

# A Study of Management of Benign Lesions of the Larynx

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## ABSTRACT

A two-year prospective study was conducted from June 2008 to May 2010. A total of 80 patients with benign laryngeal lesions were included in the study based on symptoms, such as hoarseness of voice, foreign body sensation, vocal fatigue, dyspnea and cough and with positive clinical findings on indirect laryngoscopy. Diagnostic and therapeutic laryngoscopic and microlaryngoscopic procedures were employed. Vocal cord polyps were observed to be the commonest type of lesions. Out of the 80 patients in the study group, 40% patients got complete relief with voice rest and vocal rehabilitation; 60% patients required surgery, which included endoscopic/microlaryngoscopic endolaryngeal surgery and external approaches. There was no recurrence in cases of vocal polyps and nodules during the period of observation. Endolaryngeal surgery and voice rest offer a cost-effective, useful and safe method for the management of benign laryngeal lesions. With the inclusion of lasers, they can be more precisely operated. As such, the standard treatment of choice in all types of benign tumors of the larynx should consist of a triad of approach by microlaryngeal surgery (either microscopic or endoscopic, with or without use of lasers), voice rest and vocal rehabilitation.

**Keywords:** Benign lesions, Larynx.

## INTRODUCTION

A benign lesion of the larynx was defined by Hollinger (1951) as any mass of tissue in the larynx which does not present characteristics of malignancy.<sup>1</sup> The significance of benign lesions lies in the importance of its function in speaking and the contribution of voice to one's own identity. The benign laryngeal lesions occur in a ratio of 2:3 to the malignant lesions. Various studies opined that true benign neoplastic lesions are uncommon and occur in a ratio of 1:6 to the non-neoplastic lesions.

The study is important for the laryngologist not only for the symptoms they produce but also because of the necessity of distinguishing them from malignant lesions. Some of these tumors may even undergo malignant changes like papilloma (4%), granular cell tumor (2%).<sup>2,3</sup> Non-neoplastic lesions seem to be caused primarily by vibratory trauma (excessive voice abuse). Cigarette smoking, infection, allergy and gastric reflex are cofactors. Small lesions can be excised endoscopically by CO<sub>2</sub> laser or by microlaryngeal instruments. Larger lesions extending beyond laryngeal framework often require pharyngotomy or laryngofissure.

## AIM

To analyze age, sex distribution and symptomatology, site of involvement and the prognosis of the common types of benign lesions of larynx.

## MATERIALS AND METHODS

This study was a two-year prospective study from 1st June 2008 to 30th May 2010 carried out at Department of ENT, Gauhati Medical College, Guwahati, Assam. Patients were selected based on symptoms, such as hoarseness of voice, vocal fatigue, foreign body sensation, respiratory distress, cough and their duration with positive clinical findings on indirect laryngoscopy (Table 1). The patients were in the age group of 5 to 65 years. All nonoperative and malignant cases were excluded. Age, sex, occupation and personal history like smoking, tobacco and alcohol were taken. All infective, malignant and speech defect due to CNS lesions were excluded. Diagnostic hematological, radiological and laryngoscopic investigations were done. Treatment advised was either conservative medical/speech therapy and/or surgical therapy. Conservative medical therapy included antibiotics, anti-inflammatory, steam inhalation and voice rest. Surgical procedures include tracheostomy, pharyngotomy, laryngoscopic procedures under LA and microlaryngoscopic procedures under GA. All excised tissues

**Table 1:** Incidence of the symptoms

Symptoms	No. of cases	Percentage
Hoarseness	76	95%
Vocal fatigue	42	52.5%
Cough	24	30%
Dyspnea	8	10%
Foreign body sensation	6	7.5%

were sent for histopathological examination. Postoperative management includes complete voice rest for two weeks followed by gradual talking.

### RESULTS AND OBSERVATIONS

A total of 80 patients were studied during this period. Youngest patient was 5 years of age and oldest 65 years of age. Majority of the patients were in the age group of 21 to 30 years. Males were seen to predominate over females with a ratio of 4:1 (i.e. 64 males and 16 females). Most of the patients in our study presented with hoarseness (95%). Duration of symptoms ranged from 15 days to 1.5 years. Most of the cases (40%) were diagnosed by indirect laryngoscopy during routine ENT examination and rest were diagnosed by direct laryngoscopic (40%) and videolaryngoscopic procedures (17.5%). Incidence of vocal polyp was 37.5% (Fig. 1) followed by vocal nodule 27.5% (Fig. 2), multiple laryngeal papillomatosis 10% (Fig. 3), hemangioma 10%, epiglottic cyst 5%, vocal cord cyst 7.5% and intubation granuloma 2.5%. Most common site of involvement was true vocal cord 83.33%. Vocal polyps were mainly treated by excision under direct laryngoscopy (73%), while 90% of the vocal nodules responded to conservative therapy (Table 2). One patient with epiglottic cyst was treated by suprahypoid pharyngectomy.



Fig. 1: Vocal cord polyp



Fig. 2: Vocal nodules



Fig. 3: Multiple papilloma larynx

### PROGNOSIS

Maximum cases were totally symptom free except three cases of multiple laryngeal papillomatosis who were treated in multiple sittings.

### DISCUSSION

The definition of benign lesions of the larynx requires some elaboration. In 1938, New and Erich published the Mayo Clinic

Table 2: Management of various types of lesions

Type of lesion	Conservative		Surgery			Total (%)
	Conservative alone	Conservative + voice therapy	Excision by DL	Excision by endoscopy	External approach	
VC polyp	0	4	22	4	0	30(37.5%)
VC nodule	6	14	2	0	0	22(27.5%)
VC cyst	0	4	2	0	0	6 (7.5%)
VC hemangioma	0	2	4	2	0	8 (10%)
MLP	0	0	0	8	0	8 (10%)
Epiglottic cyst	0	0	2	0	2	4 (5%)
Intubation granuloma	0	2	0	0	0	2 (2.5%)
Total	6 (7.5%)	26 (32.5%)	32 (40%)	14 (17.5%)	2 (2.5%)	80 (100%)

experience of 722 patients presenting with benign laryngeal pathology. They proposed that as true proliferative neoplasms were often clinically indistinguishable from nonproliferative inflammatory or hyperplastic growths, the term benign tumor should be used to encompass all abnormal growth of tissue in the larynx that lacked malignant or metastatic properties. Since then, some authors have revised the concept, classifying vocal fold nodules, polyps, cyst and nonspecific granulomas to be mucosal reactive inflammatory disorders and therefore non-neoplastic in nature. Notwithstanding the various view points, the principles of management remain analogous. The presence of mass lesion in the larynx can provoke numerous acute, chronic, progressive or even life-threatening symptoms. When assessing the patient with a potential laryngeal lesion, a thorough history should be taken with particular emphasis on the age of the patient, the temporal course of the symptoms complex, the presence of infection, any previous surgery or trauma, and presence or absence of respiratory, vocal or swallowing symptoms. Although the experienced laryngologist may be able to make an accurate clinical diagnosis even by indirect laryngoscopy in the outpatient clinic, evidence suggest that the accuracy of diagnosis based on visual examination alone is subject to some variation.

The first line of treatment for lesions caused by phonotrauma is behavioral intervention with speaking and singing therapy. The primary goal of voice therapy is to maximize efficiency of phonation and to eliminate maladaptive vocal behaviors that exacerbate these masses. Additionally, patients should be treated for concomitant problems that contribute to mucosal friability, such as laryngopharyngeal reflux and poor vocal hygiene. When maximal behavior intervention does not achieve satisfactory improvements in voice, surgical treatment is considered. The decision to pursue surgical interventions; however, should take into account multiple factors, including the patient's vocal impairment, type and location of the lesion, and willingness to accept surgical risk. Patients who do not have significant functional impairment from their lesions may not need surgical intervention. The overall goal of surgical intervention for benign lesions is careful removal of abnormal tissue giving maximum respect to the normal superficial lamina propria. Significant improvement in laryngeal endoscopic microsurgical understanding, technique and instrumentation has occurred over the past three decades, and the refinement is still continuing. It has brought a new era for diagnosis and treatment of benign lesions of larynx with maximum accuracy and safety.

The results in our series were in concurrence with most of the reviewed literature. A male: female ratio of 4:1 was observed in this study which is similar to the study by Stewart JP (1957), Chopra et al (1997) and Batra et al (2004) who also showed male preponderance.<sup>4-6</sup> The commonest age group of presentation was 21 to 40 years which is considered as the most active period of life. Our observation is supported by Stewart JP (1957), Hegde MC (2005) and Singhal P (2009) who also reported maximum number of the patient in the age group of 20 to 40 years.<sup>7,8</sup> Most common occupation of suffering was

imams of mosque and naamghar (temple) singers which are housewives in a study by Singhal P (2009). Most common presenting feature was hoarseness of voice (95%) which is similar to all other studies.<sup>4-6</sup> Duration of symptoms ranged from 1 month to 18 months in our study and 72.5% had duration of symptoms in months. Chopra and Kapoor (1997) have noted 68.65% patients with duration of symptoms less than 1 year.<sup>5</sup>

While studying, 32 (40%) patients were subjected for direct laryngoscopy and 14 (17.5%) for videolaryngoscopy. In a study by Parikh et al, 60% of the patients underwent microlaryngoscopy and in another study by Baitha et al DL/MLS was done in 36.36% of the patients.<sup>9,10</sup> Neoplastic tumor in our study was 20% which is 14% by Shaw et al and 24.3% by Stewart JP. New and Erich reported around 210 such tumors in a series of 722 patients presenting over 30 years period. Among them, 194 were squamous papillomas. Hollinger and Johnstone reported a similar series collected over 15 years. They reported 125 true benign tumors, of which 115 (92%) were papillomas.<sup>1</sup> Most common non-neoplastic lesion in our study was vocal polyp 37.5% which is 71.2% by Shaw et al, 68.3% by Kambic et al and 16% by Chopra et al.<sup>11</sup> Most common site in our study was true vocal cord (85%) which is similar to the different studies by Hegde et al (2005) and Singhal et al (2009) respectively.

Surgery was the prime mode of treatment in our study (60%) which is supported by Singhal et al (94%) and Hegde et al (83.29%). Endoscopic excision was done in 17.5% of the patients in our study. Contrary to this, Chopra and Kapoor (1997) reported the incidence of benign glottic lesions undergoing microlaryngeal surgery to be 73.14% and Saxena and Gode (1975) to be 58%. Both these studies involve a limited group of patients in whom focus of attention is microsurgery of larynx which is not the case with our study. Voice rest and speech therapy cured 40% of the patients in this study which is only 6% by Singhal et al. It is probably due to the early detection of benign lesions in our study.

## CONCLUSION

The symptoms of benign laryngeal lesions may vary from mild hoarseness to stridor. Early diagnosis can lead to effective management and good recovery from the disease. Early diagnosis also leads to identification of malignancy in early stages and better prognosis. Standard treatment of choice should be microlaryngeal surgery (microscopic/endoscopic) with or without laser, voice rest and speech rehabilitation.

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