

Acute Neurologic Changes in an Otherwise Healthy Young Adult

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ABSTRACT

A healthy young man presents to a community clinic after returning home from spending 4 days at a beach resort. He reports symptoms of a headache, dizziness, fatigue, mild nausea and a hard time not falling when walking. Oddly he also has a vague dull ache in his right knee with intermittent spikes of shooting pain in both legs. Rapid onset of neurological symptoms in an otherwise healthy young man requires a thorough history and prompt intervention.

Keywords: dysbarism, decompression sickness, free diving, hyperbaric treatment

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Missing clues to a correct diagnosis can result in ineffective treatment and poor outcomes for patients who present with acute onset of neurologic symptoms. A thorough history and physical can guide the clinician to make the most timely treatment choice. The following case is about a 24-year-old man who presents to a community-based health center with transient confusion, dizziness, visual blurring, and lower extremity weakness.

CASE PRESENTATION

A 24-year-old man presented to a community clinic accompanied by a friend. After returning home from spending 4 days at a beach resort, the patient reports a 14-hour history of worsening symptoms that include dizziness, fatigue, and a hard time not falling when walking. He complains of a constant headache, resembling a sinus headache, but without nasal discharge. He also describes having had a dull ache in the right knee, which over time has turned into intermittent spikes of shooting pain in both legs and feeling “very tired” with “pins and needles” increasing in intensity. He says he has minor visual changes, including blurring, and constant mild nausea with a decreased appetite that has not improved with drinking fluids and eating bland foods.

History of Present Illness

The patient reports his symptoms began soon after returning from a beach vacation with other members from his college swim team. All 4 days at the beach resort, the patient went spearfishing. On the

final day, he participated in 5 dives. Of these, 3 were greater than 30 m (98 ft) measured with a depth gauge. The average submersion time was 4 minutes.

Past Medical History

The patient indicated no recent travel outside of the United States. All his immunizations are up-to-date. His previous surgeries include a tonsillectomy at age 9 and right knee meniscus repair at age 18. He had no previous physical limitations and is otherwise in good health.

Medications

The patient is not taking any routine medications. He is a nonsmoker and denies illicit drug use or exposure by secondhand smoke. The patient consumed 3 beers 4 days before visiting the beach resort.

Family History

The patient’s family history is noncontributory. Both his mother and father are in their mid-40s, educated, and in excellent health. He has a negative history for cardiac, neurologic, endocrine, and neoplastic diseases. The patient has 2 younger sisters, ages 12 and 10, in good health.

Review of Symptoms

A review of the symptoms is as follows:

1. General: no recent weight gain or loss, “excellent health”

2. Head, eyes, ears, nose, and throat: headache in frontal sinus area, 5/10 described as dullness, onset yesterday mid-day; no change in hearing. Patient states that at last vision examination 3 months ago, he scored 20/20 in both eyes. He now describes reduced peripheral fields. He had his last dental examination 4 months prior for routine cleaning.
 3. Respiratory: negative for upper respiratory infections or cough
 4. Cardiovascular: denies chest pain, hypertension, or murmurs
 5. Peripheral vascular: numbness in lower extremities that started as a “pins and needles” sensation in the right knee soon after the 3rd of 5 free dives in the ocean on the day prior, now involving both legs
 6. Gastrointestinal: nausea present, no emesis; not relieved by rehydration solutions found at the store. Small amounts of a bland diet have been tolerated. The patient denies diarrhea or a history of abdominal issues.
 7. Genitourinary: denies frequency or urgency
 8. Musculoskeletal: joint pain in ankles, wrists, and right knee; previously in good health without limitations
 9. Neurologic: no history of concussion or loss of consciousness. Six months ago, experienced transient confusion and speech problems after a day of spearfishing to deeper depths; complete relief with 100% oxygen by on-duty lifeguards. No history of seizures or memory changes. Patient now states he has been experiencing dizziness since yesterday afternoon.
 10. Psychiatric: denies depression, anxiety, mood changes, or problems sleeping
- is 180 lb, height 6’1”, body mass index of 23.7, and pulse oximeter 98% on room air
2. General: alert and oriented \times 4, with an average of a 10-second delay in responding to questions, well-nourished, good hygiene; appears anxious (rubbing his lower legs during the examination); and his travel friend is with him in the room
 3. Head, eyes, ears, nose, mouth, and throat: visual acuity: pupils equal and reactive to light and accommodation, corneal light reflex midline, extra-ocular movements intact, cover/uncover - no drift, Snellen 20/40, right eye (od), 20/50 left eye (os), 30/30 both eyes (ou), peripheral fields: 35% b/l (bilateral), red reflex present, negative fundoscopic examination for signs of hemorrhage, normal pressure, and mild b/l nystagmus; both tympanic membranes are intact with hyperemia; and no pain or fluid in sinuses.
 4. Skin: pink, warm, and dry and normal turgor
 5. Lungs, heart and abdomen: lungs clear throughout all fields; heart sounds, regular rate and rhythm for S1 and S2, no murmurs; abdomen soft, normoactive bowel sounds, no organomegaly
 6. Musculoskeletal: well-developed muscle tone upper and lower extremities; can move all extremities; strength is firm and equal upper and lower extremities, although pain elicited when putting right knee through range of motion
 7. Neurologic: cranial nerves II-X11 grossly intact; rapid alternating movements coordinated but heel to shin misses midline b/l; deep tendon reflexes normal in upper extremity: biceps, triceps, and brachioradialis; lower extremity: patellar, Achilles and plantar reflexes sluggish; decreased vibration sensation to tuning fork in dorsal areas of both feet, unable to feel light touch below knees b/l, gait unsteady with slight tendency to lean left, unable to balance heel toe, and positive Romberg

Pertinent Physical Examination Findings

His physical examination findings were as follows:

1. Vitals signs: oral temperature of 98.7°F, orthostatic blood pressure of 122/68, heart rate of 68 beats/min lying (118/64), heart rate of 66 standing, respiration of 18 breaths/min, weight

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