

CONVERTING WEAKNESS INTO STRENGTH: RAPID RESOLUTION OF FUNCTIONAL NEUROLOGICAL SYMPTOM DISORDER WITH INTRAVENOUS LORAZEPAM

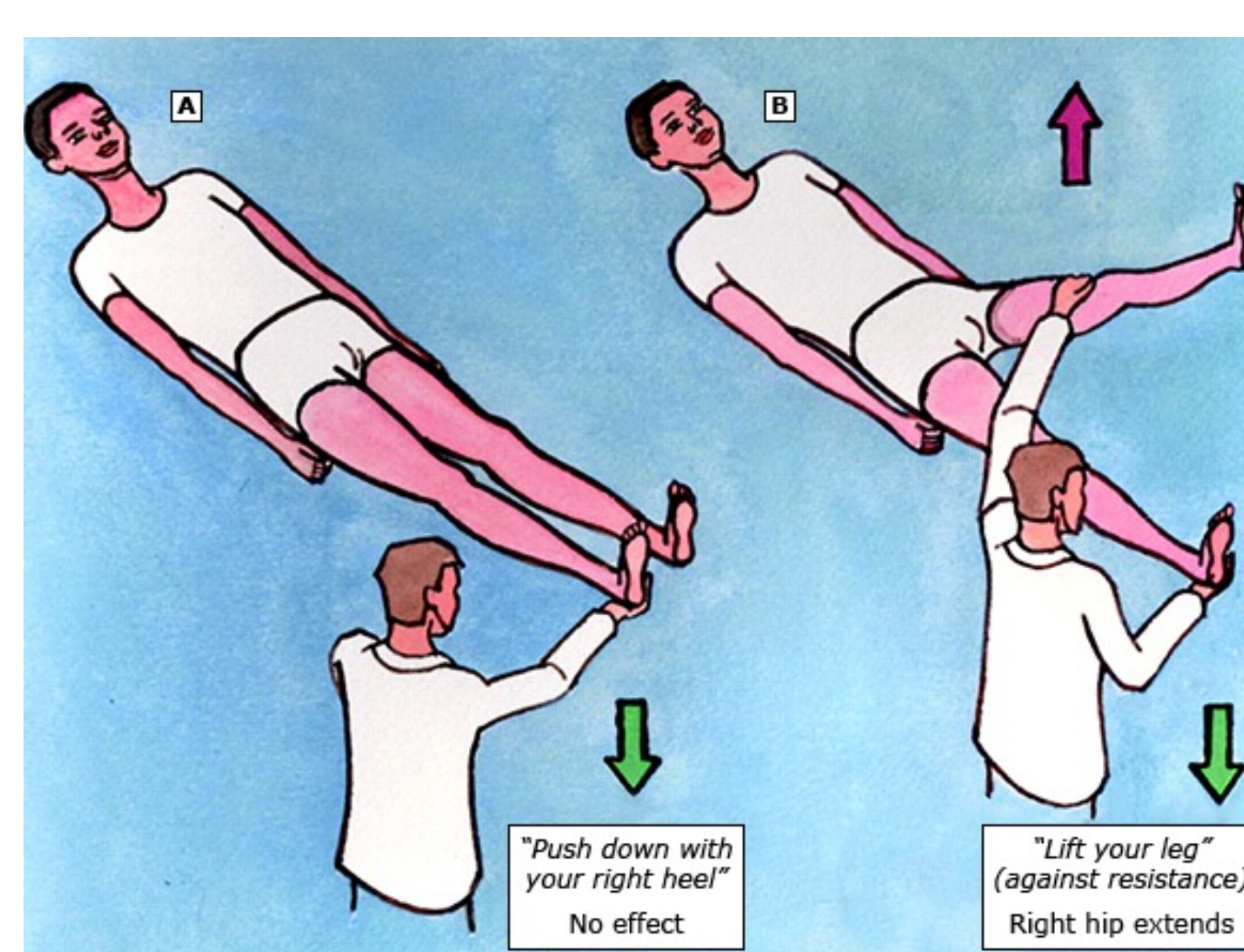
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BACKGROUND

- Functional neurological symptom disorder (FNSD), also known as conversion disorder, is defined as altered motor or sensory function incompatible with a recognized neurological or medical condition that results in clinically significant distress or impairment (APA, 2022)
- Its diagnosis and treatment can be resource-intensive and challenging, with emergency department (ED) and inpatient care of FNSD estimated to cost \$1.2 billion per year and rising in the United States (Stephen, 2021)
- Here we present a case of FNSD which rapidly resolved after intravenous (IV) lorazepam administration

CASE

- SW is a 34-year-old-female with history of bipolar I disorder, borderline personality disorder, and psychogenic nonepileptic seizures who presented to the ED after a fall during which she reportedly hit her head
- During her hospital course, she developed sudden-onset bilateral upper extremity (BUE) weakness and numbness
- Neurology, spine surgery, and trauma surgery were all consulted
- Exam findings included 0/5 strength and absent sensation to light touch, temperature, and vibration in BUE. Labs and imaging studies were unremarkable
- Given inconsistency in her physical exam and the lack of a localizable lesion, FNSD was suspected
- Almost 24 hours after presentation, psychiatry was consulted and provided psychoeducation on FNSD to the patient, who accepted the diagnosis but still could not move or feel her arms
- Inspired by its efficacy in treating catatonia, 2mg of IV lorazepam was administered with the patient's informed consent
- After a slight but notable improvement in her symptoms, an additional 2mg was given about 1 hour later
- This resulted in a significant improvement in her strength and sensation, enabling her to discharge home shortly afterwards



Hoover's Sign. (A) Hip extension is weak when tested directly. (B) Hip extension is normal when patient is asked to flex the opposite hip. Reproduced from: Stone J, Zeman A, Sharpe M. Functional weakness and sensory disturbance. *Journal of Neurology, Neurosurgery, and Psychiatry*. 2002;73(3):241. doi:10.1136/jnnp.73.3.241

Positive Signs of Functional Weakness (Stone, 2005)

- Inconsistency at different points in the physical exam
- Hoover's sign, as described above
- "Collapsing weakness," in which a limb collapses from an instructed position with light touch
- "Wrong way" tongue deviation towards the normal rather than paretic side in functional weakness of the lower half of the face
- "Co-contraction", or contraction of an antagonist muscle (eg, triceps) when an agonist muscle (eg, biceps) is being tested
- Slow, jerky descent or "pseudo waxy flexibility" with arm-drop test

WORK UP

Test	Result
CBC	WBC 9.0, Hgb 13.6, Hct 42, Plt 317
BMP	Na 139, K 3.9, Cl 107, CO ₂ 24, Glucose 91, BUN 10, Cr 0.78
CT head cervical spine	No acute abnormalities
X-ray right hand and wrist	No acute fracture or dislocation
CT chest abdomen pelvis	No acute abnormalities
MRI cervical spine	No acute abnormalities

HOSPITAL COURSE

6/28 17:15	Patient presents to ED after fall during which she hit her head. She endorses a throbbing frontal headache
6/28 17:32	Primary assessment complete with no focal neurologic deficits noted. Labs ordered
6/28 19:36	Patient developed acute onset BUE weakness and numbness
6/28 19:39	Neurology consulted and recommended CT head cervical spine followed by MRI cervical spine if no improvement in symptoms
6/28 20:58	CT head cervical spine completed
6/28 21:38	X-ray right hand and wrist completed
6/29 2:34	Spine surgery consulted and recommended cervical spine precautions with pending admission
6/29 4:15	Trauma surgery consulted with plan to admit to Neuro ICU with hourly neuro checks until MRI could be obtained
6/29 4:45	CT chest abdomen pelvis completed
6/29 6:59	Admission orders placed
6/29 7:51	Re-examination demonstrated persistent 0/5 strength and sensation in BUE
6/29 11:49	MRI cervical spine completed with no indication for spine surgery intervention
6/29 12:49	Psychiatry consulted given concern for FNSD. Provided psychoeducation and recommended trial of IV lorazepam
6/29 14:52	2mg IV lorazepam administered. Patient able to move hands but not arms shortly afterwards
6/29 16:00	Additional 2mg IV lorazepam administered. 20 minutes later, patient observed to regain ~75% strength and sensation in her BUE
6/29 16:53	Patient grateful and comfortable with discharging home. Discharge orders placed

DISCUSSION

- Standard of care for treating FNSD includes psychoeducation, psychotherapy, and physical therapy (Espay, 2018), but symptomatic improvement is variable and can take weeks-to-months
- Our case demonstrates that lorazepam can be an effective and efficient treatment for FNSD in the acute setting
- Earlier and more widespread use may prevent protracted workup and iatrogenic harm
- Given the dearth of well-studied pharmacotherapy options available in the acute treatment of FNSD, our case presents lorazepam as a promising agent worth investigating further

KEY POINTS

Treatment of FNSD in the acute setting is often resource-intensive and challenging

Lorazepam may be a potentially powerful tool in the acute treatment of FNSD



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