A Study of Clinicopathological Profile of Patients of Hoarseness of Voice Presenting to Tertiary Care hospital

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Abstract Hoarseness is subjective term used to describe abnormal voice quality which may occur due to many causes because it is just a symptom. Proper knowledge and clinicopathological profile is important to treat the underlying pathology. This prospective study was carried out in 100 patients presented in Department of ENT, Gandhi Medical College, Bhopal from April 2013 to September 2014 with complaint of hoarseness of voice for more than 15 days. Objective of this study is to study incidence, duration and sex predilection for hoarseness of voice. Also to study different etiological and predisposing factors for hoarseness of voice. After taking detailed history of the patient, complete examination of ear, nose and throat has been carried out. Indirect laryngoscopy, direct laryngoscopy, FOFE is done. Any suspicious tissue is sent for histopathological evaluation. X-ray soft tissue neck and if required CT SCAN larynx is done. Out of 100 patients maximum were from 50 to 70 years age group. 89% were males while only 11% were females. Labourers (37%) and farmers (32%) were the major groups affected. Smoking habit found in 60% of patients and tobacco chewing in 33% of patients and both, also having. Most common cause for hoarseness was found out to be laryngeal neoplasms of which supraglottic growth being commonest (37%) in our study. Hoarseness of voice may be present due to various underlying pathologies. So proper diagnosis, through detailed history, clinical examination and investigations is warranted to find out the cause and starting treatment.

Keywords Hoarseness · Clinicopathology · Larynx · Vocal cords

Introduction

Hoarseness is a symptom not a disease. It is the term used to describe a change in normal quality of voice which is rough grating, or harsh, lower in pitch and more or less discordant. The hoarse voice may have unvoiced air, but there are fricative voices added which are heard as originating in the larynx. Hoarseness may also be caused by any pathology of vocal cord and because of abnormal vocal cord movement [1, 2]. *Raucous* is a literal Latin word for ‘hoarseness’ but commonly implies loudness, and is applicable to naturally coarse crude voice.

The hoarseness can be divided into acute or chronic [3]. The acute onset is more common and mainly caused by inflammation like acute laryngitis whereas other cause could be viral infection, smoking, vocal abuse, laryngeal trauma or thyroid surgery [4]. The chronic onset is mainly caused by vocal cord nodule, polyp, laryngeal papillomatosis, tumor of vocal cord, functional dysphonia, smoking, vocal abuse, laryngopharyngeal reflux disease, post nasal drip, vocal abuse, neoplasm of thyroid, esophagus, lung, chronic granulomatous disease like tuberculosis or systemic disease like diabetes mellitus [5–7]. The complaints of hoarseness of long duration may imply serious disease, so it should not be ignored [8].

Aims and Objectives

1. To study the various etiological factors in hoarseness of voice.

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2. To study the age and gender distribution of the various cases of hoarseness.
3. Comparison of various methods in the early etiological diagnosis.
4. Study the various pathological correlates in various conditions causing hoarseness.
5. Relation of hoarseness with respect to various occupations.

Materials and Methods

The study is a prospective study carried out on 100 patients attending the department of Otorhinolaryngology, Gandhi medical college and Hamidia hospital, Bhopal (India) from March 2013 to September 2014. Patients who had hoarseness of voice of more than 15 days were selected. Detailed history for symptoms like cold, cough, pain in throat, dryness of throat, dyspnoea, stridor, swelling in neck, history of any trauma or any other complaints, if present were also noted. The mode of onset, patients vocal output. Past history of chronic sinusitis, recurrent hoarseness of voice, history of surgery, past history of radiation to neck, history of TB, syphilis or leprosy was noted. Personal history and family history was enquired.

General condition of patients, external examination of neck, systemic examination were done. Local examination of nose, oral cavity, nasopharynx and ears was done. Indirect laryngoscopy was done. The detailed history, clinical examination, routine as well as special investigation (flexible nasopharyngolaryngoscopy and direct laryngoscopy) were performed to find the diagnosis.

Observation and Results

In the present study the patients included to between age group of 18–90 year. Out of 100 patients studied, the maximum numbers of cases were found in the age group of 61–70 years (28%) (Table 1). Youngest patient being 13 years and eldest being 83 years old.

Out of 100 patients, 89 patients were male and only 11 were female (Table 2). Male to female ratio was 8:1.

The study shows that incidence is more common among laborers (37%) and farmers (32%). Incidence of benign lesions like vocal polyp and vocal nodule are more common in occupations requiring excessive vocal abuse (Fig. 1).

In our study 28% patients having hoarseness since 3–6 months. Only 4% patients were having hoarseness for more than 1 year (Fig. 2).

Table 1 Incidence of hoarseness of voice in different age groups

Age group (years)	No. of cases	Percentage (%)
0–10	0	0
11–20	2	2
21–30	8	8
31–40	9	9
41–50	18	18
51–60	27	27
61–70	28	28
71–80	7	7
81–90	1	1
Total	100	100

Table 2 Sex wise incidence

Sex	No. of cases	Percentage (%)
Male	89	89
Female	11	11
Total	100	100

No. of Cases in percentage

Fig. 1 Occupation wise incidence

Duration of Hoarseness

Fig. 2 Incidence of duration of hoarseness

Table 3 Predisposing factors for the development of hoarseness

Predisposing factors	No. of cases	Percentage (%)
Smoking	60	60
Alcohol	13	13
Tobacco	33	33
Vocal abuse	6	6
Smoking + alcohol	8	8
Smoking + tobacco	17	17

Table 4 Causes of hoarseness

Etiology	No. of cases	Percentage (%)
Growth supraglottis	37	37
Growth laryngopharynx	24	24
Growth glottis	8	8
Transglottic growth	7	7
Growth oropharynx	2	2
VC polyp	10	10
VC paralysis	5	5
VC nodule	4	4
Glottic papillomas	2	2
Diffuse laryngeal oedema	1	1
Total	100	100

Smoking is found out to be most important predisposing factors for development of hoarseness (60%) (Table 3), tobacco alone was causative factor in 33% of patients, alcohol alone in 13% of patient and smoking and alcohol both being predisposing factor in 8% of patients.

Out of 100 patients in our study with hoarseness, carcinoma was more common, growth supraglottis being commonest (37%). vocal cord polyp was commonest among benign lesions (10%). Diffuse laryngeal oedema is found in 1 patient (Table 4).

Discussion

In the present study age group most commonly presented with hoarseness of voice is 50–70 years (55%), Kambic et al. [9] in a series of 591 patients described the age group of 30–40 years in whom maximum incidence of benign lesion of larynx were observed. This could be explained by the fact that coupled with their occupational exposure, this age group is more prone for vocal abuse in western countries. In Indian subcontinent upper aerodigestive tract malignancy is more common and in laryngeal growth supraglottis being commonest. Carcinoma larynx is rare under the age of 30 years and is common in 5th and 6th decade of life.

Table 5 Comparison of male:female ratio in different study for malignant lesions

Author	Years	Male:Female
DattaChoudhary	1959	13.8:1
Shroff	1962	26:1
Silverberg and Hallels	1972	7.5:1
LeronsRubert	1974	20.27:1
NasirIqbal	2002	5:1
Present study	2014	8:1

In present study male to female ratio found to be 8:1 as compared to the studies done by other authors, DattaChoudhary (13.8:1), Shroff (26:1), LeronsRubert (20.27:1) (Table 5).

Possible explanation of male predominance is due to different habits e.g. smoking, chewing tobacco with lime, alcohol intake. Males are also exposed to occupational hazards, which are denied to woman who mostly lead indoor life.

In present study among 100 cases of hoarseness, 60% were smokers. Pal et al. [10] found smoking habit in 33% cases with hoarseness. This could be explained by the fact that majority of our patients are having malignant lesions as compared to Pal study whose majority patients are having benign lesions. Also our setup usually cater rural, poor illiterate people who are mostly negligent about change in voice and usually seek medical advice when they have more distressing symptoms like dysphagia and dyspnoea which are symptoms of underlying aerodigestive tract malignancy.

The relationship with vocal abuse and a preceding upper respiratory tract infection is well known, but is not always present. However vibration, trauma, toxins and infection, despite the frequent absence of identifiable inflammation are strongly and reasonably suspected to be causes [11].

In case of polyps or nodules of vocal cords, hoarseness was explained by the fact that lesion involving the free margin of the cords inevitably disrupts the vibratory function of phonation [12]. In our study most of the patients had hoarseness of voice complaint were having duration of 3 months (45%), 3–6 months (28%), 6–12 months (23%), and 4% were having complaints for duration of more than 1 year. Banjara et al. [13] found that most of the patients (61.35%) having complaints for duration of 3 months. 25.1% for duration of 3–6 months, 10.76% with 6–12 months and 20.72% with complaints for more than 1 year.

Dysphagia was the major associated symptom with hoarseness of voice found in 51% of patients in our study. Majority of the patients with dysphagia had growth in larynx involving hypopharynx as supraglottis share its

lateral wall i.e. aryepiglottic fold with pyriform fossa, so by the time patient seek medical advice growth usually extend to pyriform fossa causing dysphagia.

Conclusion

Voice is important tool for communication. Any disturbance in voice quantity has great impact on individual's personal and social life.

Management of hoarseness can be a challenge to treating otolaryngologist. Proper diagnosis through detailed history and examination is paramount. Referral to voice specialist is indicated when hoarseness continues to persist for more than 15 days.

Direct laryngoscopy and fiberoptic flexible endoscopy (FOFE) proved to be useful methods in detecting various causes of hoarseness of voice. Biopsy should be taken from any growth or any suspicious area for the confirmation of diagnosis so that proper management can be given. Stroboscopy is another important tool for studying mucosal wave pattern of vocal cord in patient of hoarseness of voice in whom no obvious lesion is seen, but we could not do this as this facility was not available in our hospital.

Our study is a small study and we recommend more study on hoarseness for better understanding.

Compliance with Ethical Standards

Conflict of interest The authors declare there is no conflict of interest.

Ethical Approval All procedures performed in this study involving patients were in accordance with ethical standard of institutional ethical committee and approved by same.

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