Dilated cardiomyopathy in thyrotoxicosis

S Goland, S Shimoni, O Kracoff

Heart failure is a rare manifestation of thyrotoxicosis in patients without heart disease.1–3 We report two cases of thyrotoxicosis and no previous heart disease presenting with severe heart failure. Successful treatment of the thyrotoxicosis resulted in progressive improvement of cardiac function.

Case 1

A 31 year old woman was admitted with pulmonary oedema. Two months earlier she had complained of fatigue, palpitation, and chest discomfort. She had no risk factors for coronary artery disease, had regular menses, and denied smoking or alcohol consumption. There were no symptoms of intercurrent infection.

On physical examination she looked very ill. Her heart rate was 120 beats/min and blood pressure 130/80 mm Hg. She had a small goiter and typical signs of thyrotoxicosis including warm, moist skin and a fine tremor. There was an audible S3 on cardiac auscultation. ECG showed sinus tachycardia, increased voltage, and ST depression in leads I, II, aVL, and V4–6.

Chest radiography was consistent with interstitial pulmonary oedema and moderate cardiomegaly. Echocardiography showed four chamber dilatation and depressed left ventricular (LV) function with an ejection fraction of 34% (fig 1). Routine tests were normal as was erythrocyte sedimentation rate. She had mild anaemia (haemoglobin 115 g/l). Thyroid function tests were available later: thyroid stimulating hormone< 0.2 MU/l (normal range 0.3–4.5), total triiodothyronine 11 pmol/l (normal range 1.0–2.7), and free thyroxine 60 nmol/l (normal range 8.9–24.3).

She was treated with intravenous furosemide and morphine. As thyroid function test results became available treatment with dexamethasone, propylthiouracil, and potassium iodide solution was added. A few hours later she developed atrial fibrillation, which converted to normal sinus rhythm after a short course of amiodarone treatment. She was discharged on oral propylthiouracil, propranolol, and captopril. One year later thyroid function tests were normal, she was free from any symptoms of heart failure, and continued only propylthiouracil treatment. Repeated echocardiography was normal (fig 2).

Case 2

A 46 year old man, who had a history of partial thyroidectomy because of Grave’s disease, was admitted with pulmonary oedema. The clinical and laboratory results were typical of thyrotoxicosis. Following successful treatment of thyrotoxicosis with propylthiouracil and β blockers his left ventricular ejection fraction increased from 34% to 50%. He remains clinically well and euthyroid on maintenance propylthiouracil treatment.

Discussion

The association of thyrotoxicosis and cardiovascular morbidity is well established. There are several cardiac manifestations of thyrotoxi-
Non-surgical CHOP cures right ventricular outflow obstruction

J P J Halcox

A 27 year old banker was referred by his general practitioner with constitutional symptoms and a murmur. He had a four month history of weight loss, lethargy and dry cough. On examination there was a systolic thrill and a loud ejection murmur in the pulmonary area.

Chest radiography suggested a large anterior mediastinal mass, which was confirmed by thoracic computed tomography (CT). Echocardiography showed a 2.5 × 1.5 cm mass in the right ventricular outflow tract (RVOT) (fig 1) and colour flow mapping showed turbulent flow around its free edge. Flow velocity through the RVOT, assessed by continuous wave Doppler, was 4 m/s estimating a pressure gradient of 64 mm Hg (fig 2). The right ventricle was mildly dilated and an anterior extracardiac soft tissue mass was seen.

CT guided biopsy failed to get suitable tissue for analysis but a sample was obtained mediastinoscopically, histology of which confirmed sclerosing mediastinal non-Hodgkin's lymphoma.

The patient was treated with six cycles of cyclophosphamide, doxorubicin—formerly hydroxydaunorubicin, vincristine—oncovin, and prednisolone (CHOP) chemotherapy with excellent clinical and radiological response.

Repeated echocardiography one month after treatment showed complete resolution of the RVOT mass (fig 3) with normal spectral and colour Doppler assessment.

Figure 1  Parasternal short axis echocardiogram. RVOT, right ventricular outflow tract; PV, pulmonary valve; AV, aortic valve; ESTM, extracardiac soft tissue mass.
Discussion

The differential diagnosis of an intracardiac mass includes vegetation, thrombus, and both primary and secondary neoplasm. Although the pericardium is the most usual site for cardiac secondary tumours, myocardial deposits are not infrequent. Lymphoma is noted as one of the more common tumours to spread to the myocardium.1–3 The RVOT is a well recognised site of cardiac involvement with lymphoma.4 5

Our case illustrates the value of echocardiography in the assessment of such patients. The effect of an appropriate regimen of chemotherapy is clearly demonstrated with complete resolution of the tumour echocardiographically and radiologically.

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