Lymphoma presenting as an ejection systolic murmur

D.B. McKenzie*, V. Khanna, R.D. Proctor, and J.P. Boullin

Wessex Cardiothoracic Centre, Southampton General Hospital, Southampton University Hospitals NHS Trust, East Wing, Level E, Tremona Road, Southampton, SO16 5YA, United Kingdom

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We report the case of a 22-year-old gentleman with non-Hodgkin’s lymphoma who presented with a 3-week history of non-specific symptoms and an ejection systolic murmur. Urgent transthoracic echocardiography demonstrated a large anterior mediastinal mass compressing the right ventricular outflow tract that was confirmed on subsequent computerised tomography.

Case report

A 22-year-old university student presented with a 3-week history of malaise, productive cough and exertional breathlessness. His general practitioner had treated him with antibiotics for a presumed chest infection. He then developed central pleuritic chest pain, associated with sweating and feeling light-headed, prompting his presentation to the Accident and Emergency Department. On examination he was thin, pale and afebrile. His pulse was 110 bpm with a blood pressure of 110/55 mmHg. He had normal heart sounds with an ejection systolic murmur, loudest at the upper left sternal edge, with no radiation to the carotids. He had clear lung fields with no lymphadenopathy or testicular masses. A 12-lead ECG demonstrated sinus tachycardia, but was otherwise normal.

An urgent transthoracic echocardiogram (Philips IE33) was performed for suspected infective endocarditis. This demonstrated a large extra-cardiac mass compressing the right ventricular outflow tract (RVOT). The peak gradient using continuous wave Doppler in the RVOT was 27 mmHg (Figures 1 and 2). There was a small pericardial effusion of no haemodynamic significance. A posterior—anterior (PA) and lateral chest radiograph confirmed a large anterior mediastinal mass (Figure 3). A spiral CT angiogram with contrast demonstrated that the mass filled the mediastinal space, displacing the heart and great vessels posteriorly (Figure 4). It also confirmed compression of the pulmonary trunk and the small pericardial effusion. Subsequent biopsy confirmed non-Hodgkin’s lymphoma (mediastinal large B-cell), for which the patient was initially treated with chemotherapy and is currently receiving radiotherapy.

Discussion

Clinically detectable pulmonic stenosis resulting from compression of the pulmonary artery or right ventricular outflow tract is rare. It is uncommon for mediastinal masses to compress the heart or pulmonary artery sufficiently to produce murmurs or haemodynamically important obstruction. This is thought to be due to the tendency of mediastinal tumours to enlarge laterally and produce superior vena cava obstruction instead of extrinsic compression of the heart.

Non-Hodgkin’s lymphoma is a very rare cause of right ventricular outflow tract obstruction confined to a few case
reports over the past forty years.\textsuperscript{3–7} Some authors advocate the use of echocardiography for subsequent follow-up of these patients,\textsuperscript{2,6} though many institutions, including ours, tend to use other imaging modalities, such as CT or magnetic resonance imaging (MRI) for disease follow-up.

Figure 2  Continuous wave Doppler trace through the right ventricular outflow tract showing a gradient of 27 mmHg.

Figure 3  An erect posterior–anterior chest radiograph demonstrating the mediastinal mass and clear lung fields.

Figure 4  A spiral thoracic computerised tomography angiogram with contrast demonstrating the large mediastinal mass displacing the heart and great vessels posteriorly, and compressing the pulmonary trunk. LPA = left pulmonary artery. RPA = right pulmonary artery.

Supplementary material

Supplementary data associated with this article can be found in the online version.

References