

## Clinical Study of Benign Lesions of Larynx

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### ABSTRACT

**BACKGROUND:** Benign lesions of larynx is a growth that does not metastasize to other part of the body, generally produce a common symptom of dysphonia. The symptoms are caused by interference of the routine functioning of the vocal cord and respiratory tract. The necessity to distinguish benign laryngeal lesions from malignant laryngeal lesions makes them important to laryngologist.

**AIM:** A clinical study was undertaken over a period of 2 years to analyse the age, sex, distribution, occupation, site of involvement, symptomatology and prognosis of the most frequent benign lesions of larynx.

**PATIENTS:** A total of 50 patients with benign lesions of larynx were included based on symptoms such as hoarseness of voice, foreign body sensation, neck mass and cough and with positive clinical findings on indirect laryngoscopy and neck examination, after taking their consent over a period of 2 years between August 2016 and July 2018. Patients ranged from 7 to 65 years.

**RESULTS:** In this study, a male predominance of male: female ratio of 3:1 is noted. Mostly age group between the 30-40. The most common lesion being vocal cord polyp followed by vocal cord nodule and Reinke's edema. Common symptom being hoarseness of voice. Predisposing factor being vocal abuse in most cases. Treatment given are speech therapy, medical management and MLS, and patients are followed up for 6months.

**CONCLUSION:** It was observed that Micro laryngeal surgery, medical treatment, voice rest and speech therapy are necessary for management of benign laryngeal lesions and to prevent recurrence.

**Keywords:**

### 1.Introduction

Benign laryngeal lesions are important because of the position of spoken or sung communication and the voice's contribution to individuality. Voice is the medium adapted to communicate emotional contact, whereas speech is a cultural medium that is suitable to convey intellectual contact [1].

Human voice serves a number of communicative functions such as spoken language and others unrelated to speech and language. Voice alone can communicate several nonverbal messages. Speech is the main skill that clearly separates human beings from animals. Phonation is a wonderful human performance [2].

Hoarseness of voice is one of the commonest symptom in otolaryngological practice and is invariably the earlier manifestation of a large variety of conditions directly or indirectly affecting the voice apparatus. The disease ranges from totally benign to the most malignant and therefore a varying degree of significance is attached to this. In the words of Chevalier Jackson "Hoarseness is a symptom of utmost significance and calls for a separate consideration as a subject because of the frequency of its occurrence as a distant signal of malignancy and other conditions. [3,4,5,6].

Its importance derives from the fact that though benign lesions are numerically more common cause of hoarseness of voice than malignant diseases, opportunity for the cure has often been lost by delay under a benign diagnosis" [7].

Hoarseness is a common complaint in today's fast faced, high stressed life. In India and other developing countries, the prevailing lower socio economic status, poor nutrition, poor general health of population, vocal habits, smoking, alcohol consumption and different social customs

definitely influence the incidence of hoarseness [8,9,10]. These lesions are defined as an abnormal mass of tissue in the larynx, the growth of which exceeds and is uncoordinated with that of the normal tissue and persist in the same excessive manner after cessation of stimuli which evoke the change [11, 12,13].

During the last decade there has been tremendous advance in the field of laryngology. Advent of microlaryngoscopy and endolaryngeal microsurgery as well as recently introduced fiberoptic telescope have reduced our dependence on mirror examination and greatly improved the diagnostic ability. [14,15,16]. The aim of the study is to analyse patients over a period of 2 years, the age, sex distribution, occupation, the site of involvement, symptoms, treatment and prognosis of the most common benign lesions of larynx.

## **2. Materials and Methods**

The present study “Clinical study of Benign Lesions of Larynx “has been carried out in the Department of ENT, Sri Lakshmi Narayana Institute of Medical Sciences & Hospital, Puducherry over a period of 2 years from August 2016 to July 2018. During this period patient who presented with hoarseness of voice were evaluated and 50 patients with benign lesions of larynx were included in the present study after taking their consent.

### **INCLUSION CRITERIA**

1. All patients attending ENT OPD with hoarseness of voice, foreign body sensation in the throat, neck mass and cough.
2. Age 7- 65 years.
3. Both males and females.

### **EXCLUSION CRITERIA**

1. Age below 7 years and above 65 years.
2. Patients with clinical diagnosis of malignancy of larynx.
3. Patients with speech defect due to central nervous system lesion.
4. Patients with oral and pharyngeal pathology leading to change in voice.
5. Patients with nasal and nasopharyngeal pathology leading to change in voice.

Each case has been evaluated as per the proforma enclosed. A detailed history was taken, a complete general physical examination and a thorough ENT examination was done to arrive at the final diagnosis.

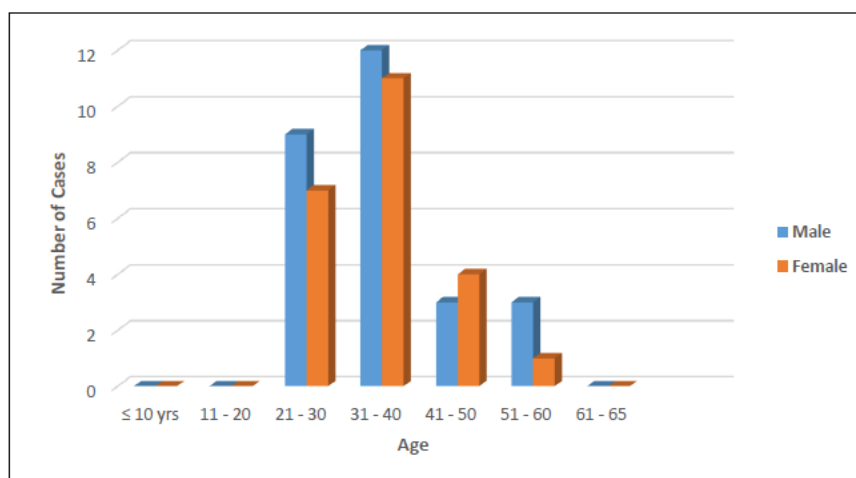
Therapy was based on the diagnosis. Vocal cord nodule and vocal cord polyp patients were advised microlaryngeal surgery to excise the lesion followed by voice rest. Those who refused were put on medical line of management including antibiotics, antacids, steam inhalation and speech therapy. Reinke’s edema patients were given medical line of management and voice rest. Patients were followed up for 6 months to assess the persistence or regression of the lesion. Those patients with persistence of the lesion were advised surgical excision [17,18,19,20].

## **3. Results and Discussion**

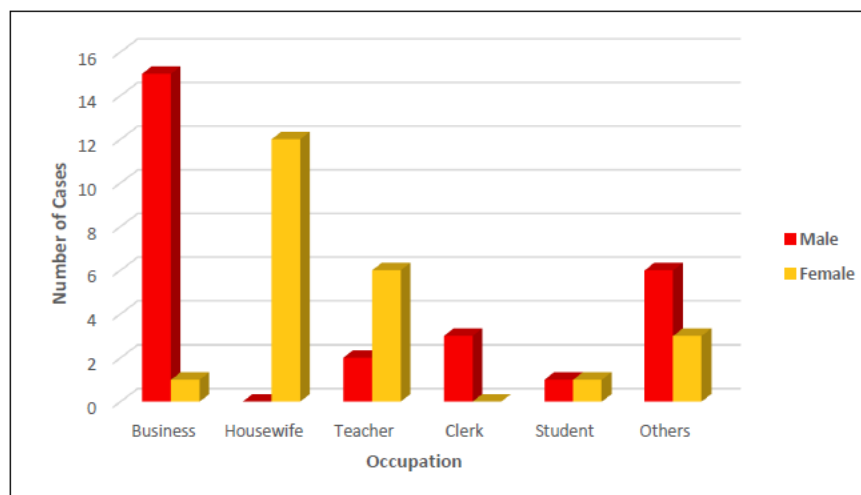
Benign lesions of larynx constitute an interesting array of lesions. The significance of these lesions lies in the importance of its function in speech and the contribution of voice to one’s own

personality [21,22]. 50 cases of benign lesions of larynx were studied during the study period. Maximum number of cases i.e., 23 cases (46%), belonged to 31 – 40 years of age group and minimum number of cases i.e., 4 cases (8%), belongs to 51 – 60 years of age group. Youngest patient was 21 years old and eldest patient was 60 years old.

**GRAPH 1: AGE AND SEX DISTRIBUTION**

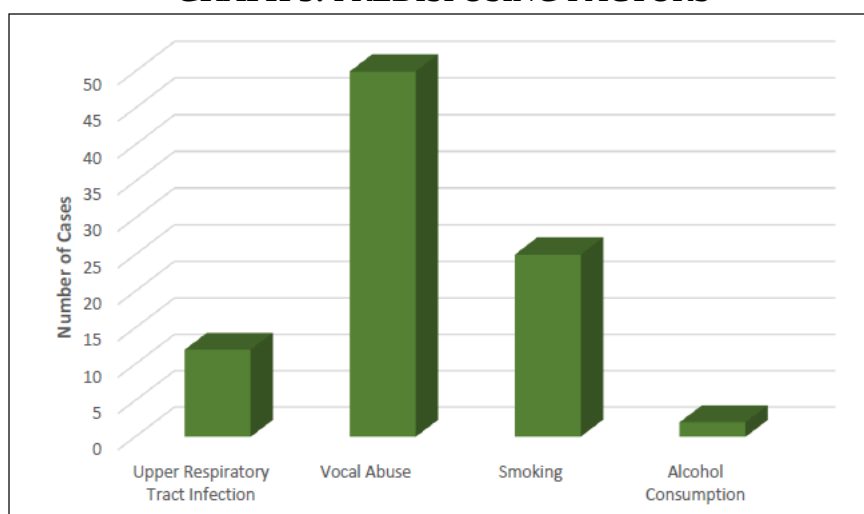


**GRAPH 2: OCCUPATION**



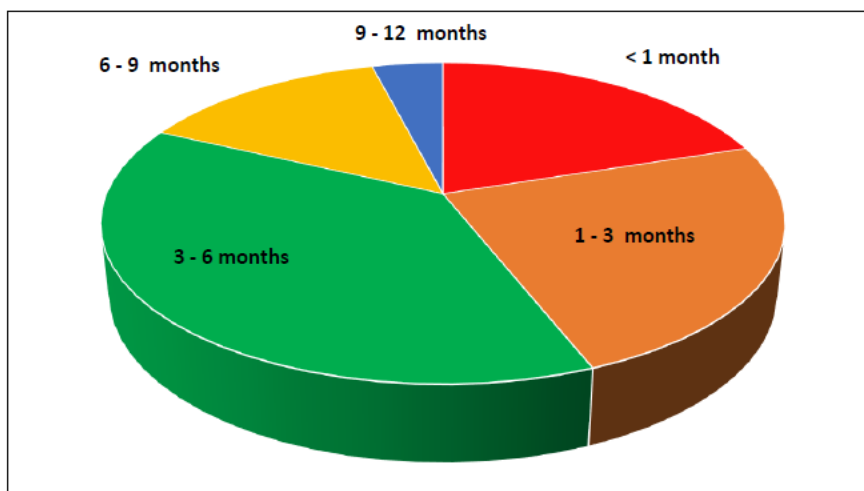
Out of the 50 cases examined, majority of patients i.e., 16 cases (32%) belonged to the business class and the least i.e., 2 cases (4%) were students. Among males, business class was dominating with 15 cases (55.56%) and among females, housewives were predominant with 12 cases (52.17%). Least was found in Student group both in males (3.7%) and females (4.35%).

**GRAPH 3: PREDISPOSING FACTORS**



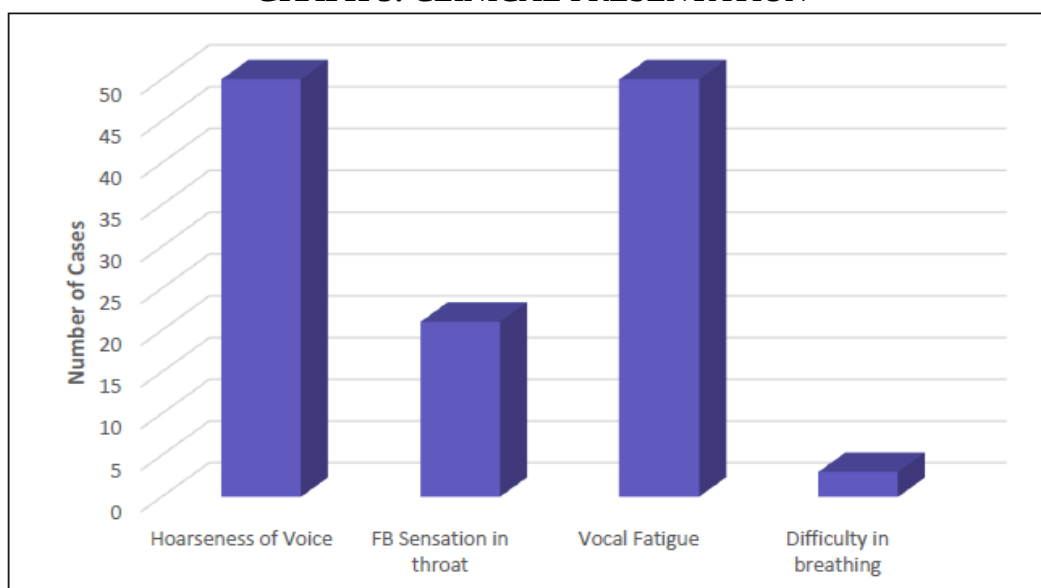
All cases i.e., 50 (100%), showed vocal abuse while finding predisposing factors, followed by smoking i.e., 25 cases (50%), followed by upper respiratory tract infection i.e., 12 cases (24%) and least number of cases i.e., 2 (4%), showed alcohol consumption.

**GRAPH 4: DURATION OF HOARSENESS OF VOICE**



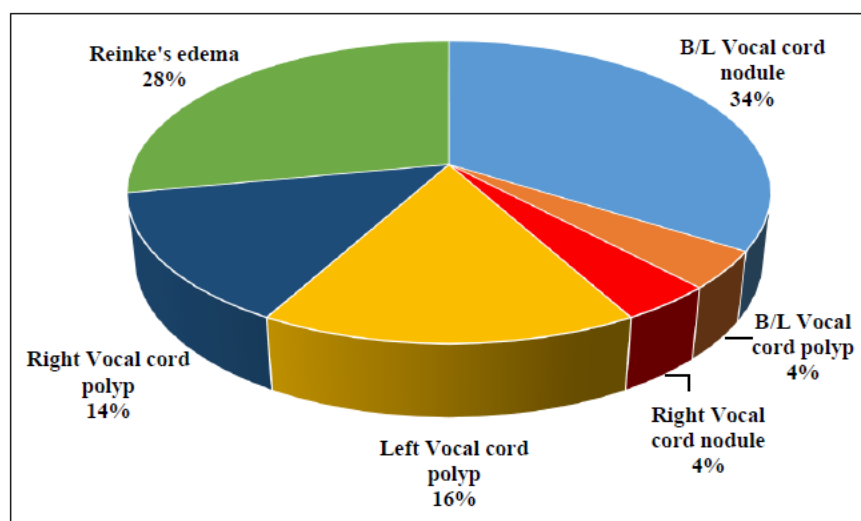
Maximum number of patients i.e., 19 cases (38%) each presented during 3 – 6 months. Least number of patients i.e., 2 cases (4%) each presented during 9 – 12 months.

**GRAPH 5: CLINICAL PRESENTATION**



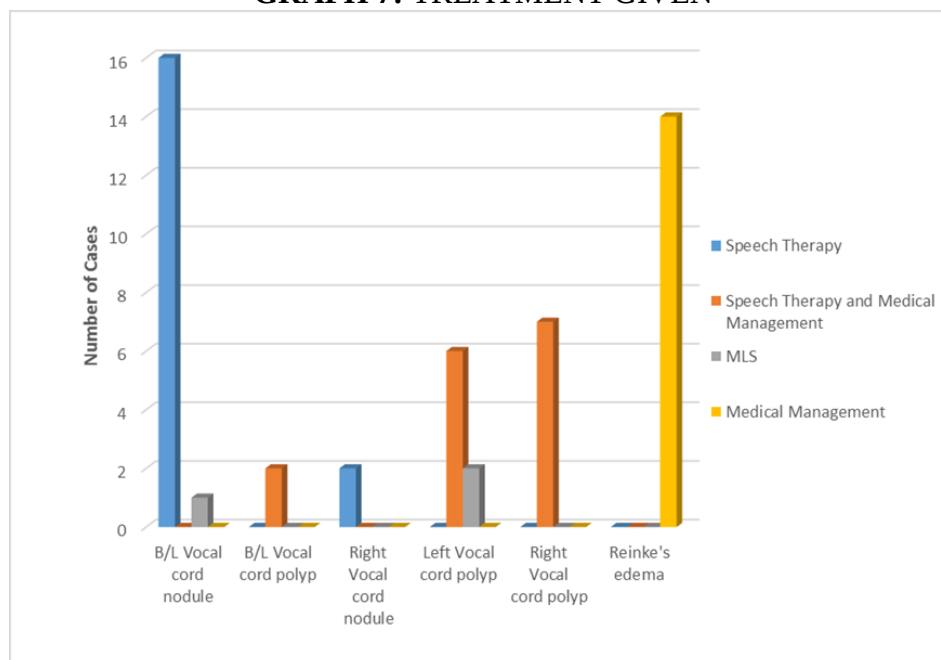
All 50 cases (100%), presented with hoarseness of voice and vocal fatigue, followed by 21 cases (42%) with foreign body sensation in throat and 3 cases (6%) with difficulty in breathing.

**GRAPH 6: DIAGNOSIS**



Maximum number of cases i.e., 17 (34%) were diagnosed with B/L Vocal cord nodule, followed by 14 cases (28%) diagnosed with Reinke's edema, 8 cases (16%) diagnosed with Left Vocal cord polyp, 7 cases (14%) diagnosed with Right Vocal cord polyp and 2 cases (4%) each of B/L Vocal cord polyp and Right Vocal cord nodule were diagnosed.

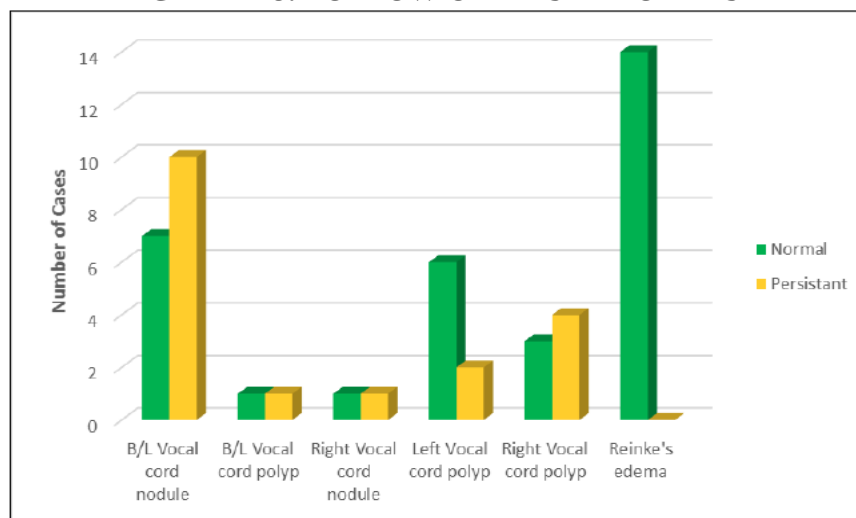
**GRAPH 7: TREATMENT GIVEN**



Out 50 cases, 18 cases (36%) were given speech therapy, 15 cases (30%) were given speech therapy along with medical management, 14 cases (28%) were given medical management and 3 cases (6%) underwent MLS.

16 cases (94.11%) of B/L Vocal cord nodule were given speech therapy and 1 case (5.88%) underwent MLS. All cases of B/L Vocal cord polyp i.e., 2 (100%) were given speech therapy and medical management together. All cases of Right Vocal cord nodule i.e., 2 (100%) were given speech therapy. 6 cases (75%) of Left Vocal cord polyp were given speech therapy together with medical management and 2 cases (25%) underwent MLS. All cases of Right Vocal cord polyp i.e., 7 (100%) were given speech therapy together with medical management. All cases of Reinke's edema i.e., 14 (100%) were treated using medical management.

**GRAPH 8: FOLLOW UP AT SIX MONTHS**



7 cases (41.18%) of patients treated with B/L Vocal cord nodule were seen to be normal after a follow up at six months, while 10 cases (58.82%) were still found to persist with B/L Vocal cord nodule. 1 case (50%) of patient treated with B/L Vocal cord polyp was seen to be normal after a follow up at six months, while 1 case (50%) was still found to persist with B/L Vocal cord polyp. 1 case (50%) of patient treated with Right Vocal cord nodule was seen to be normal after a follow up at six months, while 1 case (50%) was still found to persist with Right Vocal cord nodule. 6 cases (75%) of patients treated with Left Vocal cord polyp were seen to be normal after a follow up at six months, while 2 cases (25%) were still found to persist with Left Vocal cord polyp. 3 cases (42.86%) of patients treated with Right Vocal cord polyp were seen to be normal after a follow up at six months, while 4 cases (57.14%) were still found to persist with Right Vocal cord polyp. All cases of Reinke's edema i.e., 14 (100%) were found to be normal after a follow up at six months. Those patients with persistence of the lesion were advised surgery to ensure definitive management of the condition.

Bilateral vocal cord nodule was the most common lesion apart from vocal cord polyp (bilateral and unilateral), Reinke's edema. Vocal abuse was a strong predisposing factor in all the cases included in the study others being upper respiratory tract infection, smoking and alcohol consumption. Hoarseness of voice was the most common clinical presentation, foreign body sensation in the throat, vocal fatigue, difficulty in breathing were the other clinical presentations [27,28,29,30]. Definitive treatment of micro laryngeal surgery and voice rest was advised to patients with vocal cord nodules and vocal cord polyp and the same was executed in those patients where consent for surgery was given. Conservative management including medical management and speech therapy was advised to those patients who refused surgery and patients with Reinke's edema. All cases at 6 months follow up showed complete resolution of the lesion in patients with Reinke's edema, 41.18% of patients with bilateral vocal cord nodule, 50% of patients with bilateral vocal cord polyp, 50% of patients with right vocal cord nodule, 75% of patients with left vocal cord polyp and 42.8% of patients with right vocal cord polyp.

#### 4. Conclusion

Human voice is an extraordinary attainment, which is capable of conveying not only complex thoughts but also subtle emotions. In our present study, it is seen that benign lesions of larynx were more common in males, maximum incidence between 31-40 years. Business men among males and housewives among females were most affected.

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**Ethical approval:** The study was approved by the Institutional Ethics Committee

#### 5. Conflict of Interest

The authors declare no conflict of interest.

#### 6. Acknowledgments

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## References

- [1] Sultan Pradhan. Voice conservation surgery in laryngeal cancer. 1st edition Lloyds publishing house.1997;1.
- [2] Alan G. Kerr, John Hibbert. Scott Brown's Otolaryngology. 6th edition, Butterworth-Heinemann, 1997; Vol.5:6/1-25.
- [3] Gerald M. English. Otolaryngology. Revised edition Lippincot-Raven.1996; Vol.3:1-25.
- [4] Sharad Maheshwari. Management of hoarseness. Asian journal of ear, nose and throat, 2003- March. April.Vol.1: No.1: 1-9.
- [5] Gaelyn Garrett C, Robert H. Ossof. Hoarseness. Medical clinics of North America. Jan 1999; Vol.83: 115-123.
- [6] John Jacob Ballenger, James B. Snow, Jr. Otolaryngology, Head and Neck Surgery. 15th edition. Williams and Wilkins. 1996; 438-465.
- [7] Chevalier Jackson, Chevalier L. Jackson. Disease of ear, nose and throat 2nd edition. W.B.Sounders company. 1959; 576.
- [8] Nimish Parik. Aetiology study of 100 cases of hoarseness of Voice. Indian Journal of Otolaryngology and Head and Neck surgery. June Vol. 43, No2.71-73.
- [9] Kadambari Batra, Gulmotwani, P.C. Sagar, Functional voice disorders and their occurences in 100 patients of hoarseness as seen on fibre-optic laryngoscopy.2004; April-June: Vol.56.No:2.91-95.
- [10] Vinod Shah, Prabodh Karnik. Otolaryngology Review 2000; 160-165.
- [11] Vinod Shah, Prabodh Karnik. Otolaryngology Review 2000; 1-9.
- [12] Dimitrios Assimakopoulos, George Patrikakos, John Lascaratos. Highlights in the evolution of diagnosis and treatment of laryngeal cancer. Laryngoscope.2003; 113: 557-562.
- [13] Stev M. Zeitels. Surgical Management of early glottis cancer. Otolaryngologic clinics of North America- 1997. Feb; Vol. 30: No. 1 :59-78.
- [14] Lou. Reinisch. Laser Physics and tissue interaction. Otolaryngologic clinics of North America. 1996; Dec Vol. 29: No.2: 893-914.
- [15] Charles W. Cummings. John M. Febrickson, Lee A. Harker, Charles J. Krause. David E. Schuller. Otolaryngology. Head and Neck surgery. 2nd edition Mosby- Year Book.1993; 1891-1924.
- [16] Pamela Roehm, Clark Rosen. Dynamic voice assessment using flexible laryngoscope. How I do it: A targeted problem and solution. American Journal of otolaryngology, Head and Neck Surgery 2004; march- April. Vol. 25: No.2: 138-141.obosc
- [17] Peak Woo, Raymond Colton, Janina Casper, David Brewer. Diagnostic Value of stroboscopic examination in hoarse patients. Journal of Voice. 1997; Vol.5; No.3: 231-238.

- [18] Dejonkere P.H. Perceptual Laboratory assessment of dysphonia. Otolaryngologic clinics of North America. 2004; August; Vol.33, No.4: 731- 750
- [19] Michael. C. Munin, Thomas Murry, Clark Rosen. Laryngeal electromyography; Diagnostic and Prognostic Application. Otolaryngologic Clinics Of North America. 2000 August; Vol. 33; No.4: 959-970.
- [20] Hsiung M, Chen Y.Pai L. et al: Fat augmentation following microsurgical removal of vocal nodules. Laryngoscope 2001 August; Vol.112. No.8: 1414-1419.
- [21] Michel M. John. Update on the etiology, diagnosis and treatment of vocal fold nodules, polyps and cysts. Current opinion in otolaryngology and Head and Neck Surgery. 2003; Vol.11: 456-461.
- [22] Dikkers FG, Benign lesion of vocal folds: Histopathology and phonotrauma. Ann-Otol-Rhinol-Laryngol.1996; Vol.104:689-704.
- [23] Saileswar Goswami, Tarun Kumar Patra. A clinic pathological study of Reinke's edema. Indian Journal of otolaryngology and Head and Neck Surgery.2003 July-Sept. Vol.55: No.3: 160-165.
- [24] Zeitells S. M, Bunting G.W, Hillman et al. Reinke's edema: Phonatory mechanic and management strategies. Ann-Oto- Rhinolaryngol 1997; Vol.106:533-543.
- [25] Alan G. Ferr, John Hibbert. Scott Brown's Otolaryngology.6th edition. Butterworth-Heinemann.1997; Vol.5/1-20.
- [26] Craig Derkay, David Darrow. Recurrent Respiratory Papillomatosis of the larynx current diagnosis and treatment. Otolaryngologic clinics of North America. 2000 Oct; Vol.33: No.5: 1129-1141.
- [27] Jamina K. Casper, Thomas Murry. Voice therapy method in dysphonia. Otolaryngologic clinics of North America-2000 Oct; Vol.33; No.5:983-1002.
- [28] Thomas Murry, Clark A Rosen. Vocal education for professional voice user and Singer. Otolaryngologic clinics of North America. 2000-Oct; Vol.33:No.5: 967-987.
- [29] Phaniender Kumar. V, Srinivas Murthy MS, Ravikanth, Ratna Kumar. Phonomicro surgery for Benign vocal fold lesions: Our experience. Indian journal of otolaryngology and Head and Neck Surgery.2003. July-Sept.Vol.55; No.3: 184-186.
- [30] Singhal. P, Bhandari. A, Chouhan. M, Sharma. M.P, and Sharma. S. (2009). Benign tumors of the larynx: a clinical study of 50 cases. Indian Journal of Otolaryngology and Head and Neck Surgery, 61(1), 26-30.