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BENIGN LESIONS OF VOCAL CORD – A CLINICOPATHOLOGICAL STUDY

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Abstract

INTRODUCTION

Larynx is an important organ of the body. The primary function of the larynx is to provide protection to the lower airway. It secondarily evolved to serve as a vocal generator of sound. The larynx produces sound which is the major medium of communication.

Only vertebrates with their thoracoabdominal diaphragms are able to use their larynges as flutter valves; altering air flow from their respiratory bellows to produce sound. The production of sound for communication of complex information is limited highest orders.

Although rarely life threatening, voice problems can cause tremendous alteration in daily living and should not be underestimated as a medical disorder[19]

MATERIALS AND METHODS

This present study entitled "**Benign Lesions of Vocal Cords- A Clinico – Pathological Study**" is a prospective type of study conducted in the Department of Otorhinolaryngology at Narayana medical college and hospital from uly July 2017 to June 2018.

A total of 30 patients with benign lesions of vocal cords were included in our study based on symptomology and with positive clinical findings on indirect laryngoscopy and neck examination .All non operative cases and malignant cases were excluded from the study.

A careful history of symptoms and duration was taken and recorded in chronological order . Thorough E.N.T examination as well as systemic examination was carried out .Complete blood picture and viral screening was done, all of them were under normal limits. Video laryngoscopy was done preoperatively for all the cases of tumours of larynx.

Results

Among the 30 patients with benign lesions of vocal cord, smoking and dyspepsia were major risk factors accounting for 50%,followed by alcoholism

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Out of the 30 patients with benign lesions on vocal cords, presenting with hoarseness most prevalent type of lesion is found to be vocal polyp (22 patients) followed by vocal nodule (6 patients).

Among 30 cases of benign vocal fold lesions, right vocal cord is commonly involved in 14 cases(46.7%), followed by left vocal cord (40%)

Among 30 cases of benign vocal fold lesions, there is no recurrence of benign lesions in 29 cases and only one case with papilloma had recurrence; all cases are symptom free and only one case (papilloma) had partial symptoms

CONCLUSION

- Maximum incidence of benign lesions were found in the age group of 41 – 50 years(36.7%), followed by 51– 60 years(23.3%) followed by 31-40 years (16.7%) group, together accounting for 76.7%.
- Males had higher incidence of benign lesions of vocal cord when compared to females.
- Hoarseness was present in all the patients with benign lesions of the vocal cord.
- Vocal stress is the most common underlying etiologic factor.
- Teaching profession appeared to be the common occupational group having the benign lesions of the vocal cord presenting as hoarseness.
- The most commonly done examination procedure in OPD was video laryngoscopy.
- Vocal cord polyps appeared to be the most prevalent type of benign lesion presenting with hoarseness.
- In present study, 19(63.3%) cases correlate both clinically and histopathologically.
- As far as mortality is concerned prognosis is good.
- Recurrent respiratory papillomatosis have poor prognosis as some morbidity is always there.
- All lesions when treated early and completely and followed up properly with voice rest have very good prognosis.

Keywords: Benign Lesions, Vocal Cord, Clinicopathological Study

INTRODUCTION

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Only vertebrates with their thoracoabdominal diaphragms are able to use their larynges as flutter valves; altering air flow from their respiratory bellows to produce sound. The production of sound for communication of complex information is limited highest orders[53].

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A benign lesion of the larynx is defined as 'an abnormal mass of tissue in the larynx, the growth of which exceeds and is uncoordinated with that of normal tissue and persists in the same excessive manner after cessation of stimuli which evoked the change[39]

Recently benign lesions of larynx are becoming quite common because of increased environmental pollution due to rapid industrialization and development. The incidence has also increased because of talking loudly in noisy area in routine. Benign lesions of larynx are fairly common problem in ENT. The vocal cord have got a vital function of voice production and facilitate communication. Any lesion of it causes disturbance in routine life of person not only because of early prejudice of the airway but also because of the interference with the function in some cases. Some cases of benign lesions also present with anomalous features like that of malignant lesion. So it is very essential to diagnose and treat such problem effectively in time by knowing all details about it[12]. Histopathologic examination of these lesions is believed to be the goldstandard for diagnosing benign lesions of the vocal cord.

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Direct laryngoscopy and Microlaryngoscopic excision was done for all the cases of non -malignant tumours of larynx.

Inclusion criteria:

Patients with hoarseness or change in voice , foreign body sensation in the throat, pain on speaking and fatigue of voice, difficulty in breathing and with the findings correlated with biopsy report between the age group of 20 to 70 years of both males and females admitted in the ENT ward, Narayana

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Medical College, Nellore, were thoroughly examined for a period of October 2016 to September 2018 were taken in to consideration and follow up of 3 months.

EXCLUSION CRITERIA:

1. Patients with chronic lung pathology's (like COPD, T.B.)
2. Critically ill-patients.
3. Patient with other tracheal lesions.
4. Patient with laryngeal malignancies.
5. Patient who underwent previous Laryngo – Tracheal Procedures.

Results

The study showed maximum incidence of benign lesions of vocal cord in the age group of 41 – 50 years (11 cases out of 30 cases studied), followed by the 51-60 years age group.

TABLE 4:-INCIDENCE OF BENIGN LESIONS OF VOCAL CORD – AGE DISTRIBUTION

Age group	No. of Cases	Percentage %
20-30	3	10%
30-40	5	16.7%
41-50	11	36.7%
51-60	7	23.3%
61-70	4	13.3%
Total	30	100 %

MALE: FEMALE RATIO:

The study showed males had higher incidence of benign lesions of vocal cord compared to females, 26 patients out of 30 patients studied were males.

Table No. 5

Sex	No. of. Cases	Percentage
Male	26	86.7%
Female	4	13.3%

The incidence of presenting complaints like hoarseness, dysphagia, stridor were analysed in all patients.

All the patients (30)selected in the study had hoarseness of voice, which also included hoarseness with dysphagia in 13 patients and

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hoarseness with stridor in 6 patients .

TABLE 6:-SYMPTOMS OF BENIGN VOCAL CORD LESIONS

SYMPTOMS	NO. OF CASES	PERCENTAGE
Hoarseness of Voice	30	100%
Stridor	6	20%
Difficulty in swallowing	13	43.3%

In present study, maximum number of patients i.e,9(30%) patient had duration of hoarseness for 3-4 months, followed by duration of hoarseness for 2-3 months

TABLE 7:- DURATION OF HOARSENESS IN BENIGN VOCAL CORD LESIONS

DURATION	NO. OF CASES	PERCENTAGE
1-2 months	4	13.3%
2-3 months	7	23.3%
3-4 months	9	30%
4-5 months	5	16.7%
5-6 months	4	13.3%
>6 months	1	3.4%
TOTAL	30	100%

Among the 30 patients with benign lesions of vocal cord , 25 patients had a history of vocal stress and 5 patients did not had a history of vocal stress

TABLE 8:-OCCUPATIONAL VOICE EXPOSURE

	No. of. Cases	Percentage
With vocal stress	25	83.3%
Without vocal stress	5	16.7%
Total	30	100 %

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Among the 30 patients with benign lesions of vocal cord, 11(36.6%) were teachers followed by priests 6 (20%) and vendors 6 (20%) contributing equally

TABLE 9:-OCCUPATION OF PATIENTS WITH BENIGN VOCAL CORD LESIONS

OCCUPATION	No. of. Patients	PERCENTAGE
Conductor	2	6.7%
Housewife	3	10%
Farmer	2	6.7%
Priest	6	20%
Teacher	11	36.6%
Vendor	6	20%

Among the 30 patients with benign lesions of vocal cord, smoking and dyspepsia were major risk factors accounting for 50%,followed by alcoholism

Table 10:- ASSOCIATION OF RISK FACTORS IN BENIGN VOCAL CORD LESIONS

RISK FACTORS	NO.OF PATIENTS	PERCENTAGE
SMOKING	15	50%
ALCOHOLICS	12	40%
DYSPEPSIA	15	50%
ALLERGY	3	10%

Out of the 30 patients with benign lesions on vocal cords, presenting with hoarseness most prevalent type of lesion is found to be vocal polyp (22 patients) followed by vocal nodule (6 patients).

TABLE:- 11 DISTRIBUTION OF BENIGN LESIONS OF VOCAL CORDS

Benign lesion	No. of. Cases	Percentage
Vocal cord nodule	6	20%
Vocal cord polyp	22	73.4%

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Vocal cord cyst	1	3.3%
Respiratory papillomatosis	1	3.3%
Total	30	100 %

In present study, out of 30 cases, 19(63.3%) cases correlate both clinically and histopathologically. Of remaining 11(36.7%) cases, 9 cases diagnosed clinically as vocal cord growth in which 6 cases diagnosed as polyps histopathologically and 3cases diagnosed as Nodules
histopathologically,1case diagnosed clinically as left granuloma diagnosed as polyp histopathologically and 1case diagnosed clinically as right polyp diagnosed as papilloma histopathologically

TABLE 12:- COMPARISION OF PERCENTAGE OF CLINICAL DIAGNOSIS OF BENIGN VOCAL CORD LESIONS WITH PREVIOUS STUDIES

CLINICAL DIAGNOSES	TOTAL NO. OF CASES	PERCENTAGE
Vocal cord polyp	16	53.4%
Vocal cord nodule	3	10%
Vocal cord granuloma	1	3.3%
Vocal cord growth	9	30%
Vocal cyst	1	3.3%
TOTAL	30	100%

TABLE 13:- HISTOPATHOLOGICAL DIAGNOSES OF BENIGN VOCAL CORD LESIONS

HISTOPATHOLOGICAL DIAGNOSES	TOTAL NO. OF CASES	PERCENTAGE
Vocal cord polyp	22	73.4%
Vocal cord nodule	6	20%
Vocal cord papilloma	1	3.3%

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Vocal cyst	1	3.3%
TOTAL	30	100%

Among 30 cases of benign vocal fold lesions, right vocal cord is commonly involved in 14 cases(46.7%), followed by left vocal cord (40%)

TABLE14:- SITES OF INVOLVEMENT OF VOCAL CORD

SITE OF INVOLVEMENT	**NO. OF CASES**	**PERCENTAGE**
Right vocal cord	14	46.7%
Left vocal cord	12	40%
Both vocal cords	4	13.3%

Among 30 cases of benign vocal fold lesions, there is no recurrence of benign lesions in 29 cases and only one case with papilloma had recurrence; all cases are symptom free and only one case (papilloma) had partial symptoms

TABLE15:- POST OPERATIVE PROGNOSIS

TYPE OF LESION	**RECURRENCE**	**SYMPTOM FREE**	
		TOTAL	**PARTIAL**
Vocal cord Polyp	0	22/22	0
Vocal cord Nodule	0	6/6	0
Vocal cord Papillloma	1	0	1/1
Vocal cord cyst	0	1/1	0

DISCUSSION

Phonotrauma is largely responsible for the formation of the benign laryngeal lesions more frequently seen in daily practice[47]. The clinical diagnosis of these lesions is usually difficult, generating many questions visavis the ultimate ENT diagnosis and treatment. Usually, the lesions unresponsive to conservative therapy are surgically removed and sent to pathology to define the type of lesion, with the aim of reaching the proper diagnosis[63]. Benign lesions of the vocal fold scan cause imbalances in normal laryngeal functions.

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Hoarseness of voice is commonest symptom encountered by the otolaryngologists in day to day practice Voice is not only sound generated but also identity of a human being; voice production is one of the most fundamental functional after pathway of respiration. Laryngeal pathologies present widespread causes and factors; correct diagnosis holds the key to treat the disorder.

In the present study the inflammatory as well as structural lesions were thoroughly evaluated by detailed history & examination which includes indirect laryngoscopy, rigid endoscopy, flexible video laryngoscopy and direct laryngoscopy. After diagnosing the patients with vocal fold lesions were subjected to Microlaryngeal surgery and biopsy is done

A detailed study regarding the age, sex and occupation of patients is done. The observations are tabulated.

Maximum incidence of benign lesions of vocal folds occurs in the age group of 41 – 50 years(36.7%) and 31-40 years (16.7%) group, together accounting for53.4%.These observations are supported by Suliman Saudi et al[52] and Geetha K. Siddapur[55.] In our study the age of the patients with benign lesions ranged from 20- 70 years.

Our study showed that 83.3% of patients had occupational voice exposure.. In our study teachers constituted the largest group 36.6% followed by priests and vendors accounted for 40% together. These observations were supported by Geetha K. Siddapur[55],Shivdas Suryaji Chavan et al[54] , Chopra and Kapoor [11] and Strong & Vaughen[58] . In contrary to this in a study conducted by Baitha et a l[3] labourer's accounted for 36.36%.

The present study included all the patients presenting with hoarseness symptom. Similar types of studies were done by Mehta[34] and Parikh [44] .

Among the 30 patients with lesions on the vocal cord 43.3% patients had both hoarseness and dysphagia, followed by 20%patients had both hoarseness and stridor.

In the present study, we found maximum number of patients with hoarseness to have vocal cord polyp(73.4%) and it was the commonest prevalent benign lesion followed by vocal cord nodule(20%). Vocal cord cysts accounts for 3.3%, Vocal cord papilloma accounts for 3.3%.These findings indicate preponderance of non - neoplastic tumours, confirmed by histopathological examination.

In our study we had vocal polyp as the commonest finding accounted for 73.4%. Similar observations were reported by Raquel Buzelin Nunes et al[42], Suliman Saudi et al[52], Mahesh Chandra Hegde et al[33].Vocal cord polyps are common structural abnormality that causes hoarseness. In our present study 33.3% patients had vocal cord polyp on right side. Our observations were supported by Parikh et al [44] and Mehta et al [34]. In contrary to our study, studies by Baitha et al [3]reported that vocal cord polyp is common on left side.

CONCLUSION

- Maximum incidence of benign lesions were found in the age group of

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41 – 50 years(36.7%), followed by 51– 60 years(23.3%) followed by 31-40 years (16.7%) group, together accounting for 76.7%.

- Males had higher incidence of benign lesions of vocal cord when compared to females.
- Hoarseness was present in all the patients with benign lesions of the vocal cord.
- Vocal stress is the most common underlying etiologic factor.
- Teaching profession appeared to be the common occupational group having the benign lesions of the vocal cord presenting as hoarseness.
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