JNP

Differentiating the Symptom of Dysphonia

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ABSTRACT

Dysphonia can significantly impact quality of life, yet many patients do not seek care. Determining etiology can be challenging because the symptom presentation of hoarseness does not vary in respect to diagnosis. Nurse practitioners must rely on a thorough health history and examination to distinguish possible diagnoses, which can range from benign conditions such as voice overuse to red flag diseases, such as malignancy. Factors such as tobacco and alcohol have been well documented in increasing client risk of head and neck cancers; alternatively, human papillomavirus has also been identified as an emerging cause. The purpose of this article is to review dysphonia as a symptom, identify differential diseases, and provide recommendations for practice.

Keywords: dysphonia, hoarseness, human papillomavirus, human papillomavirus vaccination, laryngitis, nurse practitioner

Voice dysfunction can significantly impact quality of life, communication, and job productivity, yet many adult patients do not seek medical care for these symptoms.[1–3] Over the course of their life span, 30% of the adult population will present to primary care with complaints of hoarseness, also known as dysphonia.[2,3] Dysphonia can be attributed to a variety of pathologies. Possible etiology can range from benign to serious and can include viral pharyngitis or malignancy.[4] Even though dysphonia has a uniform presentation within primary care settings, the nurse practitioner (NP) must remain cognizant of the potential differential diagnoses associated with this symptom.

The purpose of this article is to review dysphonia as a symptom of disease; explore the various causes including reflux, paralysis, infection, polyp, and neoplasm; and provide specific recommendations to assist NPs when caring for patients with voice dysfunction. There are currently no standardized screening tests for head and neck cancer (HNCA). When a patient presents with dysphonia, the NP must use data from a thorough health history and physical assessment to promote early diagnosis of possible malignancy; earlier detection can improve prognosis and treatment options.[5] As a result, NPs play an important role in detecting and screening for these types of cancers.[5]

EPIDEMIOLOGY

Hoarseness is a common complaint observed across the life span in primary care settings. The overall prevalence of dysphonia is 30% in adults and 50% in older adults; moreover, women and members of voice-dependent occupations, such as teachers, are at an increased risk of developing voice dysfunction.[2,6,7] Dysphonia alters voice quality and significantly impacts quality of life as a result of impaired communication abilities.[2,7] Dysphonia also presents a significant economic burden; the symptom is associated with an estimated $2.5 billion in lost wages.[7] Despite the impact of dysphonia on health, well-being, and occupational functioning, many individuals may suspect the cause is benign and choose not to seek medical attention.[2] Delays in assessment and diagnosis can lead to poor prognosis and limited treatment options for individuals with an underlying serious and progressive pathology.[2,6,7]

Furthermore, the epidemiology of squamous cell carcinoma (SCC) HNCA has shifted over the past

30 years[8]; in America, smoking- and alcohol-related cancers have declined, yet there has been an increase in HNCAs linked to human papillomavirus (HPV), in particular strain-16.[5,8] This epidemiologic shift in HNCA may be attributed to a cultural change of sexual practices within the United States and Western Europe.[5] In the US, HPV is the most prevalent sexually transmitted infection[9]; it is estimated that nearly all sexually active individuals may acquire the virus within their lifetime.[10] Individuals diagnosed with HPV-linked HNCA are typically younger (in their fourth or fifth decade of life) and do not have the traditional risk factors such as alcohol or tobacco use but have a higher number of oral and vaginal sex partners.[8] This subset of patients has a more favorable prognosis and survival rates than non–HPV-linked cancers.[5,8] The annual incidence of SCC in the US is 6.2 in 100,000 males and 1.3 in 100,00 for females; of these cases, about 56% of these HNCAs originate in the vocal cords.[3]

CAUSES OF DYSPHONIA

The sound of the human voice is created by airflow moving past the vocal cords during exhalation.[3,4] This sound, known as voice production, is characteristically different than speech.[3] The ability to speak originates from the pharynx, tongue, and oral cavity and relies on coordination from the neurologic system.[3,5] Although speech disturbances are caused by neurologic damage, such as stroke or Parkinson disease, dysphonia signifies a disturbance in the phonatory mechanism.[3] Voice dysfunction is not a disease in itself but rather a symptom of an underlying pathology.[3,4] Dysphonia is defined as an alteration in voice pitch that is perceived by the patient and/or other individuals.[3-5] Hoarseness is often described as a harsh, breathy, or deep voice and is caused by abnormal vibrations of the vocal cords.[3,4] The etiology of phonatory dysfunction must be considered by the NP and can range from benign conditions (eg, phonotrauma) to systemic diseases (eg, hypothyroidism or malignancy; Table).

SCC AND HNCA

An entrance complaint of dysphonia in primary care can signify a potential underlying malignancy and is impossible to distinguish from auditory cues and history alone.[3] HNCA includes malignancy of the upper aerodigestive tract (including the oral cavity, nasopharynx, oropharynx, hypopharynx, and larynx), paranasal sinuses, and salivary glands.[11] SCC accounts for 85% to 90% of HNCAs in the US.[4,11,12] Traditionally, SCC was most prevalent in individuals over the age of 45 years who had a history of alcohol and/or tobacco use.[4,5,12] The recent decline in smoking rates in the US has led to a subsequent decrease in oropharyngeal and laryngeal cancers related to tobacco use.[11] In the past three decades, there has been an influx of HNCAs linked to HPV-16[5,12] in which HPV may have accounted for 70% of oropharyngeal cancers diagnosed in the US.[10]

HNCA linked to HPV can affect both males and females, and there is currently no standardized screening tool available.[10] The relative risk of developing HNCA is 10-fold among individuals with HPV infection.[10] Although HPV infection is more common among younger populations, this trend may be attributed to sexual preferences and behaviors, rather than age itself.[12] Ninety percent of oropharyngeal cancers are caused by HPV-16 and the remaining 10% by HPV-18.[10] Males are twice as likely to contract an HPV-related HNCA when compared with females.[11] Additionally, blacks are at a higher risk than whites for this type of cancer.[10] Some suggestive symptoms of malignancy of the upper aerodigestive tract include weight loss, neck mass, hoarseness, otalgia, dysphagia, or odynophagia.[5,11] HNCAs associated with HPV have a better prognosis and lower mortality rates when compared with other types of HNCA.[5,12] However, survival rates and treatment options for SCC are closely linked to the extent of disease, and, therefore, early intervention is essential to enhance patient outcomes.[3]

VOCAL CORD INFLAMMATION

Common causes of acute laryngitis in primary care include upper respiratory tract infection (URTI), voice overuse, and postnasal drip associated with allergic rhinitis.[4,7] These conditions often alter voice quality because of diffuse changes in vocal cord tissue as a result of inflammation.[3,4,7] In addition, structural changes occur in the outermost/superficial layer