ECHOCARDIOGRAPHIC CHARACTERISTICS OF CARDIAC ANGIOSARCOMAS: MAYO CLINIC EXPERIENCE

Poster Contributions
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Authors: Darrell Newman, Kyle Klarich, Gautam Kumar, Mayo Clinic, Rochester, MN, USA, Emory University School of Medicine, Atlanta, GA, USA

Background: Cardiac angiosarcoma, though exceedingly rare, is the most common primary malignant cardiac tumor. The dismal prognosis and non-specific symptomatology underscores the need for an accurate and cost effective approach to the identification and characterization of these rare tumors.

Methods: We searched the Mayo Clinic tissue registry for all histologically confirmed cases of cardiac angiosarcoma from 1976 to the present. This search strategy identified 13 cases, including 8 patients (mean age 47; 2 male, 6 female) who had echocardiograms available for review. The remaining 5 cases were comprised of outside referrals specifically for Oncologic consultation. All echocardiograms were retrospectively reviewed by the authors (G.K., K.W.K.).

Results: TTE correctly identified primary cardiac angiosarcoma in 4 of 5 patients (80%) when performed as the initial diagnostic test. Of note, TTE, TEE and CT all failed to demonstrate a right atrial mass in one patient who presented in cardiac tamponade. The average largest tumor dimension was 6.3 cm at the time of diagnosis. Right atrial angiosarcoma was more likely to invade the pericardial space (50%) than right ventricular or left atrial tumors (0% and 0%, respectively). A pericardial effusion was present in 6 of 8 patients (75%) at the time of presentation and there was a strong correlation with right atrial tumor location (6 of 6 patients, 100%). Pericardial fluid analysis was invariably negative for malignancy. Left ventricular systolic function was well preserved in 7 of 8 patients, with an average ejection fraction of 64%. Right ventricular systolic function was normal in all 8 patients. Tricuspid inflow obstruction was present in 3 patients, with a mean diastolic gradient of 6.3 mm Hg (range 3-11 mmHg). The echocardiographic findings are summarized in Table 1.

Conclusions: We report the largest single center review describing the echocardiographic features of primary cardiac angiosarcoma. The sensitivity of TTE was found to be 80% (n=5) and compared favorably with CT and MRI. Obstruction to tricuspid inflow is a common finding in cardiac angiosarcoma. Not surprisingly, pericardial fluid cytology had a low diagnostic yield.