

# Case report of a metastatic squamous cell carcinoma to the pericardium masquerading as ST elevation myocardial infarction on ECG

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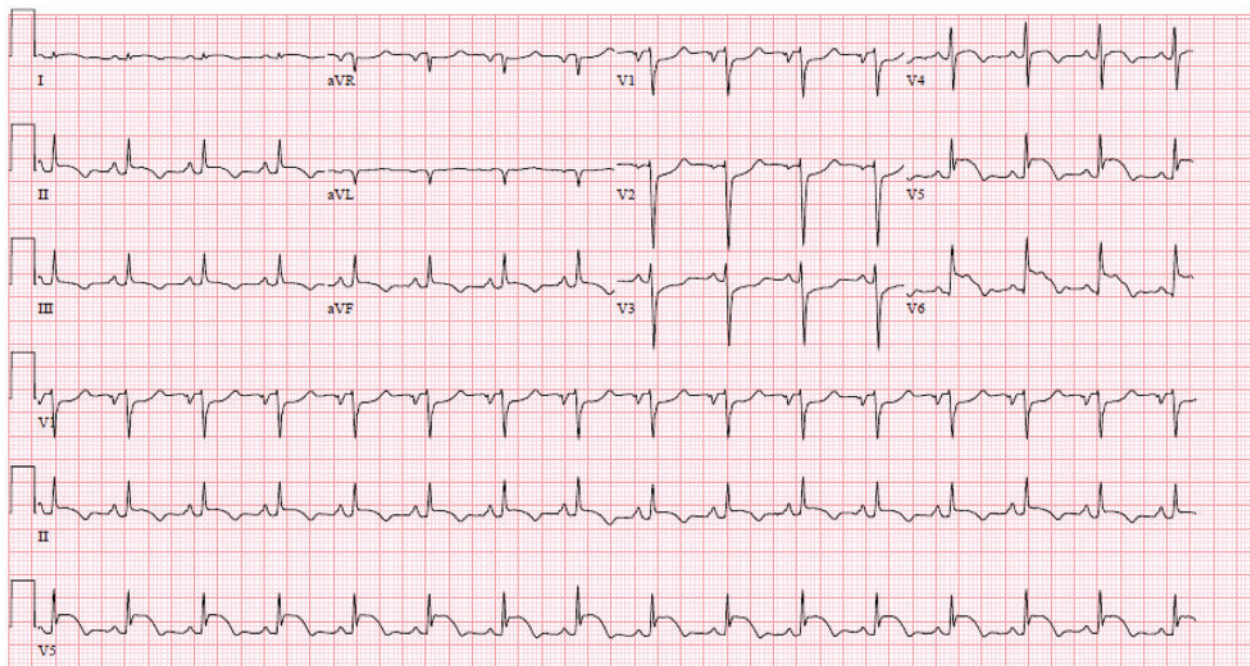
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A 55-year-old male patient presented with acute onset of substernal chest pain and dyspnoea. He had a previous medical history of oesophageal squamous cell carcinoma diagnosed 1 month prior to presentation, for which he underwent chemotherapy, radiation, and oesophageal stent placement. Vital signs on presentation were notable for heart rate of 79 b.p.m., respiratory rate of 18, blood pressure 114/87 mmHg, and oxygen saturation of 100% on room air. Initial

electrocardiogram (ECG) demonstrated ST segment elevations in leads II, III, aVF, V4–V6, concerning for acute ST elevation myocardial infarction in the inferolateral territory (*Figure 1*). He was taken emergently to the cardiac catheterization laboratory for coronary angiography, which revealed no occlusive coronary artery disease.

Echocardiogram revealed akinesis of the apical, lateral, and inferior walls, and a large left ventricular apical mass (4.5 cm × 2.5 cm)

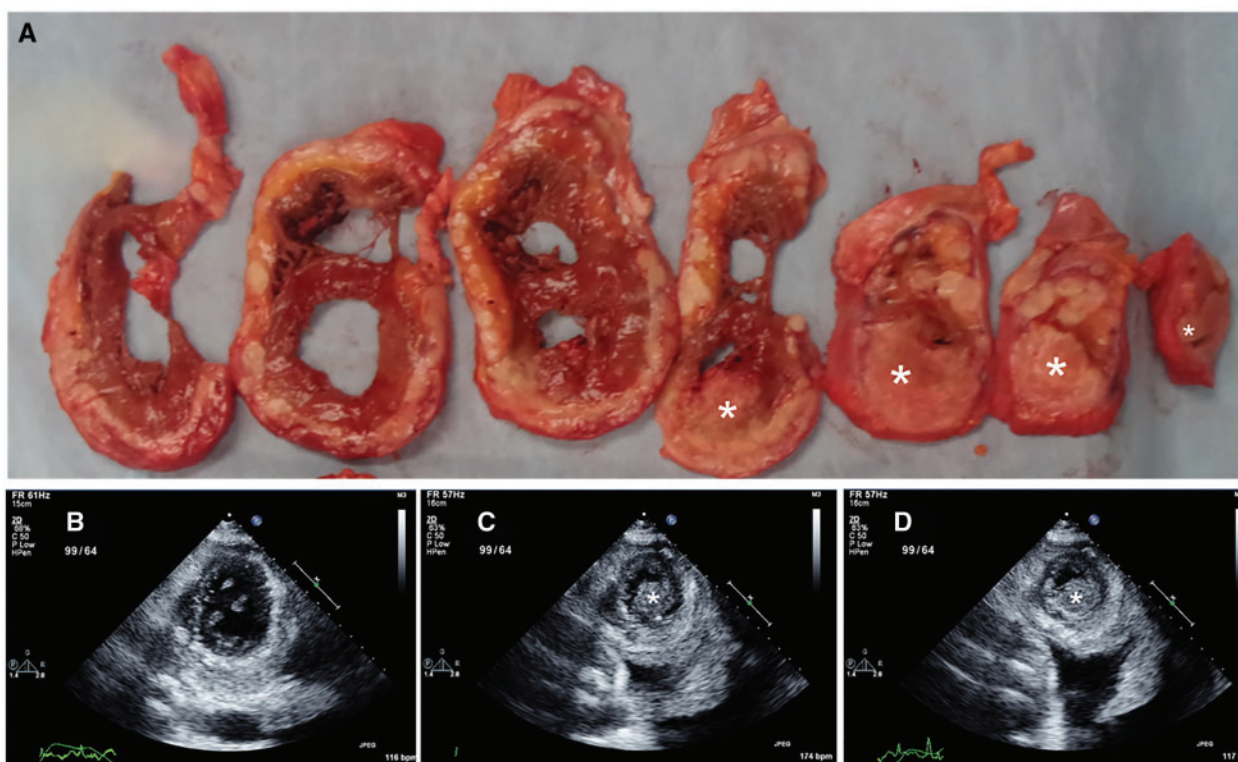


**Figure 1** ECG demonstrating ST elevation in II, III, aVF, V4–V6 with reciprocal ST depressions V1–V3, suggestive of acute ST elevation myocardial infarction of the inferolateral wall.

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**Figure 2** (A) Gross pathological specimen demonstrating infiltration of the myocardium by the tumour at multiple levels as well as large apical tumour (asterisk) as seen in the echocardiogram. (B–D) Echocardiogram. Parasternal short-axis view demonstrating large mass (asterisk) in the left ventricular apex, corresponding to the gross pathological specimen (D).

(Figure 2B–D) as well as an echogenic mass surrounding left atrium and descending aorta with evidence of external compression of the left atrium.

Hospital course was complicated by cardiac arrest secondary to pulseless electrical activity, ventilator dependent respiratory failure, and septic and obstructive shock. Further imaging to characterize the mass was limited by declining clinical status. Patient developed worsening shock and renal failure requiring renal replacement therapy. After multiple discussions with family, the decision was made to proceed to comfort care measures and patient subsequently expired. The ST elevations on ECG persisted throughout the course of his hospital.

Cardiac tumours are rare and are usually clinically silent.<sup>1</sup> Cardiac metastases are often found in the setting of widely metastatic disease.<sup>1</sup> The clinical presentation varies depending on the cardiac structures involved. Patients may present with signs and symptoms of pericarditis, cardiac tamponade, arrhythmia, or obstructive shock

from the tumour.<sup>2</sup> Our patient's autopsy revealed widely metastatic moderately to poorly differentiated squamous cell carcinoma involving the oesophagus, heart, stomach, lungs, liver, kidneys, adrenals, and thyroid. The heart was encased by tumour with infiltration of the pericardium and myocardium (Figure 2A). We surmise that the dense pericardial and myocardial infiltration resulted in the ECG pattern suggestive of myocardial injury.

**Consent:** Informed consent could not be obtained due to gravity of patient's condition. The authors removed any potential identifying information to sufficiently anonymize the report.

**Conflict of interest:** none declared.

## References

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