

Vocal Cord Dysfunction, Paradoxical Vocal Fold Motion, or Laryngomalacia? Our Understanding Requires an Interdisciplinary Approach

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KEYWORDS

- Vocal cord dysfunction • Paradoxical vocal fold motion
- Paradoxical vocal cord motion • Laryngoscopy • Dyspnea
- Inspiratory stridor • Asthma • Laryngomalacia

A HISTORICAL PERSPECTIVE

Periodic occurrence of laryngeal obstruction (POLO) was first described in an 1842 medical textbook by Dunglison,¹ who noted a disorder of the laryngeal muscles in hysteric females that he termed, *hysteric croup*. In the textbook, *Principles and Practice of Medicine*, Austin Flint² described a similar syndrome in two male adults and termed the condition, *laryngismus stridulus*. MacKenzie, however, reported the first evidence of abnormal vocal fold motion visualized by laryngoscopy in 1869. He noted paradoxical closure of the vocal folds with inspiration in hysteric patients.³ Sir William Osler,⁴ in the 1902 edition of *The Principles and Practice of Medicine*, further expanded on this syndrome as he described “spasm of the muscles may occur with violent inspiratory efforts and great distress, and may even lead to cyanosis . . . Extraordinary cries may be produced, either inspiratory or expiratory.” Little additional information was published until the 1970s when Patterson and colleagues described a 33-year-old woman with 15 hospital admissions for what they named, *Munchausen’s stridor*.⁵ Since then, more than 70 different terms have been coined over the past 30 years to describe abnormal movement of the true vocal folds.⁶ Many of these terms have been used

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primarily to describe abnormal vocal fold movement in the absence of other medical diseases (**Table 1**).

There are several proposals to categorize VCD more fully and essentially classify all glottic movement disorders into one definition. Andrianopoulos and colleagues equated paradoxical vocal fold motion, paroxysmal VCD, episodic paroxysmal laryngospasm, and irritable larynx syndrome as the same entity.⁷ A distinction was made between differing associated causes, such as gastroesophageal reflux disease, primary dystonias, psychogenic causes, and disorders of central nervous system affecting the vocal folds. The use of the term, *irritable larynx syndrome*, by Morrison and colleagues proposed a unifying hypothesis of VCD and laryngospasm in the presence of a sensory trigger. This definition, however, eliminates an identifiable psychiatric diagnosis as the cause.⁸ Additionally, the hypothesis of solely an irritable or hyperresponsive state is contrary to recent data demonstrating reduced laryngeal irritability with sensory stimuli in the presence of laryngopharyngeal reflux.⁹ It is apparent that neither of these classifications adequately describes the full-spectrum episodes of laryngeal dysfunction.

The two terms most frequently encountered in the literature and used extensively in clinical practice are *paradoxical vocal fold motion (PVFM)*¹⁰ and *vocal cord dysfunction (VCD)*¹¹ (discussed later). PVFM is most likely to be selected by otolaryngologists and speech pathologists. In contrast, pulmonologists, allergists, psychiatrists, and psychologists are generally drawn to VCD. Do these terms represent exactly the same disorder with one common origin? Are different terms used simply because of different specialty educational paths? Alternatively, is the endoscope used to visualize a limited number of end-organ laryngeal responses without fully understanding a spectrum of causes that are literally hidden from sight? Addressing these and other important issues calls for an interdisciplinary team approach. Scientists prefer to answer the

Term	Author	Year
Munchausen's stridor	Patterson R	1974
Pseudoasthma	Dailey RH	1976
Nonorganic upper airway obstruction	Cormier YF	1980
Functional upper airway obstruction	Appelblatt NH	1981
Factitious asthma	Downing ET	1982
Vocal cord dysfunction	Christopher KL	1983
Spasmodic croup	Collett PW	1983
Emotional laryngeal wheezing	Rodenstein DO	1983
Psychogenic upper airway obstruction	Barnes SD	1986
Episodic laryngeal dyskinesia	Ramirez JR	1986
Exercise-induced laryngospasm	Liistro G	1990
Functional laryngeal obstruction	Pitchenik AE	1991
Psychogenic stridor	Lund DS	1993
Functional laryngeal stridor	Smith ME	1993
Episodic paroxysmal laryngospasm	Gallivan GJ	1996
Irritable larynx syndrome	Morrison M	1999
Paradoxical vocal fold motion	Patel NJ	2004

Data from Morris MJ, Christopher KL. Diagnostic criteria for the classification of vocal cord dysfunction, submitted for publication.

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