

Original Article



Clinico-Pathological Study of Hoarseness among Adult Patients

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ABSTRACT

Introduction: Hoarseness is a non-specific, subjective term, used to describe change in normal quality of voice. It is often described as harsh, grating, breathy, strained, rough or lower pitched voice. Proper knowledge and clinico-pathological profile is necessary to treat the underlying pathology.

Methods: This is a prospective study, carried out in 109 patients presented to Department of ENT-HNS, KIST Medical College, Imadol, Lalitpur with hoarseness of voice for more than two weeks over a period of 1 year from June 11 2020 to June 10 2021. All patients with history of voice changes and age greater than 14 years were thoroughly evaluated and Flexible Fiberoptic Nasopharyngolaryngoscopy done.

Result: A hundred and nine patients between age group of 15 to 88 years were studied. Among them the age group of 35-44 years was mainly suffered from hoarseness. The number of male and females were 47 (43.1%) and 62 (56.9%) respectively with male to female ratio 0.75:1. Most common duration of hoarseness (50.5%) was between 2 to 4 weeks. Non –vocal / Non –Professionals (Level IV) voice users (67.9%) were affected mostly in this group which included laborers, housewives and clerks. Foreign body sensation in throat(76) and laryngopharyngeal Reflux (62), which were the most common predisposing factors , followed by voice abuse (58). In present study Flexible Fiberoptic Nasopharyngolaryngoscopic diagnosed pathological changes in vocal cord were Laryngitis (acute and chronic) 40.3% followed by Laryngopharyngeal reflux disease 28.4% and vocal nodule 12.8%.

Conclusion: Voice is an important means for communication. Any delay in evaluation and identification of organic causes of change in voice can worsen the prognosis. Patients with hoarseness for more than two weeks duration must be evaluated.

Keywords: Hoarseness;Laryngitis;Laryngopharyngeal reflux disease;Vocal nodules

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INTRODUCTION

Hoarseness is one of the commonest symptoms with which patient presents in ENT OPD. Voice disorders are among the most common speech and language disorders affecting approximately 3-25% of adult population and approximately 6% of children. It indicates diseases ranging from totally benign condition to the most malignant condition.^{1,2} Hoarseness is a coarse; scratchy sound most often associated with abnormalities of the vibratory margins of the vocal folds, which may be seen in condition like laryngitis, vocal fold hemorrhage, mucosal disruption, mass lesions and carcinoma.³ People may present with either transient, intermittent hoarseness which is more common and associated with infectious processes affecting the upper respiratory tract or persistent, unremitting, progressive hoarseness which may have a serious disease underlying. People who use their voice more often either professionally or in daily life for examples teachers, salesman, mothers of young children, politicians, leaders, preachers, voice-over users, present with hoarseness more commonly than the general population.¹ Delay in presentation as well as investigation and treatment will affect the outcome. Change in quality of voice of an individual may not only impair their social and professional communication but also affects one's quality of life. Presence of voice disorders with more than two weeks should be considered as a warning sign of serious underlying disease, so that an early evaluation will help in diagnosis as well as prevent in morbidity and mortality.⁴

METHODS

A cross sectional, hospital- based, Prospective study was conducted in department of ENT-HNS at KIST Medical College and Teaching Hospital, Imadol, Lalitpur during period of 1 year from June 11 2020 to June 10 2021. Permission was obtained from Institutional Review Committee (IRC). Patients who presented with hoarseness of voice for more than two weeks and age greater than 14 years were included in the study. Patients with age less than 14 years, with mental illness, who refused to participate in the study, were excluded. A detailed history, clinical examination and required investigation were done. During detailed history, special attention was given to occupation of the patient. The patients were divided into four groups based on level of vocal

usage described by Koufman and Isaacson (1991).⁵ Level I – Elite vocal performers e.g. singers, actors etc., Level II Professional voice users e.g. lecturers, politicians, public speakers, telephone operators, businessman etc., Level III – Non vocal professionals e.g. teachers, doctors, lawyers etc. Level IV- Non vocal /Non Professional e.g. farmers, laborers, homemakers etc. A proper informed consent was taken. All the patients were further evaluated with Flexible Fibreoptic

Nasopharyngolaryngoscopy. Pentax FNL15P3, a flexible fiberoptic nasopharyngolaryngoscope along with camera, light source and color video monitor was used. The procedure was done with patient in sitting position with head slightly extended. Both the nasal cavities and throat (Posterior pharyngeal wall) were sprayed with 15% lidocaine topical spray, 10 minutes before doing the procedure. The lubricated scope with 2% Lidocaine Hydrochloride jelly was then passed intranasally and then was serially observed up to larynx and hypo pharynx for any pathology. Then the data was entered into preformed standard proforma. The data obtained were compiled in Microsoft Excel 2010 and analyzed using Statistical Package for Social Science (SPSS) version 26.

RESULTS

There were total of 109 patients included in the study. Among these patients 47 (43.1%) were males and 62 (56.9%) were females with male to female ratio 0.75:1. Age range was from 15 to 88 years and most common age group belonged to 35-44 years (29, 26.6%) followed by 45-54 years (24, 22%). (Table 1)

Table 1. Age distribution of study population

Age group (Years)	Frequency (n)	Percentage (%)
15-24	16	14.7
25-34	22	20.2
35-44	29	26.6
45-54	24	22.0
55-64	8	7.3
65-74	5	4.6
74-84	4	3.7
>85	1	0.9

All the patients had history of hoarseness of voice with maximum number of patients (55, 50.5%) having duration of disease between 2 weeks to 1 month. Out of total patients 56.9% had intermittent hoarseness.(Figure 1)

Patients having hoarseness of voice belong to various occupations. Largest group of patients 74, 67.9% were from Koufmann and Isaacson categorization Level IV non vocal / nonprofessional (laborer, housewives, and students)(Figure 2)

Foreign body sensation throat, Laryngopharyngeal reflux (LPR) / Gastro esophageal Reflux (GER), voice abuse were common predisposing factors 76, 62 and 58 cases of hoarseness respectively. Most of the patients had more than one and few had more than two or three predisposing factors at the time of examination.(Figure 3)

Flexible Fiberoptic nasopharyngolaryngoscopy (NPL) 4.6% showed normal study. Laryngitis (acute 12.8% and chronic 27.5%) and Laryngopharyngeal reflux was most common, seen in 40.3% and 28.4% of cases respectively. All other pathology and its frequency seen in NPL were compiled in Table 2. Apart from pathologies, among cases that underwent NPL 25.7% of cases had adduction gap.

Table 2. Flexible Fiberoptic Nasopharyngolaryngoscopic findings (pathologies)

NPL findings (Pathology)	Frequency (n)	Percentage (%)
LPRD	31	28.4
Chronic Laryngitis	30	27.5
Acute Laryngitis	14	12.8
Vocal cord nodule	12	11.0
Vocal cord polyp	5	4.6
Normal	5	4.6
Laryngeal Ulcer	4	3.7
Functional Aphonia	3	2.8
Laryngeal neoplasm	2	1.8
Leukoplasia	1	0.9
Vocal cord palsy	1	0.9
Reinke's edema	1	0.9

DISCUSSION

There are various studies in the past which have studies in clinico-pathological profile of hoarseness of voice. In our study, age of patients with hoarseness of voice ranged from 15 to 88 years. Majority of patients i.e. 29 cases (26.6%) were in age group 35-44 years. Baitha Shambhu et al⁶ mentioned age group ranged from 21 to 50 years in their study and most of them presented in 4th decade of life.(Mean 40.4 years, 28.18% each). Our observation is supported the study done by Vengala RR et al⁷ and Bikash Lal Shrestha et al,⁸ who reported the incidence in age group 31-40 years to be 36.98% and 56.4% respectively. However, in most of the studies commonest age group ranged from 20- 45 years of age. A person of younger age belongs to the productive groups who are mostly involved in vocal abuse and are concerned with change in their voice. This could probably be the reason of our patient's belonged to younger age group.

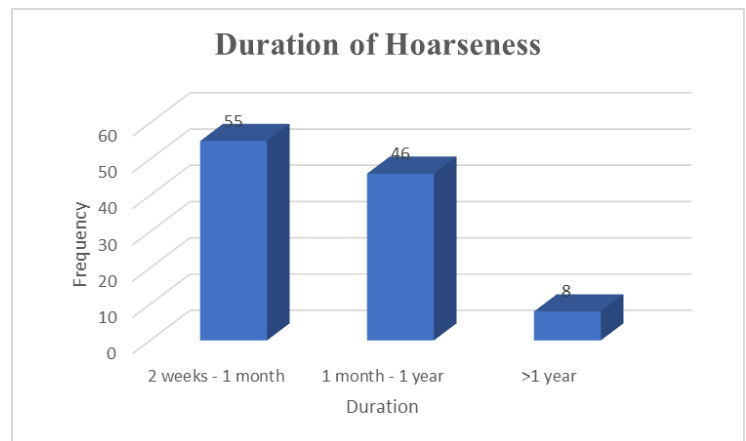


Figure 1 .Distribution of patients according to duration of Hoarseness of voice

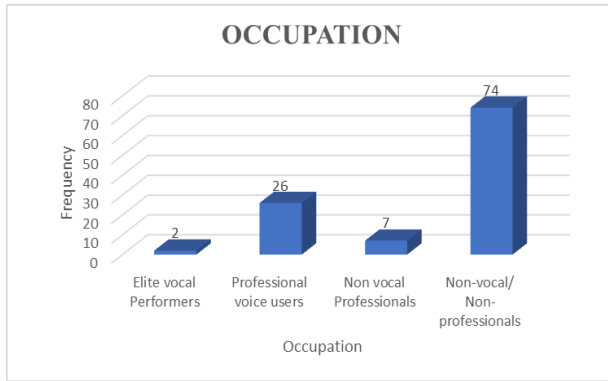


Figure 2. Distribution of Occupation in total 109 cases of hoarseness

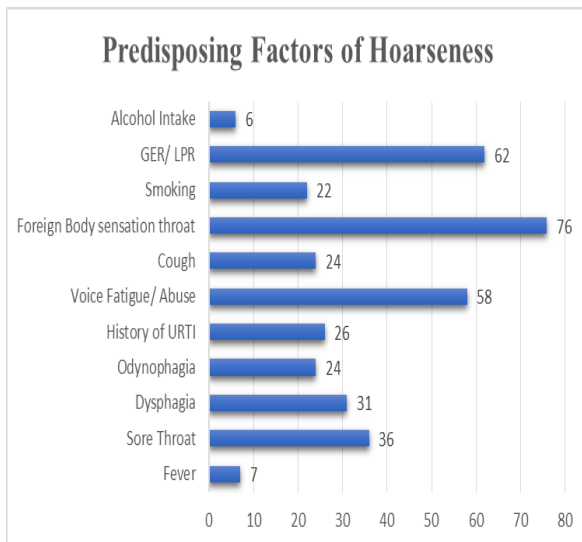


Figure 3. showing prevalence of Predisposing Factor

30Present study showed female preponderance with male: female ratio of 0.75: 1. Our finding is similar with that of Roy et al (1:1.67)⁹. This result is in contrast to many other studies done by Baitha et al⁶, Mehta et al¹⁰, Parikh et al¹¹, and Deshmukh et al¹² which reported hoarseness to be more common in male. However, it has been hypothesized that women's have more chances of having hoarseness of voice as compared to men due to shorter vocal folds anatomically, produce voice at a higher fundamental frequency. As a consequence, there is less tissue mass to dampen a large amount of vibratory force. It is also postulated that women's have lower amount of hyaluronic acid in superficial layer of lamina

propria of vocal fold. Hyaluronic acid is most concentrated in area of high shock absorption and plays important role in wound repair.¹³ These lead to less protective tissue dampening and potentially reduced wound healing response. Hence, women's are more vulnerable to voice disorders.

Most of the patients came with complain for duration of 2-4 weeks (50.5%), followed by 1 month to 1 year (42.2%) and then greater than 1 year (7.3%). In a similar prospective done by Soni et al¹⁴ majority of patients presented with complains for duration of 3 months (45%) followed by 3-6 months (28%), 6-12 months (23%) and 4% were having complaints for more than one year respectively. In a study done by Pal et al⁴ stated that most of patients presented with duration of 3 months (57.86%) followed by 3-6 months (24.29%). According to Hansa Banjara et al¹⁵ most presenting complaints (61.35%) were seen within duration of 3 months followed by (25.1%) within 3-6 months and (10.76%) within 6-12 months. Batra et al¹⁶ found that 59% of patients presented within 5 months of appearance of symptoms. In another study by H Kumar et al¹⁷ 54% patients were having duration of hoarseness between one month to one year.

Koufmann and Isaacson evolved a classification system for professionals based on level of voice use and risk.⁵ In our study most of the patient's presenting with voice changes were Level IV non-vocal nonprofessionals (67.9%) which included laborers, farmers, homemakers and clerks followed by Level II Professional voice users (23.8%) like clergymen, lecturers, politician, public speakers. Similar result was seen in study done by Hansa Banjara et al¹⁵ (86.26%) level IV voice users. Study carried out in Kerela, India by Baneesh et al¹⁸ had shown, most patients presenting with voice changes were labourers (32%) and housewives (21%). A survey done in the year 2009-2011 by Pal et al⁴ showed that more of cases were labourers followed by housewives. In study by Ghosh et al¹⁹ majority patients (29%) were housewives. Voice changes in majority of housewives could be explained by increased use of voice to their children. Another important point is that professional voice users will seek for medical help only if he or she is aware of its importance among other things.

In our study, commonest predisposing factor for hoarseness was foreign body sensation throat (76), Laryngopharyngeal reflux disease (62) and

voice abuse (58). In contrary to our study most of the studies showed smoking, alcohol and voice abuse more commoner cause for hoarseness of voice.^{4,15,20,21} Similar study done by Saileshwar Goshwami et al²² showed misuse of voice (31.1%) and upper respiratory tract infection (11.1%) to be as predisposing factor for hoarseness. Main predisposing factors for pathologies vocal cord were Upper Respiratory tract infection (50.5%), voice abuse 33.6% and Laryngopharyngeal reflux (29.4%) in study by Waheed et al.²³

Of all organic causes of hoarseness, in this study Laryngitis (40.3%) including acute (12.8%) and chronic (27.5%) was found to be the most common cause. This was followed by Laryngopharyngeal reflux disease (28.4%) and vocal cord nodule (11%). Likewise in study done by Salah Uddin Ahmmed et al²⁴ and Azhar Hameed et al²⁵ also found laryngitis 36.15% and 19% respectively. In contrast to our study, Rameshkumar E et al² and Ramesh P et al²⁶ found vocal cord nodule, vocal cord polyp and cancer larynx as major cause of hoarseness. Another study by Agrawal A et al²⁷ showed Carcinoma Larynx (30.7%) as the most common pathological cause of hoarseness. However, increased frequency of Laryngitis and Laryngopharyngeal reflux disease could be due to voice abuse, sedentary habits, intake of junk foods, stress etc.

CONCLUSION

Voice disorders are encountered more frequently nowadays with being multifactorial in etiology. Patient presenting with hoarseness for more than two weeks duration should be evaluated carefully and thoroughly to rule out malignancy. Many laryngeal diseases can be easily diagnosed through observation of larynx through flexible fiber optic nasopharyngolaryngoscopy. The causes of hoarseness are diverse ranging from inflammatory to benign and malignant lesions. Though Laryngopharyngeal reflux disease is one of common cause of hoarseness, yet it is often unrecognized and undertreated.

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