CASE REPORTS

A Tale of Three Nodules

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Introduction

Panic attacks are common and typically present with episodes of spontaneous and acute fear that lasts a variable length of time, up to one hour. Somatic features may appear, and agoraphobia is also commonly associated with panic attacks. Due to somatic features and the diversity of presentations, panic attacks can mimic other disease states such as hyperadrenalism and hyperthyroidism. Substance abuse is also commonly considered in the differential. Thus, it is imperative in the evaluation of a patient in acute distress to consider all possible diagnoses.

Case Report

We report a case of a 45-year-old Caucasian female with a past medical history of fibromyalgia, depression, and a benign right adrenal tumor removed 3 years prior. She presented to the emergency department with a five-day history of weakness, cold sweats, shaking, dizziness, visual changes, and headaches. She also described a severe headache with non-radiating pressure-like pain alleviated by rest and exacerbated by movement. Vital signs were significant for an elevated blood pressure (166/37 mm Hg) and tachycardia (122 bpm). An initial EKG revealed sinus tachycardia. On examination, the patient was visibly agitated and shaking. Neurologic examination demonstrated bilateral horizontal nystagmus and bilateral patellar hyperreflexia. In the emergency department, she received two doses of lorazepam which alleviated her agitation.

Two weeks prior to admission, gabapentin was discontinued due to suicidal ideations and the patient had begun duloxetine for fibromyalgia.

At this juncture, the differential included serotonin syndrome, pheochromocytoma, thyroiditis, adrenal tumor, and carcinoid syndrome. Due to her recent medication changes, serotonin syndrome was high on the differential; gabapentin, duloxetine and tramadol were discontinued (Table 1). The Hunter criteria for serotonin syndrome requires the presence of at least one of the following features: spontaneous clonus, tremor and hyperreflexia, hypertonia, or inducible clonus with agitation or diaphoresis, or a fever above 100.4 °F (38 °C). The patient did have hyperreflexia but did not have tremors; nor did she have spontaneous or inducible clonus. While the patient had bilateral nystagmus, which can be mistaken for ocular clonus, the two are separate entities. She was also afebrile. As the patient did not meet the Hunter criteria, serotonin syndrome was ruled out.

With a family history of thyroid disease and the possibility of thyroid pathology, further workup was pursued. Initial evaluation with an ultrasound of the thyroid revealed a 1.3 cm isoechoic posterior mid-inferior indeterminate thyroid nodule with minimal internal vascularity. The TSH level was 0.15 U/mL. A 24-hour thyroid uptake scan (Figure 1) revealed

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Fig. 1: Thyroid Uptake Scans: At four hours, uptake – 1.3% (normal 5-15%) and at twenty-four hours was 1.2% (normal 15-35%). The impression of very low uptakes indicated a subacute thyroiditis in the setting of subclinical hyperthyroidism

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Fig. 2: CT scan revealed a 1.2x1.1 cm right adrenal nodule highly suggestive of a lipid poor adrenal adenoma

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Fig. 3: CT scan revealed a normal sized liver with a 6mm hypodense lesion within the lateral aspect of the hepatic segment, suggestive of a possible cyst

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Panic attacks can present in different ways and can co-exist with other conditions. It is imperative for the clinician to have a broad differential.

Physiologic symptoms of a panic attack include but are not limited to: sweating, feelings of choking, chest pain/discomfort, chills, fear of dying, and paresthesia. There are a number of symptoms associated with panic attacks, but at least four must occur to be considered a panic attack (11). Panic attacks can also cause hyperventilation, trembling, dizziness, and chest pain (3). Agoraphobia may develop secondary to panic attacks, and individuals with panic attacks are at an increased risk for suicide attempts and substance abuse.24

The emergency department frequently becomes the first stop for patients with recurrent panic attacks. This can result in redundant and expensive work ups; patients at risk for panic attacks should be identified to preserve resources and improve patient care.3

Considerations on the differential

Paroxysmal supraventricular tachycardia (PSVT) can be confused for panic disorders. In a study that assessed 107 patients with PSVT, symptoms were initially attributed to panic or anxiety in 54% of the patients.4 In a pair of case reports, two patients had both PSVT and panic disorders; panic disorders were not terminable by vagal maneuvers, and patients were able to identify when they were having a panic attack as opposed to PSVT.6

Pheochromocytoma, a catecholamine producing tumor, was considered on the differential as well. Pheochromocytomas are found on the adrenal medulla, while secreting paragangliomas are found on extra-adrenal chromaffin cells.7 A pheochromocytoma should be suspected in a patient who has sweating, tachycardia, and a headache; early-onset hypertension or hyperadrenergic spells can also increase suspicion. Secreting paragangliomas tend to be more asymptomatic as compared to pheochromocytomas, but patients can present with an increase in catecholamine secretion; it can also be an incidental finding on imaging. Laboratory evaluations to investigate if a patient has a pheochromocytoma or a secreting paraganglioma include measuring urinary and plasma catecholamines and fractionated metanephrines.7 Furthermore, a pheochromocytoma or paraganglioma can be identified through imaging if symptoms or laboratory testing warrant it.

Subacute granulomatous thyroiditis usually presents with neck pain and hyperthyroidism, which then progresses to euthyroidism and subsequently hypothyroidism. A hyperfunctioning thyroid nodule, or ‘hot’ nodule, can also mimic panic attacks or other etiologies in our differential. Thus, thyroid disease was an important consideration.

Paroxysmal hypertension could also be considered on the differential. Patients with paroxysmal hypertension, also known as pseudopheochromocytoma, have surges in sympathetic activity without an underlying organic cause. In such patients, it is critical to reassure the patient that a catastrophic event is unlikely.9 Patients with carcinoid syndrome experience wheezing and abdominal pain as well as diarrhea; laboratory values will show elevated levels of blood serotonin and urine 5-hydroxyindoleacetic acid.9

Management of Panic Attacks

Psychotherapy, such as cognitive behavioral therapy, is encouraged to help patients cope and to decrease the frequency of attacks.5 Pharmacologic interventions for panic attacks include SSRIs, SNRIs, and benzodiazepines.

Medication reconciliation and appropriate communication with different members of the healthcare team is of vital importance. Medication reconciliation prior to discharge has been shown to decrease medication changes at discharge as well as the need for discussions with the hospitalist after discharge.10 Such practices reduce the likelihood of medication interactions, of which serotonin syndrome can be a dangerous and unwanted consequence. Medication reconciliation is especially important in cases where adverse effects of medications are part of the differential. In our case, the use of duloxetine was a red flag for consideration of serotonin syndrome as the culprit for the constellation of symptoms.

Conclusion

In cases of complicated patient presentation, it is important to systematically rule out differential diagnoses. Panic attacks are common and can mimic a myriad of other
diagnose including hyperadrenalism, hyperthyroid states, paroxysmal supraventricular tachycardia, as well as somatic symptom disorder and substance abuse. Medication reconciliation, as well as consideration of adverse drug reactions, are also worthwhile.

References