Background: Emergency ultrasound is now used in both community and academic hospitals for rapid diagnosis and treatment of life-threatening conditions. Bedside emergency echocardiography can rapidly identify significant pathology such as pericardial effusions and tamponade, right ventricle dilatation due to pulmonary embolism, and cardiac hypokinesis, and aid in the diagnosis and management of patients in emergency department (ED).

Case Report: A 41-year-old man presented twice to the ED with history of abdominal pain and was diagnosed with primary cardiac angiosarcoma with point-of-care ultrasound.

Conclusion: This case is illustrative of how bedside cardiac ultrasound in the ED can dramatically change a patient’s hospital course. [West J Emerg Med. 2011;12(4):478–480.]
(FAST) examination was without free fluid. A view of the heart was included as the fourth view of the FAST examination, and the cardiac images revealed a 5-cm hyperechoic mass in right atrium that appeared to be tethered to the free atrial wall (Figure 1). After this finding, cardiology and cardiothoracic surgery were consulted, and the patient was admitted to the cardiovascular service. A chest CT and repeated abdominal CT scan were performed. The chest CT demonstrated a well-circumscribed 4-cm filling defect in the right atrium, with possible extension into the right ventricle. No evidence of pulmonary embolism was seen in the right or left main pulmonary arteries or in any of the visualized branches. The abdominal CT demonstrated the 3-cm hypodense mass, seen on the prior CT scan, in the right lobe of the liver. The differential diagnosis reported by radiology for this examination was hemangioma versus metastasis. The patient underwent surgery with radical resection of the right atrial wall tumor and reconstruction of the right atrial wall with a large piece of autogenous pericardium (Figure 2). After histopathologic evaluation, tumor features were found to be typical for cardiac angiosarcoma, spindle-cell type.

**DISCUSSION**

Point-of-care echocardiography skills can rapidly identify life-threatening pathology, and aid in the diagnosis and management of patients in ED.1,2 These findings can at times dramatically change patient disposition. In the case presented, an ultrasound looking for biliary disease and free fluid in the abdomen was extended to include the heart. The echocardiogram revealed the presence of a cardiac mass that had gone undetected on the prior visit, and would probably have otherwise gone undetected on the second visit.

The majorities of primary cardiac tumors (approximately 75%) are benign, most commonly atrial myxomas.3,4 Cardiac angiosarcoma is the most common malignant tumor of the heart, and two thirds of angiosarcomas are located in the right side of the heart, especially the atrium. These tend to present with chest pain, cough, syncope, or dyspnea in young and middle-aged patients.5,6 Cardiac angiosarcomas can also remain an asymptomatic tumor until they metastasize. Extracardiac manifestations, including abdominal pain, can occur with intracardiac tumors. In a case reported by McCoskey et al.,7 a 37-year-old woman with persistent abdominal pains and nausea actually underwent diagnostic laparoscopy 5 weeks before eventually being diagnosed with an atrial myxoma.

In our case, a patient with an intracardiac tumor had a similarly unusual clinical presentation with abdominal pain as his predominant symptom. His abdominal pain could have resulted from hepatic congestion from right-sided obstruction to cardiac flow (although the liver-function tests were normal on both visits), indirectly through autoimmune causes, or directly from his hepatic mass. This presentation is different from the typical pattern of pulmonary emboli, pulmonary hypertension, and vena cava obstruction found with intracardiac tumors.4,8

**CONCLUSION**

Bedside echocardiography is a rapidly accessible, low-cost, noninvasive procedure that greatly benefitted this ED patient. This case illustrates how ED point-of-care ultrasound dramatically changed the disposition in a case that was initially being tracked toward outpatient follow-up. Beyond pericardial effusion, bedside echocardiography is able to identify other cardiac pathology such as intracardiac masses. Emergency providers should have a low threshold for the use of bedside cardiac ultrasound.
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