

CLINICAL IMAGE

Massive pericardial effusion caused by hypothyroidism

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A 73-year-old female with prior total thyroidectomy 12 years ago, presented to the Emergency Department with progressive shortness of breath on exertion for the past months, in the prior 2 days accompanied by orthopnea. She denied chest pain or syncope. On physical examination, the patient was eupnoeic; heart rate was 80 bpm and brachial artery pressure 125/89 mmHg. Cardiac auscultation revealed muffled heart sounds, and Ewart sign was positive. Blood work revealed hypothyroidism (TSH 92.64 mUI/L (normal 0.55–4.78) Ft4 0.10 ng/dL (normal 0.8–1.76).

Chest radiography showed a large, “Erlenmeyer” shaped, mediastinal widening, compatible with pericardial effusion (Fig. 1), confirmed by CT (Fig. 2). EKG (Fig. 3) showed sinus rhythm, low voltage QRS, and flattened T waves, without QT prolongation.

Trans-thoracic echocardiography-guided pericardiocentesis was performed (Fig. 4), with aspiration of clear fluid with unremarkable cytological, biochemical, and microbiological tests.

Due to its insidious evolution and no evidence of other plausible causes, hypothyroidism was assumed as the cause of the massive pericardial effusion.

The patient was started on levothyroxine, with progressive clinical improvement. In follow-up, 4 months after discharge, she was euthyroid and asymptomatic.

Key Clinical Message

Although mild pericardial effusion is a usual finding in patients with hypothyroidism, massive pericardial effusion or pericardial tamponade is rare and customarily related to severe hypothyroidism. The diagnosis of hypothyroidism should be considered in the differential of patients presenting with unexplained pericardial effusion, even when signs and symptoms of hypothyroidism are nonexistent.

Keywords

Computed tomography, dyspnea, hypothyroidism, pericardial effusion, X-ray.



Figure 1. Admission chest radiograph showing a huge, “Erlenmeyer” shaped, mediastinal widening, compatible with massive pericardial effusion.

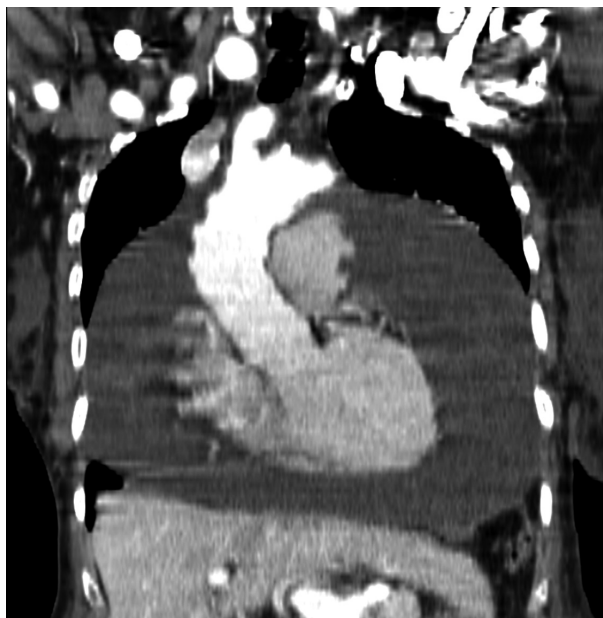


Figure 2. Coronal computed tomographic slice of the thorax obtained in a mediastinal window confirming the large pericardial effusion.

Because of the subtle and nonspecific clinical presentation of hypothyroidism, along with the rare occurrence of massive pericardial effusion, this diagnostic possibility may be overlooked.

A high index of clinical suspicion is necessary for the diagnosis of these rarer presentations as it represents a treatable cause of massive pericardial effusion. Emergent pericardiocentesis is only indicated if cardiac tamponade develops [1, 2].

Conflict of Interest

None declared.

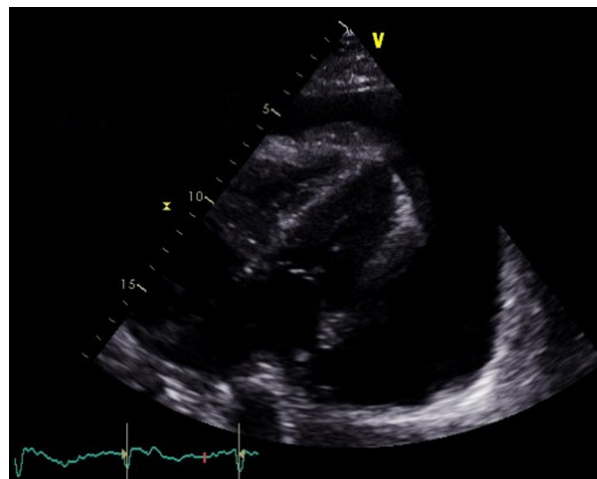


Figure 4. Trans-thoracic echocardiography exhibiting a large amount of anechoic pericardial fluid.

Authorship

WS: contributed to write the case and identify the images. DR: reviewed and edited the case report. AG: reviewed and edited the case report and helped in identifying appropriate images.

References

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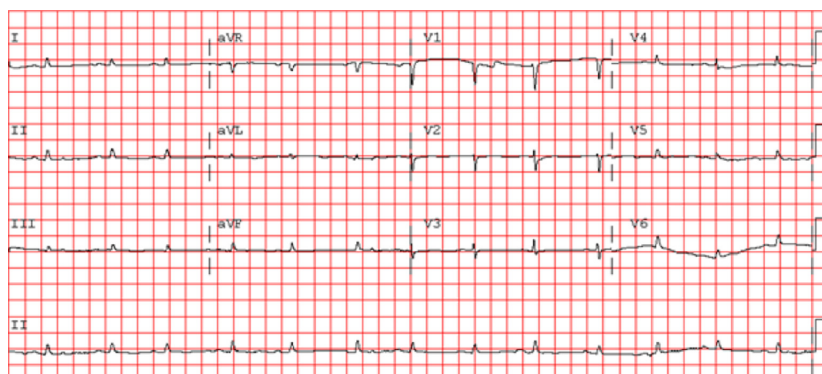


Figure 3. EKG revealing sinus rhythm at 80 bpm, low voltage QRS, flattened T waves, without QT prolongation.