

## VIDEO SESSION

## Right Atrial Mass: Time for Contrast Echocardiography

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### CASE REPORT

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We present the case of a 42-year-old man with dyspnea New York Heart Association class III-IV, leg edema and ascites for the last 3 months. ECG and chest X-ray were unremarkable. The echo study revealed a large triangular mass in the right atrium attached to the interatrial septum with a wide base. There were also severe tricuspid stenosis and regurgitation. A real time myocardial contrast enhancement (MCE) echocardiographic study with low mechanical index and bolus injection of contrast showed contrast hyper-enhancement of the tumor compared to the surrounding myocardium, suggesting a highly vascular or malignant tumor (visual assessment). Mass contrast enhancement (MaCE) persisted several minutes after the disappearance of MCE (Figure 1, panels A-C). A computed tomography (CT) study confirmed the location, shape and vascularity of the mass, while histological examination after surgery disclosed an angiosarcoma. The patient succumbed to his disease 2 months later.

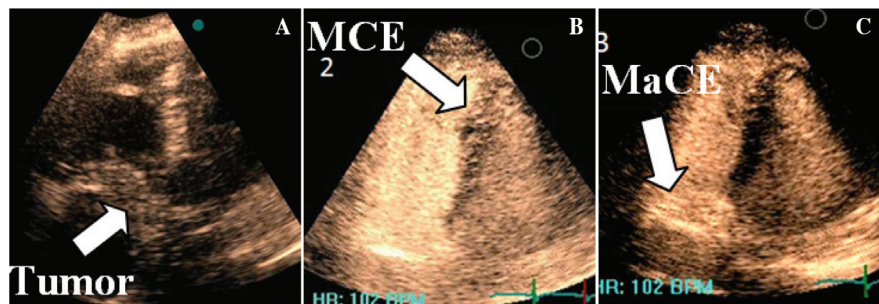


FIGURE 1. Panels A-C.

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### DISCUSSION

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During continuous infusion of contrast, which is a well-established imaging technique, malignant tumors display a stable contrast hyper-enhancement compared to the surrounding myocardium. On the contrary, with the bolus injection of contrast, as in our study, there is a transit time of tissue contrast enhancement which is proportional to tissue vascularity (blood volume-BV-) and inversely proportional to blood flow (BF) (Figure 2). Using this technique, malignant tumors, such as angiosarcoma,

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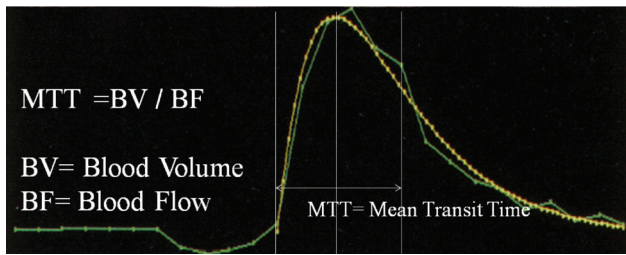


FIGURE 2.

display persistence of contrast enhancement compared to the surrounding myocardium. This can help in the differential diagnosis between malignant and other tumors of the heart.