

Large Mediastinal Mass in Pregnancy: Role of Echocardiography and Cardiac MRI

Keely

Department of Medicine, UK

***Corresponding Author:**

Keely

Department of Medicine, UK

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1. Abstract

Mediastinal tumors during pregnancy are rare and present diagnostic and management challenges. We report a 29-year-old woman at 27 weeks of gestation who presented with dyspnea, chest pain, and fatigue. Echocardiography revealed pericardial effusion and a heterogeneous mediastinal mass compressing the right ventricle. Cardiac magnetic resonance imaging (MRI) further delineated the size and anatomical relationships of the lesion, suggesting a lymphoproliferative disorder. Biopsy confirmed primary mediastinal large B-cell non-Hodgkin lymphoma. After multidisciplinary planning, pregnancy was continued until 30 weeks, followed by successful caesarean delivery and tumor excision. This case highlights the complementary roles of echocardiography and cardiac MRI in safely evaluating mediastinal masses during pregnancy.

Keywords: Mediastinal mass, pregnancy, non-Hodgkin lymphoma, echocardiography, cardiac MRI

2. Introduction

Non-Hodgkin lymphoma in pregnancy is uncommon, and clear management guidelines are lacking. Diagnosis is often delayed due to nonspecific symptoms and concerns regarding imaging during pregnancy.

Echocardiography is a safe, non-invasive tool that can detect mediastinal masses and assess their hemodynamic impact. Cardiac MRI, when performed after the first trimester, provides detailed anatomical information without ionizing radiation. This report demonstrates the value of these imaging modalities in diagnosing and managing a mediastinal tumor during pregnancy.

3. Case Report

A 29-year-old woman at 27 weeks of gestation presented with progressive dyspnea, chest pain radiating to the left shoulder, and fatigue.

3. Examination

3.1. Findings included:

- Reduced breath sounds at the left lung base, suggestive of pleural effusion
- Tracheal murmur at the lower cervical level

4. Investigations

4.1 Echocardiography:

- Pericardial effusion (up to 17 mm)
- Heterogeneous mediastinal mass anterior to the right ventricle
- Altered right ventricular geometry without impaired filling

4.2 Cardiac MRI:

- Clearly defined the size of the mass
- Demonstrated its relationship with adjacent structures
- Suggested a lymphoproliferative process

4.3 Biopsy:

- Confirmed primary mediastinal large B-cell non-Hodgkin lymphoma

5. Management

- Chemotherapy was initiated. After multidisciplinary discussion and patient consent, pregnancy was continued with close monitoring of maternal and fetal status.
- Serial echocardiography was used to track:
- Pericardial effusion
- Hemodynamic impact of the mass

At 30 weeks of gestation, worsening maternal condition necessitated delivery. A caesarean section was performed successfully, resulting in a healthy neonate.

Subsequently, the mediastinal mass was surgically excised via a transthoracic approach.

6. Outcome

The patient recovered well and was discharged after 10 days. At 6-month follow-up, she showed clinical improvement with reduction in disease burden. The infant remained healthy.

7. Discussion

Mediastinal lymphoma during pregnancy is rare and may present with symptoms related to compression of adjacent structures, such as dyspnea, chest pain, and pleural or pericardial effusion.

Diagnosis is challenging due to symptom overlap with common pregnancy-related conditions. Imaging plays a crucial role:

- Echocardiography is ideal for initial detection and monitoring of cardiac effects.
- Cardiac MRI provides superior anatomical detail and is safe after early pregnancy.

Management requires an individualized, multidisciplinary

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approach. Options include biopsy, chemotherapy during pregnancy, and carefully timed delivery.

8. Conclusion

Mediastinal masses in pregnancy require prompt recognition and coordinated care. Echocardiography and cardiac MRI are complementary, safe, and effective diagnostic tools. Early diagnosis and appropriate intervention can lead to favorable maternal and fetal outcomes.

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