

Background

Cardiac tumors, particularly malignant ones, are rare in occurrence but can present in a very insidious fashion. Whether it be a primary or secondary cardiac tumor, dyspnea and chest pain are the most common presenting symptoms [1,2]. In some cases, as in our patient, potentially fatal complications such as arrhythmia can occur. Other worrisome consequences include embolism and valvular dysfunction [1]. Prompt diagnosis of malignant tumors involving the heart, such as the high-grade myxoid sarcoma in our patient, is critical as it can affect the immediate clinical outcome and future therapy.

Case Presentation

30-year-old Caucasian male with past medical history of Diabetes and HTN presents to the ER due to chest pain and worsening dyspnea. Soon after presenting to the ER, the patient went into PEA cardiac arrest. He returned to spontaneous circulation after one round of cardiopulmonary resuscitation. Bedside echocardiography on initial presentation revealed a moderate-sized pericardial effusion, which was emergently removed through pericardiocentesis.

Diagnostic Studies/Case Outcome

The following are some of the diagnostic studies that this patient underwent during his admission.

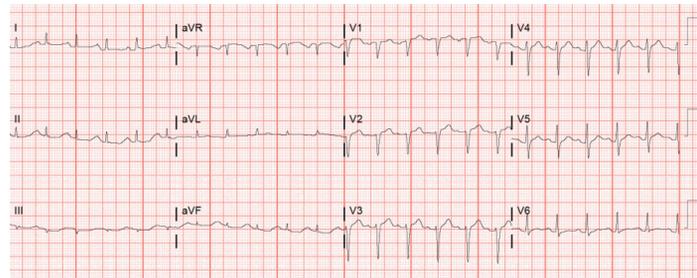


FIGURE 1: EKG showing sinus tachycardia and diffusely low-voltage QRS's

TRANSTHORACIC ECHO FINDINGS

-LVEF 61%
 --small to moderate pericardial effusion with no evidence of cardiac tamponade



FIGURE 2: CT Chest - read as "moderate-sized left-sided pleural effusion" and "large-right-sided pericardial cyst"

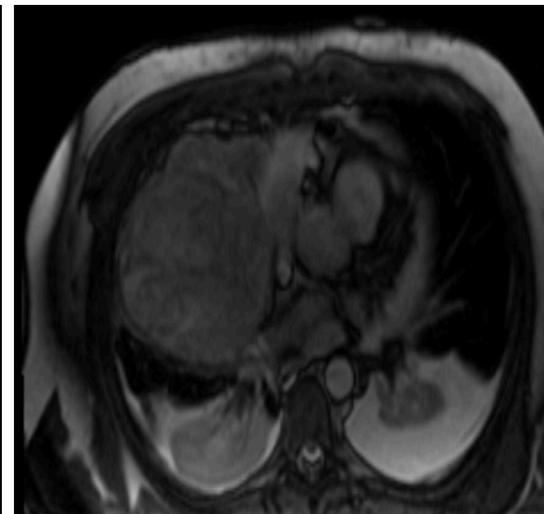


FIGURE 3: Cardiac MRI – read as follows: "Large, solid hypoenhancing mass abuts the lateral wall of the right atrium but without evidence for restricted cardiac function. Findings are consistent with malignancy, for which sarcomas and other primary pleural/pericardial neoplasms are favored. Additional mass effect or invasion extends inferiorly into/toward the medial right hemidiaphragm and liver with mass effect on the IVC at the cavoatrial junction"

Patient Outcome: Patient successfully underwent resection of the intracardiac mass, however, due to extensive involvement of the tumor, complete resection was unable to be achieved. Pathology of the tumor confirmed diagnosis of high-grade myxoid sarcoma, with histopathology suspicious for either extra-skeletal myxoid chondrosarcoma or myoepithelial carcinoma. Oncology team was subsequently involved, and the patient began chemotherapy with Doxorubicin and Ifosfamide.

Discussion

Approximately a quarter of all cardiac tumors are malignant, with about ¾ being sarcomas [1]. Cardiac sarcomas generally have a poor prognosis, with most patients only surviving 6-12 months after initial diagnosis [3]. Echocardiography, MRI, and CT can all be valuable diagnostic tools for patients with underlying cardiac sarcomas. Echo can help in the evaluation of ventricular function and valvular involvement and thereby provide an estimate of intraoperative risk. CT and MRI, with its higher tissue resolution, yields great information on tumor extension [1]. Due to the many complications associated with cardiac sarcomas including arrhythmia (as with our patient), tumor resection should be performed if possible. Adjuvant chemotherapy (Doxorubicin and Ifosfamide is a common combination regimen) or radiotherapy may also be necessary to help prolong survival in patients with cardiac sarcomas [1].

Conclusions

1. Although cardiac sarcomas are rare, being aware of the possible presenting symptoms (with dyspnea and chest pain being the most common [2]) can aid in a more prompt diagnosis.
2. Knowledge about the diagnosis, pathology, and potential complications can prove to be essential in the care of patients with cardiac sarcomas.
3. Furthermore, timely collaboration with other subspecialists such as cardiothoracic surgeons and oncologists is necessary to provide patients the best possible clinical outcome.

References

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3. Agaimy, A, Rosch, J, Weyand, M, and Strecker, T. Primary and Metastatic Cardiac Sarcomas: a 12-year experience at a German heart center. *International Journal of Clinical Experimental Pathology*. 2012; 5(9): 928-938. ISSN:1936-2625/IJCEP1208005