Regression of cardiac involvement by malignant melanoma following lomustine chemotherapy

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Summary

Cardiac involvement by malignant melanoma is usually a premorbid event. We present a case of presumed cardiac involvement by malignant melanoma with regression following chemotherapy as demonstrated by transoesophageal echocardiography.

Keywords: malignant melanoma, transoesophageal echocardiography, metastatic heart disease

Cardiac deposits are found in 60% of patients with metastatic malignant melanoma at autopsy.¹ In life, the finding of cardiac involvement usually occurs in the final stages of the disease, although it is rarely the cause of death.²⁻⁴ We present a case of intracardiac malignant melanoma diagnosed in life by transoesophageal echocardiography (TOE) which showed initial regression after lomustine chemotherapy, as assessed by TOE.

Case report

A 53-year-old woman underwent wide local excision and skin grafting of a histologically proven 12-mm thick malignant melanoma on the left elbow. At this time there was no evidence of local or systemic spread.

She presented to medical out-patients 17 months later with a three-month history of chest pain and dyspnoea on exertion. Examination revealed no clinical evidence of metastatic disease but a resting electrocardiogram (ECG) showed T-wave changes and reduced R-wave amplitude in the anterior chest leads consistent with a diagnosis of myocardial ischaemia. She underwent treadmill exercise testing and completed eight minutes of the modified Bruce protocol, with no ECG changes or chest pain. Subsequent echocardiography (Hewlett Packard Sonos 1500, 2.5 MHz transducer) showed gross thickening of the intraventricular septum (3.2 cm), and the presence of a mobile mass within the right ventricle. To further define this mass TOE was performed. This demonstrated the distal septum thickening seen before (figure 1), and two masses in the right ventricle, one adjacent to a papillary muscle and a further frond-like mass was seen in the body of the ventricle, extending into the outflow tract and reducing the infundibular diameter by 50%. No further masses were seen in the right atrium or pulmonary arteries.

Ultrasound scanning and chest radiography showed no evidence of renal, lung or intra-abdominal pathology. Bone scanning showed widespread increased uptake in the right humerus, several ribs, femoral shaft, and the skull vault. Plain radiography of the affected bones confirmed the presence of lytic metastases. Biopsy of the right ventricular mass was considered but was rejected because of the risk of complications. The presumed diagnosis of cardiac involvement by malignant melanoma was made on the basis of the widespread metastatic disease and the particular echocardiographic findings (intramyocardial deposits) which are usually only found in lymphomatous or melanomatous cardiac deposits.⁵ The patient received a single fraction of radiotherapy to the shoulder and four courses of oral lomustine chemotherapy at six-to-eight weekly intervals. After the first course she became pain free.

Repeat TOE (figure 2) following the final course of chemotherapy showed marked reduction of septal thickness and no evidence of either of the two right ventricular masses. The patient remained in clinical remission for 11 months. Back pain then recurred and she developed new skin nodules. There were no cardiac symptoms or signs but repeat transthoracic echo showed the presence of areas of new myocardial thickening consistent with myocardial recurrence. The patient deteriorated with increasing dyspnoea and died four months later. *Post mortem* examination revealed widespread evidence of metastatic malignancy with no evidence of a second primary. Examination of the heart showed numerous metastases in the epicardium and myocardium, one

Figure 1 TOE image of the intraventricular septum before chemotherapy showing considerable thickening of the distal septum (arrows)

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