

## Micro laryngeal surgery for benign laryngeal lesions

Smruti Swain

Associate Professor, Dept. of ENT, SCB Medical College, Cuttack, Odisha

**\*Corresponding Author:**

Email: swaindrsmruti@yahoo.in

### Abstract

Micro Laryngeal Surgery (MLS) is a procedure where the larynx is seen with the help of endoscope and the view is magnified by use of an operating microscope. A minimally Invasive Technique, micro Laryngeal Surgery is a process that helps in the correction of the benign lesions of the larynx. This has numerous advantages in regard to delineating the extent of lesion and performing a satisfactory excision or biopsy. This is the procedure of choice in assessment as well as treatment of benign lesions of larynx.

Study group comprise of 46 patients with age group varying from 14-54 years. Various abnormalities were detected among these patients, vocal cord polyp being the commonest. Other pathologies were vocal nodule, Reinke's Oedema, ventricular cyst, keratosis of larynx, intubation granuloma, and papillomatosis of larynx. MLS was performed by hydro dissection and micro flap technique. Recurrence was seen in 3 patients who were again subjected to MLS without any recurrence.

**Keywords:** Micro laryngeal Surgery (MLS), Benign lesions of larynx.

### Introduction

Micro laryngeal surgery, otherwise known as Microscopic voice surgery, is a minimally invasive procedure used to correct voice disorders, speaking or breathing difficulties or other problems affecting the larynx. Microscopic voice surgery is performed with a laryngoscope. An operating microscope is used to greatly magnify the vocal folds and it allows the doctor to visually examine the area while operating on it. Fine and tiny instruments are inserted through the laryngoscope and used to perform the procedure.<sup>(1,2)</sup>

### Objective

The study was undertaken to identify the common type of various benign laryngeal lesions, and the age, sex distribution, symptomatology of various benign laryngeal lesions and to know the advantages of micro laryngeal surgery for their treatment over conventional surgeries.

### Materials and Methods

This retrospective study was conducted at SCB medical college Cuttack from January 2016 to June 2017. All patients with complains of hoarseness of voice, chronic cough, foreign body sensation in throat,

dysphasia, dyspnoea, haemoptysis and dysphonia were evaluated by taking history, clinical examination and laryngeal endoscopy. 46 patients with benign laryngeal lesions were included in the study. They underwent micro laryngeal surgery under general anaesthesia after taking written informed consent. Patients with cervical spondylosis, with clinical diagnosis of malignancy of larynx and patients unfit for general anaesthesia were not included in the study.

### Results

The present study is an analysis of 46 patients with benign laryngeal lesions among them 32 was male and 14 were female. Thus a male preponderance with a male: female ratio of 2.3:1 was observed. Majority of the patients were in the age group of 21-40 years. (Table 1). Vocal cord polyps were observed to be the commonest type of lesion (41%), followed by vocal nodule (17%) and vocal cord cyst (8%) (Table 2). Hoarseness of voice was the commonest symptom (82%) followed by foreign body sensation and dysphonia. 3 patients, two with laryngeal papilloma one with keratosis had recurrence, which was again dealt with MLS. Most of the patients improved with surgery and there were no complications.

**Table 1: Showing the Incidence lesions in relation to age**

Serial no	lesions	1-10years	11-20yrs	20-30yrs	31-40yrs	>40yrs
1	Vocalcord polyp			8	7	4
2	Vocal nodule			3	5	
3	Reinkes oedema			3	2	
4	Vocal cord cyst			3		1
5	Intubation granuloma				2	1
6	Laryng. pappilomatosis	2	1			1
7	Keratosis of larynx				1	1
8	Ventricular cyst					1
total		2	1	15	19	9

**Table 2: Percentage of benign lesions of Larynx**

Serial no.	lesions	No of cases	percentage
1	Vocal cord polyp	19	41.3
2	Vocal nodule	8	17.4
3	Reinkes oedema	5	10.8
4	Vocal cord cyst	4	8.6
5	Intubation granuloma	3	6.6
6	Laryng. papillomatosis	4	8.7
7	Keratosis of larynx	2	4.4
8	Ventricular cyst	1	2.2
Total		46	100%

**Table 3: Pre-operative symptoms -percentage**

Serial no.	symptoms	No. of cases	Percentage
1	hoarseness	38	82
2	Foreign body sensation	12	26
3	dysphonia	10	21
4	dyspnoea	6	13
5	cough	6	13
6	haemoptysis	4	8
7	odynophasia	1	2

**Fig. 1: Intra Cordal cyst****Fig. 2: Papilloma of larynx**

## Discussion

The development endolaryngeal microsurgery began with the histological investigations of precancerous lesions. Karl Storz in 1958-1959 built a laryngoscope with a movable 10 fold prismatic optical magnifying system attached to the handle and named it

laryngeal microscope.<sup>(3)</sup> This instrument was originally designed for diagnostic purposes. Klein Sasser, an otolaryngologist and pathologist in 1958 added magnifying telescope to the Hollinger anterior commissure laryngoscope, later he combined it with chest support. Thus endo-laryngeal microsurgery started.<sup>(4)</sup> Later Zeiss microscope with 400mm objective was obtained. Finally K Hopman and Renier introduced a new set of instruments for MLS.<sup>(5)</sup> The male preponderance observed in our study is in accordance with the results of various studies<sup>(6,7,8)</sup> but Stewart has reported a still higher ratio (3:2).<sup>(9)</sup>

Various studies have reported a higher incidence of benign tumors of the larynx in the age groups between 20 and 60 years.<sup>(10,11,12)</sup> Our results are in concordance with the above findings as we observed maximum number of cases in the third decade and fourth of life (20-40 years).

The most common benign lesion of larynx presenting with hoarseness. Similar report was observed in a study by Singhal P, Bhandari A. in their study.<sup>(13)</sup>

In our study, we found maximum number of patients to have vocal cord polyps (41%) followed by vocal nodules (17%). These findings indicate preponderance of non-neoplastic tumors over neoplastic tumors, confirmed by histopathological examination and have been supported by the elaborate classification given by Myerson<sup>(14)</sup> and revised by Friedmann<sup>(15)</sup> and the results of other similar studies<sup>(12,16)</sup>

Recurrence was observed in 3 cases giving a success of 94% after MLS. Similar observation was observed in their study of Singhal P and vandari A.<sup>(13)</sup> Voice rest was recommended for one week following the surgery. If one must use his voice during the first week avoid whispering, shouting and singing. Speak with your normal voice for limited periods of time. No heavy lifting or straining for 1 week following the surgery was advised.

**Fig. 3: Haemangiomatous polyp of vocal cord**

## Conclusion

Micro laryngeal surgery offers 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 tumours of the larynx should consist of a triad of approach by micro laryngeal surgery, voice rest and vocal rehabilitation. By leaving the majority of the laryngeal structure intact and completely unharmed, MLS is a minimally invasive technique that offers a rapid healing process.

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