Acute pericarditis in toxic multinodular goitre thyrotoxicosis: the role of pulmonary hypertension and right ventricular function

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Introduction: Approximately 50 per cent of pericardial effusions are idiopathic, while the epidemiological data and pathophysiology are poorly known. Thyrotoxicosis-related pericarditis is not a common finding with toxic multinodular goitre (TMNG).[1-3]

Case report: 63-year-old female patient with a history of TMNG presented with chest pain, general weakness, fever, and palpitations. Laboratory findings showed increased inflammatory parameters. Despite taking antibiotics for several weeks, her condition did not improve. The performed MSCT of the thorax described a circular pericardial effusion (**Figure 1**) and an enlarged thyroid gland. The echocardiography exam showed a hyperkinetic left ventricle and a large pericardial effusion with no signs of tamponade. There were signs of pulmonary hypertension. The thyroid-stimulating hormone was 0.006 mIU/L (normal 0.54-4.07), free thyroxine was 35.7 pmol/L (normal 11.8-19.8), and free triiodothyronine was normal. The immunology tests were normal except for the higher IgE and eosinophil cationic protein levels. The patient was given thiamazole 10 mg t.i.d., propranolol 20 mg t.i.d., ibuprofen 600 mg t.i.d., and colchicine 0.5 mg b.i.d. with subsequent clinical improvement. Although there were no signs of right ventricular (RV) dysfunction, the RV function parameters were further restored two months later, with normalised pulmonary pressure indicators and a complete reduction of the pericardial effusion. In the follow-up, the patient had no symptoms or signs of recurrent pericarditis.

Conclusion: Our case suggests that hyperdynamics with pulmonary hypertension and subclinical RV dysfunction may present an important pathological mechanism in the genesis of pericardial effusion in thyrotoxicosis. Microvasculature inflammation along with enhanced vascular reactivity may be among the significant mechanisms as well. Further investigation is needed to better understand this condition and to enable better patient management.

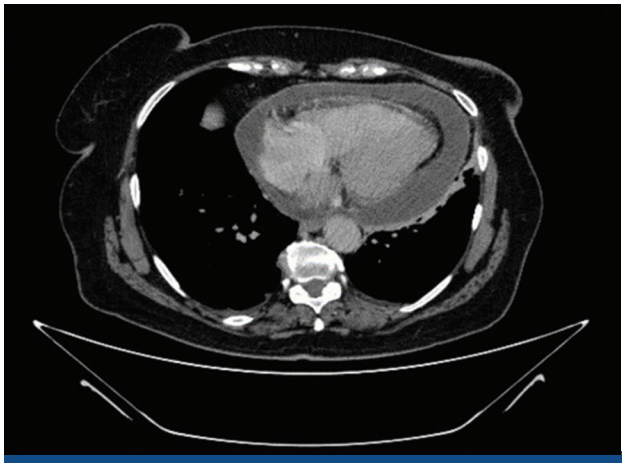

FIGURE 1. Multislice computed tomography of the thorax showing circular pericardial effusion.

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