DIZZINESS WITH BILATERAL LOWER EXTREMITY WEAKNESS AND AMBULATORY DYSFUNCTION IN AN ADOLESCENT

Gihan Jayasuriya, DO[1], Samantha Y. Lin, MD[2], Bradley M. Wasser, MD[2], Sandi Verbin, MD[2]

1. Family Medicine Residency, UPMC Lititz, Lititz, PA 2. Department of Pediatrics, UPMC Harrisburg, Harrisburg, PA

INTRODUCTION

Dysautonomia (DSN) encompasses autonomic nervous system medical conditions ranging from postural orthostatic tachycardia syndrome (POTS) to chronic fatigue syndrome. The symptoms also vary considerably as depicted in the bottom center figure. DSN affects people of all ages and can occur as a primary or secondary medical condition. Many causes of DSN are shown in the top center figure. The prognosis varies greatly depending on symptom type and severity in addition to any associated conditions.

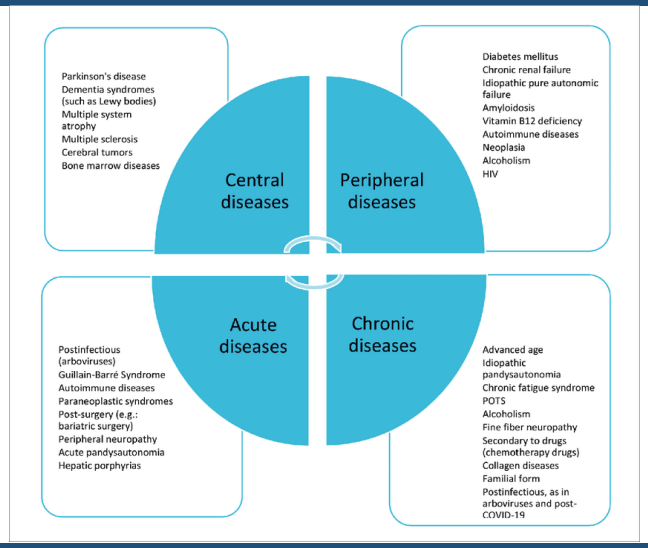
CASE PRESENTATION

An 11-year-old male with a past medical history of allergic rhinitis, eczema, and obstructive sleep apnea (had adenotonsillectomy) was admitted to the inpatient pediatrics unit after a presyncopal episode at his primary care physician's office with dizziness and bilateral lower extremity weakness over the past ten days causing multiple falls. He failed to improve on prednisone, meclizine, and albuterol.

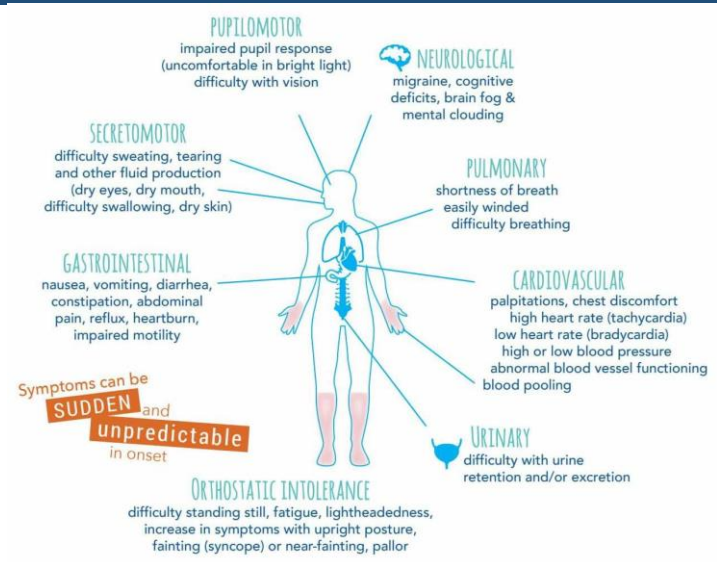
Brain MRI revealed a suspected old lesion but other imaging, an echocardiogram, and an electrocardiogram were unremarkable. Lyme serology was negative and most other labs were unremarkable or pending (including dysautonomia panel) but patient was infected with Mycoplasma pneumoniae and had subclinical hypothyroidism.

Patient exhibited rapid improvement after steroid/IVIG administration (recommended by neurology) without any adverse side effects. Next, ophthalmology diagnosed mild left optic neuritis with decreased visual acuity bilaterally but no optic nerve damage on MRI. On exam, patient consistently had bilateral lower extremity weakness/numbness/tingling but upper extremities remained unaffected and his dizziness resolved by discharge (did receive fluid boluses and meclizine). Finally, patient's ambulation improved with physical therapy (PT) as he could run on discharge. He was to follow up with pediatric cardiology, neurology, endocrinology, ophthalmology, and PT.

DYSAUTONOMIA CAUSES



DYSAUTONOMIA SYMPTOMS



DISCUSSION

This case exemplifies the significance of early DSN treatment and shows that even pediatric patients can be affected by DSN. First, the patient repeatedly met POTS criteria (a pulse increase > 40 within ten minutes of standing without orthostatic hypotension) potentially from Mycoplasma pneumoniae infection (a known POTS trigger). Next, subclinical hypothyroidism is also associated with POTS which further illustrates how DSN is linked with various conditions. It should be mentioned that the patient's physical exam would vary daily (e.g. ambulation ability) and he didn't respond to osteopathic manipulative treatment.

Moreover, the multiple specialists involved in this case demonstrates the importance of collaboration in treating DSN. For example, neurology suggested a five-day course of high-dose steroids and endocrinology was consulted to monitor his blood sugars and evaluate his subclinical hypothyroidism. Finally, it must be noted that the patient became gloomier during his admission and therefore was granted increased floor access and visited hospital therapy dogs.

CONCLUSION

The medical outcomes of DSN can be debilitating depending on factors such as symptom type/severity, associated conditions (POTS in this case), age, and risk factors. An extensive workup is required to treat both the symptoms and the cause(s) of DSN with a strong collaboration of healthcare providers. Careful observation is needed to determine if a patient's prognosis is worsening. Lastly, the psychological impact of DSN on the patient and their family/friends must also be monitored.

REFERENCES

1. Rocha, Eduardo Arrais, et al. "Dysautonomia: A Forgotten Condition—Part 1." *Arquivos Brasileiros de Cardiologia* 116 (2021): 814-835.
2. Fedorowski, A. "Postural orthostatic tachycardia syndrome: clinical presentation, etiology and management." *Journal of internal medicine* 285.4 (2019): 352-366.
3. Kasmani, Rahil, Hossam Elkambergy, and Kelechi Okoli. "Postural orthostatic tachycardia syndrome associated with mycoplasma pneumoniae." *Infectious Diseases in Clinical Practice* 17.5 (2009): 342-343.
4. Blitshteyn, S. "Autoimmune markers and autoimmune disorders in patients with postural tachycardia syndrome (POTS)." *Lupus* 24.13 (2015): 1364-1369.
5. "Identifying Dysautonomia." *The Dysautonomia Project*, 15 Dec. 2021, https://thedysautonomiaproject.org/identifying-dysautonomia/.