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The Puzzle of Medically Unexplained Symptoms—A Holistic View of the Patient With Laryngeal Symptoms

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Functional laryngeal and airway disorders are characterized by apparently normal anatomy and neurological function accompanied by clinically significant symptoms, which can include dysphonia, dysphagia, globus sensation, and dyspnea. These disorders are often diagnoses of exclusion, since the presenting symptoms can also accompany important anatomic and neurologic abnormalities that must be ruled out. Primary muscle tension dysphonia (MTD), also often called *functional dysphonia* or *hyperfunctional dysphonia*, presents with various forms of laryngeal muscular dysregulation during voice and speech production and remains a voice disorder without established pathophysiology. Some signs and symptoms may be observable during the examination (eg, supraglottic hyperfunction, perceived vocal strain), while others may be elusive (eg, vocal fatigue, stress-induced hyperfunction). Functional airway disorders such as paradoxical vocal fold motion disorder (sometimes also called *vocal cord dysfunction*) are characterized by dysfunctional respiratory/laryngeal coordination. These can lead to dynamic airway narrowing at the glottis and shortness of breath despite a neurologically normal larynx. Functional laryngeal and airway disorders are frequently associated with psychological distress, including depression, anxiety, and somatic concerns. Somatic concerns involving other parts of the body are also common in patients with MTD and are associated with heightened medical costs, which drive up the costs of health care and further burden patients, who may undergo numerous expensive evaluations, tests, and procedures owing to their symptoms.

In the intriguing study by Piersiala et al¹ in the current issue of *JAMA Otolaryngology–Head & Neck Surgery*, a retrospective review of more than 4000 patients was undertaken to determine whether patients with chronic pain syndromes (CPS: fibromyalgia, irritable bowel

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syndrome, chronic fatigue syndrome) had different patterns of voice and laryngeal disorders than those without CPS. In the 5% of patients noted to have at least 1 CPS, functional voice disorders (as grouped by the authors) were more commonly diagnosed, and laryngeal and airway conditions were less commonly diagnosed, than in those without CPS. Furthermore, regardless of the specific type of CPS, patients had similar patterns of voice and laryngeal problems. These findings are consistent with the observation in a different health care system that patients with mental health diagnoses, including somatization, had a lower likelihood of receiving anatomic laryngeal disorder diagnoses than patients without mental health diagnoses.²

It is important to emphasize, as acknowledged by the authors,¹ that the term “medically unexplained” must be used with caution. Some major medical disorders in the past were considered medically unexplained, until they were not. Inroads into the basic science of chronic fatigue syndrome, for example, suggest possible causes such as immune and/or mitochondrial dysfunction.³ Similarly, evidence is increasing that MTD is associated with disordered vocal motor control.^{4,5} Importantly, stress, even in vocally normal individuals, can significantly affect control of phonatory behaviors through limbic-motor pathways.⁶ The findings on altered brain function underlying voice and speech production place a spotlight on the concept of laryngeal stress responders⁶ and on functional neurological disorders (dissociative disorders) expressed as functional aphonia. In patients with chronic somatic concerns, central neurological processes themselves, and the secondary effects they produce (such as stress caused by chronic pain), may affect voice production and sensory perceptions. We need to consider that some individuals are laryngeal stress responders and that personality influences symptom reporting, health behaviors, and treatment outcomes. Other important considerations include individual differences in coping, such as adaptive vs maladaptive coping, self-regulation, and perceived control.⁷ Furthermore, factors such as social support, financial resources, and family function are also likely to play a role. It will be important to differentiate the roles that CPS plays in MTD. In addition to considering whether the presence of CPS is a risk factor for developing MTD, as suggested by the authors, we should also consider the fundamental question of a potential shared pathophysiology that may make individuals vulnerable to both CPS and MTD.

The authors indicate that similarities in the voice and airway presentation across the 3 different CPS disorders studied may imply a shared set of symptoms across the 3 disorders.¹ A notable finding was that MTD was the only common denominator across syndromes, thus shifting the focus to voice rather than airway symptoms. As voice is an expression of general well-being, the shared symptoms may be not only a regional or anatomically isolated phenomenon but rather an outlet for the many types of symptoms experienced by patients with somatic disorders. Functional somatic syndromes often cause diffuse symptoms and frequently are notable for mental health comorbidities; the responses of patients with these syndromes to behavioral therapies and psychoactive medical treatment may suggest common or related central nervous system causes.

Findings of the study¹ must be interpreted in the context of limitations typical of retrospective studies, including the potential for incomplete data, which may explain the relatively low prevalence of CPS identified in this study. Neat categorization of laryngeal

findings may also be difficult because some patients have overlapping presentations, such as concurrent MTD and paradoxical vocal fold motion. Future studies will need to investigate the extent to which the degree of other somatic and throat symptoms are associated, and delve into the mechanisms by which functional somatic disorders and laryngeal/airway disorders may be linked.

As noted by the authors,¹ a multidisciplinary approach is paramount to achieve optimal treatment outcomes in patients with somatic concerns. In laryngology, these include MTD, paradoxical vocal fold motion, and globus. Otolaryngologists in many subspecialties evaluate disorders in which patients report troublesome symptoms, such as tinnitus and burning mouth, despite having unremarkable anatomy. This suggests that a broader approach to patients with functional disorders is important to consider regardless of subspecialization. The study by Piersiala et al¹ also helps to raise awareness about the differentiation of voice (vs speech) and airway symptoms beyond otolaryngology clinics.

Otolaryngologists, in addition to neurologists, psychiatrists, speech-language pathologists, physical therapists, and behavioral health professionals (eg, psychologists), can play an important role in the management of these disorders. For example, cognitive behavioral therapy is valuable in CPS and tinnitus, and limited data suggest that cognitive behavioral therapy and associated psychological interventions may also be helpful for MTD.⁸ Functional disorders must be conceptualized in a holistic manner that includes biological, psychological, and social determinants. This study by Piersiala et al¹ provides an important reminder that care for these patients, when appropriate, needs to extend beyond the larynx and airway to focus on the whole person.

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