Severe Paradoxical Vocal Fold Movement: An Algorithm for Treatment

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ABSTRACT

Paradoxical vocal fold movement (PVFM) is a paradoxical adduction of vocal cords with inspiration. Multiple paradoxical vocal fold movement (PVFM) is known by many other names: vocal cord dysfunction, irritable larynx, laryngeal dysfunction, and laryngopharyngeal reflex. PVFM was previously described in 1842. However, increasing awareness of the disorder has resulted in the need for clear treatment guidelines. We propose an algorithm of treatment for the spectrum of paradoxical vocal fold motion disorders and highlight a novel treatment for acute PVFM with desmethylmethadone.

CASE PRESENTATION

A 26-year-old active duty male medic with a known history of PVFM presented to our emergency department with acute onset of stridor and dyspnea. His past medical history includes a known history of asthma and a history of respiratory distress. In a previous admission at another hospital, an attempt was made prior to intubation for his respiratory distress. When a laryngeal view was unable to be passed, an emergent tracheotomy was performed. (Fig. 1)

In our emergency department the patient received norepinephrine, dexamethasone, and desmethylmethadone. He identified laryngeal irritation with cough and was intubated immediately with the administration of desmethylmethadone. He had recurrent episodes of dyspnea while receiving treatment. He was admitted to the ICU where he was administered heliox, dexamethasone and lorazepam. His stridor improved intermittently with the administration of heliox, but subsequently recurred. Desmethylmethadone hydrochloride (Precedex, Hospira, Inc.) at a dose of 0.5 mg for sedation was initiated. Pneumonia developed and was treated with continuous infusion with subsequent long lasting treatment. PVFM was identified by the patient returning to his military base following his hospital discharge. The patient was referred to the ward the following day and began speech therapy immediately. His identified laryngeal irritation with cough and exacerbation as key triggers for his PVFM and worked with our speech therapists to improve his control. The procedure was done and with subsequent discharge with improved control over his PVFM and no subsequent hospital admissions.

DISCUSSION

PVFM is the paradoxical adduction of the vocal cords with inspiration. Acute therapy consists of reassurance, and medical history and current triggers. Objective findings in both the acute and non-acute settings are proposed to help distinguish PVFM as a diagnosis. A normal chest radiograph and baseline laryngoscopy should be obtained to rule out the presence of structural abnormalities. A novel treatment for acute PVFM with desmethylmethadone is proposed to help obviate PVFM as a diagnosis. A novel treatment for acute PVFM with desmethylmethadone is proposed to help obviate PVFM as a diagnosis.

REFERENCES