

Original Research Article

Study of laryngeal lesions undergoing microlaryngeal surgery in a tertiary health centre

Gangadhara K. S., Chaitanya Vadva, Sridhara S.*

Department of ENT, McGann Teaching District Hospital, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

Received: 13 March 2020

Revised: 29 April 2020

Accepted: 30 April 2020

***Correspondence:**

Dr. Sridhara S.,

E-mail: sriside@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Patients with laryngeal lesions were evaluated for age and sex ratio, analysis of clinical features, videolaryngoscopic findings and histopathological features. Assessment of therapeutic role of microlaryngeal surgery (MLS) by telescopic method and also prognosis after surgery and voice therapy were evaluated.

Methods: A prospective institutional based study. A total of 18 patients with vocal cord lesions the chief complaint being hoarseness of voice were subjected to surgery in a tertiary health centre. After thorough evaluation patients underwent MLS by telescopic method.

Results: In our study 6 patients stand out to be benign lesions and 12 patients stand out to be pre malignant and malignant lesions. Improvement in voice after surgery was reported in all patients. No recurrence was reported after 6-8 months of follow-up.

Conclusions: MLS is a good tool as it is precise and cost effective. MLS by telescopic method is a good therapeutic tool in both benign and malignant vocal cord lesions.

Keywords: Microlaryngeal surgery, Vocal cord lesions, Hoarseness

INTRODUCTION

Microlaryngeal surgery (MLS) is minimally invasive procedure to visualise magnified view of larynx through videolaryngoscope or operating microscope for diagnostic and therapeutic purpose using microlaryngeal instruments.¹

The development of endolaryngeal microsurgery began with histological investigations of precancerous lesions. Karl Storz in 1958-1959 built a laryngoscope with a movable 10-fold prismatic optical magnifying system attached to handle and named it as laryngeal microscope. Kleinsasser in 1958 added magnifying telescope to the Hollinger anterior commissure laryngoscope which he later combined it with chest support.¹ Zeiss microscope

with 400 mm objective was introduced later. Hopman and Reiner finally introduced new set of instruments for MLS in 1989.

Over the last three decades laryngology has developed immensely. As the saying goes “the human voice is the organ of the soul”, one of the goal of laryngologist is preservation or restoration of good voice. As it is highly demanding MLS is fast emerging with intention to improve the quality of voice through rectifications of defects in larynx minutely.²

Aims and objectives

Aims and objectives of the study were to evaluation of age and sex ratio in lesions of larynx who underwent

MLS by telescopic method in our institute, analysis of clinical features, videolaryngoscopic findings and histopathological features in patients who underwent MLS, to assess the therapeutic role of MLS by telescopic method, prognosis of laryngeal lesions after videolaryngoscopic surgery and voice therapy.

METHODS

18 patients who presented to our institution McGann Teaching District Hospital, Shivamogga, who underwent MLS by telescopic method were included in the study. It is a prospective institutional based study. Cases operated from June 2018 to June 2019 were included in the study. All surgeries were performed by experienced senior surgeons.

Inclusion criteria

All benign and pre malignant lesions of vocal cord diagnosed by videolaryngoscopy were included in the study.

Exclusion criteria

Patients who unfit for surgery were excluded.

After obtaining informed written consent, MLS by telescopic method was performed under general anaesthesia using endotracheal tube of size 5 mm with cuff using microlaryngeal instruments.³ Patient in supine position with rigid direct laryngoscope introduced, vocal cords were visualised and laryngoscope was supported and fixed with chest piece and rod. Laryngeal Karl Storz Hopkins 15° telescope of 4 mm diameter and 17 cm length was introduced into laryngoscope in the allotted slot. Light source was provided by led lighting and images were displayed on monitor. Subglottic packing was done with a ribbon gauze. Local infiltration of 1% lignocaine with adrenaline was given to the affected vocal cord. Lesion was grasped with MLS forceps and excised using MLS instruments. Hemostasis was achieved with adrenaline soaked peanut balls. All relevant parameters to be assessed were recorded.

For statistical analysis of the study numerical data was entered in the table and calculated.

RESULTS

In our study totally 18 patients were included. The age wise distribution is given in (Table 1).

In our study totally there were 15 males and 3 females given in (Table 2).

In our study after detailed examination pre-operatively we suspected 5 benign lesions and 13 malignant lesions given in (Table 3).

Table 1: The age wise distribution of the patients.

Age in years	Number of patients
20-30	1
31-40	4
41-50	1
51-60	8
61-70	4

Table 2: The sex wise distribution of the patients.

Gender	Number of patients
Males	15
Females	3
Total	18

Table 3: Provisional diagnosis.

Diagnosis	Number of patients
Suspected benign lesions	5
Suspected malignant lesions	13

After histopathological examination 6 patients stand out to be benign lesions and 12 patients stand out to be pre malignant and malignant lesions. Out of 6 benign lesions 5 were vocal cord polyp and 1 was hemangioma. Out of 12 pre malignant and malignant lesions 1 was moderate dysplasia, 2 were severe dysplasia, 2 were well differentiated squamous cell carcinoma and 7 were moderately differentiated squamous cell carcinoma (Figure 1).

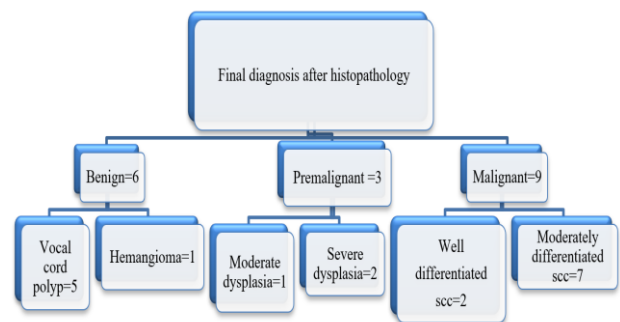


Figure 1: Final diagnosis.

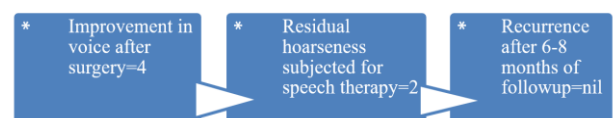


Figure 2: Postoperative outcome.

Out of 6 benign lesions 4 patients had improvement in voice after surgery. 2 patients with residual hoarseness were subjected for voice therapy after which improvement was reported. No recurrence was reported after 6-8 months of follow up (Figure 2).

Out of 3 premalignant lesions, 1 patient recovered well with no recurrence, 1 expired due to other co-morbid condition and 1 lost for follow up after surgery (Figure 3).

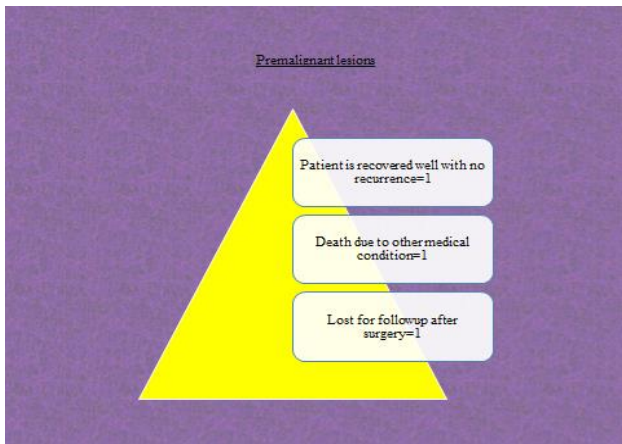


Figure 3: Follow up results of premalignant lesions.

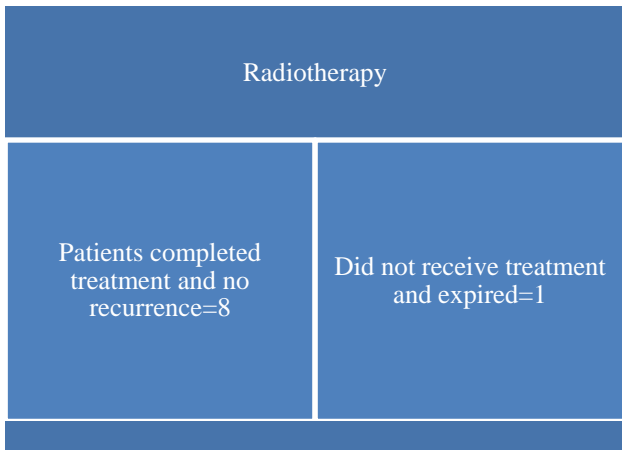


Figure 4: Follow up results of malignant lesions.

Out of 9 malignant lesions, all were referred for radiotherapy. Out of which 8 patients completed treatment and no recurrence after 6 months of follow up. 1 patient did not receive radiotherapy due to unwillingness and expired after 4 months because of other co-morbid condition (Figure 4).

DISCUSSION

In a study conducted by Chopra et al in 67 patients 73.14% were between 20-50 years of age group. Males predominated. Most common type of benign lesion was vocal nodules 33.33% with recurrence rate of 7.49% and were re-operated. 32.84% were subjected to voice therapy.⁴

In a study conducted by Chandra et al in 42 patients, 38.74% patients were between 31-40 years. Males predominated with ratio of 2.82:1 and 100% patients presented with hoarseness of voice.⁵

Most common benign lesions being vocal cord polyps 40.47% with no neoplastic lesions being encountered. No recurrence reported. All patients subjected to voice therapy and completely recovered.⁵

In a study conducted by Singhal et al in 50 patient's majority of them belonged to age group 21-30 years. Males predominated with ratio of 2.5:1 and 100% patients presented with hoarseness of voice. Most common benign lesions being vocal cord polyp where 94% patients underwent surgery. No recurrence reported.⁶

In a study conducted by Baitha et al in 110 cases 100% presented with hoarseness of voice. 61.81% of patients belonged to age group 21-50 years. Males predominated with ratio of 2:1. Indirect laryngoscopic examination showed congested vocal cords 34.54%. 40 patients underwent MLS 40% cases showed neoplastic lesions followed by vocal nodule 22.5%.⁷

In our study out of 18 cases who underwent MLS majority of patients belonged to age group 51 to 60 year, males predominated. After histopathological examination 9 patients were found to have malignant lesions who were subsequently subjected for radiotherapy. Six patients had benign lesions and 3 patients had pre malignant lesions. All patients were on regular follow up and no recurrence reported.

CONCLUSION

MLS is a good tool as it is precise and cost effective. Use of telescope with high definition endoscopic video system is best method as it is more precise, allows better visualisation and improved surgeon comfort and ease. Cure and outcome following surgery is good as procedure yields complete clearance of benign lesions and in adjuvant with radiotherapy gives complete cure for premalignant and malignant lesions. MLS by telescopic method is a good therapeutic tool in both benign and malignant vocal cord lesions.

ACKNOWLEDGEMENTS

Authors acknowledge the Department of Pathology Shimoga Institute of Medical Sciences, Shivamogga for providing the histopathological impressions for the study.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Kleinsasser O. Microlaryngoscopy and endolaryngeal microsurgery. Stuttgart, Germany. HNO. 1974;22(3):69-83.

2. Subramaniam V, Rai S. Chronicles of voice restoration surgery. *AMHS J.* 2019;7(1):121-7.
3. Carlucci C, Fasanella L, Maccarini AR. Exolaryngoscopy: a new technique for laryngeal surgery. *Acta Otorhinolaryngol Ital.* 2012;32(5):326-8.
4. Chopra H, Kapoor M. Study of benign glottic lesions undergoing microlaryngeal surgery. *Indian J Otorhinolaryngol Head Neck Surg.* 1997;49(3):276-9.
5. Hegde MC, Kamath P, Bhojwani K, Peter R, Babu PR. Benign lesions of larynx-A clinical study. *Indian J Otorhinolaryngol Head Neck Surg.* 2005;57(1):3451554.
6. Singhati P, Bhandari A, Chouhan M, Sharma P, Sharma S. Benign tumours of larynx-A clinical study of 50 cases. *Indian J Otorhinolaryngol Head Neck Surg.* 2009;61:26-30.
7. Baitha S, Raizada RM, Kennedy Singh K, Puttuver MP, Chaturvedi VN. Clinical profile of hoarseness of voice. *Indian J Otorhinolaryngol Head Neck Surg.* 2002;54(1):14-8.

Cite this article as: Gangadhara KS, Vadva C, Sridhara S. Study of laryngeal lesions undergoing microlaryngeal surgery in a tertiary health centre. *Int J Otorhinolaryngol Head Neck Surg* 2020;6:1167-70.