Research Article

Study of clinical profile of benign laryngeal lesions

Hiren D Soni[1], Saurabh Gandhi[2], Manish Goyal[2], Umakant Shah[2]

[1]Department of ENT, GMERS Medical College, Gotri, Vadodara, Gujarat, India.
[2]Department of ENT, Smt. NHL Municipal Medical College, Ahmedabad, Gujarat, India.
Correspondence to: Hiren D Soni, E-mail: soni.hiren@hotmail.com

Received March 19, 2015. Accepted June 11, 2015

Abstract

Background: Benign laryngeal lesion commonly affects the quality of life of the person.

Objective: To analyze the clinicopathological profiles of the study group of patients and the outcome after treatment.

Materials and Methods: This is a prospective study of 100 patients attending an outpatient department with laryngeal lesions evaluated irrespective of their age, sex, and occupation. Biopsy-confirmed malignant cases were excluded.

Result: Of the 100 patients, 90 of them exhibited benign lesions. Along with hoarseness of voice, other symptoms reported were cough and throat pain (21%), breathlessness (19%), fever (11%), dysphagia (8%), and fatigue (1%). Chronic laryngitis is seen as the most common disorder. The duration of the symptoms in our study ranged from 2 days to 9 years. Improvement in symptoms was seen in 80% cases after the treatment.

Conclusion: Organic disorder of larynx is the most common cause among benign laryngeal disorder. Hoarseness of voice is present in all benign laryngeal lesions. Vocal abuse and smoking are the most common causative factors.

KEY WORDS: Benign, larynx, voice, vocal nodule, organic vocal disorder

Introduction

Larynx, commonly known as the voice box, is made of a cartilaginous framework with muscles attached to it giving it a unique property of various movements to fulfill various functions. Function of the larynx is mainly as a pathway to lower respiratory tract, the prevention of aspiration during deglutition, and voice production. Like any other body part, larynx also can be involved with malignant lesion or a spectrum of benign lesions of various divisions such as infective, inflammatory, traumatic, neurogenic, congenital, functional, and benign neoplasms. A benign organic lesion of the larynx includes noninfective and nontraumatic laryngeal disorders; such mass-producing lesions of the larynx involves mainly chronic laryngitis, vocal cord polyp, vocal cord nodule, Rienke's edema, and contact pachydermia. Acute laryngitis and tubercular laryngitis are mainly the infective lesions of the larynx. Among all these benign laryngeal lesions, diagnosis is the key for the management of the disorder. Smoking and voice abuse seem to be the most common causative factors of laryngeal disorders. Treatment options available are surgical options such as microlaryngeal surgery (MLS), thyroplasty (laryngeal frame work surgery), and laryngeal stent; nonsurgical treatment options are with local or systemic administration of appropriate drugs.

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2016.19032015105	

Objective

To study and analyze the clinical profiles and treatment options, with outcome after the treatment of cases with benign laryngeal lesions.

Materials and Methods

This is a prospective study of 100 patients attending a regular ENT outpatient department (OPD) with laryngeal lesions irrespective of their age, sex, occupation, and onset or duration

of symptoms. A thorough history of the cases was collected. Clinical and ENT examination were done. Routine investigations such as complete blood count and urine test for albumin and sugar were carried out in all the patients; sputum examination for acid-fast bacilli, X-ray chest—PA view, and X-ray soft tissue neck—AP and lateral views were done when required. The larynx was examined by indirect laryngoscopy in OPD, and if needed, 70° or 90° endoscopic or flexible nasopharyngolaryngoscopic evaluation was done. From the study group, the patients with confirmed malignancies were excluded after a histopathology examination. All the cases were managed by conservative or surgical management depending upon the pathology involved. All the patients were given speech therapy as and when required. A regular follow-up was done, and the final result was noted after 3 months. The data obtained were analyzed with clinical profile denominators such as disease incidence, duration of the disease, mode of onset, and the treatment obtained with outcome on follow-up.

Result

We found an improvement of symptoms in 80% of the cases with a combination of speech therapy, conservative management, and phonosurgery. Acute laryngitis, chronic laryngitis, contact pachydermia, habitual dysphonia, tubercular laryngitis, and vocal cord palsy showed improvement in more than 80% cases with conservative management. Vocal cord polyp and vocal cord nodule showed around 100% cure with surgical intervention. Traumatic laryngeal lesions and recurrent laryngeal papillomatosis could be cured only in 37.5% and 28.58% cases, respectively. One case of vocal cord palsy who did not show improvement with conservative management after 6 months underwent type I thyroplasty, and improvement of voice was achieved.

Discussion

Voice is not only sound generated but also identity of a human being; voice production is one of the most fundamental functional after pathway of respiration. Laryngeal pathologies present widespread causes and factors; correct diagnosis holds the key to treat the disorder. Benign pathology of larynx presents with various symptoms; in this study, the change of voice is seen as the presenting symptom in all the cases, which means any sign or symptom of laryngeal pathology that point at potential laryngeal pathology. The second most common presenting symptom was cough and throat pain (21%), equally seen in the study population. Other presenting symptoms were breathlessness (19%), fever (11%), dysphagia (8%), and fatigue (1%) when compared with the study done by Baitha et al.,[1] who observed cough in 30% and fever in 26.36% cases. Mehta[2] and Parikh[3] have also done similar studies and noted that 100% cases presented with hoarseness. As in our study, the other associated symptoms such as cough, breathlessness, dysphagia, throat pain, and fever were noticed in the study done by Parikh[3]. In the study carried out by Shah[4] on patients with benign growths of larynx, the incidence of hoarseness was reported to be 93%, and the other symptoms were cough, painful swallowing, difficulty in swallowing, fever, lump in throat, and respiratory distress. The duration of symptoms in our study ranged from 2 days to 9 years. But, most of the presenting complaints (36.67%) were seen within the first month, while 65.56% cases presented the duration of symptoms as within 3 months; only 5.56% cases showed the duration for more than 1 year. Batra et al.[5] in their study found that 59% patients revealed the symptoms within the first 5 months of appearance of symptoms, and 14% of patients were found to present the symptoms after more than 1 year-duration. In the study done by Baitha et al.,[1] the duration range of symptoms was found to be from 1 day to 5 years, and 50% of the patients showed the duration of symptoms as within 1 month. In the study by Chopra and Kapoor,[6] 68.65% of the patients with the duration of symptoms less than 1 year were observed.

In our study, we found vocal abuse (40%) and smoking (23.33%) as the most common predisposing factors, while the incidence of vocal abuse and smoking together were seen in 10% of the cases. In the studies done by Ghosh et al.[7] and Parikh,[3] vocal abuse was observed in 72% and 56% cases, respectively.

In this study, vocal abuse was the main predisposing factor in vocal cord nodules (100%) and vocal cord polyp (70%). In the study done by Kay,[8] he noted that one of the most widely quoted factors associated with vocal nodules in children was vocal abuse in the form of screaming and shouting (Toohil, 1975; Wilson, 1961; Batza, 1970; Green, 1972; Scott Brown, 1971). In addition, chronic mucosal irritation by smoking was noted as a predisposing factor in 50% cases of chronic laryngitis and 57.14% cases of tubercular laryngitis.

Sataloff et al.[9] diagnosed 40 entities as a structural and neurologic abnormalities in the study of 377 cases, while Woo et al.[10] observed 11 different diagnosis in the study of 146 patients. According to Rosen and Murry,[11] there is no standardized nomenclature regarding voice disorder and pathological condition of the vocal folds.

Rosen and Murry[11] proposed the classification and nomenclature and divided the voice disorder into four major categories.

1. Nonorganic voice disorder (functional)
   a. Dysphonia with normal vocal fold morphology and movement.
   b. Includes muscle tension dysphonia, conversion dysphonia, psychogenic dysphonia, and functional dysphonia.
2. Organic voice disorder
   a. Actual pathological changes of larynx in general and vocal fold in specific.
   b. Includes vocal nodule, polyp, Reinke's edema, granuloma, leukoplakia, and carcinoma of vocal fold.

Table 1: Incidence of benign laryngeal lesions

Benign laryngeal disorder	Incidence (%)
Organic voice disorder	
Chronic laryngitis	22 (24.44)
Contact pachydermia	1 (1.11)
Recurrent laryngeal papillomatosis	7 (7.78)
Rienke's edema	3 (3.33)
Traumatic dysphonia	8 (8.89)
Vocal cord polyp	10 (11.11)
Vocal cord nodule	11 (12.22)
Systemic disease	
Tubercular laryngitis	7 (7.78)
Acute laryngitis	8 (8.89)
Movement disorder	
Vocal cord palsy	11 (12.22)
Nonorganic voice disorder (functional)	
Habitual dysphonia	2 (2.22)

Table 2: Duration of symptoms

Benign disease of larynx	Duration of the symptoms			
	A	B	C	D
	<1 month	1–3 months	>3 months–1 year	>1 year
Acute laryngitis	7	1	0	0
Chronic laryngitis	5	9	7	1
Contact pachydermia	1	0	0	0
Habitual dysphonia	1	0	0	1
Recurrent laryngeal papillomatosis	0	4	3	0
Rienke's edema	2	1	0	0
Tubercular laryngitis	1	1	4	1
Traumatic dysphonia	6	2	0	0
Vocal cord polyp	2	5	3	0
Vocal cord palsy	5	0	5	1
Vocal cord nodule	3	3	4	1
Total, *N* (%)	33 (36.67)	26 (28.89)	26 (28.89)	5 (5.56)

Table 3: Presenting symptoms in benign laryngeal lesions

Presenting symptom	%
Change of voice	90 (100)
Cough	21 (23.33)
Throat pain	21 (23.33)
Fever	11 (12.22)
Dysphagia	8 (8.89)
Fatigue	1 (1.11)
Breathlessness	19 (21.11)

Table 4: Incidence of causative factors

Benign laryngeal disease	Smoking	Vocal abuse	Both
Acute laryngitis	0	1	0
Chronic laryngitis	11	12	5
Contact pachydermia	0	0	0
Habitual dysphonia	0	1	0
Recurrent laryngeal papillomatosis	0	0	0
Rienke's edema	1	3	1
Tubercular laryngitis	4	1	0
Traumatic dysphonia	1	0	0
Vocal cord polyp	3	7	2
Vocal cord palsy	2	0	0
Vocal cord nodule	1	11	1
Total, *N* (%)	21 (23.33)	36 (40)	9 (10)

Table 5: Posttreatment outcome

Disease	Postconservative treatment voice		Postoperative voice		Percentage of cure
	Improved	Not improved	Improved	Not improved	
Acute laryngitis	7	1	0	0	87.5
Chronic laryngitis	21	1	0	0	95.45
Contact pachydermia	1	0	0	0	100
Habitual dysphonia	2	0	0	0	100
Recurrent laryngeal papillomatosis	0	0	2	5	28.58
Rienke's edema	0	1	2	0	66.67
Tubercular laryngitis	5	1	1	0	85.71
Traumatic dysphonia	2	1	1	4	37.5
Vocal cord polyp	0	0	10	0	100
Vocal cord palsy	6	4	1	0	63.63
Vocal cord nodule	1	0	10	0	100
Total	45	9	27	9	80

3. Movement disorder
   a. Abnormal movement of larynx caused by muscle control.
   b. Includes vocal cord paralysis and spasmodic dysphonia.
4. Systemic disease
   a. Often, systemic diseases have adverse effects on the function of the vocal production tracts and result in voice change.
   b. Includes infection of larynx, acute laryngitis, tubercular laryngitis, and neurological disease of central causative factors.

Other classification divides into two major groups.

1. Functional voice disorder
2. Organic voice disorder

In our study of benign laryngeal lesions, the most commonly found organic voice disorder is chronic laryngitis with 22 cases (24.44%); Baitha et al.[1] and Parikh[3] found 50% and 48% cases, respectively, in their studies. Whereas Batra et al.[5] and Ghose et al.[7] showed 6% and 8% incidence rates, respectively, in their studies.

The second most common pathological condition noted is vocal cord nodule (12.22%), which is the most common causative factor, noted by Parikh[3] and Ghosh[7] (30%).

The next most common pathological condition seen is vocal cord palsy (12.22%) when compared with the results (9%) obtained in the study done by Baitha et al.[1]

In our study, the functional causes were only compared with the study carried out by Batra et al.,[5] who found them in 51% cases as a functional disorder that included vocal nodule, polyp, and granulomas, as these lesions have been shown to be secondary to vocal abuse. Koufman and Isaacson[12] found up to 40% cases of functional disorder referred for the symptom of dysphonia in a multidisciplinary voice clinic. We have not included the benign mass lesions secondary to functional lesion in this study.

In this study, all the patients were given speech therapy during the trial of conservative management and postoperative cases. The goals of voice therapy are to maximize vocal

efficiency, thereby reducing the vibratory trauma that underlies and exacerbate the masses according to Johns.[13] However, speech therapy alone cannot cure benign pathology such as vocal cord nodule, but it significantly reduces the surrounding edema with change in voice generation and allows the voice of the patient to return to near normal; but, in few cases of professional vocal users continue to notice changes in voice and may require surgery when compared with benign vocal lesions such as vocal cord polyp that almost always required surgery to achieve a normal functional voice. Precise MLS with efforts to preserve as much normal tissue as possible remains the surgery of choice for symptomatic benign laryngeal mass lesion. In this study, an acceptable voice allowing the patient to perform a routine normal life is considered to be the cure.

Conclusion

Change in voice is seen as the presenting symptom in all the cases of laryngeal pathology. So, all the cases of changes in voice need to be evaluated thoroughly to identify the underlying cause as the cure rate is around 80% with available multipronged therapy options. Vocal hygiene and de-addiction from tobacco (smoking) need to be practiced, as they are the common causative factors.

References

1. Baitha S, Raizada RM, Singh AKK, Puttewar MP, Chaturvedi VN. Clinical profile of hoarseness of voice. Indian J Otolaryngol Head Neck Surg 2002;54(1):14–8.
2. Mehta AS. *An Etiological Study of Hoarseness of Voice*. Thesis, Gujarat University, 1985.
3. Parikh N. Aetiology study of 100 cases of hoarseness of voice. Indian J Otolaryngol Head Neck Surg 1991;43(2):71–3.
4. Shah BK. *Benign Growth of Larynx*. Thesis, Gujarat University, 1973.
5. Batra K, Motwani G, Sagar PC. Functional voice disorders and their occurrence in 100 patients of hoarseness as seen on fibreoptic laryngoscopy. Indian J Otolaryngol Head Neck Surg 2004;56(2):91–5.
6. Chopra H, Kapoor M. Study of benign glottic lesions undergoing microlaryngeal surgery. Indian J Otolaryngol Head Neck Surg 1997;49(3):276–9.
7. Ghosh SK, Chattopadhyay S, Bora H, Mukherjee PB. Microlaryngoscopic study of 100 cases of hoarseness of voice. Indian J Otolaryngol Head Neck Surg 2001;53(4):270–2.
8. Kay NJ. Vocal nodules in children—aetiology and management. J Laryngol Otol 1982;96(8):731–6.
9. Sataloff RT, Spiegel JR, Hawkshaw MJ. Strobovideolaryngoscopy: results and clinical value. Ann Otol Rhinol Laryngol 1991;100(9 Pt 1):725–7.
10. Woo P, Colton R, Casper J, Brewer D. Diagnostic value of stroboscopic examination in hoarse patients. J Voice 1991;5(3):231–8.
11. Rosen CA, Murry T. Nomenclature of voice disorders and vocal pathology. Otolaryngol Clin North Am 2000;33(5):1035–46.
12. Koufman JA, Isaacson G. The spectrum of vocal dysfunction. Otolaryngol Clin North Am 1991;24(5):985–8.
13. Johns MM. Update on the etiology, diagnosis and treatment of vocal fold nodules, polyps and cysts. Curr Opin Otolaryngol Head Neck Surg 2003;11(6):456–61.

How to cite this article: Soni HD, Gandhi S, Goyal M, Shah U. Study of clinical profile of benign laryngeal lesions. Int J Med Sci Public Health 2016;5:656-660

Source of Support: Nil, **Conflict of Interest:** None declared.