Intracardiac metastasis of high-grade sarcoma of the neck causing right ventricular outflow obstruction

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DESCRIPTION

A 71-year-old man with a medical history significant for high-grade pleomorphic undifferentiated soft tissue sarcoma of the neck and multiple lung metastases presented to the emergency room, with exertional dyspnoea. He was actively receiving palliative radiation at the time of presentation as his tumour was deemed untreatable by his oncologist. Physical examination revealed a cachectic man in mild respiratory distress, at rest. A firm, non-tender 8×8 cm mass was palpated in the suboccipital area of his neck. On auscultation, there were bilateral scattered rhonchi, but no crackles. Cardiovascular examination revealed a grade 3/6 ejection systolic murmur, heard loudest in the pulmonic area, which worsened on inspiration but did not radiate to other areas.

Chest X-ray displayed bilateral pleural effusions and multiple new metastatic lesions, as well as earlier metastatic lesions that were enlarged as compared to those seen on the patient's prior CT chest scans. The initial differential diagnosis was pulmonary embolism on a background of hypercoagulability secondary to malignancy. A CT scan of the chest with contrast study was subsequently performed to assess for a pulmonary embolism but was negative for any central or peripheral pulmonary emboli. However, the study revealed a filling defect in the right ventricle (figure 1) (figure 2). A transthoracic echo was then employed to further characterise this filling defect and it demonstrated a large right ventricular mass encroaching on the right ventricular (RV) outflow tract. RV pressure was noted to be >60 mm Hg with normal left ventricular systolic function. (figure 3) (figure 4) (figure 5). Given the large size and inoperable nature of the mass, and his overall status and outlook, the patient was referred to hospice for comfort care.

Metastatic cardiac tumours are more common than primary cardiac tumours.¹ The most common

Figure 2 Sagittal chest CT with contrast showing complex filling defect in the right ventricle of the heart.

Figure 3 Parasternal long axis view of two-dimensional transthoracic echocardiography showing large mass in the right ventricle (diastole).

Figure 4 Parasternal long axis view of two-dimensional transthoracic echocardiography showing large mass in the right ventricle (systole).

Figure 1 Axial chest CT with contrast showing complex filling defect in the right ventricle of the heart.

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Figure 5 Apical four-chamber view of two-dimensional transthoracic echocardiography showing large complex mass in the right ventricle.

clinical presentation is congestive heart failure. Other associated findings include arrhythmias, pericardial effusions, cardiac tamponades, restrictive pericarditis and diffuse myocardial metastases.² Symptoms secondary to outflow tract obstruction from the intraluminal metastases, as in this case, are quite rare. A variety of imaging modalities such as transthoracic echocardiography (TTE), transoesophageal echocardiography, CT imaging and MRI can be used for diagnosis. Still, TTE is considered the primary tool in the accurate diagnosis of site and nature of tumours due to its ease and availability.³

Learning points

- ▶ Cardiac metastases causing aortic or pulmonary outflow obstruction, although rare in occurrence, should be a consideration in anyone with sarcomatous malignancies presenting with exertional dyspnoea.
- ▶ Echocardiography, an easily used tool, remains critical in the diagnosis of cardiac tumours.
- ▶ In known cases of soft tissue sarcoma, periodic screening with echocardiography will help in early diagnosis and treatment of the cardiac metastases.

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Competing interests None declared.

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