



## Visual Case Discussion

## A young woman with chest pain

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## ARTICLE INFO

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## 1. Discussion

Intracardiac mass is an uncommon cause of chest pain presenting to the ED. To delineate the cause of chest pain, echocardiography needs to be incorporated while evaluating chest pain in the ED.<sup>1</sup> Intracardiac mass that can present to ED with chest pain, includes primary benign and malignant neoplasm of myocardium, intracardiac metastasis, hydatid cyst and intracardiac thrombi.<sup>2</sup> Intracardiac metastasis are rare with an incidence of 0.7% to 3.5% in general population.<sup>3</sup> It can present with acute coronary syndrome, cardiogenic shock, arrhythmia and cardioembolic stroke.<sup>4</sup>

## 2. Visual case discussion

A 33-year old female, without any comorbidities, presented to the emergency department (ED) with complaints of severe chest and back pain, with radiation to left arm, associated with breathlessness, for 10 h. There was no history of fever, cough, recurrent vomiting, prolonged bed rest, any recent trauma, surgery or endoscopic procedures. Her vitals were stable and systemic examinations were within normal limits. Her pain scale was 9/10 and was relieved on intravenous opioids. Electrocardiograph showed non-specific ST/T changes. Serial troponins and D-dimer were normal. Echocardiography showed a (→) cystic, interventricular septal mass (Fig. 1, Video 1). There was no evidence of any regional wall motion abnormality, chamber dilation or pericardial effusion. The case was discussed with the cardiology team and Cardiac MRI was advised. Cardiac magnetic resonance imaging (MRI) showed multi-septated, intramyocardial cyst involving the inferior septal wall. Operative removal of the cyst was done and histopathological features

suggested synovial sarcoma. To delineate the cause of chest pain, echocardiography needs to be incorporated while evaluating chest pain in the ED.<sup>1</sup> Intracardiac mass that can present to ED with chest pain, includes primary benign and malignant neoplasm of myocardium, intracardiac metastasis, hydatid cyst and intracardiac thrombi.<sup>2</sup> Intracardiac metastasis are rare with an incidence of 0.7% to 3.5% in general population.<sup>3</sup> It can present with acute coronary syndrome, cardiogenic shock, arrhythmia and cardioembolic stroke.<sup>4</sup> This case showed the importance of integration of echocardiography in diagnosing intracardiac mass.

## 3. Questions and answers with a brief rationale

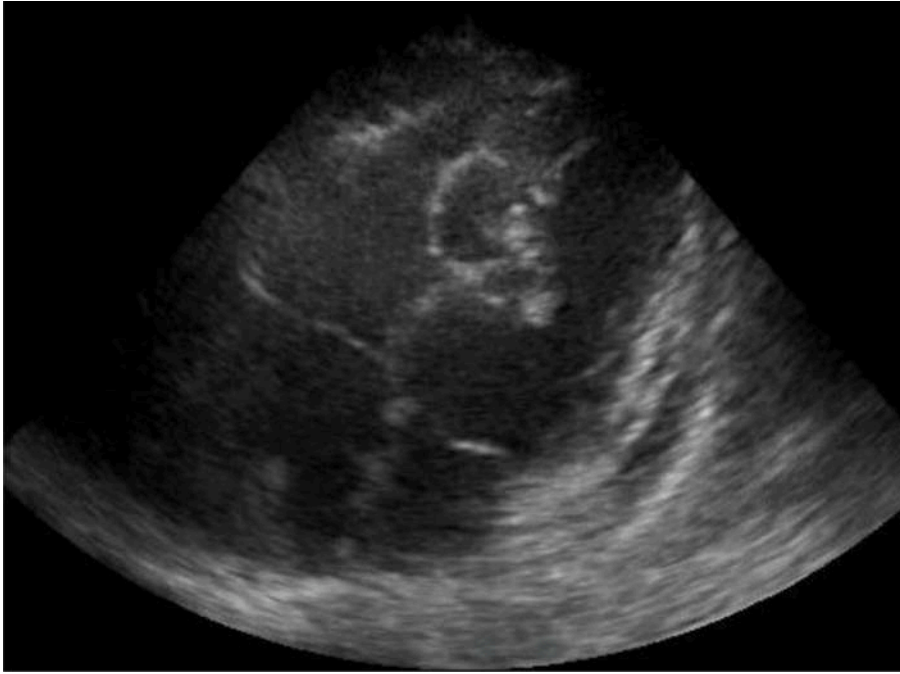
## Question 1

**Question Type:** Multiple choices

A 33-year old female, without any co-morbidities, presented to the emergency department (ED) with complaints of severe chest and back pain, with radiation to left arm, for 10 h. There was no history of fever, cough, recurrent vomiting, prolonged bed rest, any recent trauma, surgery or endoscopic procedures. Her vitals were stable and systemic examinations were within normal limits. Her pain scale was 9/10 and was relieved on intravenous opioids. Chest x-ray was within normal limits. EKG showed non-specific ST/T changes. Serial troponins and D-dimer were normal. Point of care Ultrasound (POCUS) was done to delineate the underlying etiology which shows:

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**Fig. 1.** Apical four-chamber view echocardiograph showed a (→) heterogeneous, cystic mass in inferior part of interventricular septum.

What is the cause of her chest pain?

- A) Acute coronary syndrome
- B) Pulmonary embolism
- C) Intra-cardiac mass
- D) Pnuemothorax

Correct Answer = c

Explanation: A young women with no co-morbidities presented with chest pain is unlikely due to acute cardiac event and Point of care ultrasound shows cystic, interventricular septal mass. For this reason,

echocardiography needs to be incorporated while evaluating chest pain in the ED

#### Author declaration

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**Video - 1:** Apical four-chamber view echocardiographic clip showing a cardiac interventricular septal cystic mass

#### Declaration of Competing Interest

Attaching COI form with the manuscript

#### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.visj.2022.101542](https://doi.org/10.1016/j.visj.2022.101542).

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