

Hoarseness of Voice, Concepts on Etiologies and Managements: Experience of King Abdulaziz University Hospital

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Abstract. Hoarseness of voice is a common otolaryngological problem that is seen in the out-patient department of King Abdulaziz University Hospital, Jeddah, Saudi Arabia. This is a retrospective study aimed at finding out the causes, incidence and treatment outcome of hoarseness. The medical charts of one hundred and twenty patients seen between 2000 and 2004 were reviewed. The age, sex, occupational history, history of voice abuse and smoking were reviewed. We also studied the incidence of different laryngeal pathologies and the treatment modalities of hoarseness and follow-up of the patients using the rigid Hopkins-telescope, flexible fiberoptic laryngoscope and the laryngeal stroboscope.

Keywords: Hoarseness of voice, Incidence, Etiology, Treatment.

Introduction

The voice is the primary means of communication for humans both socially and in the work place. Hoarseness is a common complaint seen in all age and gender groups. In patients with hoarseness, the voice becomes coarse, scratchy, harsh,

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husky with breathiness (excessive loss of air during vocalization) and sometimes fatigued (unable to maintain the voice's quality for extended periods).

Voice changes occur when laryngeal functions or anatomy are altered in such a way that proper opposition of the vocal folds for normal speech production is prevented^[1-3].

The etiologies of hoarseness are multifactorial. These factors include vocal abuse, smoking, gastro esophageal reflux disease (GERD) and chronic sinusitis^[4]. Although, the majority of the underlying pathology is benign such as vocal cord nodules or vocal polyps, a great concern of the possibility of laryngeal cancer is likely to initiate early investigation and treatment^[5]. The aim of this study was to find out the incidence of hoarseness, the different etiologies involved and the clinical outcome of treatment.

Material and Methods

In this retrospective study, the medical charts of one hundred-twenty patients who presented to the Otolaryngology Department of King Abdulaziz University Hospital (KAUH), Jeddah, Saudi Arabia between 2000 and 2004 with chronic hoarseness were studied. Acute cases of hoarseness lasting less than 3 weeks and associated with upper respiratory tract infection were excluded, as most of these cases were treated by general practitioners in the general clinic. Data collected included age, sex, male to female ratio (Table 1), occupational history (Table 2), and history of voice abuse, smoking, and/or Gastroesophageal Reflux Disease (GERD) (Table 3).

Table 1. Chart of age and sex distribution of 120 patients.

Age group (Years)	Male	Female
1 – 10	2	1
11 – 18	5	5
19 – 30	15	13
31 – 40	20	19
41 – 50	10	9
51 – 60	8	5
61 – 70	3	2
Above 70	2	1
Total	65	55

Table 2. Chart displaying the occupational history of this study's patients.

Occupation	Number of cases (%)
Teachers	45
Housewives	30
Businessmen	20
Students	15
Singers	5
Nurses	3
Typists	2
Total	120 Patients

Table 3. Incidence of different etiologies.

Etiology	No. of cases (%)	Percentage
Vocal Abuse	72 (60%)	60
GERD	48 (40%)	40

Smoking – 50% of vocal abuser and GERD patients were smokers.

Full ear, nose and throat examinations were made including indirect laryngoscopy with the use of the rigid the Hopkins-telescope, flexible fiberoptic laryngoscope with visual monitoring. The use of the laryngeal stroboscope in the voice clinic added substantially to our diagnostic ability.

A general physical examination was performed on all patients to rule out systemic causes for voice changes such as hypothyroidism, neurological- and neuromuscular-disorders.

Microlaryngoscopy under general anesthesia was performed in 20% of the study's patients. This group was made up of patients in whom the vocal cord could not be assessed adequately in the clinic or those patients requiring biopsy for histological confirmation or removal of laryngeal pathology. Computerized tomography (CT) scan imaging of the larynx and neck had been performed in 25% of the cases in whom the laryngeal pathology was suspicious of malignancy on examination.

Results

In this series of hundred-twenty patients with hoarseness, 65 were males and 55 were females. The peak incidence of different laryngeal pathology was

recorded in age group (19-40) as shown in Table 1. The maximum incidence of laryngeal disease was found among teachers (Table 2).

In the present series, vocal cord nodules were the most common pathology seen (Table 3). Of the 120 patients, 60% received medical treatment which included voice rest, referral to speech pathology, anti-reflux treatment, anti-allergic treatment, antibiotics, and anti-inflammatory medicine and 40% underwent surgical excision of the laryngeal pathology. Microlaryngoscopy under general anesthesia with preoperative evaluation by speech pathologist and post-op follow-up in a speech clinic for up to six months was applied to each case. The result of the treatment in the non-surgical group showed marked improvement of hoarseness and voice return to normal in 80% of the patients during the one year follow-up. In the surgical group, 85% of the patients showed marked improvement of hoarseness and voice return to normal during the follow-up period of one year.

Discussion

The care of the human voice has challenged the medical practitioner for centuries^[6]. Although rarely life threatening, voice problems should not be underestimated as a medical disorder. Besides affecting useful vocal communication, hoarseness may also signify the presence of more serious medical conditions such as a malignancy or airway compromise^[7,8]. Hoarseness is the most common symptom of laryngeal dysfunction regardless of its etiology.

This study showed that most dysphonia was multifactorial in origin, often a combination of vocal abuse, smoking, and gastro esophageal reflux disease findings which are comparable to those of previous studies^[9-11].

Several mechanisms are involved in the pathogenesis of hoarseness; among these are abnormalities of the vibratory margins of the vocal cords such as laryngitis, vocal cord lesions such as nodules and polyps, and benign or malignant tumors^[12]. Immobility or paralysis of the vocal cord can result in hoarseness^[13].

Other less common causes recorded were dysphonia plicae ventricularis and muscular tension dysphonia. Extra laryngeal systemic process can also affect the voice as in hypothyroidism, Wegner's granulomatosis, rheumatoid arthritis and Systemic Lupus Erythematosus (SLE), tuberculosis, and sarcoidosis^[14].

Over the past 25 years, we have seen significant advancement in the diagnosis and treatment of vocal disorders. These advances include the development of the diagnostic endoscope, telescope-Hopkins and laryngeal stroboscope in addition to new surgical techniques such as microspot CO₂ laser and other precise microsurgical instruments. Such advances have led to improvement in the

clinical outcome for patients with hoarseness. This is demonstrated by the marked improvement in the voices (85%) of the patients in the surgical group at one year follow-up. We made use of the new technical advancements in surgery using precise microsurgical instruments and in some cases microspot CO₂ laser with careful dissection of the lesion and sparing the normal tissue to avoid the post-operative vocal cord scarring^[15]. We achieved improvement in 80% of patients with medical treatment that involved voice therapy, anti-reflux treatment, anti-allergies, antibiotics, and anti-inflammatory treatment. These results are comparable to others^[16,17].

Conclusion

Hoarseness of voice is a common manifestation of laryngeal disease.

A thorough understanding of its underlying etiology and the use of advanced techniques in the diagnosis and treatment has improved the clinical outcome in most patients. Otolaryngologists should be familiar with the latest concepts in diagnoses and treatment of voice disorders.

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أسباب بحة الصوت وطرق علاجها : خبرة مستشفى جامعة الملك عبدالعزيز

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المستخلص. تعتبر مشكلة بحة الصوت المزمنة عند المرضى من أكثر المشاكل الشائعة التي تُرى في عيادات الأنف والأذن والحنجرة في مستشفى جامعة الملك عبد العزيز بجدة . في هذه الدراسة، تم فحص مائة وعشرون مريضاً خلال فترة أربع سنوات من عام (٢٠٠٠ - ٢٠٠٤م) لتحديد أسباب البحة الصوتية المزمنة، وتم تحديد أعمار المرضى، ووظائفهم وعلاقة هذا ببحة الصوت. كذلك تم تحديد مسببات البحة الصوتية باستخدام أحدث وسائل التشخيص الإكلينيكي المتوفرة في العيادات، من مناظير ضوئية وكاميرات لقياس ذبذبات الصوت، واستخدام الأشعة المقطعية، والرنين المغنطيسي. وكانت من أكثر المسببات للبحة في هذه الدراسة هو سوء استعمال الصوت عند التخاطب، بالإضافة إلى التدخين، ومرض ارتجاع الأحماض المعدية، والتهاب المريء.

كذلك جرى متابعة المرضى بعد خضوعهم للعلاج، سواء كان جراحياً أو طبياً، وتحديد نسبة الشفاء في كل مجموعة، وكذلك تحديد أفضل الطرق للوقاية من حدوث البحة مرة أخرى بعد العلاج.