Multiple cardiac metastases from a malignant melanoma

Dimitrios N. Chrissos*1, Pavlos N. Stougiannos2, Dimitrios Z. Mytas*, Andreas A. Katsaros3, George K. Andrikopoulos4, and Ioannis E. Kallikazaros5

Cardiology Department, Hippokration Hospital, 114 Vas. Sofias Street, 11527 Athens, Greece

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Metastatic tumors in the pericardium or the heart are more common than primary tumors and their incidence has increased during the last decades due to the prolonged survival of patients with cancer and the increased prevalence of the disease in the general population. We present the case of a 36-year-old patient admitted to our hospital due to fatigue, dyspnea, and episodes of dizziness and fainting during the last month. He had a history of a malignant skin melanoma surgically removed 4 years ago. The echo study identified multiple metastases in the heart involving the pericardium, the myocardium and the right atrium, where the tumor was mobile creating mechanical tricuspid valve stenosis. Malignant metastasis was confirmed by pericardiocentesis and, although treatment with chemotherapy was promptly initiated, the patient died 4 months later. Despite the difficulty in clinical diagnosis of cardiac melanoma, early detection has important therapeutic and prognostic implications. Echocardiography is the most common diagnostic modality and transesophageal approach may be the technique of choice to image intracardiac metastatic tumors.

KEYWORDS
Melanoma; Heart metastases; Echocardiography

Case presentation
A 36-year-old patient, with a history of a malignant skin melanoma surgically removed 4 years ago, was admitted due to fatigue, dyspnea and frequent episodes of presyncope and syncope during the last month. On admission, the patient had tachypnea, tachycardia, pericardial friction rub and paradoxus pulse. The electrocardiogram showed sinus tachycardia with low voltages, while chest radiography revealed an enlarged cardiac silhouette.

The echo study identified multiple metastases in the heart, which involved the pericardium (large pericardial effusion with diastolic collapse of right ventricle, signs of evolving tamponade), the myocardium (a well rounded mass inside the posterior myocardial wall) (Figure 1) and a large mobile mass which was virtually filling the right atrium and during diastole prolapsed through the tricuspid valve creating mechanical valve stenosis (Figure 2). In the transesophageal view there was also a mass behind the heart, which seemed to infiltrate the cardiac walls (Figure 3).

Pericardiocentesis revealed malignant cells in the pericardial fluid. Despite chemotherapy, he died 4 months later. Cardiac metastases of malignant melanoma were confirmed by autopsy study.

Discussion
Metastatic tumors to the pericardium in the heart are far more common than primary ones.1 Although cardiac metastases from malignant melanoma are quite frequent, in the early stages, the majority of patients have non-specific symptoms or they are mainly asymptomatic. Unfortunately, correct diagnosis is made antemortem in only 30% of these cases.1,2 Nevertheless, a variety of manifestations may suggest cardiac involvement such as acute pericarditis, pericardial effusion, congestive heart failure, arrhythmias, embolic events and rarely syncope.3 Echocardiography is the most useful diagnostic modality and transesophageal approach may be the technique of choice, while CT or MRI may offer additional information.4
Considering our patient, his clinical manifestations raised the possibility of cardiac involvement, which was confirmed by echocardiography. Unfortunately, due to the advanced stage of his disease, chemotherapy was unsuccessful. In the current era, with the rapidly increasing incidence of malignant skin melanoma, cardiac involvement should be readily suspected, especially in patients with the aforementioned clinical presentation. Moreover, early diagnosis is of profound value if the patient is to benefit from the recent advances in cancer therapy.

References