

Original Research Article

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A descriptive study of benign vocal cord lesions

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ABSTRACT

Background: Various vocal cord lesions have a significant influence on vocalization. In India and other developing countries, the prevailing lower economic status, poor general health of population, different food habits, vocal habits, smoking and drinking habits, unhealthy environment and different social customs definitely influence the incidence of various vocal cord lesions. Objective of this study was to find out the incidence of various vocal cord lesions, factors affecting the voice and treatment.

Methods: This is a prospective study carried out in ENT Department from June 2018 to September 2019 at a tertiary care teaching hospital of Western Gujarat. We evaluated 48 patients who had various lesions on vocal cord. Incidence, age, gender, occupational factors, contributing factors, clinical features, histopathological findings were studied.

Results: Vocal cord lesions were more common in males (64.58%), 21 to 40 years of age group. Change of voice (100%) was the most common presenting symptom. Vocal abuse (83.33%) was most common etiological factor. Students (27.08%) were most commonly affected. Maximum cases were of vocal cord nodules (39.58%). All vocal cord lesions (except papilloma) had good recovery with no recurrence.

Conclusions: Vocal cord lesions were more common in males and in 3rd and 4th decades of life. Change of voice was the most common presenting symptom. Vocal abuse was most common etiological factor. Students were more affected in vocal cord lesions. Vocal cord nodules were the most common lesions. Microlaryngeal surgery, voice rest and speech therapy are the mainstay of the treatment for benign lesions.

Keywords: Hoarseness of voice, Microlaryngeal surgery, Speech therapy, Vocal cord lesions

INTRODUCTION

In human body, organ of voice production is the larynx. Any disease in the larynx alters the characteristics of voice. Various vocal cord lesions have a significant influence on vocalization. In India and other developing countries, the prevailing lower economic status, poor general health of population, different food habits, vocal habits, smoking and drinking habits, unhealthy environment and different social customs definitely influence the incidence of various vocal cord lesions. Voice change is a common complaint in today's fast faced, high stressed life, which can cause noticeable

alteration in daily living, social and emotional adjustment.¹ Otolaryngologists usually are the first person approached when voice sounds abnormal. Opportunity for the cure is maximum when diagnosed early.² The objective of this study was to find out the incidence of various benign vocal cord lesions, factors affecting the voice and treatment.

METHODS

This is a prospective study carried out in ENT Department, GK General Hospital, Bhuj, from June 2018 to September 2019. All adult patients presenting with

hoarseness of voice were included in the study. However, patients with clinical diagnosis of malignancy, neuromuscular lesions, nasal or nasopharyngeal pathology and those who were not willing to participate were excluded.

IEC approval was taken before starting the study. A detailed history was taken in all patients with special reference to addiction like smoking, tobacco chewing and alcohol intake, gastritis, drug allergy and past history of operative procedure and intubation. Detailed general examination and local examination of larynx with neck carried out. All the patients were examined by indirect laryngoscopy and 90° Hopkins rigid laryngoscope and findings were noted. After preoperative assessment, all patients were taken under general anaesthesia for surgical management (microlaryngeal surgery). Operating microscope with specialized instruments was used for removal of the lesions. All the lesions could be removed precisely and accurately with minimal trauma to vocal mechanism.

After microlaryngeal surgery, tissues were sent for histopathological examinations for final diagnosis. Postoperatively antibiotics, anti-inflammatory and other supportive treatment were given for one week. Voice rest was advised. Patients were asked to avoid cold and spicy food, all irritants like tobacco, smoking, alcohol, betel nut, snuff inhalation, excessive coughing and throat clearing. Patients were discharged after 24 hours with above advises to be followed for 2 weeks. Patients were called for follow up examination for Hopkins laryngoscopy at 2nd week, 4th week and 8th week. All patients of nodule, polyp, cyst, hypertrophic vocal cord were advised speech therapy for 2 months.

Data was analyzed using the Microsoft Excel sheets.

RESULTS

This study consisted of 48 cases, which had vocal cord lesions, during a period from June 2018 to September 2019. In our study, there was male predominance with male contributing to 64.58% of cases (Table 1). The youngest patient was of 6 years and eldest patient was of 68 years of age. The lesions were more common in 21 to 40 years (37.5%) of life (Table 2). Significant male predominance was noted in all vocal cord lesions. Vocal cord nodule, polyp and cyst were more common in younger age group due to vocal abuse/overuse in them. Keratosis, granuloma and reinke's edema were more common in older age group due to their habits of smoking. Papilloma, as is common in children, was more seen in patients less than 20 years of age.

Table 1: Distribution of patients according to gender.

Gender	Number of patients (%)
Male	31 (64.58)
Female	17 (35.41)
Total	48

Table 2: Distribution of patients according to age groups.

Age group (in years)	Percentage of patients (%)
1-20	22.91
21-40	37.05
41-60	27.08
>60	12.05

In this study, there were maximum cases of vocal cord nodules followed by polyp, cyst, vocal cord hypertrophy, papilloma, keratosis, granuloma and reinke's edema (Table 3).

Table 3: Distribution of various vocal cord lesions.

Pathology	Male	Female	Total
Vocal nodule	10	9	19
Vocal polyp	6	2	08
Vocal cyst	5	1	07
Vocal cord hypertrophy	3	2	05
Papilloma	3	1	04
Keratosis	2	1	03
Granuloma	1	1	02
Reinke's edema	1	0	01

Vocal nodules contributed to 39.58% of cases, which was commonly seen in students and housewives due to overuse or misuses their voice. In our study there were 2 cases of vocal cord granuloma who had a history of prolonged intubation (>3 weeks). Change of voice (100%) was the most common presenting symptom of vocal cord lesions followed by foreign body sensation, throat pain, cough, difficulty in swallowing and difficulty in breathing (Table 4).

Table 4: Clinical presentation of vocal cord lesions.

Chief complaints	Total cases (%)
Change of voice	100
Foreign body sensation in throat	18.75
Throat pain	16.66
Cough	14.58
Difficulty in swallowing	12.5
Difficulty in breathing	8.33

In our study, highest incidence was observed in non professional voice users viz. students and housewives. In case of professional voice users, the highest incidence was observed in labourers, hawkers and teachers respectively. Vocal abuse is highly correlated to all vocal cord lesions. Tobacco chewing, smoking were also contributory factors.

Indirect laryngeal examination (IDLE) was difficult in 19 cases due to excessive gag, tilted epiglottis, restricted mouth opening and patient's non-cooperation. Small lesions (1 to 3 mm in diameter) like vocal nodules, vocal

polyps and vocal cysts were difficult to visualise by IDLE mirror. The lesions of larger size were well visualised by IDLE and were easy to interpret. In case of vocal cord nodule, polyp, cyst, granuloma and papilloma, findings of peri-op examinations were matched with histopathological report (100%). In case of chronic laryngitis and keratosis, final diagnosis was based on HPE.

Follow up of patients was done at 2nd, 4th and 8th week interval and it revealed very good results. Postoperative speech therapy was advised in all the patients of vocal cord nodules, vocal cord polyp, vocal cord cyst and granuloma. All the patients of vocal cord lesions were totally symptoms free with no recurrence. Recurrence was seen in all patients of papilloma at every 4 to 6 months interval.

DISCUSSION

In our study, there was male predominance with male contributing to 64.58% of cases. Male predominance were also noted by Singhal et al (M:F=2.5:1), Hegde et al (M:F=2.8:1) and Baitha et al (M:F=2.1).²⁻⁴ In our study, significant male predominance for all vocal cord lesions may be because males have to deal more with outside world leading to vocal strain and stress. Occupation might be the contributory factor. Bidi smoking and tobacco chewing are more prevalent in males causing chronic irritation or trauma to the vocal cord. The lesions were more common in 21 to 40 years (37.5%) of age, which is considered as the most active period of life. These finding were almost similar to other studies.^{5,6} Vocal cord nodule, polyp and cyst were more common in younger age group due to vocal abuse or overuse in them. Keratosis, granuloma and Reinke's edema were more common in older age group due to their habits of smoking.

Change of voice (100%) was the most common presenting symptoms of vocal cord lesions followed by foreign body sensation, throat pain, cough, difficulty in swallowing and difficulty in breathing, change of voice (100%) was also the most common symptom in Hegde and Baitha studies.^{3,4} In our study, highest incidence was observed in non-professional voice users viz. students and housewives respectively. In case of professional voice users, the highest incidence was observed in labourer, hawkers and teachers respectively. In Baitha study, most of the patients were labourers (36.36%) followed by housewives (21.81%), students (14.54%) and teachers (10%).⁴ In Singhal study, highest incidence was noted in housewives (24%) followed by teachers (16%) and hawkers (16%).² In housewives, shouting at their children and managing household duties may lead to strain on the vocal cords. Teachers and hawkers have significant history of vocal abuse; as they have to speak with loud voice for longer durations. Smoking, tobacco addiction, chemical exposure are quite common in

labourers and farmers leading to chronic laryngitis and hypertrophy of vocal cords due to chronic irritation. Vocal abuse was also a most common etiological factor in some previous studies.⁷⁻⁹ Tobacco chewing, smoking, alcohol are responsible for chronic irritation leading to lesions like keratosis, reinke's edema, chronic laryngitis.

CONCLUSION

This study concludes that vocal cord lesions were more common in males and in 3rd and 4th decades of life. Change of voice is the most common presenting symptom. Vocal abuse is the most common etiological factor. Hopkins laryngoscope is a good diagnostic tool as it provides clear image as compared to IDLE. Microlaryngeal surgery, voice rest and speech therapy are the mainstay of the treatment.

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

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