Abstract: P242

The case of the vanishing cardiac mass

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Introduction: Immune checkpoint inhibitors such as Ipilimumab and Nivolumab have significantly improved the prognosis of patients with metastatic melanoma. However, their effects on cardiac metastases have not been elucidated.

Case Description: A 60 year-old man with a history of malignant melanoma diagnosed nine years previously developed left axillary lymphadenopathy and a left upper arm subcutaneous mass; biopsy confirmed metastatic dermal melanoma. He developed exertional chest pain; electrocardiogram showed a new right bundle branch block. A staging positron emission tomography (PET) scan revealed widespread metastatic disease, including pulmonary nodules and increased uptake in the right ventricle near the interventricular septum. Subsequent transthoracic echocardiogram (TTE) disclosed a large, lobular echodensity in the right ventricular cavity, adjacent to the septal tricuspid leaflet consisting of two lobes (42mm x 29 mm, and 16mm x 15 mm) with the smaller lobe having mobile elements. The echodensity infiltrated into the basal and mid left ventricular inferoseptal wall. The patient received immunotherapy with Ipilimumab and Nivolumab. Serial computed tomography scans revealed an interval decrease, with eventual eradication of the mass within a year (Fig 1).

Discussion: Cardiac metastases, most commonly from metastatic melanoma, may carry a high morbidity and mortality depending on location and symptoms. Prior cases of sudden death, heart failure, and angina have been described. Our patient presented with a new right bundle branch block (which was consistent with the RV mass and/or metastatic emboli) and chest pain with exertion. In some cases, cardiac masses from metastatic melanoma may require surgical resection if symptoms are severe or cardiac function is compromised. Although shrinkage of cardiac tumors has been previously observed with therapies for metastatic melanoma, complete eradication with immunotherapy is novel in our case and highlights the potency of these therapies.

PET/CT is the gold standard for diagnoses of metastases and led to the detection of the RV mass in our case. TTE can provide further useful diagnostic information. In our patient, the cardiac metastases were initially detected by PET (increased uptake noted in the right ventricle), size and characteristics were then seen on CT, and the mobile nature of the mass, which is important to elucidate the risk of embolization, was demonstrated on TTE.

Conclusion and Implications: It was previously thought that surgical resection might be essential for cardiac masses that produce symptoms. However, this case illustrates the potential of immunotherapy to eradicate cardiac metastases from melanoma over time.

Figure 1. A: PET CT demonstrating increased uptake in the right ventricle (RV); B: Initial TTE illustrating the mass consisting of two lobes with mobile elements; C: Initial chest CT showing RV mass; D: Follow up chest CT in one year: resolution of the RV mass.
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