To cite: Lagrand TJ, Almuwais A, Lehn AC. BMJ Case Rep 2022;15:e248779. doi:10.1136/bcr-2022-248779

© BMJ Publishing Group Limited 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

Correspondence to
Tjerk J Lagrand; tjerklagrand@gmail.com

Accepted 28 June 2022

‘Tricked’ sensory trick: a geste antagoniste in functional dystonia

Tjerk J Lagrand,1 Ahmed Almuwais,1 Alexander C Lehn1,2

SUMMARY

A sensory trick, or geste antagoniste, is a manoeuvre used by patients with dystonia to ameliorate their dystonic movements or posturing. Typically, a sensory trick is a confirmatory clue indicating an organic nature of the dystonia. In this report, we present an extremely rare case of a sensory trick in a patient with functional dystonia.

DIFFERENTIAL DIAGNOSIS

The diagnosis of functional dystonia is purely based on the clinical features. The major differential is primary cervical dystonia, which is idiopathic involuntary oscillatory movements with abnormal posture of the neck.1

In order to establish the diagnosis of functional dystonia, secondary causes of cervical dystonia ought to be considered, such as cervical sprain, Huntington disease, parkinsonism, multiple sclerosis and Wilson’s disease. Conditions that mimic dystonia are referred to as pseudodystonia, such as dystonic tics, atlantoaxial subluxation, congenital muscular and torticollis.2

Physical exam demonstrated features of incongruence and inconsistency (movements varied over time and suppressed by complex cognitive tasks). Therefore, the dystonia in this patient met the current Diagnostic and Statistical Manual of Mental Disorders (DSM-V) criteria for functional neurological disorders.3

CASE PRESENTATION

A man in his 40s was referred to our neurology outpatient clinic with a 3-year history of painful posturing of his head and upper limbs, which was aggravated when bending forward and during walking. His medical history included chronic back pain, fibromyalgia, gastro-oesophageal reflux disease, dyslipidaemia and anxiety. The patient reported an acute onset of these movements following a work-related incident, in which he hit his neck on the steering wheel of his bus. Extensive MRI of his head and spine excluded any structural abnormalities. Over the years, his pain and posturing continued to progress, which forced him to stop working as a bus driver. His general practitioner had commenced him on a trial of levodopa in the past, which had not been beneficial, and currently, he was not on medications or therapy for his movements. He was never exposed to dopamine-blocking or depleting agents.

On examination, the patient showed an isolated multifocal dystonia with reduced head rotation and mild dystonic jerks of the chin towards his right shoulder. Intermittently, he demonstrated abnormal posturing of both hands during neck movements and walking. Interestingly, the patient had noticed an improvement of his neck posturing and gait when he gently touched the front of his neck as is typical for geste antagoniste (video 1). The examiner was able to show distractibility of the movements, as well as inconsistency in this self-discovered ‘sensory trick’.

DISCUSSION

The sensory trick is an episodic and voluntary manoeuvre that alleviates dystonic posturing and/or movements. The phenomenon, also known as ‘geste antagoniste’, was first described in 1902 by Henry Meige and Eugene Feindel in patients with cervical dystonia.4

For most of the 20th century, the gesture was interpreted as proof for an underlying functional origin of dystonia, and patients were treated by psychoanalysis. It was the British neurologist David Marsden in the 1970s, who established the organic basis of cervical dystonia and other dystonic syndromes.5 His model of dystonia as a disease of sensorimotor integration changed the pendulum to swing towards organic causation. Although the exact pathophysiological mechanism of sensory tricks remains currently unclear, the presence of a sensory trick is considered one of the strongest clues for an organic aetiology.

Sensory tricks are most prevalent in cervical dystonia and blepharospasm, with rates varying...
between 17% and 89%. Typically, these manoeuvres are characterised by light touch of a particular skin area, for example, a finger touching the cheek in cervical dystonia or wearing goggles in blepharospasm. However, a variety of non-tactile stimuli, including visual, auditory and thermal tricks, have been described. Interestingly, sensory input seems to be not a necessity, and some patients ameliorate their dystonia by only the thought of their sensory trick. One might argue that these ‘imaginary tricks’ border on the clinical use of psychological suggestion, which can be a clue suggesting a functional origin.

In 2004, Munhoz and Lang reported a unique case of a geste antagoniste in a patient with functional craniocervical dystonia whose dystonic movements also could be relieved using a tuning fork. Although examiner manoeuvres can show an improvement or aggravation of movements and may hint towards functional dystonia, they are not necessarily present. Our diagnosis of a functional movement disorder was based on the key features of inconsistency and incongruency during neurological examination.

Functional movement disorders account for 15%–33% of patients in movement disorders outpatient clinics. In the spectrum of functional movements, dystonia is considered the second most common subtype after tremor. Historical clues that are suggestive of functional dystonia include abrupt onset, waxing and waning over time, and adult age of onset. Pain is frequently present in patients with functional dystonia, especially in patients with fixed dystonia. Other non-motor symptoms that have demonstrated to be supportive of a functional origin are fatigue, cognitive and behavioural symptoms, and psychiatric disturbances.

However, diagnosis should be established on positive signs found during neurological examination. Core features of functional dystonia include a fixed posture at rest, variable resistance to passive manipulation, and/or distractibility or absence of dystonia when unobserved. In comparison to patients with primary dystonia, sensory tricks are less likely described. When present, these tricks are often atypical, including dystonic movements transferring to other body parts or forcible tricks, which necessitate the use of force and are always antagonistic to the direction of the dystonia.

Delivering the diagnosis of functional dystonia requires the art of medicine and using the right language to establish rapport with the patient. Using the term ‘functional neurological disorder’ rather than terms such as ‘psychogenic’ is more acceptable and reflects the heterogeneity and reversibility of the condition. It is important for a neurologist to validate the symptoms, name the condition, explain it and discuss biopsychosocial management with optimism. One of the successful methods used to deliver diagnosis of functional neurological disorders is to explain the analogy of a software problem rather than a hardware issue, and ‘the computer crushes’ temporarily. This method was very effective in delivering the diagnosis in this case and the patient accepted the diagnosis.

This case may not only reflect the importance of basing the diagnosis of dystonia not solely on a sensory trick, but also highlight one of the grey zones between functional and organic movement disorders.

**Learning points**
- Sensory tricks may be diagnostically helpful in patients with dystonia, typically pointing in the direction of an organic origin.
- However, a sensory trick does not rule out the possibility of a functional dystonia, and clinicians should take the full picture into account during their evaluation of patients with movement disorders.
- Sensory tricks in functional dystonia are often atypical and might cause dystonic posturing in other body parts (inconsistency) or require the use of force (incongruency).

**Contributors** Study concept and design: TjL. Acquisition, analysis and interpretation of data, critical revision of the manuscript for important intellectual content, and administrative, technical, and material support: TjL, AA and ACL. Drafting of the manuscript: TjL and AA.

**Funding** AA and ACL have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Consent obtained directly from patient(s).

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

**ORCID iDs**
Tjerk J Langrand http://orcid.org/0000-0002-4967-866X
Ahmed Almuwais http://orcid.org/0000-0002-3840-9608

**REFERENCES**
1. Espay AJ, Lang AE. Phenotype-Specific diagnosis of functional (psychogenic) movement disorders. Curr Neurol Neurosci Rep 2015;15:1–9.
2. Frucht L, Perez DL, Callahan J, et al. Functional dystonia: differentiation from primary dystonia and multidisciplinary treatments. Front Neurol 2020;11:605262.
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th edn. Washington, DC: American Psychiatric Association, 2013.
4. Patel N, Hanfelt J, Marsh L, et al. Alleviating manoeuvres (sensory tricks) in cervical dystonia. J Neurol Neurosurg Psychiatry 2014;85:882–4.
5. Poisson A, Krack P, Thobois S, et al. History of the ‘geste antagoniste’ sign in cervical dystonia. J Neurol 2012;259:1590–4.
6. Munetz AG, Kohler PJ. How psychogenic is dystonia? views from past to present. Brain 2010;133:1552–64.
7. Pandey S, Soni G, Sarma N. Sensory tricks in primary blepharospasm and idiopathic cervical dystonia. Neurol India 2017;65:532–6.
Lagrand TJ, et al. BMJ Case Rep 2022;15:e248779. doi:10.1136/bcr-2022-248779

Copyright 2022 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit https://www.bmj.com/company/products-services/rights-and-licensing/permissions/
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:
► Submit as many cases as you like
► Enjoy fast sympathetic peer review and rapid publication of accepted articles
► Access all the published articles
► Re-use any of the published material for personal use and teaching without further permission

Customer Service
If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow

8 Ramos VFML, Karp BI, Hallett M. Tricks in dystonia: ordering the complexity. J Neurol Neurosurg Psychiatry 2014;85:987–93.
9 Ganos C, Edwards MJ, Bhatia KP. The phenomenology of functional (psychogenic) dystonia. Mov Disord Clin Pract 2014;1:36–44.
10 Baizabal-Carvallo JF, Jankovic J. Examiner manoeuvres ‘sensory tricks’ in functional (psychogenic) movement disorders. J Neurol Neurosurg Psychiatry 2017;88:453–5.
11 Stone J, Carson A, Duncan R, et al. Who is referred to neurology clinics? – the diagnoses made in 3781 new patients. Clin Neurol Neurosurg 2010;112:747–51.
12 Popkirov S, Hoeritzauer I, Colvin L, et al. Complex regional pain syndrome and functional neurological disorders - time for reconciliation. J Neurol Neurosurg Psychiatry 2019;90:608–14.
13 Lagrand T, Tuftert I, Klamer M, et al. Functional or not functional; that’s the question: can we predict the diagnosis functional movement disorder based on associated features? Eur J Neurol 2021;28:33–9.
14 Stephen CO, Perez DL, Chibnik LB, et al. Functional dystonia: a case-control study and risk prediction algorithm. Ann Clin Transl Neurol 2021;8:732–48.
15 Schrag A, Trimble M, Quinn N, et al. The syndrome of fixed dystonia: an evaluation of 103 patients. Brain 2004;127:2360–72.
16 Munhoz RP, Lang AE. Gestes antagonistes in psychogenic dystonia. Mov Disord 2004;19:331–2.
17 Aybek S, Perez DL. Diagnosis and management of functional neurological disorder. BMJ 2022;376:o64.