

MCQ Answer: Infective endocarditis/vegetations

By far, the most common causes of intracardiac masses are thrombi or vegetations. Our patient's blood cultures subsequently grew *Candida tropicalis*. Therefore, the acute development of biventricular masses in the setting of neutropenia and candidemia strongly suggests the etiology to be infective endocarditis. Risk factors for development of infectious endocarditis include presence of prosthetic valves, intracardiac devices, history of rheumatic heart disease, intravenous drug use, and nosocomial infection in the setting immunosuppression. (1) In this regards, our patient's only risk factor was being immunosuppressed with a prolonged hospital course. With regards to developing invasive candidiasis, our patient's risk factors included neutropenia, immunosuppression, deteriorating clinical condition from underlying hematologic malignancy, and the use of total parenteral nutrition.

Ventricular thrombi often develop at the apex as a consequence of acute myocardial infarction or aneurysms with resultant stasis of blood flow, neither of which were present in our patient. Although our patient had atrial fibrillation, the development of thrombi in this setting is more likely to occur in the left atrium.

The incidence of cardiac metastases ranges from 2.3 to 18.3%. (3,4) While metastasis can affect all structures of the heart, endocardial metastasis is particularly rare. They are usually associated with malignancies that spread hematogenously such as lymphoma, melanoma, and sarcoma, as well as tumors with endovascular growth such as renal and liver malignancies. (2,3,4) Cardiac metastases are rare in CLL.

Myxomas are the most common primary benign cardiac tumors. Approximately 80% are found pedunculated in the left atrium arising from the interatrial septum, while the remainder are found in the right atrium. (2,4) Myxomas arising from the left ventricle are extremely rare, accounting for approximately 2.5% of all myxoma cases. (6) Even more rare is a myxoma arising in the right ventricular outflow tract, with only 30 reported cases in existence in the last decade. (5)

While exceedingly rare, the most common malignant primary tumors are variants of sarcomas, of which the most common histologic subtype are angiosarcoma. (2) Similar to cardiac myxomas, sarcomas tend to arise from the left atrium, while angiosarcomas often arise from the right atrium or pericardium. (2)