Cardiac tamponade in hypothyroidism

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DESCRIPTION

Pericardial effusion in overt hypothyroidism is common (incidence 3–6%), but cardiac tamponade and pretamponade as a presentation in newly diagnosed hypothyroidism is rare. For patients diagnosed with cardiac tamponade without sinus tachycardia, hypothyroidism should be suspected.¹ Evaluation of hypothyroidism is often overlooked during the initial evaluation of patients at risk for this uncommon disease.²

We present a 46-year-old woman with a medical history of hypertension, treated with amlodipine, who presented to the emergency department with worsening symptoms of pedal oedema and fatigue. She was seen by her primary care physician a few weeks prior to this admission for bilateral leg swelling which was attributed to her use of amlodipine, and subsequently, this medication was discontinued. Her physical examination at our hospital

was significant for borderline hypotension (94/60 mm Hg), pulse rate of 56 bpm, muffled heart sounds with jugular vein distension estimated to be 12 cm and pretibial myxoedema (figure 1). However, pulsus paradoxus was not appreciated. ECG showed normal sinus rhythm with low voltage (figure 2). Chest X-ray showed enlarged cardiac silhouette (figure 3). She underwent a two-dimensional echocardiogram that showed presence of early diastolic collapse of the right ventricle (figure 4), late diastolic collapse of the right atrium and a large pericardial effusion with heart swinging within the effusion, suggestive of cardiac tamponade. A pulse wave Doppler showed more than 25% variation in mitral inflow velocities and more than 40% variation in tricuspid inflow velocities during inspiration and expiration. The patient underwent urgent closed pericardiocentesis with drainage of 1400 cc of serous fluid (figure 5). Fluid cultures

Figure 1 Pretibial myxoedema with thickened and inelastic skin.

Figure 3 Chest X-ray showed enlarged cardiac silhouette.

Figure 2 ECG showing low voltage in precordial and limb leads.

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Figure 4 Parasternal long axis view on two-dimensional echocardiogram showing large pericardial effusion with heart swinging within the effusion suggestive of cardiac tamponade.

were negative, and cytology analysis was negative for malignant cells. A complete laboratory panel was obtained which was significant for a thyroid stimulating hormone level of 317 mIU/mL (N: 0.35–4.8 mIU/mL) and free T4 0.00 ng, confirming the diagnosis of primary hypothyroidism, prompting initiation of

levothyroxine. Her symptoms improved dramatically over the next few weeks.

Our case highlights the importance of careful history taking and physical examination while evaluating patients with new onset symptoms, although one may presume a benign condition. This patient's initial symptom of lower leg oedema was the first sign of a more dangerous outcome, but was missed at her primary care physician's office. Patients with hypothyroidism may not present with classic signs and symptoms of cardiac tamponade³ but a high index of suspicion is required to diagnose life-threatening complications of hypothyroidism and prompt diagnosis leads to complete reversal and cure of the disorder.

Learning points

- ▶ Always take careful history taking and physical examination while evaluating patients with new onset symptoms.
- ▶ For patients diagnosed with cardiac tamponade without sinus tachycardia, hypothyroidism should be suspected.
- ▶ Patients with hypothyroidism may not present with classic signs and symptoms of cardiac tamponade.

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Figure 5 Serous fluid obtained after pericardiocentesis.

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