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Original Research Paper

# A Comprehensive Study of Incidence of Benign Lesions of Larynx in The Population in Relation to Their Habits and Environment

Medical Science

KEYWORDS : Fibroagioma, Papilloma, Vocal Nodules, Polyps, HLS

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## INTRODUCTION

Benign lesions of the larynx are seen amongst all age groups and are not infrequent. These lesions occur in different parts of the larynx producing varying symptomatology depending upon the location. Lesions that involve the vocal cords produce early change of voice. Change of voice that persists for more than 3 weeks in adults should be thoroughly investigated to rule out malignancies. Persistent hoarseness of voice with progressive dyspnoea should be similarly investigated and treated so that likely fatalities can be avoided.

The awareness and fear of malignancy is increasing in the general population. Persistent symptoms like hoarseness of voice, discomfort in the throat with or without dysphagia, dyspnoea and pain in the throat do drive the patient to seek medical attention early. A good number of these patients are found to suffer from benign lesions of larynx. They can be treated successfully and without much inconvenience to the patient or prolonged hospitalisation or earning capacity.

With the advent of phonomicrosurgery, micro laryngeal excision, tomography and modern techniques of anaesthesia total excision of the lesion is possible. As the vocal ligament is not damaged in phonomicrosuregery, the voice is restored to near normal state. However, multiple papillomata that occur in children can still produce problems as recurrence rate is high. Early detection and treatment of benign lesions of larynx is to be done, as some of those can be fatal if neglected.

## AIMS AND OBJECTIVES OF THE STUDY

The main aim of this study is to know the incidence of benign lesions of the larynx in the population in relation to the environment and personal habits.

It is mainly related to the criteria like age, sex, etiological factors, symptomatology, site of lesions, pathology of lesions and management modality.

Personal habits like smoking, alcohol, tobacoo chewing, profession are also taken into the criteria.

About 21 patients has been studied over a period of two years i.e from 2013-2015 in GOVERNMENT ENT HOSPITAL, Visakhapatnam.

## .MATERIALS & MATHODS

The prospective study was conducted from March 2014 to October 2015, in GOVERNMENT ENT HOSPITAL, Vishakhapatnam.

During this period, 64,000 new patients with various complaints of Ear, Nose and Throat were seen. Out of which 21 cases were benign lesions and 400 cases were malignant tumours of larynx, which amounts to approximate incidence of benign lesions of larynx being 1 in 300.

The median age of the patients was 30.1 years (4-60). 15 patients were males and 6 patients were females. 5 patients needed emergency tracheostomy.

Of the 21 cases of benign lesions of the larynx, six cases (28.36%) were fibroangiomas, 5 cases (23.76%) were papillomas, 4 cases(19%) were vocal nodules, 3 cases(14.2%) were cysts , 2 cases (9.52%) were ploops and 1 case(9.76%) was fibroma.

After a thorough history and clinical examination by indirect laryngoscopy, a provisional clinical diagnosis was made.

Flexible endoscopy was done and exact size and location was confirmed.

Out of 21 cases, 20 cases were treated surgically and 1 case was treated conservatively by advising :

1. Voice rest for 15 days.
2. To speak softly in the most relaxed way.
3. To avoid exposure to irritant gases.

**Consent obtained from patients.**

18 cases were operated under general anaesthesia and 2 under local anesthesia.

Microlaryngeal excision was done in 12 cases, Endoscopic excision in 4 cases. Peroral excision in 2 cases and Laryngo fissure in 1 case.

Phonomicro surgery done in 1 case, in which the lesion was excised sub epithelially without disturbing the vocal ligament.

Nature of the lesion was confirmed by histopathological examination.

## POST OPERATIVE CARE AND FOLLOW UP :

Immediately after surgery intravenous hydrocortisone hemisuccinate was given to reduce laryngeal edema to all the patients.

Approximate antibiotics and analgesics given for 1 week and patients were discharged on 3rd post operative day.

Advised absolute voice rest for 10-15 days to all the patients to prevent recurrence of the lesions and symptoms.

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| No. | Name | Age in Years | Sex | Occupation | Change in Voice | Dyspnoea | F.B. Sensation | Emergency Tracheostomy | Diagnosis |
|---|---|---|---|---|---|---|---|---|---|
| 1. | M.Behara | 47 | M | Head master | + | - | - | - | Left Vocal Cord polyp |
| 2. | S.K.Abdulla | 9 | M | Student | + | + | | + | Multiple Papilloma |
| 3. | K. Simhachalam | 35 | M | Cooly | + | + | - | + | Fibroma larynx |
| 4. | D.V.V.S.N.Murthy | 40 | M | News Reader | + | - | - | - | Solitary Papilloma of Larynx |
| 5. | Raghavachari | 30 | M | Instructor | - | - | + | - | Aryepiglottic Cyst |
| 6. | P.Ch.S.Naidu | 50 | M | Agriculturist | - | - | + | - | Epiglottic Cyst |
| 7. | Venkata Ramana | 40 | M | Labour | - | - | + | - | Vallecular Cyst |
| 8. | Y Uma Maheswari | 11 | F | Student | + | - | + | - | Vocal nodules |
| 9. | A.Saraswathi | 32 | F | HouseWife | + | | | - | Vocal Nodules |
| 10. | J.Sgarna | 30 | M | Sales Officer | + | | | - | Gelatinous Polyp |
| 11. | A. Prakash Rao | 38 | M | Contractor | + | - | | | Fibroangioma |

| No. | Name | Age in Years | Sex | Occupation | Change in Voice | Dyspnoea | F.B. Sensation | Emergency Tracheostomy | Diagnosis | Treatment | Anaesthesia | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12. | Sowbhagyavathi | 45 | F | Housewife | + | - | - | - | Fibroangioma | Phono Microsurgery | General | Cured |
| 13. | P. Chinnamadu | 60 | F | Housewife | + | - | - | - | Fibroangioma | Micro laryngeal Excision | General | Cured |
| 14. | K.UdhayaLaxmi | 35 | F | Housewife | + | - | - | - | Vocal Nodules | Micro Laryngeal Excision | General | Cured |
| 15. | K. Laxmi Naidu | 32 | M | Police Constable | + | + | - | - | Fibroangioma Left Vocal Cord | Endoscopy Removal | General | Cured |
| 16. | P. Ratna | 30 | F | Housewife | + | - | - | - | Vocal Nodules | Micro Laryngeal Excision | General | Cured |
| 17. | T. Bala Raju | 36 | M | Bus Conductor | + | - | - | - | Fibroangioma | Micro Laryngeal Excision | General | Cured |
| 18. | M.Srinu | 7 | M | - | + | + | - | + | Multiple Papilloma | Endoscopic Excision | General | Recurred |
| 19. | J.JagdeswarRao | 45 | M | Business | + | - | - | - | Fibroangioma | Micro Laryngeal Excision | General | Cured |
| 20. | P. Phani | 5 | M | - | + | + | - | + | Multiple Papilbma | Micro Laryngeal Excision | General | Recurred |
| 21. | K. Sai Kumar | 4 | M | - | + | + | - | + | Multiple Papilloma | Micro Laryngeal Excision | General | Recurred |

**OBSERVATION & ANALYSISTable No.I**
**INCIDENCE OF TOTAL LARYNGEAL LESIONS IN THE PERIOD FROM MARCH 2014 TO OCTOBER 2015 IN GOVT ENT HOSPITAL, VISHAKA-PATNAM**

| Total No. of Cases | No. of cases of laryngeal lesions | Percentage |
|---|---|---|
| 64,000 | 421 | 0.65% |

**Table No. II**
**PERCENTAGE OF BENIGN AND MALIGNANT LESIONS OF THE LARYNX DURING MARCH 2014 TO OCTOBER 2015 IN KGH, VISHAKAPATNAM**

| Disease | No. of Cases | Percentage |
|---|---|---|
| Benign lesions of larynx | 21 | 0.03% |
| Malignant lesions of larynx | 400 | 0.625% |

**Table No.III**
**PERCENTAGE OF BENIGN LESIONS VERSUS MALIGNANT LESIONS OF LARYNX AMONG TOTAL LARYNGEAL LESIONS**

| Disease | No. of Cases | Percentage |
|---|---|---|
| Benign lesions of larynx | 21 | 4.9% |
| Malignant lesions of larynx | 400 | 95% |

**The following observations were made from the data collected from 21 cases and are presented in Tabular forms.**
**Table No. IV**
**AGE INCIDENCE**

| Age (in years) | No.of cases | Percentage |
|---|---|---|
| 1-10 | 4 | 19% |
| 11-20 | 1 | 4.76% |
| 21-30 | 3 | 14.28% |
| 31-40 | 8 | 38% |
| 41-50 | 4 | 19% |
| 51-60 | 1 | 4.76% |

**Table No. V**
**SEX INCIDENCE**

| Sex | No.of cases | Percentage |
|---|---|---|
| Male | 15 | 71.47% |
| Female | 6 | 28.57% |

**Table No. VI**
**ETIOLOGICAL FACTORS**

| Etiological factor | No.of cases | Percentage |
|---|---|---|
| Voice abuse | 17 | 81% |
| Smoking | 6 | 28.5% |
| Alcohol | 6 | 28.5% |

**Table No.VII**
**INCIDENCE OF SYMPTOMS**

| Symptoms | No.of cases | Percentage |
|---|---|---|
| Hoarseness of voice | 12 | 57.1% |
| Hoarseness of voice + Dyspneoea | 5 | 23.8% |
| Hoarseness of voice + Foreign body sensation in throat | 1 | 4.76% |
| Foreign body sensation in throat | 3 | 14.28% |

**Table No.VIII**
**EMERGENCY TRACHEOSTOMY**

| Tracheostomy | No.of cases | Percentage |
|---|---|---|
| With Tracheostomy | 5 | 23.8% |
| Without Tracheostomy | 16 | 76.2% |

**Table No.IX**
**INCIDENCE OF PATHOLOGICAL LESIONS**

| Pathological Type | No.of cases | Percentage |
|---|---|---|
| Fibroangioma | 6 | 28.57% |
| Papilloma<br>Solitary<br>Multiple | <br>1<br>4 | <br>4.76%<br>19% |
| Vocal nodules | 4 | 19% |
| Cysts | 3 | 14.2% |
| Polyp | 2 | 9.52% |
| Fibroma | 1 | 4.76% |

**Table No. X**
**SITE OF LESIONS**

| Site of lesions | No.of Cases | Percentages |
|---|---|---|
| True vocal cords | 14 | 66.6% |
| Epiglottis | 1 | 4.76% |
| Vallecula | 1 | 4.76% |
| Aryepiglottic folds | 1 | 4.76% |
| Multiple sites | 4 | 19% |

**Table No. XI**
**MANAGEMENT MODALITY**

| Treatment | No.of Cases | Percentage |
|---|---|---|
| Surgical | 20 | 95.2% |
| Conservative | 1 | 4.98% |

**Table No, XII**
**TYPES OF ANAESTHESIA**

| Type | No.of Cases | Percentage |
|---|---|---|
| General anesthesia | 18 | 85.7% |
| Local anesthesia | 2 | 9.52% |

**Table No. XIII**
**SURGICAL PROCEDURES**

| Name of the surgery | No.of Cases | Percentage |
|---|---|---|
| Phonomicrosurgery | 1 | 4.76% |
| Microlaryngeal excision | 12 | 57.1% |
| Endoscopic excision | 4 | 19% |
| Peroral excision | 2 | 9.52% |
| Laryngofissure | 1 | 4.76% |

**Table No. XIV**
**OVERALL FUNCTIONAL RESULTS**

| Results | No.of Cases | Percentages |
|---|---|---|
| Cured | 17 | 81% |
| Recurred | 4 (Papillomatosis) | 19% |

**DISCUSSION**

Our study included 21 cases of benign lesions of larynx with 12 detailed case sheets during period of March 2014 to October 2015 in our hospital.the youngest to suffer was a 4 year old male child, the oldest being a 60 year old male. The commonest age group was 20-40 years excluding multiple papillomata which occurred mainly in 1-8 years age

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group. Our study coincides with that of Oliver W.Suehs. in his series of 90 cases the commonest range of age falls between 20-50 years.71% of cases were in males and the rest in females, highlighting fact that males are more prone for laryngeal trauma due to excess usage of voice in their occupation.most of the cases had an occupation compelling over use of their voice, though their occupation variedas teachers, vendors, cultivators, students, salesman and merchants etc. percentage might be considered as too low. We could elicit history,with some objective findings of sinusitis and other upper respiratory tract infections in about 30% of our cases. This type of sepsis and resultant nasal obstruction have been incriminated as causative factors. In nasal obstruction the inspired air is deviated from the humidifying action of the nasal mucosa and may exert a deleterious influence on the delicate epithelium of the true cords. Similarly the cords can be exposed to the toxic effect of mucus originating in the nasal and paranasal sinuses.six(29%) cases had a history of smoking and in these only 5 patients used to smoke more than 10 per day.66.6% of cases situated at the junction of anterior 1/3rd and posterior 2/3rd s of the vocal cord. Remaining occurred in the epiglottis, vallecula and aryepiglottic folds. Multiple papilloma occurred at various sites. Twelve(57%) cases had hoarseness of voice, five(23.8%) had hoarseness of voice and dyspnoea, one(4.76%) had hoarseness of voice and foreign body sensation in the throat and three(14.28%) had only foreign body sensation in the throat. The duration of symptoms scattered with in three months. We did not come across any asymptomatic patients during our study. the size of the lesions varied from small rice grains to the size of a walnut. The smallest beingvocal nodules and the largest were fibromas.six (28.56%) cases were fibroangiomas, five(23.76%) were papillomas, four(19%) were vocal nodules, three(14.2%) were cysts, two(9.52%) were polyps, one(4.76%) was fibroma.

## CONCLUSION

1. The incidence of benign lesions of larynx was 4.9%.
2. The youngest to suffer was a 4 year old child and the oldest being a 60 year old mate. The commonest age group was 20-40 years excluding multiple papillomata.
3. Multiple papillomata is common in the age group of 1-8 years.
4. Male to female ratio was 2.5:1.
5. These lesions were common in those who use their voice excessively.
6. Emergency tracheostomy was needed in 5 cases.
7. Hoarseness of voice is the commonest symptom.
8. Anterior 2/3rds of the vocal cords are frequently in volved.
9. The commonest non-neoplastic tumour being fibroan gioma and the neoplastic was papilloma.
10. With the advent of microlaryngeal surgery, the phona tion will be certainly improved.
11. Sub-epithelial excision of the lesion in phonomicro surgery causes no damage to the vocal ligament and hence preserves the voice.
12. Absolute voice rest for 10 to 15 days is mandatory for all the cases inorder to prevent recurrence.

In our study surgery has been preferred for all the cases except for one which was treated conservatively. Eighteen(85.7%) cases were operated under general anaesthesia and two (9.52%) cases were operated under local anaesthesia.

**The advantage of general anaesthesia being**

1. Complete co operation of the patient.
2. Absence of gag reflex.
3. Prevention of aspiration.

Phonomicro surgery was done in one(4.76%) case in our series, micro laryngeal excision in four (19%) cases, per oral excision in two(9.52%) cases and laryngofissure in one (4.76%) case. Phonomicro surgery is a recent advance in micro laryngeal surgery. The advantages are

1. The epithelium over the vocal cord will be intact.
2. There is no injury to the vocal ligament.
3. The quality of voice will be better as there is no scar ring.

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