Point-of-Care Ultrasound Expedites Coordination of Care in An Obstetric Patient with Compressing Mediastinal Mass Undergoing Vaginal Delivery

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Introduction

- Mediastinal mass may cause cardiac and major vessel compression
- Signs and symptoms of dyspnea and heart failure can be exacerbated in obstetric physiology
- Hemodynamic impact may compromise fetal perfusion
- Existing case reports describe elective cesarean delivery in patients with compressing mediastinal masses with the use of combined spinal epidural being the preferred anesthetic technique

Case Summary

- A 28 y/o woman at 39 weeks of gestation presented to obstetric emergency triage with acute sharp rib pain, dyspnea, and worsening cough
- Admitted for induction of labor for category II fetal heart rate tracing
- Chest x-ray demonstrated a large anterior mediastinal mass
- POCUS exam concerning for cardiac compression; cardiology was emergently consulted, and formal transthoracic echocardiogram showed partial compression of right atrium and ventricle and mildly reduced left ventricular function

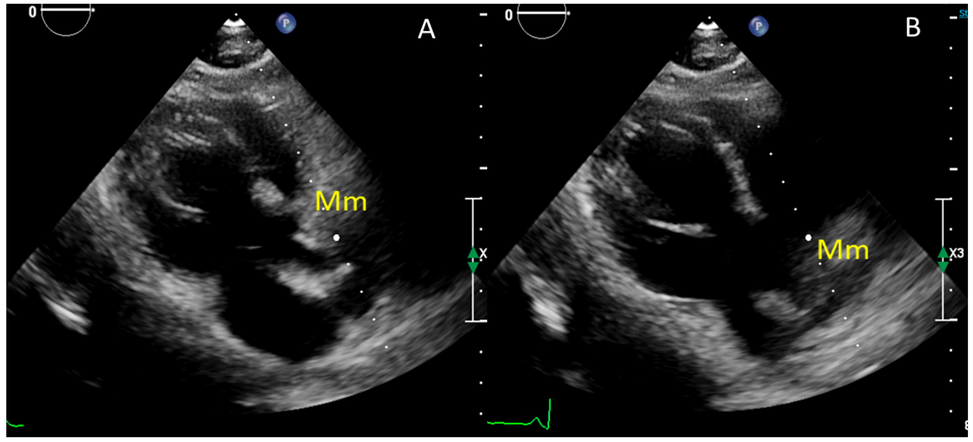
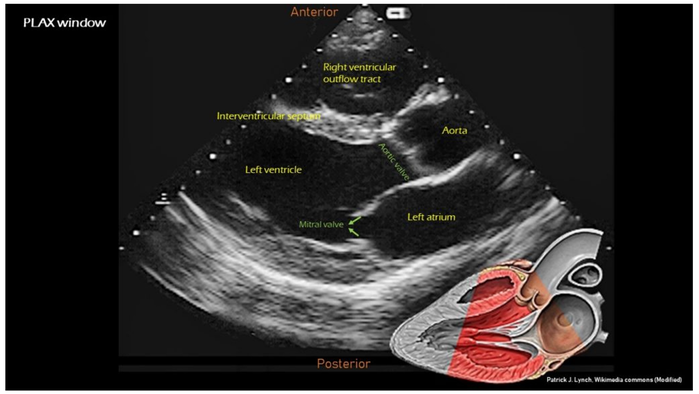


Figure. Transthoracic echocardiogram images in parasternal long axis view during A) diastole and B) systole, demonstrating mediastinal mass (Mm) compression throughout the cardiac cycle.



Normal TTE parasternal long axis view

Case Summary (continued)

- Multidisciplinary discussions involving anesthesiologists, obstetricians, cardiologists, and cardiac surgeons regarding hemodynamic compromise if large volume hemorrhage were to occur due to concern for RV compression, including potential need for extracorporeal membrane oxygenation
- An epidural catheter had been placed for labor analgesia *without* a spinal dose
- Joint decision was made to proceed with vaginal delivery in the operating room with resuscitative equipment, vasoactive medications, and blood products readily available
- To minimize valsalva and subsequent preload compromise, patient underwent vacuum-assisted vaginal delivery without complications, with an estimated blood loss of less than 100 cc

Discussion

- POCUS provides expeditious information to assist with coordination of multidisciplinary care in critical obstetric cases
- Assisted vaginal delivery under neuraxial anesthesia is a safe and possibly preferred alternative to cesarean delivery in obstetric patients with mediastinal masses due to decreased risk of intrapartum hemorrhage
- Caution should be exercised when considering administration of spinal dose in patient with cardiac or major vessel compression

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