

Clinico-demographic trend of Benign Vocal Cord Lesions among Urban Population attending a Tertiary Medical Institution of Kolkata.

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Abstract: To analyze the clinico-epidemiologic profile of patients diagnosed with benign vocal cord lesions. It was a Prospective, single institution-based study. Patients with hoarseness of voice presenting the otolaryngology out-patients' department of a government tertiary-care hospital from March 20012 to June 2013 were evaluated by indirect laryngoscopy, fiber-optic laryngoscopy and direct laryngoscopy followed by biopsy. Only those patients with benign vocal cord lesions, fifty in number, were selected. A clinical and epidemiologic profile was made from the data obtained from these patients. Vocal polyps were the commonest type of benign vocal cord lesions, followed by vocal nodules. Overall, there was a slight male predominance with factors for the development of such lesions being voice abuse, recent attack of upper respiratory tract infections and smoking, among others. These lesions were more common among the urban population. Twenty to 40 years formed the bulk of the benign vocal cord lesions, with a predilection for the left side in unilateral cases. This study deals with the clinico-epidemiologic picture of benign vocal cord lesions. Prevention by medical education (voice rest and voice rehabilitation) and treatment by medical and surgical procedures can result in excellent prognosis.

Keywords: Benign Vocal Cord Lesions, Indirect Laryngoscopy, Vocal Cord Polyp, Vocal Nodule, Direct Laryngoscopy

I. Introduction

Benign vocal cord lesions are a significant cause of hoarseness in clinical practice with or without cough, respiratory distress and pain. They may range from various inflammatory lesions to benign neoplasms and neurological disorders.¹ Epstein *et al*² showed in their study that benign vocal cord lesions far exceeded malignant ones in relation to frequency of occurrence. Our study is based on 50 cases of benign vocal cord lesions and we have tried to elicit different varieties as well as their demographic trend of occurrence.

II. Material and Methods

It is a prospective study conducted in the department of Otolaryngology of R. G. Kar Medical College and Hospital, Kolkata, from March 20012 to June 2013. Fifty patients with complaints of hoarseness of voice due to non-malignant lesions (benign neoplastic and non-neoplastic) were included in the study, malignant growth initially thought to be benign like keratosis laryngis, vocal cord paralysis, acute simple laryngitis were excluded from study. Patients attending otolaryngology out-patients' department with hoarseness were first examined clinically and then baseline demographic profile like age, sex, occupation, duration and progression of symptoms, addiction, history of voice overuse and abuse, personal and family history were recorded. We first performed indirect laryngoscopy, followed by fibre-optic laryngoscopy for further clinical evaluation of benign nature of lesion. Then microlaryngeal surgery was planned and performed under general anaesthesia followed by histopathological examination of lesions of excised tissue to confirm its benign pathology.

III. Results

The youngest patient was 12 years old and the oldest patient was 68 years old (Table I). The highest incidence of cases was in the fourth decade of life (20 patients, i. e., 40%), followed by 16 (32%) in the third decade. Males outnumbered females in our study (Table I). Office-workers and farmers consisted of 26% and 22% respectively and housewives consisted of the largest group (28%) (Table II). Vocal polyps were the commonest lesions encountered (36%), followed closely by vocal nodules (28%) (Table III). Out of the 50 patients, 54% were smokers. Other factors that appeared to have significant association with development of

benign lesions of larynx were voice strain (misuse/overuse) and recent attack of upper respiratory tract infection (URTI) prior to onset of symptoms. Out of the 50 patients, 26 (52%) had definitive history of voice abuse/misuse prior to symptoms. A total of 16 patients (32%) had a positive history of attack of URTI immediately preceding the symptoms – follow-up of these patients revealed that out of these 16 patients, 10 subsequently developed vocal polyps and 6 developed Reinke’s oedema. Ten patients (20%) had history of sudden-onset of symptoms while in 40 (80%), the symptoms were of gradual onset. All the patients had hoarseness of voice as their chief complaints (54%). Twenty-three patients (46%) had some other associated presenting complaints along with hoarseness of voice. It can be seen that urban patients outnumbered their rural counterparts and comprised 52% of total cases. Teachers and singers consisted of 14% of the study population. Bilateral lesions were commoner than unilateral lesions and among the latter, left sided involvement were found to be more common (Table III). (10)

Table I: Age and Sex wise distribution of the patients

Age and Sex Wise Distribution	Age Groups (years)	Number of males	Number of females	Total number of cases
	11-20	0	6 (100%)	6 (12%)
	21-30	5 (31%)	11 (69%)	16 (32%)
	31-40	13 (65%)	7 (35%)	20 (40%)
	41-50	3 (100%)	0	3 (8%)
	51-60	3 (100%)	0	3 (6%)
	61-70	2 (100%)	0	2 (4%)
	71-80	0	0	0
	TOTAL	26 (52%)	24 (48%)	50 (100%)

TABLE II: Occupation wise Distribution of the patients

Occupation	No. of cases	Percentage
Office workers	13	26
Students	5	10
Housewives	14	28
Farmers	11	22
Singers/Teachers	7	14
Total	50	100

Table III: Laterality of vocal cord lesions

Sl. No.	Pathology	Bilateral	Unilateral		Total
			Right	Left	
1	Vocal nodule	14	0	0	14 (28%)
2	Vocal polyp	0	7	11	18 (36%)
3	Reinke’s oedema	7	0	0	7 (14%)
4	Chronic Laryngitis	3	0	0	3 (6%)
5	Vocal cyst	0	2	1	3 (6%)
6	Papilloma	2	1	1	4 (8%)
7	Rhinosporidiosis	1	0	0	1 (2%)
Total		27	10	13	50 (100%)

IV. Discussion

In our study, out of the 50 vocal cord lesions, 46 were found to be non-neoplastic and only 4 were benign neoplasms (papilloma). Among the non-neoplastic group, the largest subset comprised of polyps (36%).

Epstein *et al*² also found that vocal polyps are the most common benign vocal cord lesions but with higher incidence rate of 77.3% observed in their study. The second most common pathology in the present study was vocal nodules. Reinke’s oedema was the 3rd most common pathology (14%). Vocal cysts came next and were responsible in 6% of cases, this tallies well with results of Henry Shaw who identified retention cyst of vocal cord in 5% of cases. Chronic laryngitis with similar incidence of 6% in our study matches with findings of Kleinsasser³ who diagnosed in 241 patients in a series of 3980 patients. A solitary case of laryngeal rhinosporidiosis was encountered in our study which is a rare entity and we could not compare its incidence with other series. Epstein *et al*² and Kambic V *et al*⁴ in their respective studies reported that maximum age of involvement was between 40—50 years for all types of non-malignant lesions and vocal polyp is the most common in the age group 40—50 years. Chopra and Kapoor⁵ found that 73.14% patients with benign lesions were between age group of 20—50 years. John B. Erich⁶ noted in their series of 722 cases that 59.8% were between 20-50 years, 21.8% between 50–76 years, and only 18.4% were aged under 26. In the

present study, the maximum number of non-neoplastic lesions was aged between 21—50years (72%), of which the commonest age group was 30—40 years (38%).

Chopra and Kapoor⁵ also agreed with the findings of our present study of male: female ratio of 56:44% but in vocal nodules 85.7: 15% was female: males. Our study is also in complete agreement with Salmon⁷ and Kleinsasser⁸. Urban patients (52%) outnumbered rural patients – this matches with the opinion of workers like Kambic *et al*⁴ and Snow⁹ who blamed urbanization and industrialization as risk factors. Ghosh *et al* found that history of voice abuse was positive in 72% comparable to our findings (62%). Epstein *et al*² found that incidence of bilateral nodule to be more than bilateral polyp, and in unilateral cases left side is affected more frequently than the right. Chopra and Kapoor⁵ found that in 68.65% cases the duration of symptoms was less than one year. Our study also corroborates that 40 patients (80%) had illness for 6 months or less, and there was no correlation between the type of lesion and duration of symptoms. Regarding onset of symptoms 40 out of 50 cases, i. e., (80%) had gradual onset. So these findings nicely corroborated with that of Epstein *et al*² and Chopra and Kapoor⁵.

V. Conclusion

Benign vocal fold lesions like vocal cord polyp, nodule and cysts are the most common presenting vocal fold disorders with maximum age of incidence in the fourth decade of life with a male predominance (except for vocal nodules). Urbanization (environmental pollution and subsequent respiratory infections) are important triggering factors. Prevention by medical education (voice rest and voice rehabilitation) and treatment by medical and surgical procedures (combined approach) can result in excellent prognosis.

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