

Role of videolaryngoscopy in patients with hoarseness of voice

Nehal Vindrani^{1*}, Monika Patel², Sushil Gaur³, Vandana Singh⁴

¹Post Graduate Student, ²Assistant Professor, ³Associate Professor, ⁴Professor and Head, Dept. of ENT, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India

***Corresponding Author: Nehal Vindrani**

Email: nehalvindrani90@gmail.com

Abstract

Introduction: Hoarseness is roughness of voice resulting from variations of periodicity or intensity of consecutive sound waves. Hoarseness is a symptom, not a disease per se therefore warrants a careful determination of the underlying cause in every case. Videolaryngoscopy is a very useful and effective method of evaluation and documentation of pathological conditions of the larynx.

Aims and Objectives: The aim of the study is to evaluate the diagnostic value of videolaryngoscopy in laryngeal pathologies.

Materials and Methods: An observational cross sectional study was carried out in the Department of ENT, tertiary level care Hospital, Ghaziabad, Uttar Pradesh. 106 patients presenting with hoarseness were included. All the patients were thoroughly evaluated and analyzed using video laryngoscopy.

Result: Among 106 cases, age ranged between 12 and 80, 47 (44.4%) were males, largest group of patients were labourer / farmer (33%) followed by housewives (30%). In males, largest group was of labourer/farmer (54.10%). Vocal abuse was the most common predisposing factors in 30% of hoarseness. Other factors in descending order were smoking (26%), upper respiratory tract infection, and alcohol (10%), tobacco chewing (5%). It was found 76% patients had single risk factor, 20 % had two and 4% patients had multiple predisposing factors.

Conclusion: A good videolaryngoscopy is a definitive investigation tool where stroboscopy cannot be done. It can provide accurate diagnosis in many laryngeal pathologies. Seeing is believing. Another useful advantage of videolaryngoscopy is that the patients are able to see the pathology which helps in their counselling and better compliance of patients is seen.

Keywords: Hoarseness, Videolaryngoscopy, Vocal cord, Stroboscopy, Vocal nodule.

Introduction

Hoarseness of voice is a symptom, not a diagnosis and therefore warrants a careful determination of the underlying cause in every case. It is one of the commonest symptoms in otolaryngological practice and it indicates diseases ranging from totally benign condition to the most malignant condition. Depending on the diagnosis treatment varies from simple voice rest to aggressive treatment for certain conditions. Thus, early diagnosis of underlying cause is of utmost importance. Hoarseness is a vague term that is used to describe a change in quality of voice ranging from voice harshness to voice weakness.¹ Hoarseness lasting longer than two weeks must be evaluated completely.² Patients with hoarseness may experience discomfort with speaking, increased phonatory effort, weak voice, as well as altered quality such as wobbly or shaky voice, breathiness, and raspiness.³ At times hoarseness is often the first and only signal of serious local or systemic disease.⁴

Videolaryngoscopy is a very useful and effective method of evaluation and documentation of pathological conditions of the larynx. It is of great value for making accurate diagnosis and planning proper treatment.⁵ Videolaryngoscopy is a non-invasive and easy OPD procedure for the diagnosis of a wide range of laryngeal pathologies.

Aims and Objectives

To study the clinicopathological profile of patient presenting with hoarseness of voice. To find out association of common predisposing factors leading to hoarseness and usefulness of videolaryngoscopy for the same.

Materials and Methods

An observational cross sectional study was carried at the department of ENT and Head & Neck surgery, at a Tertiary Level Care Hospital, Ghaziabad from June 2018 to April 2019. A total of 106 patients of the age group 10-80 years who are willing to participate were included in study. Patients not willing to participate or not given consent for the study or the female patients with ongoing pregnancy were excluded from the study. A written informed consent was obtained from the patients and their guardians wherever the patients were minor. All patients underwent complete preliminary work-up, including detailed otorhinolaryngologic examination and relevant investigations. Videolaryngoscopy using a 70 degree rigid endoscope was done in all the patients and results interpreted by a single person to reduce inter-observer variability. Data collection and entry was done using the MS - Excel and the variables identified were analyzed. Descriptive statistical analysis was carried out in the present study.

Results

Among 106 cases, 47 (44.4%) were males and 59 (55.6%) were females. Age ranged between 12 and 80 years. Female predominance was observed with male to female ratio of 0.8:1 (Table 1). Largest group of patients were labourer / farmer (33%), housewives (30%), private job/businessman (16%), student (9.43%), teacher (9.43%), singer (3%) (Table 2). In males, largest group was of labourer/farmer (54.10%). In females, housewives (76.92%) comprised of largest group.

Koufman and Isaacson⁶ evolved a classification of vocal professionals based on their voice use and risk. *Level I (elite vocal performers)*: Included sophisticated voice users like the singers and actors, where even a slight vocal difficulty causes serious consequences to them and their careers (3%). *Level II (professional voice users)*: For whom moderate vocal difficulty would hamper adequate job performance. Clergymen, politicians, public speakers, and telephone operators would classify in this level of voice users (25%). *Level III (nonvocal professionals)*: It includes teachers and lawyers. They can perform their jobs with slight or moderate voice problems; only severe dysphonia endangers adequate job performance (9%). *Level IV (nonvocal/ nonprofessionals)*: which include labourers, homemakers and clerk (63%). These are the persons who are not impeded from doing their work when they experience any kind of dysphonia.



Fig. 1: Image showing bilateral vocal nodules in a 35 year old patient who was a teacher by profession

Vocal abuse was the most common predisposing factors in 30% of hoarseness. Other factors in descending order were smoking (26%), upper respiratory tract infection, and alcohol (10%), tobacco chewing (5%). In about 15% no predisposing factor was found (Table 4). Some patients had more than one predisposing factors. We found 76% patients had single risk factor, 20% had two and 4% patients had multiple predisposing factors. Few patients had two or more than two complaints at the time of examination. Along with hoarseness, patients presented with foreign body sensation in throat, dysphagia and dyspnoea. Duration of symptoms ranged from two days to more than a year. Mean presentation of complaints was of two months.



Fig. 2: Image showing left sided vocal cord palsy



Fig. 3: Image showing right vocal cord polyp.

Table 1: Demographic distribution of patients

S. No.	Demographic Character	Number	Percentage (%)
1	Age Wise		
	12 – 20	7	6.6
	21 – 30	14	13.2
	31 – 40	25	23.5
	41 – 50	20	18.8
	51 – 60	18	17.0
	61 – 70	18	17.0
	71 – 80	4	3.8
	Total	106	100
2	Gender		
	Male	47	44.4
	Female	59	55.6
	Total	106	100

Table 2: Showing occupation wise distribution

S. No.	Occupation	Number	Percentage
1	Farmer/labourer	35	33.03
2	Housewife	32	30.19
3	Businessman	16	15.09
4	Student	10	9.43
5	Teacher	10	9.43
6	Singer	3	2.83
	Total	106	100.00

Table 3: Various pathologies causing hoarseness of voice

S. No.	Pathology	Male (N)	Female (N)	Total N (%)
1	Haemorrhagic Vocal Cord	3	7	10 (9.4)
2	Vocal Cord Palsy	10	6	16 (15.1)
3	Vocal Nodule	10	15	25 (23.5)
4	Vocal Polyp	7	4	11 (10.3)
5	Vocal Cysts	5	4	9 (8.4)
6	Chronic Nonspecific Laryngitis	7	13	20 (18.8)
7	Acute Laryngitis	4	6	10 (9.4)
8	Malignancy	4	1	5 (4.7)
Total		50	56	106 (100.0)

Table 4: Showing distribution of common predisposing factors

S. No.	Predisposing factors	Number	Percentage
1	Vocal abuse	32	30.19
2	Upper Respiratory Tract Infections	20	18.87
3	Smoking	27	25.47
4	Alcohol	10	9.43
5	Tobacco chewing	6	5.66
6	No factors	11	10.38
Total		106	100.00

Discussion

Although there was a male predominance in many previous studies, here in this study we found a female predominance with male to female ratio of 0.8:1.^{7,8}

Professionals with higher risk of voice problems were singers, teachers, lawyers, hawkers as seen in other studies.^{9,10}

In present study it was also noted that housewives, especially mothers of small kids had hoarseness. This may be due to chronic screaming habits at home.

Most common pathology was vocal cord nodules (23.5%) most of the vocal cord palsy were idiopathic (15%) and on the left side which is consistent with other studies.¹¹

Few patients (4.7%) with chronic progressive voice disorders were diagnosed to have malignancy (Table 3). These were usually associated with symptoms like dysphagia, foreign body sensation, and were chronic tobacco users. All elderly male patients with tobacco habits presenting with changes in voice for more than two weeks should be evaluated to rule out malignancy.

Majority of patients especially females were diagnosed to have chronic laryngitis. The most common findings were congestion in posterior larynx, string sign positive, in some severe cases granuloma were seen in posterior larynx.

Conclusion

Videostroboscopy is the most ideal method for evaluation of vocal cord vibration and mucosal waves.¹²

Although a painless, office based procedure, at times is not available in many setups and also is a costly affair.

On the contrary video laryngoscopy with 70 degree endoscope is also painless, office based procedure to evaluate hoarseness. A careful videolaryngoscopic examination can be of great importance in accurately

diagnosing laryngeal pathologies. Selected cases can be further evaluated by stroboscopy.

Hence, it conclude that a good videolaryngoscopy is a definitive investigation tool where stroboscopy cannot be done. It can provide accurate diagnosis in many laryngeal pathologies.

Seeing is believing. Another useful advantage of videolaryngoscopy is that the patients are able to see the pathology which helps in their counseling and better compliance of patients is seen.

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Self.

Conflicts of interest

None declared.

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