



## Original Research Article

# A Clinical Study of Benign Glottic Lesions

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### Abstract

**Introduction:** Many patients with voice disorders have benign vocal fold lesions. The common presentation of the voice disorder is hoarseness, which is defined as change in voice with altered quality, pitch, loudness or which reduces voice related quality of life.

**Aim of the study:** To find out the incidence of various types of benign mucosal lesions of vocal fold causing hoarseness. To correlate the Demographic etiological and risk factors in relation to benign mucosal lesions of vocal fold.

**Materials and Methods:** The prospective study was undertaken in the Department of Otorhinolaryngology, head and neck surgery in Govt Mohan Kumaramangalam medical college hospital salem, Tamil Nadu over a period of one year (June 2015-May 2016).

**Results:** Most common benign vocal fold lesion causing hoarseness is vocal nodule (64%) followed by vocal fold polyp (22%), Intubation granuloma (4%) and Reinke's oedema (4%). Common age group involved was 20-50 years (66%). Incidence was higher in urban residents (58%). Benign vocal fold lesions were commoner in teachers (30%), followed by vendors (20%) professional singers (20%). Smoking was found to be a higher risk factor in the development of vocal fold lesions (60%). Regarding sex distribution male: female ratio was 1.1:1

**Keywords:** Benign vocal fold lesions, Hoarseness, Vocal nodule, vocal fold polyp, Reinke's edema

### Introduction

The voice is primary mode of communication for human. A change in voice with altered quality, pitch, loudness or which reduces voice related quality of life is called hoarseness of voice<sup>[1]</sup>

Although hoarseness has an ICD-9 code, it is not a disease; it is a symptom of a disease. Patient with hoarseness of voice more than two weeks should undergo thorough evaluation of larynx.

Among the benign mucosal lesions of vocal fold that results in hoarseness more common lesions are vocal fold polyp, nodule, granuloma, cyst, reinke's edema, glottic sulcus and laryngeal papillomatosis.

More than 50% of patient with voice disorder have benign vocal fold lesion. Brodnitz<sup>[2]</sup> reported 45% of 977 patients had vocal nodule, polyp or polypoidal thickening.

Kleinsasser<sup>[3]</sup> reported that more than 50% had one of these benign disorders.

### Aim of the study

- To find the incidents of various Benign lesions of vocal fold causing hoarseness
- To correlate the demographic etiological and risk factors in relation to benign mucosal lesions of vocal fold

### Materials and Methods

The prospective study was undertaken in the department of Otorhinolaryngology and Head-Neck surgery of a tertiary care hospital Govt Mohan Kumaramangalam Medical College Hospital, Salem, Tamilnadu over a period of one year (June 2015- May 2016). The study design was a prospective observational one. A detail history was taken and thorough clinical examination was performed with indirect laryngoscopy and telelaryngoscopy to arrive at the diagnosis.

Data analysis was done using Microsoft Excel Software.

### Inclusion Criteria:

- Patient with voice change with benign lesions in mucosal layer of vocal fold with age group from 10years to 60 years were included.

### Exclusion Criteria:

- Patient with vocal fold palsy
- Patient with acute mucosal infection
- Patient with lesions of vocal fold proven to be malignant on histopathological examinations

### Results

The total number of patients having benign mucosal lesions of vocal fold included in the study were 50. Various benign lesions in our study were 32vocal nodule (64%), 11 polyp (22%), 2 Intubation granuloma(4%), 2 Reinke's edema (4%), 1 Papilloma (2%), and Vocal fold sulcus (2%), (Table 1)

There were 27 males and 23 females in our study with sex distributions of Male: Female ratio of (1.1: 1). The overall sex distributions showed a female preponderance over male in cases of nodules and male preponderance (Table 2) in other benign vocal fold lesions. Intubation granuloma and Reinke's edema showed equal distribution.

Age distribution of cases with benign vocal fold lesions were 33 case in the age group of 20-50 years..

8 cases were in the age group of <20 years and 9 cases were in the age group of > 50 years (Table 3)

An interesting observation was that teachers constituted 25% of the study and commonly presented with vocal nodule and polyps. Majority of the patients in this series i.e. about 75% belong to occupation well known for voice abuse as vendors, singers, business man, sales man, hawkers, and medical personnel (Table 4)

We found that patient from urban area having comparatively higher (58%) vocal fold lesions than patient from rural area (42%).

Out of 50 patients, having benign vocal fold lesions 30 cases (60%) were chronic smoker. Dyspepsia was seen in 18 cases (36%) with vocal fold nodule, vocal fold polyp and contact ulcer  
Out of 50 patients, 12 patients were alcoholics among them 9 had been diagnosed with nodule, one each with polyp, contact ulcer and papilloma. 10 cases had a history of exposure to fumes. Allergic association is seen in 8 cases, 4 cases having mostly polyps and nodule followed by intracordal cyst and contact ulcer (Table 5).

**Table 1** Total case distribution among patient with benign vocal fold lesions

Diagnosis	Number of cases	Percentage
Nodule	32	64
Polyp	11	22
Intubation granuloma	2	4
Reinke's edema	2	4
Papilloma	1	2
Vocal fold sulcus	1	2
Vocal fold cyst	1	2

**Table 2** Sex distribution of patient with benign vocal fold lesion

Diagnosis	Male	Female
Nodule	14	18
Polyp	8	3
Intubation granuloma	1	1
Reinke's edema	1	1
Papilloma	1	0
Vocal fold sulcus	1	0
Vocal fold cyst	1	0

**Table 3** Age distribution of cases with benign vocal fold lesion

S.No	Age	Number of cases	Percentage
1.	< 20 years	8	16%
2.	20 – 50 years	33	66%
3.	> 50 years	9	18%

**Table 4** Occupational variations presented in benign vocal fold lesions

S.No	Occupation	Number of cases	%age
1.	Teachers	15	30%
2.	Vendors	10	20%
3.	Professional singers	10	20%
4.	Sales man	4	8%
5.	Hawkers	4	8%
6.	Medical Personnel	4	8%
7.	Business man	3	6%

**Table 5** Association of risk factors in benign vocal fold lesion

Risk factors	No.of Patients	%age
Smoking	30	60%
Dyspepsia	18	36%
Alcoholic	12	24%
Fume Exposure	10	20%
Allergy	8	16%

## Discussion

In our study, out of 50 vocal fold lesion largest subset comprised of vocal nodule (22 cases). The second most common pathology in our study was vocal polyp 11 cases.

Siddapu G K et al <sup>[4]</sup> also found that vocal nodule is the common presentation of benign vocal fold lesion with incidence of 33% observed in their study.

Mahesh Chandra et al <sup>[5]</sup> reported on incidence of 28.57% and 24% on vocal nodule and vocal polyp respectively. Kotby et al <sup>[6]</sup> reported similar results. In studies by kambic et al <sup>[7]</sup> and Chopra et al <sup>[8]</sup> the incidence varied from 68.3 to 16%.

In our study, 27 cases (54%) were males compared to females which were supported by Stewart J P et al <sup>[9]</sup>, Chopra et al <sup>[10]</sup>, Batra et al <sup>[11]</sup> and Chindhapeta K K et al <sup>[12]</sup>.

Male preponderance is also proved by a study in Chicago in 1197 patients by Paul H. Holyinge and K.C. Johnston (1951) in which 70% of cases were male and 33% of cases female.

In another study conducted on 15 patients in AIIMS, New Delhi in 1965 by A. Sinha, S. K. Kachu and K.N. Premanik 73 cases are males and 77 were females.

Chindhapeta K K et al <sup>[12]</sup> in their study observed that teaching professional appeared to be the common occupational group having the benign lesions of vocal fold. In our study too teachers were the major group 30% having vocal fold lesions.

We found that patient from urban areas were having comparatively higher (58%) vocal fold lesions than patients from rural areas (42%). El – Moselhy et al <sup>[13]</sup> urban residence found to have significant risk factors for chronic voice disorders. Regarding provoking factors confirmed from our study were patients with habit of voice abuse, smoking, alcohol intake, dyspepsia, allergy and fume exposure are clinically more prone to chronic voice disorders.

Regarding smoking, it is an important risk factor for voice disorders. As smoking irritates the laryngeal mucosa and at extremes can cause

malignancy. similar results were quoted by Hanson and Jiang, 2000<sup>[14]</sup> in their study.

We have shown that 60% of patients with voice disorders were smokers. This result is consistent with Kambic et al<sup>[15]</sup>.

Alcohol intake represented a risk factor for voice disorder in 24% of patients. This result was consistent with Rothman et al<sup>[16]</sup>, Guenel et al<sup>[17]</sup> and Altieri et al<sup>[18]</sup>.

### Conclusion

We concluded that the most common vocal fold lesion causing hoarseness is vocal nodule followed by vocal fold polyps.

The age group 20-50 years, urban residence, smokers, teachers and male gender were the most important social demographic risk factors for chronic voice disorders.

This study brings a important message to our Indian population who are transforming to new horizon of unhealthy life style which should be avoided and above mentioned criteria should be strictly adhered in their life for better quality of life.

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