



## Helping patients find their voice

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### To the Editors

Patients with a functional neurological disorder (FND) are common in neurological practice, with an incidence in the general population of 10–15/100,000 [1]. Available studies show that 60–75% of patients with FND are female [2]. The most frequent presentations of FND are functional seizures and functional movement disorders (FMDs) [1].

Functional speech and voice disorders (FSVDs) are quite common among patients with FMD.

We present two cases of FSVD initially suspected as being laryngeal dystonia, and discuss the characteristics of FSVD.

**Case 1:** A 53-year-old female had developed acute difficulty in vocal expression. She experienced effort during speaking, and had needed to rest afterwards. She also complained of chronic generalised exertion.

Her past medical history revealed a brainstem stroke cured with alteplase, strumectomy complicated by right vocal cord paresis, and Hashimoto's thyroiditis treated with levothyroxine.

On neurological examination, prosodic disturbances and intervals of silent speech were found.

Standard blood investigations were normal. Brain and cervical MRI were normal. Electrophysiological recordings e.g. repetitive nerve stimulation and single fibre electromyography were normal.

Pulmonary diseases were ruled out. On ENT consultation, paresis of the right vocal cord was seen. Normal voice was recorded after disappearance of voice problems with distraction.

Neuropsychological testing showed periodic phonatory and articulatory impairment during spontaneous statements

accompanied by shortness of breath, and sometimes the flow of speech was slowed down. It was noted that full remission was observed in distraction (up to 10 minutes). The subject presented a tendency to repress more difficult emotions, with the possibility of dissociation (conversion). The study indicated the functional-psychogenic nature of the symptoms.

Her psychosocial history revealed that the patient had had tertiary education and had been very successful professionally. She was married with two grown-up children. For several years, the patient had experienced serious problems in her marriage including her husband's infidelity, and had considered leaving home because she felt like she was "suffocating" there. She decided to stay in the relationship and later engaged in psychotherapy. This somewhat alleviated her distress, but did not address the issues associated with her marriage. The patient withdrew from psychotherapy. Reflecting upon her marriage, the patient ambivalently reported that the relationship was now satisfactory but at the same time that the previous problems remained unresolved.

Functional voice and speech disorder were diagnosed. The patient was recommended for a psychiatric consultation and further management.

**Case 2:** A 46-year-old female was referred with dysphonia, of which the initial symptoms had appeared suddenly 10 years earlier. The patient felt paresthesia in the chest and general weakness during considerable voice impairment. A slight improvement was observed after speech therapy.

Her past medical history featured thymus hyperplasia without compressive symptoms or systemic symptoms (autoimmune diseases).

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**Table 1.** Characteristics of types of functional speech and voice disorders [4]

Type of FSVD	Clinical features
Psychogenic voice disorder	Sudden onset of aphonia or dysphonia; aphonia can present as a whisper, dysphonia may present as a breathy falsetto, hoarseness or vocal production of two separate tones
Muscle tension voice disorder	Gradual onset of dysphonia, secondary to excessive tension in para-laryngeal musculature, often mistaken for laryngeal dystonia, improves with speech therapy, may coexist with an underlying organic condition of vocal cords (secondary type)
Functional stuttering	Manifests as repetitions of sound, syllables or words, speech blocks, or extended pauses between sounds, may present as an accent on the wrong syllable, excessive variability, absence of dysarthria, aphasia, or apraxia of speech
Foreign accent syndrome	Type of prosodic disturbance, ability to imitate additional accent(s) with ease, may demonstrate stereotyped behavioural mannerisms, variability of accent, cases of organic aetiology (often linked to dominant hemisphere vascular or traumatic lesions)
Childlike prosody	Infantile speech ('baby talk'), sometimes accompanied by infantile gestures and facial expressions
Articulation abnormalities	Coexists with inconsistent lingual, jaw or facial weakness on tasks unrelated to speech

On neurological examination, a breathy falsetto was noted. Her symptom alters significantly with distraction and intervals of normal voice was heard.

Standard blood investigations, a brain MRI and electro-physiological recordings were all normal.

On ENT consultation, a minor abduction of the right vocal cord was seen. Psychogenic component influence was taken into consideration.

Neuropsychological testing revealed a significant impact of the functional component in the clinical picture. Analysis of the patient's psychological mechanisms indicated a tendency for repression of intense emotions and somatisation. Further assessment also showed that the patient had trouble in adjusting to new environments (e.g. when changing jobs) and in tolerating the distress related to day-to-day activities.

An eventual diagnosis of functional voice and speech disorder was made, and the patient was sent for psychotherapy.

Functional (previously psychogenic) neurological disorders are thought to be the results of psychological causes, although the pathophysiology is not fully understood.

FMDs include tremor, dystonia, myoclonus, and parkinsonism. Functional speech and voice disorders (FSVDs) represent 16.5–53% of FMDs, and are recognised as being challenging to diagnose, as they may resemble organic motor speech disorders [3].

To be diagnosed as an FSVD, at least five of the following seven criteria must be present: sudden onset, marked distractibility of speech disorder, temporal association with an FMD or another psychogenic phenomenon, the occurrence of periods of unexplained improvement, speech abnormalities inconsistent with developmental stuttering or neurological dysarthria, the absence of an organic neurological disorder that could explain abnormal speech or voice, and an improvement with suggestion or placebo [4].

Any aspect of speech or phonation can be affected, and various FSVDs are set out in Table 1.

Patients with an FSVD may demonstrate facial movements including grimacing, lip pursing, blinking, and contraction of the periorbital lower facial muscles or platysma during attempted speech [5]. The symptoms of an FSVD usually present in seemingly neutral situations and reflect an increased level of psychobiological activation in response to daily life stressors, but they can also occur in association with a sense of immediate threat.

All possible organic disorders should be ruled out following a detailed examination in order to make the diagnosis of an FSVD.

In patients with an FSVD, psychiatric disorders are usually identified, including anxiety, distress, depression, conversion reaction, personality disorders, and interpersonal conflicts within family and/or work environments. Nevertheless, diagnosis by DSM-5 no longer requires the identification of a precipitating stressor.

Neurologists have traditionally avoided taking responsibility for people with FMD, although they are actually the most appropriate specialist to engage upon a patient's treatment. Studies report that engaging in psychological contact is important to prevent a relapse in patients suffering from an FSVD, but only c.60% in fact visit a psychologist. Traditional voice therapy includes behavioural techniques which can be direct (i.e. vocal exercise and rehabilitation programmes) or indirect (i.e. vocal hygiene advice and education). However, this does not address the issues which are closely related to FSVD, i.e. psychosocial problems, personality traits predisposing to, precipitating and/or maintaining FSVD symptoms, and comorbid anxious or depressive disorders with FSVD burden. Cognitive behavioural therapy (CBT) is a more complex, evidence-based structured treatment method, which helps patients modify not only their behaviour but also aids their understanding of their own symptoms and helps them to develop alternative coping strategies and manage coexisting psychological distress.

Therefore, a combination of the traditional approach plus CBT offers better results than traditional behavioural intervention in terms of voice improvement, psychosocial wellbeing, and reduced risk of relapse [6]. Given the importance of psychological help for patients with FSVDs, neurologists may have a significant role to play in providing patients with adequate psychoeducation, referrals, and checking that they follow through on the consultations' recommendations. Alternatively, CBT can be provided by speech-language therapists provided that they have firstly received appropriate training [6].

In summary, the prognosis of FSVD remains poor. Speech therapy rarely improves patients. Psychotherapy seems necessary for most patients. Cognitive behavioural therapy is recommended, while physiotherapy and pharmacotherapy should also be considered.

### Article information

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