



A case of foreign accent syndrome in a patient affected by a complex functional movement disorder

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Dear Editor,

Foreign accent syndrome (FAS) is a prosody and articulation disturbance that makes people talk in their mother tongue with an intonation that resembles the one of a foreign person [1]. FAS is a rare disorder; primarily, it has been described to be associated with left-hemisphere brain damage due to several causes (e.g., stroke or traumatic event) (organic FAS). Nevertheless, FAS has also been anecdotally described in patients affected by psychiatric disorders, such as bipolar disorder or conversion disorder [2]; in these conditions, FAS is not associated with any brain damage and is clearly not consistent with any structural neurological condition (functional FAS) [2]. The differential diagnosis between organic and functional FAS is not always easy. However, the variability of the accent during examination, the absence of organic brain damage and the prompt improvement of the symptom are pathognomonic features of functional FAS [3].

Here, we report the case of a 44-year-old lady, born and grown up in Italy, who developed a FAS in the context of a complex functional movement disorder. Her functional motor symptoms started promptly in December 2014 with abnormal movement in her right upper limb; she rapidly developed a right-hand myoclonus preventing her from acting fine movements such as writing. In a couple of weeks, the movement disorder got worst involving the ipsilateral lower limb. At the same time, she also abruptly developed a dysarthric speech pattern. Her past medical and psychiatric history was negative. The patient underwent the following investigations: EEG

recordings, electroneurography, somatosensory evoked potential, motor evoked potential for the four limbs, rachis MRI and brain MRI. All the investigations were within the normal range (Fig. 1).

In the light of the negative investigations and the particular pattern of the neurological symptomatology, in March 2015, she was assessed by a neurologist with an expertise in functional movement disorders who made a diagnosis of functional right ataxic hemisphere syndrome with functional dysarthria. She was then referred to psychiatrist, psychologist, and physiotherapist.

In May 2015, after a rachicentesis, her motor symptoms dramatically got worst with the onset of retropulsion and the worsening of the gait pattern. At that time she suddenly developed a foreign accent syndrome, with an accent very similar to the French one. The French accent originates from a combination of lexical, grammatical, and pronunciation characteristics. At the lexical level the patient showed occasional language mixing and code switching. At the grammatical level, the patient regularly made mistakes that are characteristic of French learners of Italian; in terms of pronunciation, the patient incorporated a few typical French pronunciation features such as the uvular-r, the excessively front articulation of the vowel [a] and pronunciation of [I] as [i].

This prosody disturbance, on top of her dysarthric pattern of speech, affected her communication as much as neither her husband was able to understand what she was saying. Because of the severity of her symptoms, she was admitted to a rehabilitation hospital from August 2015 to February 2016 where she attended physiotherapy and speech rehabilitation therapy twice a week; after only four sessions of speech therapy she completely recovered from FAS: her French accent completely disappeared and the communication with other people came back to normality. Nevertheless, her dysarthric speech pattern and her motor symptoms remained quite stable.

To the best of our knowledge, this is the first case describing a foreign accent syndrome in the context of a complex functional movement disorder, completely recovered after

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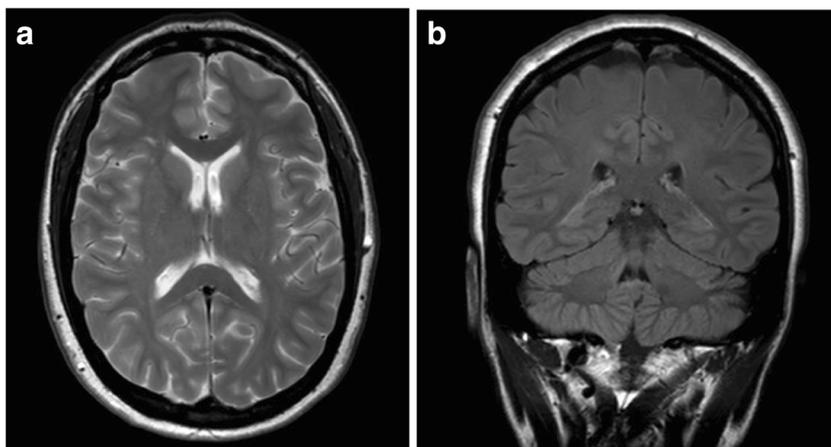
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Fig. 1 Magnetic resonance imaging: T2-weighted axial (a) and FLAIR coronal (b) views did not show any abnormality



four sessions of speech rehabilitation therapy. The rate of comorbidity between functional movement disorders and functional speech disturbances has been reported to be about 25% [4]. Nevertheless, the association between functional movement disorders and FAS has been described only anecdotally. Critchley described a patient who developed a Welsh accent following post-traumatic neurosis after a car crash [5]. Verhoeven et al. reported a Dutch patient who developed a French accent, along with a bizarre gait following a traffic accident [4]. Lee et al. describe a case of functional FAS and identify characteristics that help to distinguish functional from structural cases, including preceding motor disturbances causing the maladaptive speech response, inconsistencies in accent production, and the adoption of unusual mannerisms in speech [2].

Here, we describe a complete recover from FAS after four sessions of speech therapy, clearly suggesting the functional origin of the syndrome. This characteristic, along with other features, such as the variability of the accent during examination or the absence of organic brain damage, might help the clinician in the differential diagnosis between functional and organic FAS.

Compliance with ethical standards

Ethics The Ethics Committee of San Paolo Hospital reviewed and approved the study protocol.

Conflict of interests Authors have no conflict of interests to declare.

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References

1. Kurowsky KM, Blumstein SE, Alexander M (1996) The foreign accent syndrome: a reconsideration. *Brain Lang* 54:1–25
2. Lee O, Ludwig L, Davenport R, Stone J (2016) Functional foreign accent syndrome. *Pract Neurol* 16:409–411
3. Duffy JR (2016) Functional speech disorders: clinical manifestations, diagnosis, and management. *Handb Clin Neurol* 139:379–388
4. Verhoeven J, Marien P, Engelborghs S, D'Haenen H, De Deyn P (2005) A foreign speech accent in a case of conversion disorder. *Behav Neurol* 16:225–232
5. Critchley M (1964) Regional 'accent', demotic speech, and aphasia. *Livre Jubil. Docteur Ludo Van Bogaert, Bruxelles Les Ed. Acta Medica Belgica*; 182–91