

Fear Avoidance Beliefs and Misdiagnosis in a 16-year-old Patient with Neck Pain, Headaches, and Dizziness: A Case Report.

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Background

- Autonomic Dysfunction is a dysfunction of the autonomic nervous system that regulates nonvoluntary body functions⁸
 - Common complaints include dizziness, giddiness, blurred or tunnel vision, headache, neck pain, nausea, or fatigue
- Postural Orthostatic Tachycardia Syndrome (POTS) is a variant of autonomic dysfunction¹
 - Most common complaints include dizziness, weakness, rapid heartbeat and palpitation on standing
- Frequency of diagnostic errors in outpatient care approximately 5.08%⁵
- Evidence supports the use of psychosocial approach to patient care, especially in patients with fear-avoidance beliefs, in decreasing pain and improving satisfaction³
- The purpose of this case report is to demonstrate how a medical misdiagnosis and a patient's fear avoidance beliefs can impact physical therapy treatment.

Case Description

- 16 year-old female with chief complaint of neck pain, headaches, chronic dizziness, decreased balance
- Patient reported lack of belief in her diagnosis resulting in decreased buy in and fear avoidance behaviors during therapy
- Examination findings are summarized using the International Classification of Function, Disability, and Health Model (ICF)⁴ in *Figure 1*

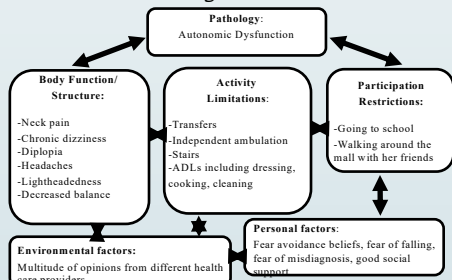


Figure 1. Patient's ICF Model Upon Examination

Intervention

Phase 1: With a medical diagnosis of BPPV/vestibular disorder

- Repositioning maneuvers to rule out BPPV
- VOR & balance training
- Manual therapy to the cervical and upper thoracic spine regions

Phase 2: With a medical diagnosis of POTS

- Total body strengthening and balance training
- Manual therapy as needed
- Dual task activities (motor-motor & motor-cognitive)

Phase 3: With a medical diagnosis of Autonomic Dysfunction

- Focused on cardiovascular endurance and LE strengthening
- Increased water consumption, decreased hours of sleep per day

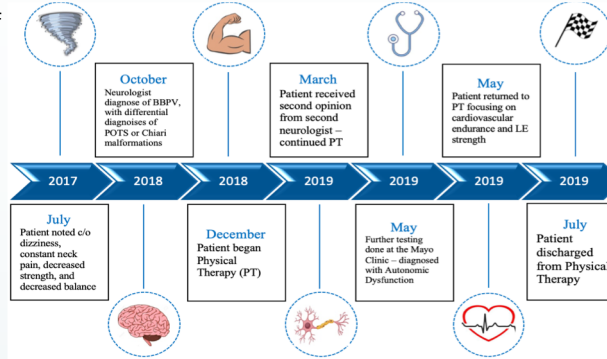


Figure 2. Patient's Timeline of Events

Intervention Notes:

- Progression of exercise based on patients symptoms
- Exercise log was maintained to track Heart Rate, Peripheral Capillary Oxygen Saturation, and dizziness level
- Heart Rate monitor was used two times a week for her cardiologist
- Refer to *Figure 2* for timeline of events

Outcomes

	Initial Evaluation	Re-evaluation prior to the Mayo Clinic	Discharge
Numeric Pain Rating Scale (NPRS)	6/10 at rest, 10/10 with activity (sharp)	0/10 at rest, 6/10 with activity (sharp)	0/10 at rest, 0/10 with activity
Strength (MMT)	Hip Extension = 3+/5 (bilateral) Hip Adduction = 3+/5 (bilateral) Knee Extension = 3+/5 (bilateral)	Hip strength = 5/5 (bilateral) Knee strength = 5/5 (bilateral)	Hip strength = 5/5 (bilateral) Knee strength = 5/5 (bilateral)
Range of Motion (AROM)	Cervical spine AROM WNL but pain with (L) side bending	Cervical spine AROM WNL and no pain	Cervical spine AROM WNL and no pain
Dizziness Handicap Inventory (DHI)	50	40	0
Patient Specific Functional Scale (PSFS)	Walking = 2 Running = 0 Showering = 4 Going to school = 0	Walking = 2 Running = 0 Showering = 6 Going to school = 0	Walking = 10 Running = 7 Showering = 10 Going to school = 8
Patient Reported Symptoms	-Neck pain -Chronic dizziness -Diplopia -Headaches -Lightheadedness -Decreased balance -Unable to ambulate independently -Tachycardia following minimal exercise -"room felt like it was spinning", "off-balance", and that her "heart felt like it was going to explode" -"blacking out" and falling 3x in the previous year	-Neck Pain -Dizziness -Altered vision -Headaches -Decreased balance -Ambulation with MaxA -Tachycardia following minimal exercise -"room felt like it was spinning", "off-balance", and that her "heart felt like it was going to explode"	Patient reported no symptoms

Table 1. IE, Re-evaluation, & Discharge Findings

*PSFS MCID = 2.0 points⁹ ; DHI MCID = 11 points⁶

Discussion

- Research suggests exercise and physical therapy are a vital part of the treatment plan for patients with autonomic dysfunction⁷
- Patients with elevated fear avoidance beliefs are more likely to have higher pain and disability scores²
- Providing the patient with some autonomy, and taking the time to learn the patient's perspective can be evolutionary to the rehab success
- Understanding the importance of further testing if patient is plateauing in therapy

Conclusion

- The patient made a full recovery and was able to return to school and recreational activities
- Treatment protocols for individuals with autonomic dysfunction should focus on cardiovascular fitness & resistance training

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