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CASE IMAGE

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A case image of epicardial implants in a young male with mixed germ cell tumor

Sacide S. Ozgur[1] | **Sherif Elkattawy**[2] | **Yezin Shamoon**[2] | **Abdullah Ahmad**[2] | **Maria Perez**[1] | **Rachel Abboud**[2] | **Fayez Shamoon**[2]

[1]Department of Internal Medicine, St. Joseph's University Medical Center, Paterson, New Jersey, USA

[2]Department of Cardiology, St. Joseph's University Medical Center, Paterson, New Jersey, USA

Correspondence
Sacide S. Ozgur, Department of Internal Medicine, St. Joseph's University Medical Center, Xavier 509, 703 Main St, Paterson, NJ 07503, USA.
Email: r_ozgurs@sjhmc.org

Key Clinical Message

Epicardial metastasis from mixed germ cell tumors is exceedingly rare and poses a significant risk for cardiac morbidity. This case highlights the crucial need for comprehensive systemic evaluation in patients with known malignancies presenting with cardiac symptoms.

KEYWORDS

epicardium, germ cell tumor, imaging, metastasis, pericardium

1 | BACKGROUND

Mixed germ cell tumors (MGCTs) are a heterogeneous group of neoplasms commonly found in the testes and ovaries. While these tumors frequently metastasize to the retroperitoneal lymph nodes, lungs, liver, and brain, the occurrence of epicardial metastasis is extremely rare. Due to the rarity of germ cell tumors with cardiac metastasis, the exact incidence of pericardial metastasis remains unknown. Nunes et al. reported 17 cases of germ cell tumors with cardiac metastasis in the literature, only two of the cases had pericardial involvement.[1] We present the fourth case of pericardial metastasis of germ cell tumor.

2 | CASE PRESENTATION

A 25-year-old male with no prior medical history presented with a nonproductive cough persisting for 2 weeks. Initial chest X-ray imaging revealed multiple well-defined lesions in both lung fields. Subsequent CT scans of the chest, abdomen, and pelvis confirmed extensive intrathoracic metastatic disease, a liver mass, a right-sided retroperitoneal mass and right-sided hydronephrosis. On admission, a testicular examination and ultrasound identified a 3 cm mass in the right testicle, leading to a right testicular radical orchiectomy. Pathological evaluation revealed a mixed germ cell tumor comprising 65% seminoma and 35% teratoma. Before the initiation of chemotherapy, the patient developed acute dyspnea, tachypnea, and tachycardia, raising suspicion of a pulmonary embolism (PE). Although the CT angiogram of the chest was negative for PE, it uncovered right-sided epicardial implants (Figure 1A). A transthoracic echocardiogram (TTE) showed no evidence of pericardial effusion or tamponade physiology (Figure 1B).

3 | DISCUSSION

The exceptional rarity and potential complications associated with epicardial metastasis necessitated a multidisciplinary approach involving both oncology and cardiology teams. Given the risk of cardiac complications from the

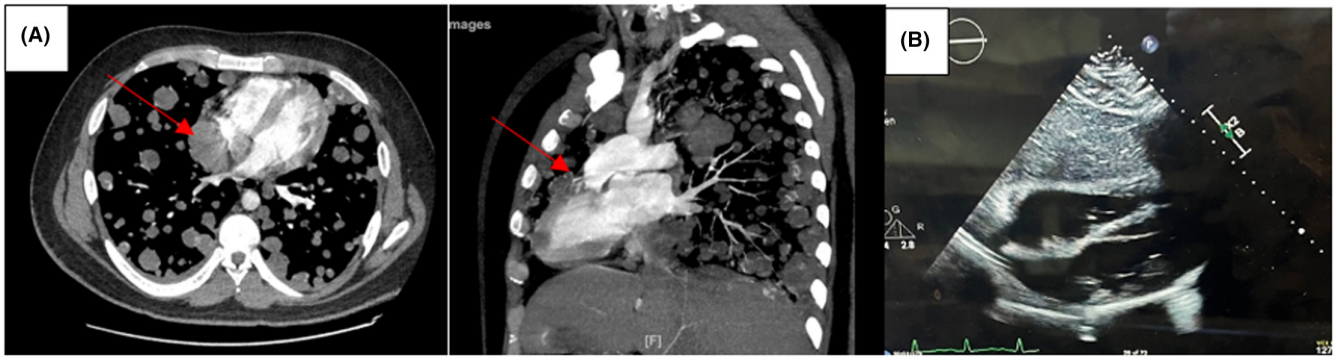

FIGURE 1 (A) CT Angiogram of the chest axial and sagittal views showing right sided epicardial implants. (B) TTE showing no pericardial effusion.

metastatic implants, a treatment strategy was created that combined targeted chemotherapy (Bleomycin, Etoposide, Cisplatin)[2] with close cardiac monitoring for possible arrhythmias. The patient maintained hemodynamic stability throughout the medical management and did not require surgical intervention from cardiothoracic surgery. Urgent surgical intervention is recommended for hemodynamically unstable patients to reduce mortality.[3] However, the patient's course was complicated by bleomycin-induced pneumonitis and spontaneous pneumothorax requiring intubation. He had multi-organ failure, his code status was changed to Do Not Resuscitate—May Intubate (DNR-B), and the patient expired.

AUTHOR CONTRIBUTIONS

Sacide S. Ozgur: Data curation; investigation; visualization; writing – original draft. **Sherif Elkattawy:** Investigation; supervision; visualization; writing – review and editing. **Yezin Shamoon:** Investigation; supervision; visualization; writing – review and editing. **Abdullah Ahmad:** Investigation; supervision; visualization; writing – review and editing. **Maria Perez:** Conceptualization; investigation; writing – review and editing. **Rachel Abboud:** Investigation; supervision; validation; writing – review and editing. **Fayez Shamoon:** Investigation; supervision; validation; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors report no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

ORCID

Sacide S. Ozgur https://orcid.org/0009-0008-2592-4927

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