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Aetiopathaological Study of Hoarseness of Voice

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Abstract
Background: *Hoarseness is one of the most frequently found symptoms in otolaryngology. It is invariably the earliest manifestation of various conditions affecting directly or indirectly the larynx ranging from benign to malignant lesions. Hoarseness indicates an abnormality at the level of glottis resulting from structural or physiologic disorders. A careful and complete examination is mandatory because of impending brisk airway obstruction.*
Aim: *The aim is to evaluate various etiological factors and different pathologiesin clinical presentation of hoarseness of voice.*
Materials and Methods: *This is an observational study consisting of 50 cases of hoarseness carried out in the department of ENT, Govt. ENT Hospital, Visakhapatnam, during August 2018 and July 2019. A detailed history was taken, and all patients were subjected to the IDL examination. Findings were confirmed by videolaryngoscopy, direct laryngoscopy, and micro laryngoscopy.*
Results: *The majority of patients were seen in the age group of 41-60 years (40%). Male predominance was observed with a Male:Female ratio of 2.3:1.Most commonly seen in Manual labourers (hawkers) (35%). Maximum patients presented with a duration of 1-3 months. Smoking was the commonest habit in 40% of cases. The commonest cause was laryngeal malignancy (30%)followed by polyp (20%), vocal cord palsy(14%).The least common cause was vocal cord cyst seen in 2%cases.*
Conclusion: *Hoarseness of voice was most commonly seen in middle-aged males. Most of the patients attended with complaint of hoarseness with duration of 1-3 months. It was mostly seen in manual labourers (hawkers) along with habits of smoking and alcohol consumption, chewing tobacco preparations, and vocal abuse. Suspicion of Malignancy and its exclusion should be considered in all the cases with hoarseness.*
Keywords: *hoarseness of voice, laryngeal malignancy, smoking, vocal cord polyp.*

Introduction

The normal voice should possess certain characteristics of pitch, loudness, and quality, which make clear meaning and elicits an emotional response to ensure a pleasant tonal effect upon the listener. Hoarseness can be defined

as a quality of voice that is rough, grating, harsh, and lower in pitch than normal. Hoarseness is obviously a symptom and not a disease[1]. It is often caused by benign or self-limited conditions and may also be the presenting symptom of a more severe or progressive condition. For the production of hoarseness of voice, there will be a change in anatomical structures and physiopathological processes.

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 distinct signal of malignancy and other conditions.[1]"Hoarseness has a lifetime prevalence of 29.9 percent and a point prevalence of 6.6 percent in adults aged 65 years or under.

Hoarseness is more prevalent in certain groups, such as teachers and older adults, but all age groups and both genders can beaffected[2].

Aim

To evaluate various etiological factors and different pathologies in clinical presentation of hoarseness of voice.

Materials and Methods

This is an observational study comprising of 50cases of hoarseness of voice which was carried out in the department of ENT, Govt. ENT Hospital, Visakhapatnam, during August 2018 and July 2019.

Inclusion Criteria Patients presenting with hoarseness of voice of ≥ 2 weeks duration were included in the present study.

Exclusion Criteria

1. Age group below 5 years.
2. Voice disorders other than hoarseness like rhinolalia aperta, rhinolaliaclausa, articulation disorders, functional disorders, and central nervous systems like bulbar palsy, Wegner's granulomatosis, multiple sclerosis, stroke, and Parkinson's disease.

Written informed consent was taken from all the individuals in the study. A thorough evaluation of 50 patients was done by taking a detailed history regarding the symptoms. Then the patients were subjected to general physical, systemic & nose, ear & throat examinations. The clinical diagnosis of laryngeal lesions was made on the basis of clinical presentation, IDL examination. Any patient with suspected lesions in the larynx were examined by videolaryngoscopy with 70° endoscope, direct laryngoscopy, or flexible nasopharyngolaryngoscopy. Later under general anesthesia, biopsy was taken and sent for histopathological examination to confirm the diagnosis.

Results

Table 1: Age and sex distribution

Age group	Male	Female	No. of cases
0-15	1	1	2 (4%)
16-30	5	1	6 (12%)
31-40	5	7	12 (24%)
41-60	16	4	20 (40%)
>61	8	2	10 (20%)
Total	35	15	50

Table 2: Etiological factors

Predisposing factors	Male	Female	Total
Smoking	18	2	20 (40%)
Vocal abuse	7	11	18 (36%)
Alcohol	15		15 (30%)
Chewing of tobacco preparations	8	2	10 (20%)
No factor	7	3	10 (20%)

Table 3 -Complaints with duration:

Complaints	Duration (months)					Total	%
	<1	1-3	3-6	6-12	>12		
Hoarseness	7	18	9	8	7	50	100
Dysphagia	10	5				15	30
Breathlessness	9	3				12	24
Cough	10					10	20
Stridor	8					8	16
Foreignbody sensation	3	2				5	10
Neck swelling			3	2		4	8

Pathology

ETIOLOGY	MALES	FEMALES	TOTAL
Laryngeal malignancy	12	2	15 (30%)
Vocalcord polyp	4	6	10 (20%)
Vocal cord palsy	5	2	7 (14%)
Chronic laryngitis	4	2	6 (12%)
Vocal nodule	2	3	5 (10%)
papilloma	3	1	4 (8%)
hemangioma	2		2 (4%)
Vocal cord cyst	1		1 (2%)

Discussion

Among 50cases, 35(70%) were males, and 15(30%) were females. Male predominance was observed with male to female ratio of 2.3:1. Parikh et al.[3] and Karan Sharma et al.[4] also reported a male: female ratio of 2:1.Majority of the patients presented in the age range of 41-60years (40%) followed by 31-40 years (24%), >61 years age (20%), 16-30years (12%), 0-15 years (4%). Baitha et al.[5]found the majority of patients (28.18 %) in the age group of 31–40 years. Male predominance was seen (45.7%) in the 41-60 years age group, while female dominance was seen (46.6%) in the 31-40years age group. The largest group were labourer (hawkers) (36%) followed by private jobs (26%), housewives (22%), students (16%). The same observation was made by Baitha et al.[5], i.e., the majority of patients were of labourer class (36.36%).The majority of the male patients were labourer (36%), and females were housewives (22%). Ghosh et al.[6] found the majority of patients (29 %) were housewives. In our study, the most common etiological factor was smoking (40%) followed by vocal abuse (36%), alcohol (30%), chewing of tobacco preparations, and no habits (20%). Among males, Smoking was the most common etiological factor, while in females, voice abuse was most common. In a study by Pal KS et al.[7] Smoking was noted in 33% of cases. Ghosh et al.[6]showed vocal abuse in 72% of cases.

All cases presented with hoarseness of voice (100%). Studies were done by Parik et al.[3], and Mehta et al.[8] noted that 100% of cases presented with hoarseness. Next common complaint was dysphagia in 15cases (30%), breathlessness in 12 cases (24%), cough in 10cases (20%), stridor in 8 cases (16%), foreign body sensation in 5cases (10%) and neck swelling in 4 cases (8%). In study by Kamana sindhu et al.[9] hoarseness of voice is the most common symptom seen in 92% of cases, and the other symptoms were foreign body sensation (25%), breathiness (23%), vocal fatigue (10%), neck swelling (10%), dysphagia (8%), stridor (6%), aphonia is the least commonly seen in 2% cases. Verma et al.[10] reported hoarseness in 73.92%, difficulty in swallowing in 59.95%, and cough with expectoration in 39.04%. The duration of hoarseness ranged from 2weeks to 4yrs. Most of them (36%) presented with hoarseness of voice with 1-3 months duration. Other complaints were most common in the duration of <1 months. Hansa et al.[11] found most of the presenting complaints (61.35 %) were seen

with three months duration, 25.1 % with 3–6 months and 10.76 % with6–12 months duration. Batra et al.[12]found 59 % of patients within the first five months of the appearance of symptoms.

In our study, the most common pathology of hoarseness was laryngeal malignancies, which comprises of 30% (15cases) of hoarseness of voice. Glottic malignancy constitutes 53.3% of cases, while supraglottic malignancy constitutes 46.6% of cases. Among patients with malignancy, out of 15 cases,12 males(80%) and 3 females (20%). It was comparable to the study by Baitha et al.[5] where the incidence of malignancy was 14.54%. Ghosh et al.[6] and Parikh et al.[3]study showed the incidence of malignancy of 8% and 12% and vocal nodule (4%).

In our study, vocal cord polyp was seen in 10 Cases (20%), which was more common in females (60%) and males (40%). Vocal abuse was noticed in all cases of vocal cord polyp. Mehta et al.[8] found 11.66 % cases, Parikh et al.[3] found15 % cases, and Hansa et al.[11] found 3.59 % of cases of vocal cord polyp in their study.

Vocal cord palsy was seen in 7cases (14%), of which 4 were unilateral (2left, 2right), and 3 were bilateral. The cause for vocal cord palsy includes idiopathic in 5cases, and 2 cases were due to post thyroidectomy. In a study by Parikh et al.,[3] Batra et al.[12] and Baitha et al.[5], it was only 3%, 9%, and 9%, respectively, with male to female ratioin Baitha et al.[5]studywas 9:1.

Chronic laryngitis was seen in 6 cases (12%),of which 4 (66.6%) were males and 2 (33.3%) were females. Smoking and GERD was the predisposing factor in these cases. Hansa et al.[11], in his study, found 9.56 % of chronic laryngitis. In a study by Kumar H et al. [13], 52% of the cases were affected with chronic laryngitis.

Squamous papilloma (8%) was seen in 4cases, of which 3(75%) were males and 1 (25%) female. Thisis correlated with Chavan SS et al.,[14] 11.6 %, KavithaY et al.[15] 98%, and 10% by Chaitanya V et al.[16]

In our study, vocal nodules were seen in 5 cases. Among them, 3 were female patients, 2 were males. In studies by Soldatskil LuL et al.[17], Schneider stickler B et al.[18] and Martin RH et al.[19] vocal nodule was the most common cause for hoarseness in children prevalence being 53.1%, 60%, and 57.5%, respectively. Vocal cord cyst (2%) was seen in 1 case.

Conclusion

In our study, the incidence of hoarseness of voice showed a male to female ratio of 2.3:1. Manual Labourers (hawkers) was the largest group (36 %) of patients with hoarseness of voice. Smoking (40%) was the commonest etiological factor. The most common pathology of hoarseness was laryngeal malignancies, which comprises 30% of hoarseness of voice, followed by vocal cord polyp (20%). Our conclusion was in middle-aged male patients presenting with hoarseness of voice of more than 1month duration along with habits of smoking, alcohol consumption and chewing tobacco preparations, the malignancy should be ruled out.

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