

Original Research Article

Clinical study of 100 cases of hoarseness of voice: a hospital based study

Anchal Gupta^{1*}, Padam Singh Jamwal²

¹Senior Resident, ²Professor, Department of ENT, Head and Neck Surgery, SMGS Hospital, Government Medical College, Jammu, Jammu and Kashmir, India

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*Correspondence:

Dr. Anchal Gupta,

E-mail: anchalsachit@gmail.com

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ABSTRACT

Background: Hoarseness is defined as roughness of voice resulting from variations of periodicity or intensity of consecutive sound waves. Hoarseness is a symptom not a disease.

Methods: The present study was carried out in the Department of ENT and Head and Neck Surgery, SMGS Hospital, Jammu over a period of 2 years from March 2016 to February 2018. During this period the patients who presented with hoarseness of voice were evaluated.

Results: Total 100 cases were studied. 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%), Reinkes oedema (9%), keratosis (7%), vocal cord paralysis (4%) and laryngeal tuberculosis (1%).

Conclusions: Hoarseness is a common symptom of laryngeal dysfunction. The micro laryngeal surgery is a minimally invasive procedure used to correct voice disorder or other problems affecting the larynx.

Keywords: Hoarseness, Vocal nodule, Vocal polyp

INTRODUCTION

The human voice is an extraordinary attainment which is capable of conveying not only complex thought but also subtle emotions. The vocal folds produce tones that become modified by pharynx, palate, tongue and lips to generate the individual sounds of speech.¹ Hoarseness is defined as roughness of voice resulting from variations of periodicity or intensity of consecutive sound waves. The vocal apparatus consists of the respiratory system, the larynx, and the supraglottic vocal tract. Normally, these complex systems are integrated to produce high vocal quality.² The respiratory system (i.e., the lungs, rib cage, abdominal musculature, and diaphragm) Acts as a bellows or compressor by providing constant and steady flow of air through the vocal folds. During vocalization, the compressed air generates pressure differential through a narrowed glottis by means of the Bernoulli effect. 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.³

Hoarseness is a coarse, scratchy sound most often associated with abnormalities of vibratory margins of vocal folds in conditions like laryngitis, vocal fold haemorrhage, mucosal disruption, mass lesions and carcinoma.⁴ Hoarseness lasting longer than 2 weeks must be evaluated completely.⁵ Although the voice is not visible to eyes during speech production but its absence or malfunction is obvious. It is the most common symptom in otolaryngological practice and is invariably related to large number of diseases of vocal folds ranging

from benign to malignant. Its importance derives from the fact that though benign lesions are numerically more common causes of hoarseness than malignant, opportunity for cure has been often lost by delay under a benign diagnosis. To listen the spoken voice is the only way to identify hoarseness. It is often the first and only signal of serious local or systemic disease.⁶

METHODS

The present study was carried out in the Department of ENT and Head and Neck Surgery, SMGS Hospital, Jammu over a period of 2 years from March 2016 to February 2018 after taking proper approval of Institutional Ethical Committee. During this period the patients who presented with hoarseness of voice were evaluated.

Inclusion criteria

All the cases presenting to ENT OPD with symptoms of hoarseness of voice or change in voice.

Exclusion criteria

The cases with change in voice due to congenital disease; nasal and nasopharyngeal pathology; oral and oropharyngeal pathology; speech defects due to CNS lesions.

A detailed history was taken, a complete general physical examination and a thorough ENT examination was done. The local examination was done using Indirect Laryngoscopy, Fiberoptic Laryngoscopy and Direct Laryngoscopy and treated. Routine investigations like complete blood count, fasting and post prandial blood sugar were carried out, urine routine examination, x ray chest, x ray soft tissue neck AP and lateral views was done, histopathological examination of suspected malignancies were done whenever required.

The therapy was based on diagnosis. The benign lesions were excised by microlaryngeal surgery and malignant lesions underwent treatment according to site and staging of tumor.

Statistical analysis

All the data were entered into Microsoft Excel format 2013 and statistical analysis was done with SPSS 20 Version.

RESULTS

In our study out of 100 patients presenting with hoarseness of voice, the age range of patients was between 15-85 years. 64 (64%) were males and 36 (36%) were females, the male: female ratio was 1.7:1. The most common age of presentation in males was 41-50 years (20%) whereas in females maximum patients were in the

age group of 21-30 years (14%). Majority of males (31.25%) presented in age group 41-50 years whereas majority of female (33.33%) presented in 31-40 years age group (Figure 1 and 2).

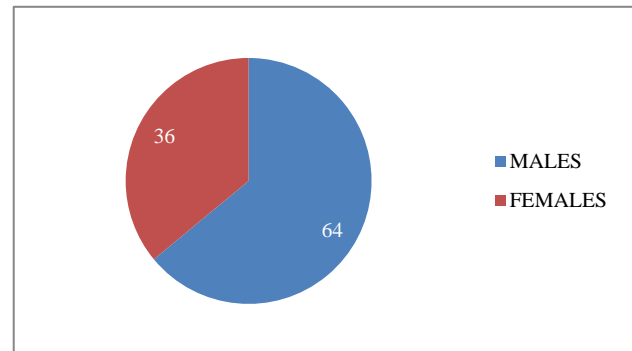


Figure 1: Sex distribution of patients with hoarseness of voice.

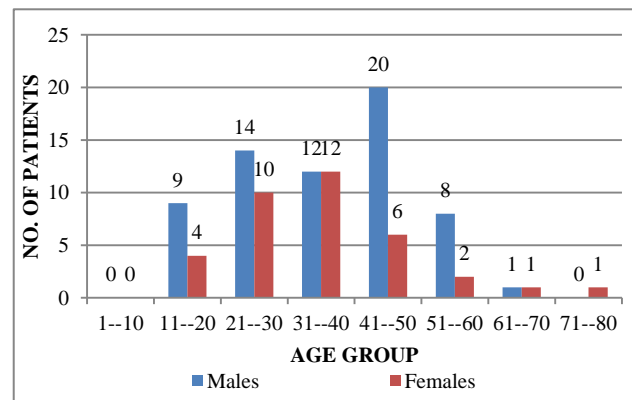


Figure 2: Age and gender wise distribution of patients.

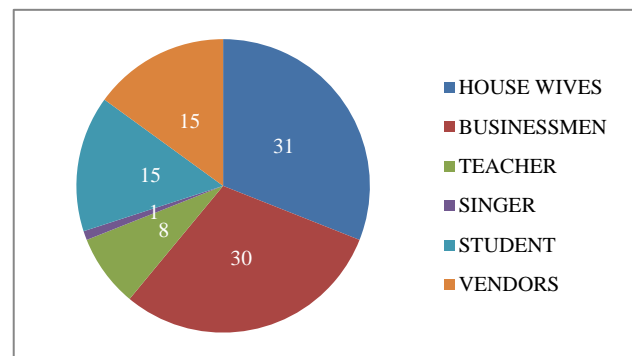


Figure 3: Occupation of patients with hoarseness of voice.

The largest group of patients comprised of housewives (31%), followed by businessmen (30%), vendors (15%), students (15%), teachers (8%) and singers (1%) (Figure 3).

In the present series the most common lesion was vocal nodule (30%) followed by vocal polyp (23%), squamous

cell carcinoma (16%), papilloma (10%), reinkes oedema (9%), keratosis (7%), vocal cord paralysis(4%) and laryngeal tuberculosis (1%) (Figure 5 A-D). In males, the most common condition associated with hoarseness of voice was vocal polyp (19%) whereas in females the

most common lesion encountered was vocal nodule (18%). (23%) cases of vocal cord polyps are responsible for hoarseness of voice with male: female ratio 4.75: 1 (Figure 4).

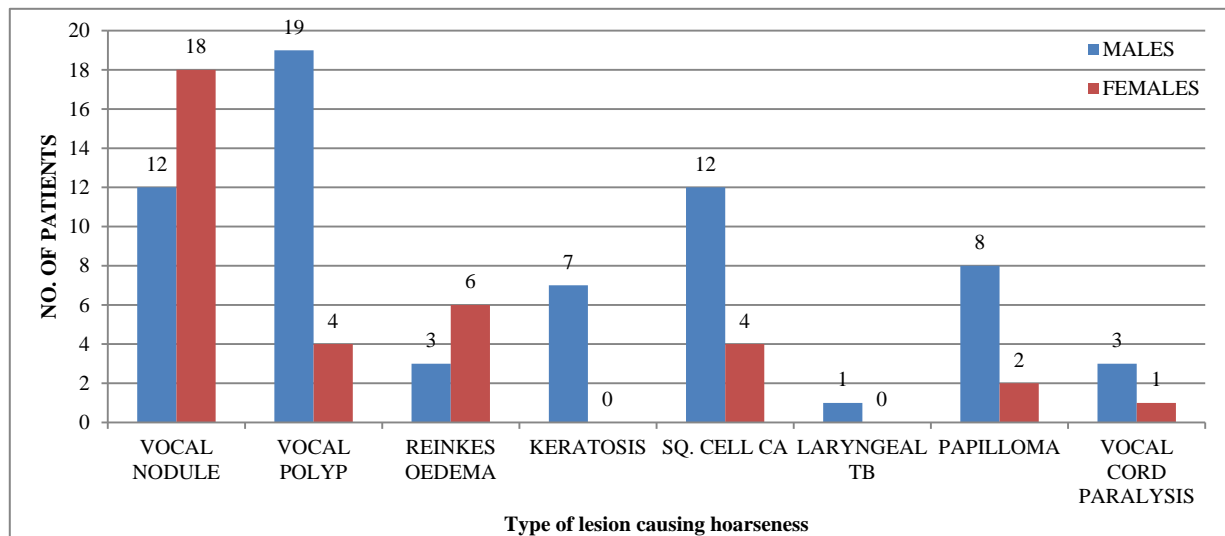


Figure 4: Genderwise distribution of lesions causing hoarseness of voice.

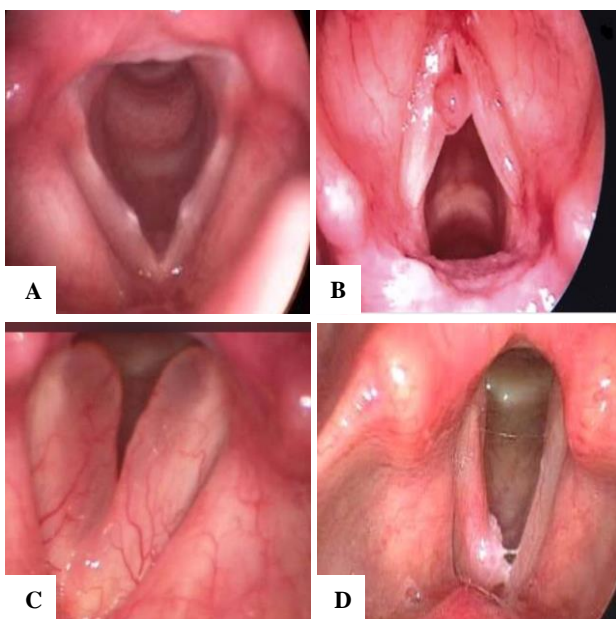


Figure 5: Different lesions causing hoarseness. (A): vocal nodules; (B): vocal polyp; (C): Reinkes oedema; (D): growth right vocal cord.

Out of 100 patients vocal abuse was present in 75% patients whereas in rest 25% patients there was no vocal abuse but other associated factors like smoking, alcohol were present. Out of 9 cases of Reinkes oedema, 6 (66%) were females, whereas out of 16 cases of malignancy of larynx presenting with hoarseness of voice 12 (75%) were males. The distribution of laterality of lesion is given in Table 1.

Table 1: Laterality of the lesions.

Lesion	Right	Left	Bilateral
Vocal nodule	0	0	30
Vocal polyp	13	7	3
Reinkes oedema	1	2	6
Keratosis	3	0	4
Squamous cell carcinoma	5	3	8
Laryngeal tuberculosis	1	0	0
Papilloma	1	3	6
Vocal cord paralysis	1	3	0

DISCUSSION

In our study on 100 patients the age range of patients was between 15-85 years., majority of patients were seen in age group of 41-50 years (26%) and 21-30years (24%) and 31-40 years (24%) followed by 2nd decade (13%). Baitha et al. also found majority of patients (28.18%) in the age group of 31-40 years.⁷ Banjara et al stated majority (22.31%) group fall between the ages of 31-40 years.⁸ All these findings were similar to our study. Herrington-Hall et al 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. Females presented with laryngeal pathologies at a slightly younger age. Majority of males (31.25%) presented in age group 41-50 years whereas majority of female (33.33%) presented in 31-40 years age group. A ratio of 1.7:1 with male predominance was observed in this study.⁹ Male to female ratio in Baitha et al, Mehta, Parikh, Deshmukh

with 2:1, 1.8:1, 2:1 and 1.5:1 respectively.^{7,10-12} In our study, housewives comprised majority of cases (31%) followed by 30% of businessmen. This majority was associated with presence of small children at home. In females majority of cases were housewives (31%). Ghosh et al found majority of patients (29%) were housewives.

Nodule was most common lesion found in our study in 30% cases with male: female ratio of 0.67:1 whereas in a study by Banjara et al it was seen in 11% patients with male: female ratio 1:1.7.^{13,8} In another study incidence was found only 12.72% with male to female ratio 1:1.3.⁷ We found (23%) cases of vocal cord polyps are responsible for hoarseness of voice with male: female ratio 4.75:1. Vocal abuse (75%) was the most common predisposing factor. Mehta found 11.66% cases, Parikh found 15% cases and Banjara et al found 3.59% cases of vocal cord polyp in their study.^{10,11,8} In our study 75% patients gave the history of vocal abuse and 25% gave the history of smoking. In our study malignancy responsible for hoarseness of voice was found in 16% of the cases. Ghosh found 8% cases of malignancy as causative factor for hoarseness of voice in his study whereas Mehta and Parikh found it to be 7.50 and 12% respectively.^{13,10,11} In our study we found 4 cases (4%) as unilateral vocal cord paralysis presenting as hoarseness of voice. According to Mehta and Parikh incidence of vocal cord paralysis was 9.16 and 3% respectively.^{10,11} Banjara et al found 13.55% cases of vocal cord paralysis with M: F ratio of 2.5:1.⁸ We observed left vocal cord paralysis (75%) more often than right (25%) in the ratio of 3:1. Left vocal cord was commonly involved (63.6%) and neoplasm was the commonest causes of vocal cord paralysis as per Mehta.¹⁰ This is attributed to the longer course of the left recurrent laryngeal nerve.

CONCLUSION

Management of hoarseness can be a challenge for the physician. Proper diagnosis through a detailed history and examinations is very important. Treatment is individualized depending on the diagnosis and individual needs of the patient. Voice therapy, vocal cord surgery, and drug therapy for appropriate groups of patients with hoarseness are well documented as effective by the available evidence. In patients with risk factors, especially smokers, hoarseness should be immediately evaluated by laryngoscopy. 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.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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