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Hoarseness of voice – an institutional study

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ABSTRACT

Background: Hoarseness is one of the earliest signal of local and systemic disease. It should be emphasized that hoarseness is not a disease in itself but a symptom of disease or disturbance of larynx or laryngeal innervation. The aim of the study was to analyse various causes and conditions associated with hoarseness of voice.
Methods: We studied 150 patients in a prospective randomised study with inclusion criteria of hoarseness of voice, attending otolaryngology outpatient department of Dayanand medical college and hospital, Ludhiana, irrespective of their age, sex and duration of disease. No exclusion criteria were applied. All the routine investigations like Hb, BT, CT, TLC, DLC, urine-for albumin and sugar were carried out in all patients. X-ray chest- PA view and X-Ray soft tissue neck- AP and lateral view were done when required. Larynx was examined by flexible fibreoptic laryngoscopy followed by biopsy if suspicious looking area was seen. 4% lignocaine spray was used orally and nasally to provide local anaesthesia.
Results: In the present study of 150 cases 87 were males and 63 were females with M:F ratio of 1.4:1 and age ranged from 10–90 years with majority of cases in 4th and 6th decade of their life. All patients had history of hoarseness of voice with most of patients having duration of disease between one month to one year. On flexible fibreoptic laryngoscopy 27% of cases showed normal study, vocal nodule was most common, seen in 20% of cases, 10% showed vocal cord palsy and 10% had laryngopharyngeal reflux disease. Bilateral lesion (72.6%) predominated overall, with left sided (15.2%) of larynx affected more as compared to right side (12%).
Conclusions: Flexible fibreoptic laryngoscopy is an effective alternative for diagnosis of laryngeal lesions and various causes of hoarseness of voice. Vocal nodule has been found as the commonest cause of hoarseness of voice followed by vocal cord palsy and laryngopharyngeal reflux disease.

Keywords: Hoarseness, Voice, Flexible fibreoptic laryngoscopy, Vocal nodule, Vocal cord palsy, Laryngopharyngeal reflux disease

INTRODUCTION

Hoarseness is one of the first and only signal of serious local and systemic disease.[1] It is commonest symptoms in ENT practice. It is one of the earliest manifestations of conditions directly or indirectly affecting the voice apparatus as voice being the primary means of communication socially and professionally. Hoarseness is defined as perceived, rough, harsh or breathy quality of voice.[2] In children vocal abuse in the form of screaming and shouting is quoted as one of the most widely quoted factor associated with hoarseness.[3] It should be emphasized that hoarseness is not a disease in itself but a symptom of disease or disturbance of larynx or laryngeal innervation. The purpose of the study was to assess various causes and conditions associated with hoarseness of voice.

METHODS

In this prospective randomized study, 150 patients were selected with inclusion criteria of hoarseness of voice,

attending otolaryngology outpatient department of Dayanand medical college and hospital, Ludhiana, irrespective of their age, sex and duration of disease. No exclusion criteria were applied. Duration of study was of 14 months (2015-2016). All the routine investigations like Hb, BT, CT, TLC, DLC, urine for albumin and sugar were carried out in all patients. X-ray chest- PA view and X-Ray soft tissue neck- AP and lateral view were done, when required. Larynx was examined by flexible fibreoptic laryngoscopy followed by biopsy if suspicious looking area was seen. 4% lignocaine spray was used orally and nasally to provide local anaesthesia. Statistical method used was SPSS version 17.

RESULTS

In the present study of 150 cases 87 were males and 63 were females with M:F ratio of 1.4:1 and age ranged from 10–90 years with majority of cases in 4th decade of their life. All patients had history of hoarseness of voice with most of patients having duration of disease between one month to one year.

On flexible fibreoptic laryngoscopy 27% of cases showed normal study, vocal nodule was most common, seen in 20% of cases, 10% showed vocal cord palsy and 10% had laryngopharyngeal reflux disease. Bilateral lesion (72.6%) predominated overall, with left sided (15.2%) of larynx affected more as compared to right side (12%).

Table 1: Age and gender distribution of hoarseness of voice (n=150).

Age group	Male	Female	Percentage
1 - 10	-	1	0.6
11 - 20	5	4	6
21 - 30	9	10	13
31 - 40	10	16	17
41 - 50	20	10	20
51 - 60	14	7	14
61 - 70	21	8	19
71 - 80	7	6	9
81 - 90	1	1	1.3
Total	87	63	100

Figure 1: Haemorrhagic cyst right TVC, anterior part, superior surface.

Figure 2: Bilateral TVC nodules on anterior one-third.

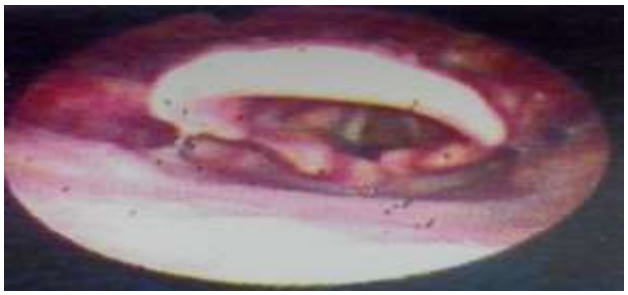

Figure 3: left TVC palsy and right TVC mobile.

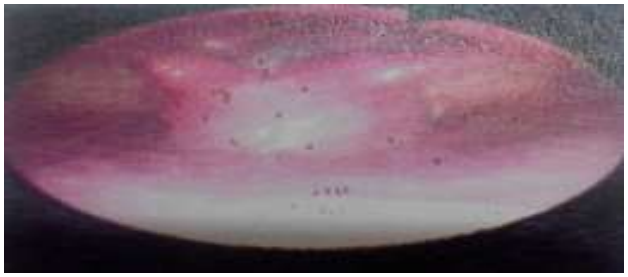

Figure 4: Bilateral arytenoids congested.

DISCUSSION

The larynx is a complex structure that serves protective, respiratory, deglutition, and vocalization functions. Sounds are produced by air flow from the lungs which vibrates the vocal cord epithelium. The resultant fluctuations in air pressure produce sound waves. The vocal cord edges must be brought close enough together to vibrate from the flow of air through the larynx. The arytenoid cartilages along with attached muscles are responsible for movement and tension of the vocal cords. Various lesions of vocal cords causing hoarseness include pathologic changes from allergies, irritants and inflammatory processes, neuromuscular and psychiatric conditions, systemic disorders, and neoplasms. With increase in age mucous membranes of vocal cords become thin and become more dry, which leads to hoarseness of voice. Banjara et al mentioned age range to be 11-78 years in their study and majority of patients presented in 4th and 6th decades of life (22.31% each). [2] Similar results are seen in our study with maximum number of patients seen in the 4th and 6th decade.

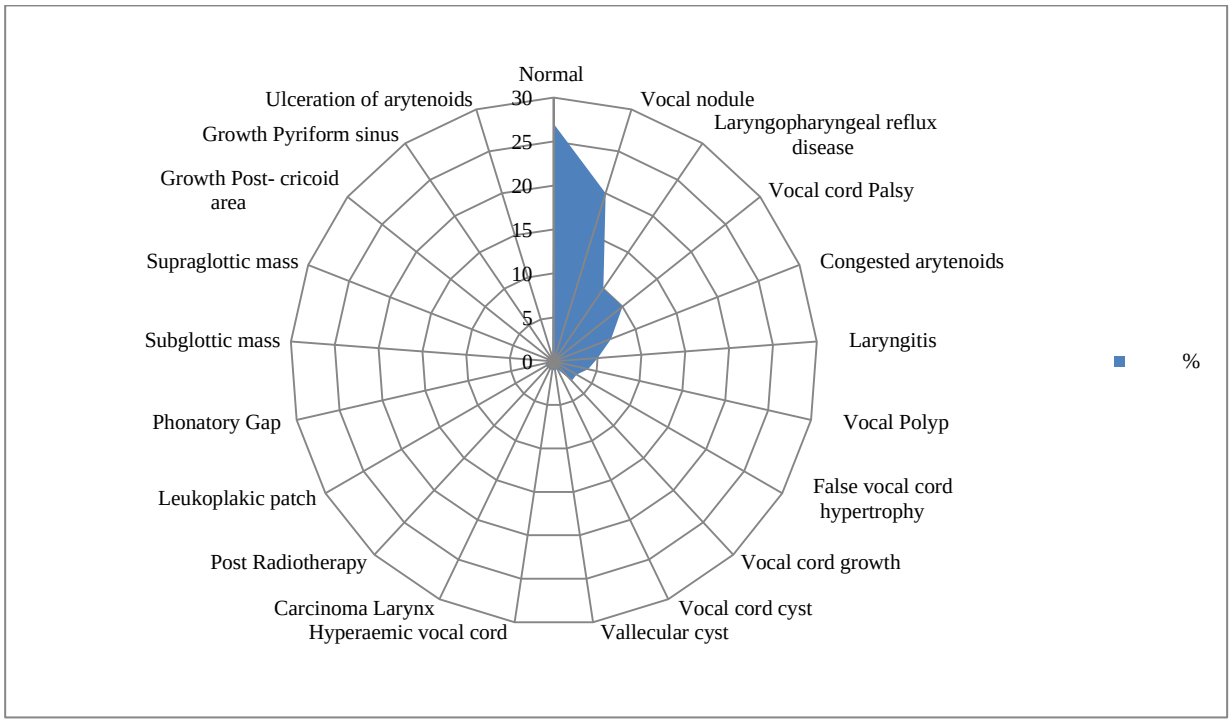

Figure 5: Percentage of various causes of hoarseness seen in this study.

Table 2: Findings on FFL in patients with hoarseness of voice (n=150).

Lesions total	Bilateral	Right	Left
Normal study	40	-	-
Vocal cord palsy	1	6	8
Vocal nodule	18	3	9
Vocal polyp	1	3	2
Vocal cord cyst	1	-	1
Vallecular cyst	-	1	1
Vocal cord growth	-	3	1
Hyperaemic vocal cord	2	-	-
Carcinoma larynx	2	-	-
Post radiotherapy	2	-	-
Subglottic mass	1	-	-
Supraglottic mass	1	-	-
Growth post- cricoid area	1	-	-
Growth pyriform sinus	-	-	1
Ulceration of arytenoids	1	-	-
Congested arytenoids	10	-	-
Laryngitis	7	-	-
False vocal cord hypertrophy	4	-	-
Leukoplakic patch	-	2	-
Laryngopharyngeal reflux disease	15	-	-
Phonatory gap	2	-	-
Total	109	18	23
Percentage	73%	12%	15%

Male:Female ratio in our study was 1.4:1. Khavasi and Prabhu, Kumar and Seth reported male:female ratio of 2:1.[4] The gender differences can be attributed to the effect of hormones.

In present study 27% of cases showed normal study, vocal nodule was most common, seen in 20% of cases , 10% showed vocal cord palsy and 10% had laryngopharyngeal reflux disease. Bilateral lesion (72.6%) predominated overall, with left sided (15.2%) of larynx affected more as compared to right side (12%). Baitha (2004) documented chronic nonspecific laryngitis (43.63%) as the most common pathology of hoarseness followed by acute laryngitis (23.63%), carcinoma larynx (14.54%), vocal cord palsy(9.09%) and tubercular laryngitis (5.45%).[5] Banjara et al mentioned functional lesions (16.33%) to be most common etiology followed by vocal nodule (11.95%), vocal palsy (11.16%), cancer and chronic laryngitis (9.56% each).[2] Ghosh et al (2001) mentioned vocal nodule as the commonest finding in disease of larynx, as seen in our study.[6] Epstein et al reported that bilaterality was about four times as common in nodules as compared to polyps. [7] Our study also showed similar findings. Vocal abuse was the most common predisposing factor for vocal nodule and vocal polyp. Smoking and tobacco chewing was the predisposing factor for carcinoma larynx. Progressive hoarseness of voice more than 15 days should be evaluated by otolaryngologist. Education about vocal

hygiene and voice therapy is effective in improving the quality of voice in patients with hoarseness of voice.

Table 3: Gender distribution of aetiology of hoarseness (n=150).

Lesions total	Male	Female	%
Normal study	22	18	27
Vocal cord palsy	10	5	10
Vocal nodule	15	15	20
Vocal polyp	5	1	4
Vocal cord cyst	2	-	1
Vallecular cyst	2	-	1
Vocal cord growth	3	1	3
Hyperaemic vocal cord	-	2	1
Carcinoma larynx	2	-	1
Post radiotherapy	2	-	1
Subglottic mass	1	-	0.6
Supraglottic mass	-	1	0.6
Growth post- cricoid area	1	-	0.6
Growth pyriform sinus	1	-	0.6
Ulceration of arytenoids	-	1	0.6
Congested arytenoids	3	7	7
Laryngitis	3	4	5
False vocal cord hypertrophy	3	1	3
Leukoplakic patch	2	-	1
Laryngopharyngeal reflux disease	7	8	10
Phonatory gap	2	-	1
Total	86	64	100

CONCLUSION

Flexible fibreoptic laryngoscopy is an effective alternative for diagnosis of laryngeal lesions and various causes of hoarseness of voice. Vocal nodule has been found as the commonest cause of hoarseness of voice followed by vocal cord palsy and laryngopharyngeal reflux disease.

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