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The Clinico-pathological Study of Benign Lesions of vocal cords

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ABSTRACT-
Background
Vocal cord lesions are benign (non-cancerous) growths that may include nodules, polyps and cysts. Vocal trauma or overuse is associated with these lesions. Vocal cord lesions, also known as vocal fold lesions, are benign (noncancerous) growths that include nodules, polyps, and cysts. All can cause hoarseness and may be associated with vocal overuse or vocal cord trauma. Vocal cord nodules, sometimes called singer's nodules or nodes, result from repetitive overuse or misuse of the voice. (1, 2)These callous-like growths develop in the midpoint of the vocal folds. Vocal cord nodules look like calluses under the microscope and are occasionally associated with abnormal blood vessels. Men between the ages of 20 and 50 years old are more prone to vocal cord nodules, but both men and women can be affected. Vocal cord polyps are different from nodules because they can occur on either one or both vocal cords. They tend to be more vascularised than nodules, meaning they have more blood vessels and appear reddish in color. These growths can vary in size and shape, but are usually larger than nodules and resemble blisters. Like vocal cord nodules, polyps can be caused by overuse or misuse of the voice, but can also be caused by a single episode of vocal abuse (such as yelling at a sports event).(3) Another type of vocal cord polyp, polypoid corditis (Reinke's edema), is associated almost exclusively with smoking. Both vocal cord nodules and polyps can be caused by different forms of trauma, including singing (particularly in professional singers), screaming, cheerleading, and excessive talking (such as that by a teacher, coach, salesperson or radio personality). Other causes include extra muscle tension when speaking, smoking, alcohol use, sinusitis, allergies, and rarely, hypothyroidism.
Methods- A prospective study was carried out in the department of ENT and HNS from the period of January 2019 to January 2021. 48 patients were evaluated, who had various lesions on vocal cord. Incidence, age, gender, occupational factors, contributing factors, clinical features, histopathological findings.
Result- Vocal cord lesions were more common in males (62.50%), 21 to 40 years of age group. Change of voice was the most common presenting symptom and was seen in 100% cases. 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%).
Conclusions- Change of voice was the most common presenting symptom and lesions were more common in males and in 3rd and 4th decades. Vocal abuse was most common etiological factor. Vocal cord nodules were the most common lesions. Micro laryngeal surgery (Miscopy), voice rest and speech therapy are the mainstay of the treatment for benign lesions of vocal cords.
Keywords- Hoarseness, MLscopy, micro-laryngeal surgery, benign lesions, speech therapy.

I. INTRODUCTION

Benign vocal lesions are non-malignant growths of abnormal tissue on the vocal cords. The common benign lesions of vocal cord are singer's nodule, polyps, papilloma, polypoidal degeneration (Reinke's edema) and cysts. Others are sulcus vocalis, mucosal bridge, intracordal cysts, vocal cord varices and anterior webs.(1) Several factors can be responsible for the development of the benign vocal lesions such as vocal abuse, overuse or misuse of voice, chronic infections of upper airway, allergy, smoking and gastro-esophageal reflux.(2) Frequent coughing and throat clearing also contribute to the mucosal irritation which worsens the voice .Excessive mechanical trauma and stress in the mid membranous area of vocal cord leads on to wound formation occurs. Subsequently remodeling of the superficial layer of the lamina propria and, to a lesser extent, epithelium results in the formation of vocal cord nodules, polyps, and cysts. (1,2)Several studies have demonstrated that the pathologic changes in vocal cord polyps, nodules, and cysts occur within the superficial layer of the lamina propria. Voice disorders cause communication handicap which leads on to psychosocial problems and impaired quality of life.(3) The significance of benign lesions of the

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larynx lies in the importance of its function in speech and the contribution of the voice to one's identity. Since these lesions are not malignant, they are usually not life threatening. A clinical diagnosis of nodules, polyps or cysts does not rule out a malignancy unless the lesion resolves with treatment or is benign on histopathological examination. (3)

II. METHODS

The study was prospective and was carried out in the department of ENT and HNS from the period of January 2019 to January 2021. All patients with voice hoarseness were included in the study and after MLscopy surgery those presented with malignancy on histopathology were excluded. Proper history was obtained from the patients regarding the onset duration and progression of symptom, addiction history like smoking, alcohol consumption and GERD. Past history of corrosive poisoning or surgical procedures like thyroidectomy, tracheostomy or intubation is considered. General examination and local examination including examination of oral cavity and oropharynx. Indirect laryngoscopy is performed. Nasopharyngolarygoscopy was done for the patient to visualize the vocal cord movements and lesions. Patient underwent pre-op assessment for surgery. MLscopy was done for the patient under general anesthesia and the tissue was sent for histopathology. Postoperatively patient was given antibiotics and anti-inflammatory medications and corticosteroids and advised voice rest. Patient was called for follow up after 15 days and re-assesment was done for a period of 2 months.

III. RESULTS

The study consisted of 48 patients those who had vocal cord lesions from a period of January 2019 to January 2021. In the study there was male dominance with 30 males and 18 females out of 48 patients. Males contributing 62.5% and Females contributing 37.5 %

GENDER	NO. OF PATIENTS %
MALE	30 (62.5%)
FEMALE	18 (37.5%)

Fig 1- distribution of patients according to gender

Age Group	% of patients
1-20 yrs	27.08
21-40 yrs	37.00
41-60 yrs	22.91
>60 yrs	13.01

Fig 2 – distribution of patients according to age groups

Predominance was seen among the age group of 21-40 years of age (37%) followed by age group of 1-20 years (27.08%). Least number of cases were seen in the age group of >60 years .

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Lesion	Male	Female	Total	%
Vocal Nodule	10	9	19	39.58%
Vocal polyp	7	3	10	20.3%
Vocal cyst	6	1	7	14.5%
Vocal cord hypertrophy	3	2	5	10.41%
Papilloma	3	1	4	8.33%
Granuloma	1	1	2	4.16%
Reinke's edema	1	0	1	2.08%

Fig 3- distribution of various vocal cord lesions

Majority of cases were of vocal cord nodule contributing to 39.58% of the total cases followed by vocal polyp (20.83%), vocal cyst (14.5%), hypertrophy (10.41%), papilloma(8.33%), granuloma(4.16%) and Reinkes's edema (2.08%).

Occupation	Male	Female	Total	%
Students	15	4	19	39.58%
Teachers	5	5	10	20.83%
Singers	5	0	5	10.41%
Hawkers	2	0	2	4.16%
housewives	-	9	9	18.75%
labourers	3	0	3	6.25%

Fig 4- distribution according to occupation

The incidence was observed more commonly among students(39.58%)and teachers(20.83%) who were more prone to voice abuse. Followed by housewives ,singers , labourers and hawkers and teachers. Vocal abuse is directly proportional to vocal cord lesions and GERD, tobacco chewing, alcohol consumption, smoking were the contributing factors for hoarseness of voice.

Nasopharyngolaryngoscopy was performed for the patient for better visualization of the lesion and vocal cord movements. The findings in the pre-op were matched with the histopathological findings. Follow-up was done for the patient every 15 days for 2 months and results were good. All patients of vocal cord nodules, cyst, polyp and granuloma were advised speech therapy and voice rest and showed no recurrence.

IV. DISCUSSION

In this study change of voice was the most common presenting symptom in almost all the cases (100%) and a male predominance was seen contributing to 62.5% of all cases. Most commonly seen in the age group of 20-40 years (37.5%) . Smoking, tobacco chewers, alcohol played a contributory factor. Tobacco chewing, smoking, alcohol are responsible for chronic irritation leading to lesions like keratosis, reinke's edema, chronic laryngitis (4)Vocal cord nodule was found to be the most common benign lesion among the cases(39.58%) followed by vocal cord polyp and cyst. Students (39.58%) and teachers(20.83%) were most affected with change of voice followed by housewives and singers.(5)

V. CONCLUSION

We conclude in the study that benign vocal cord lesions were common among men in their 3rd and 4th decade. Voice abuse was the most common etiological factor and hoarseness of voice was the most common presenting symptom.

Nasopharyngolaryngoscopy is a very important diagnostic tool and is superior over indirect laryngoscopy. Micro-laryngeal surgery , voice rest and speech therapy remain the mainstay of treatment.

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