medpulse.in

Accessed Date:
28 December 2018

INTRODUCTION

Hoarseness is defined as a change in the quality of voice which is caused by abnormal vocal cord movement.¹ Hoarseness is a coarse, scratchy sound most often associated with abnormalities of the vibratory margins of the vocal cords. Hoarseness of voice describes the voice quality that is noticeably evident in its lack of clarity and

discordance. Hoarseness of voice is one of the widely found symptom in otolaryngological practice and is invariably the earlier manifestation of laryngeal involvement directly or deviously. The disease ranges from utterly benign to the most malignant, ranging from self-limited laryngitis to malignant tumors of the vocal cords.² Some of the predisposing factors to hoarseness include vocal abuse, smoking, and frequent upper respiratory tract infections.³ Aetiopathological factors causing hoarseness include laryngeal irritation, infective laryngitis (acute and chronic), benign non neoplastic nodular lesions, laryngeal papillomatosis, neoplastic vocal cord lesions, neuromuscular disorders, and laryngeal cancers.⁴ Present study was aimed to study clinical profile, incidence of common etiological factors and the association of common predisposing factors for hoarseness of voice.

MATERIAL AND METHODS

Present study was single-center, prospective, observational study, conducted in Department of ENT, KIMS Medical College, Chaitanya Nagar, Amalapuram, India. Study duration was of 2 years. Study approval was obtained from institutional ethical committee.

Inclusion criteria

Patients of age 6-70 years, either gender, presenting with hoarseness of voice, willing to participate in present study

Exclusion criteria

Voice disorders other than hoarseness like rhinolaliaaperta, rhinolaliaclausa, articulation disorders and central nervous system like bulbar palsy, multiple sclerosis, stroke and Parkinson's disease.

Study was explained to patients in local language and written consent was taken for participation and study. The case history included the presenting complaints, history of present illness, history of past illness, personal history, family history and treatment history. The clinical examination included examination of throat by indirect laryngoscopy, examination of nose and ear. The endoscopic examination of throat was also done in every case. The patients were investigated by X-ray Chest (PA view) and X-ray neck (AP/Lateral view) where indicated. CT scan of neck and/or thorax was advised where indicated. Videolaryngoscopy under local anaesthesia was carried out in all 100 patients as a part of local examination. Out of which many patients required surgical intervention for both diagnostic and therapeutic purposes.

When the findings were inadequate to arrive at a clinical diagnosis, direct laryngoscopic examination with or without biopsy, microlaryngoscopy with or without biopsy, flexible endoscopy with or without biopsy was performed. The biopsy specimen was sent for histopathological examination.

Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Statistical analysis was done using descriptive statistics.

RESULTS

In present study, 112 patients presented with hoarseness of voice were studied. Majority cases were from 51-60 years age (28.57 %) and 41-50 years age (25.89 %), mean age was 52.97 ± 14.64 years. Male to female ratio was 2.3:1, male (68.75 %) outnumbered females (31.25 %). Common habits observed in patients were tobacco components (36.61 %), smoking (28.57 %), alcohol (23.21 %) and vocal abuse (9.82 %), while no habits noted in 45 patients (40.18 %).

Table 1: General characteristics

Characteristics	No. of patients	Percentage
Age groups (in years)		
6-20	9	8.04
21-30	13	11.61
31-40	18	16.07
41-50	29	25.89
51-60	32	28.57
61-70	11	9.82
Mean age (mean±SD)	52.97 ± 14.64	
Gender		
Female	35	31.25
Male	77	68.75
Habits		
No habits	45	40.18
Tobacco components		
Smoking	41	36.61
Alcohol	32	28.57
Vocal abuse	26	23.21
	11	9.82

After complete evaluation, clinical diagnosis was finalized. Common diagnosis was chronic laryngitis (21.43 %) followed by malignancy (17.86 %), vocal cord palsy (14.29 %), acute laryngitis (12.5 %), vocal cord nodules (9.82 %), vocal polyp (8.04 %), Reinke's edema (5.36 %), vocal cord cyst (5.36 %), functional voice disorder (2.68 %), tubercular laryngitis (1.79 %) and reflux laryngitis (0.89 %). Among malignancies, carcinoma supraglottis (9.82 %), carcinoma glottis (5.36 %) and carcinoma subglottis (2.68 %) were noted. In patients with vocal cord palsy out of 16, 2 were iatrogenic (after surgery) remaining were idiopathic.

Table 2: Clinical diagnosis

Clinical diagnosis	No. of patients	Percentage
Chronic laryngitis		0
• Chronic hyperplastic laryngitis	8	7.14
• Chronic hyperemic laryngitis	16	14.29
Malignancy		
• Carcinoma supraglottis	11	9.82
• Carcinoma glottis	6	5.36
• Carcinoma subglottis	3	2.68
Vocal cord palsy		
• Idiopathic	14	12.5
• Iatrogenic	2	1.79
Acute laryngitis	14	12.5
Vocal cord nodules	11	9.82
Vocal polyp	9	8.04
Reinke's edema	6	5.36
Vocal cord cyst	6	5.36
Functional voice disorder	3	2.68
Tubercular laryngitis	2	1.79
Reflux laryngitis	1	0.89

DISCUSSION

Voice is an auditory perceptual term that means the audible sound produced by the larynx, which embodies such parameters as pitch, loudness, quality and variability.⁵ It is the abnormal quality of voice that is rough, grating, harsh and more or less discordant and has lower pitch than normal for the individual.⁶ The larynx consists of fold-shaped muscles and is covered by mucous membranes. The space between the vocal folds is called the glottis. Each vocal fold consists of a membranous (anterior) component and cartilaginous (posterior) component. Vocal fold pathology may therefore adversely affect phonation and/or respiration, depending on the location of the pathology.⁷ Several factors are involved in the development of hoarseness in a classification method. They can be divided into organic (structural changes of the vocalization system into malformation, traumatic, inflammatory/ infectious and neoplastic/tumor aetiologies), neurologic (innervation and muscular control of vocalization system, from respiration to voice production deficits caused by lesions in the central or peripheral nervous system), and functional (aphonia, psychogenic, hyperfunctional and hypofunctional) categories.^{8,9} Depends on duration of illness, hoarseness can be divided into acute or chronic condition. The acute onset is more common and mainly caused by inflammation (acute laryngitis) chronic sinusitis acid reflux disease, excessive alcohol use, smoking and over use or misuse of voice whereas other cause may be, laryngeal trauma or thyroid surgery and systemic disease.¹⁰ In study by Amarnath SB,¹¹ incidence of hoarseness of voice was 0.38%. Most common age group affected are 4th to 6th decade with male to female ratio 2.5:1. Malignancy is the commonest cause, smoking and alcohol consumption were major etiological factors. Gupta A¹² studied 100 cases, average age group was found to be between 15-85 years. The number of female patients were 36 (36%) and male 64 (64%). In the present series the most common lesion was vocal nodule (30%) followed by vocal polyp (23%), squamous cell carcinoma (16%), papilloma (10%), Reinke's oedema (9%), keratosis (7%), vocal cord paralysis (4%) and laryngeal tuberculosis (1%). Khajuria A *et al.*,¹³ studied 75 patients, 58.7% males and 41.3% females with a mean age of 40.17±16.64 (range 8-76) years. Majority of the study population had tobacco chewing and smoking habit. Throat irritation was reported by majority (21.3%) of the subjects. Laryngitis was reported among many (17.3%) with 10.7% acute and 6.7% cases of chronic laryngitis, carcinoma larynx (8%), vocal cord polyp (17.3%), vocal cord cyst (8%), vocal cord palsy (13.3%), Reinke's edema (10.7%) and vocal nodule (16%). Hansa B *et al.*,¹⁴ studied 251 cases, M:F ratio was 1.9:1. Patients age ranged from 11 to 80 years and majority of patients equally presented in 4th and 6th decade.

Nonvocal/nonprofessional group constituted as a single largest group (85.26%). Smoking was commonest predisposing factor (44.22%) followed by vocal abuse (30.28%). Out of 251 cases, 83.67% cases were organic and 16.33% cases were functional in origin. In study by Gupta M.,¹⁵ 253 cases presented with complaint of change in voice (Hoarseness). The incidence of hoarseness among total OPD patient was 0.73%. Among 253 cases, 165 (65.21%) were male and 88 (34.78%) were female. Male predominance was observed with Male: female ratio of 1.87:1 in this study. Majority of patients (22.13%) were reported in 51-60 years age group followed by 31-40 years age group (21.73%). Largest group of patients were housewives (19.76%), then farmer (19.36%) and labour (18.57%). Rest was teacher (13.43%), singer (5.92%) politician (5.13%), policeman (1.97%) and sportsman (0.79%). Many predisposing factors were noted like tobacco chewing, smoking, alcohol drinking. Tobacco chewing (38.33%), smoking (33.99%) and alcohol consumption (15.81%) were most common predisposing factors in descending order. Functional disorder was reported in (5.13%) cases and vocal abuse in 2.37% cases. Most cases of acute onset hoarseness improve with conservative therapy such as vocal hygiene, voice rest, medications and voice therapy. All of these patients may not require laryngoscopic examination as these cases usually do not progress. However, hoarseness that lasts for longer than 3 weeks should be evaluated thoroughly.¹⁶ Benign tumors like papiloma, haemangioma; or tumors like masses such as vocal nodule, vocal polyp and cyst causing hoarseness that do not respond to conservative therapy often need microlaryngoscopic surgery (MLS) of the lesions which has both diagnostic and therapeutic value.¹⁷

CONCLUSION

Hoarseness of voice as a symptom should never be ignored as its etiology may range from simple infection to malignancy. 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. Early diagnosis is the key to improve the outcome of treatment.

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Source of Support: None Declared
Conflict of Interest: None Declared