CHARACTERISTICS OF *HOARSENESS* IN HASAN SADIKIN HOSPITAL BANDUNG 2015-2019

Mohammad Adithya Prawiranata*,

Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital Bandung, Indonesia

Abstract

Background: Hoarseness is a symptom that is often found in the ORL-HNS polyclinic. The incidence rate of hoarseness in the world is 1.16% and the annual prevalence is 33.3%. **Purpose**: This study aims to determine the characteristics of patients with hoarseness in Hasan Sadikin Hospital Bandung which is the tertiary center hospital in West Java. **Method:** This study used a retrospective descriptive design using the medical records of patients who came with complaints of hoarseness at the ORL-HNS polyclinic at Hasan Sadikin Hospital Bandung from 2015-2019. **Results:**The total study sample was 926 patients, with an overall hoarseness prevalence of 1.2%. The number of male patients was 540 (58.30%) and the number of female patients was 386 (41.70%). The highest age distribution was in the 46 - 65 year age group, namely 384 (41.50%) people. **Conclusion**: In this study, the most common cause of hoarseness was found in cases of chronic laryngitis, 177 (19.3%) patients, followed by malignant neoplasms of the larynx, namely 157 (17%) patients, and LPR in 147 (15.9%) patients, and vocal cord nodules in 140 (15.1%) patients. Hoarseness is a common complaint of a wide spectrum of diseases. Early diagnosis is recommended to reduce avoidable morbidity and mortality.

Keywords : Hoarseness; Chronic laryngitis; neoplasm

Introduction

Hoarseness, a prevalent symptom encountered in ORL-HNS clinics, refers to alterations in the quality, tone, loudness, or vocal exertion that impede effective verbal communication and diminish overall quality of life. This condition frequently manifests as a rough or strained voice, resulting in difficulties expressing oneself clearly and engaging in meaningful conversations. Individuals experiencing hoarseness may find it challenging to convey their thoughts and emotions, leading to frustration and a sense of isolation. Furthermore, the adverse effects of hoarseness can extend beyond social interactions, affecting professional endeavors, personal relationships, and even psychological well-being. Consequently, it becomes essential to address and manage this symptom in order to restore optimal vocal function, enhance quality of life, and promote overall vocal health.[1,5] The incidence rate of hoarseness in the world is 1.16% and the annual prevalence is 33.3%.[6] While the incidence rate of hoarseness in Indonesia is 0.58%, and for Bandung the incidence data does not yet exist. Hoarseness has varying effects and complications, depending on the cause and characteristics of the sufferer. According to Singh 2021, the most frequent causes of hoarseness are chronic laryngitis (51.6%), malignancy (27.8%), vocal fold paralysis (15.1%), and vocal abuse (33.3%).[4,7] In accordance with the clinical practice guidelines established by the American Academy of Otolaryngology-Head and Neck Surgery Foundation, a comprehensive evaluation of hoarseness involves several key steps. These include a thorough history-taking and detailed physical examination by healthcare professionals. Additionally, a fiber optic examination of the larynx may be performed to visualize the vocal structures directly. These initial assessments help gather important information about the patient's medical background, vocal habits, and potential contributing factors. By utilizing these diagnostic tools, doctors can identify potential causes of hoarseness, such as vocal misuse, underlying medical conditions, or anatomical abnormalities. This comprehensive evaluation approach ensures accurate diagnosis and guides subsequent management decision.[3,4,8,9] Failure to analyze the cause of the disorder can aggravate the underlying disease.[1, 2,10–12]

Hasan Sadikin Hospital is a vertical hospital of the Ministry of Health and is a referral hospital in West Java, but data on characteristics related to hoarseness does not yet exist.

Method

This study used a retrospective descriptive design obtained from the medical records of patients who came with complaints of hoarseness at the ORL-HNS clinic Hasan Sadikin Hospital Bandung from 2015-2019. The population is all patients with hoarseness who came to the ORL-HNS clinic of Hasan Sadikin Hospital Bandung, West Java in 2015-2019.

Sampling is carried out using the total sampling technique. The inclusion criteria are medical records containing data on patients with hoarseness complaints who came to the ORL-HNS clinic of Hasan Sadikin Hospital Bandung in 2015-2019. Exclusion criteria are medical records that contain data on patients with other forms of voice disorders and medical records that cannot be accessed. After the data was collected, a descriptive analysis was carried out to determine the frequency distribution of each predetermined characteristic, namely age, gender, diagnosis, and management.

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Result

The total number of patients who entered the research inclusion criteria during the 2015-2019 period at RSUP dr. Hasan Sadikin Bandung was 926 patients, with an overall prevalence of hoarseness of 1.2%. The patients in the study had uniform basic characteristics. The number of male patients was 540 (58.30%) and the number of female patients was 386 (41.70%). The age distribution is the most in the age group of 46-65 years, 384 (41.50%).

Table 1 Characterisics of Hoarseness Patients

Gender	N (926)	Presentage(%)
Male	540	58,30
Female	386	41,70
Age		
0-11	49	5,30
12-25	76	8,20
26-45	245	26,50
46-65	384	41,50
>65	172	18,50
Diagnosis		
Acute Laryngitis	77	8,3
Chronic laryngitis	177	19,3
Vocal fold nodule	140	15,1
Vocal fold polyps	81	8,7
Vocal fold cysts	42	4,5
Laryngopharyngeal reflux	147	15,9
Laryngeal Papilloma	60	6,4
Laryngeal Neoplasm	157	17
Vocal fold Paralysis	45	4,8
Management		
Lifestyle interventions	188	20,3
Medical Intervention	326	35.2
Surgical Intervention	412	44,5

The causes of hoarseness found in this study include acute laryngitis, chronic laryngitis, vocal fold nodules, vocal fold polyps, vocal fold cysts, laryngopharyngeal reflux (LPR), laryngeal papilloma, malignant neoplasm of laryngeal, and vocal fold paralysis.

The procedures implemented in each of these cases include lifestyle interventions, medical interventions, and surgical interventions. Surgical intervention is the most common treatment in cases of hoarseness. A total of 412 (44.5%) patients underwent surgical intervention. Medical intervention with the use of drugs was administered in 326 (35.2%) patients. Lifestyle modifications were only given in 188 (20.3%) patients.

Discusscion

Hoarseness is the most common symptom of diseases of the larynx. Hoarseness is a voice quality disorder that limits communication and can negatively impact the quality of life associated with sound in both physical, emotional, social, and economic aspects.[2–4] Hoarseness, although generally not life-threatening, should not be underestimated as it can be indicative of more serious laryngeal disorders like malignancy or airway obstruction. Epidemiological studies have shown that hoarseness affects approximately 6% of children under 14 years old and 3-9% of adults. Moreover, in a specific healthcare setting, the prevalence of hoarseness was found to be 1.2%. These statistics highlight the significance of hoarseness as a common concern and emphasize the need for timely evaluation and management to ensure accurate diagnosis and appropriate intervention. Delwar, 2020 also conducted research on the prevalence of hoarseness in tertiary referral hospitals in Bangladesh and got a figure of 1.16%. Almost the same background among developing countries, both in social and economic conditions gives similar characteristics and risk factors to patients with hoarseness. This can be illustrated by a similar prevalence.[6,14]

Patients involved in the study have uniform characteristics. The number of male patients was 540 people (58.30%) and the number of female patients was 386 (41.70%) people. These findings are in accordance with a study conducted by Aremu, which found among 214 patients, 125 (58.4%) were men, 89 (41.6%) were women, with the ratio of men to women being 1.5:1.[13]

Among the age groups studied, the highest prevalence of hoarseness was observed in individuals aged 46-65 years, constituting 384 individuals or approximately 41.50% of the population. These findings diverge from other similar investigations, which typically identify the age group of 21-30 years as the most affected. This discrepancy can be attributed to the fact that younger individuals tend to be more active and utilize their vocal skills more frequently compared to other age groups. Notably, vocally demanding professions such as teaching, religious leadership, choir singing, acting, and even the responsibilities of housewives can contribute to this increased prevalence among the younger population. The demanding nature of these roles often entails prolonged or intense vocal use, increasing the likelihood of developing hoarseness symptoms. Consequently, these occupational and lifestyle factors play a pivotal role in shaping the age distribution patterns of hoarseness observed in the studied population.[4,13–16]

A comprehensive assessment of a patient's hoarseness symptoms begins with a thorough examination of their medical history, which can offer valuable insights into a potential diagnosis. When evaluating hoarseness, healthcare professionals take into account several factors, including the timing of symptom onset, specific characteristics of the hoarseness, the progression of the condition in response to treatment, any accompanying complaints, and the patient's social background. By carefully analyzing these details, clinicians can uncover important clues that aid in understanding the underlying causes of hoarseness. The onset of symptoms provides information about whether hoarseness appeared suddenly or gradually over time, which can help differentiate between acute and chronic conditions. Furthermore, understanding the specific characteristics of the hoarseness, such as its quality, pitch, loudness, and potential variations, contributes to narrowing down the potential causes. The clinical course of hoarseness, including any changes or improvements with treatments, offers insights into the effectiveness of previous interventions and informs future management decisions.[9,17–19]

Hoarseness can be attributed to various predisposing factors, including vocal abuse, smoking, and frequent upper respiratory tract infections. These factors can be classified into different categories based on their nature and impact. Organic factors encompass structural changes, such as malformations, trauma, and conditions involving inflammation, infection, or tumors. Neurological factors involve issues with innervation and muscle control, resulting from lesions or abnormalities in the

central or peripheral nervous system. Functional factors include aphonia, psychogenic hoarseness, hyperfunctional hoarseness, and hypofunctional hoarseness. Understanding these predisposing factors and their categorization is essential in evaluating hoarseness and devising appropriate treatment plans.[3,4,10,13]

Hoarseness can manifest as an initial indication of various laryngeal conditions, spanning from mild inflammation to potentially malignant growths within the larynx. The causes of hoarseness are multifaceted and encompass a range of etiopathological factors. These factors include laryngeal irritation, infectious laryngitis (both acute and chronic), benign non-neoplastic nodules, laryngeal papillomatosis, neoplastic lesions of the vocal folds, neuromuscular disorders affecting the larynx, as well as laryngeal cancer. To effectively diagnose the underlying cause of hoarseness, a thorough anamnesis (patient history) and physical examination play integral roles. These evaluations provide essential insights and guide healthcare professionals in their diagnostic process. Additionally, a crucial component of accurate diagnosis involves the visualization of the larynx. By directly observing the laryngeal structures, medical practitioners can gain a comprehensive understanding of the condition and determine the most appropriate course of action.[13,17–19]

The causes of hoarseness found in this study include acute laryngitis, chronic laryngitis, vocal fold nodules, vocal fold polyps, vocal fold cysts, laryngopharyngeal reflux (LPR), laryngeal papilloma, laryngeal neoplasm malignancy, and paralysis of the vocal fold. In this study, the cause of hoarseness was most commonly found in cases of chronic laryngitis 177 (19.3%) patients, followed by neoplasm malignance in the larynx 157 (17%) patients, and LPR 147 (15.9%) patients, and vocal fold nodules 140 (15.1%) patients. In research conducted by Aremu et al, the main cause of hoarseness is acute laryngitis.[13] Hasan Sadikin hospital is a tertiary-level hospital so cases such as acute laryngitis are likely to have been treated at previous level health centers. Patients with hoarseness should be referred to the ENT department if hoarseness continues for more than 4 weeks or if an underlying serious cause is suspected.[17] This also explains the large number of malignant cases in this study (17%), because malignance is a specialist case that needs to be treated at a higher level of health centers.

Chronic laryngitis, characterized by its prolonged duration, can be attributed to various factors that induce inflammation of the larynx. This condition commonly arises from exposure to chemical irritants such as smoking, air pollution, and the use of inhalers. Mechanical irritation caused by persistent coughing or excessive vocal strain can also contribute to chronic laryngitis. Furthermore, irritants such as postnasal drip or laryngopharyngeal reflux (LPR) can exacerbate the condition. Given its diverse etiology, chronic laryngitis is considered a non-specific condition characterized by persistent inflammation of the larynx. Alongside hoarseness, patients experiencing chronic laryngitis may also present with sensations of a lump in the throat (globus sensation), nonproductive coughing, and a constant urge to clear the throat. Stroboscopic examination, a visual assessment of the larynx, may reveal diffuse laryngeal edema (swelling) and erythema (redness), necessitating careful evaluation for the presence of lesions such as leukoplakia (white patches). It is crucial to consider these varied manifestations and conduct a comprehensive examination to accurately diagnose and manage chronic laryngitis[15,17–19]

Laryngeal malignancy, with an annual incidence rate of 3.1 cases per 100,000 for men and 1.0 cases per 100,000 for women, presents a significant health concern. It is noteworthy that smoking constitutes the primary risk factor for laryngeal cancer, with excessive alcohol consumption further amplifying its impact as a risk factor

Hoarseness, changes in tone, and a coarse-sounding voice are the most frequently reported symptoms associated with laryngeal carcinoma. Unlike hoarseness caused by inflammatory conditions, hoarseness linked to laryngeal cancer tends to persist and remains constant. In addition to hoarseness, several other symptoms raise suspicion and often indicate a more advanced disease state. These symptoms include odynophagia (painful swallowing), dysphagia (difficulty swallowing), otalgia (ear pain), the presence of a neck mass, unexplained weight loss, and hemoptysis (coughing up blood). The presence of these additional symptoms further heightens concerns and warrants additional investigation to assess the extent of the illness..[3,4,9,14,16,17]

In order to effectively manage hoarseness, it is crucial to establish a precise diagnosis by identifying the root cause of the condition. This necessitates a comprehensive examination and evaluation of the pharynx, larynx, head, and neck regions. While the anatomical location of these structures can pose challenges for direct visual observation, there are various techniques available for clinical evaluation. One such technique is fiberoptic laryngoscopy, which offers a noninvasive and anesthetic-free approach to examining these areas.

The evaluation of the pharynx, larynx, head, and neck involves a systematic assessment to assess any abnormalities or potential contributing factors to the hoarseness. This can be accomplished through the use of specialized instruments, such as flexible fiberoptic laryngoscopes, which are equipped with a light source and camera to capture detailed images of the structures. These instruments are designed to be passed through the nasal passages or mouth, allowing for a thorough examination of the larynx and surrounding areas.

Fiberoptic laryngoscopy provides several advantages in the diagnostic process. Firstly, it offers a noninvasive approach, eliminating the need for invasive procedures or anesthesia administration. This makes it a more comfortable and accessible option for patients, particularly those who may have concerns or limitations with regard to invasive interventions. Additionally, the real-time visualization provided by fiberoptic laryngoscopy allows healthcare professionals to directly observe any abnormalities, such as lesions, inflammation, or structural changes, which may be contributing to the hoarseness..[11,13,18,19]

Laryngoscopy and videostroboscopy are essential diagnostic procedures that play a crucial role in accurately differentiating and diagnosing the underlying causes of hoarseness. Laryngoscopy allows direct visualization of the vocal cords, enabling healthcare professionals to identify any abnormalities or structural changes that may be contributing to the hoarseness. Videostroboscopy enhances this assessment by providing a dynamic view of vocal cord vibration during phonation, aiding in the distinction between functional voice disorders and structural abnormalities. These procedures are particularly recommended when hoarseness persists for more than four weeks or when there is suspicion of an underlying serious condition, as they provide valuable visual information for a comprehensive and accurate differential diagnosis.[10,11,17,18]

When hoarseness persists for more than four weeks, it is important to give it special attention as it is unlikely to resolve on its own. In such cases, a thorough diagnosis and appropriate treatment are necessary. Serious conditions, including malignancies, should be considered, as they can have a significant impact on quality of life or even be life-threatening. Certain symptoms should raise the suspicion of serious lesions, such as a history of tobacco or alcohol use, the presence of a neck mass, ear pain, coughing up blood, difficulty breathing or

wheezing, unexplained weight loss, and hoarseness following recent intubation or head and neck surgery. In these situations, performing videostroboscopy can be beneficial to aid in the diagnostic process and guide appropriate management strategiesy.[17,18]

Pharmacological interventions can be beneficial in the management of certain causes of hoarseness. If the patient reports reflux symptoms, such as heartburn, the use of proton pump inhibitors twice a day can be administered for two months, Therapeutic lifestyle modifications such as reduced consumption of caffeine, carbonated drinks, alcohol, and acidic foods should also be recommended. Vocal hygiene is also recommended with reduced voice use. Strategies to reduce coughing can help reduce mechanical irritation. Surgical intervention for hoarseness is indicated for neoplastic conditions or failed cases with conservative treatment.[13,17]

A wide variety of surgical intervention techniques can be performed according to the case suffered by the patient. In the case of polyps or cysts on the vocal fold, phonosurgical excision can be performed on the base of the cyst by removing the entire cyst capsule. Papilloma that can appear repeatedly on the vocal cords or other places such as the trachea, bronchi, or lungs can be treated with microsurgery techniques. In the case of malignancy in the vocal cords, treatment using transoral laser resection or primary low-volume radiotherapy is recommended.[11,18,20] Resection using a laser is not yet available at the center of this research study, so in cases of malignancy, a total laryngectomy is performed.

The procedures implemented in each of these cases include lifestyle interventions, medical interventions, and surgical interventions. Surgical intervention is the most common treatment in cases of hoarseness. A total of 412 (44.5%) patients underwent surgical intervention. Medical intervention with the use of drugs was administered in 326 (35.2%) patients. Lifestyle modifications were only given in 188 (20.3%) patients. The large number of surgical interventions in this study suggests a higher level of case difficulty, in which behavior modification interventions and medical interventions are not sufficient to deal with the patient's problem.[11,18,20]

Conclusions

Hoarseness is a common complaint of a wide spectrum of diseases of the larynx, both benign and malignant. The most common pathological conditions involved in the study are chronic laryngitis as well as Laryngeal neoplasms are also diagnosed in most patients. Early diagnosis is recommended to reduce morbidity and avoidable mortality.

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