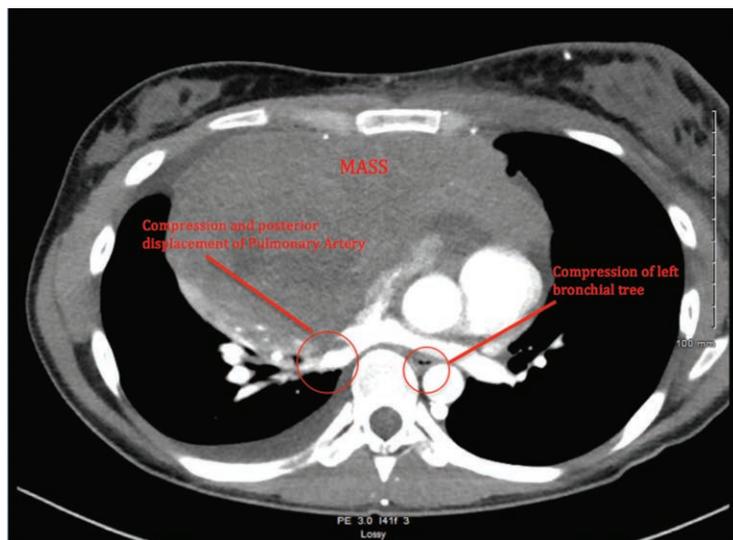


A Large Anterior Mediastinal Mass

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A LARGE anterior mediastinal mass (AMM) poses significant challenges for hemodynamic and airway management. This image demonstrates a 19 x 11 x 10 cm B-cell lymphoma compressing the tracheobronchial tree and pulmonary arterial vasculature. AMMs are predominantly malignancies such as lymphomas or thymomas.

Signs or symptoms of mediastinal compression such as orthopnea or upper body edema are strong predictors of perioperative complications.¹ Prognostic computed tomography findings include a tracheal cross-sectional area less than 50% or mainstem bronchus compression, as demonstrated in this image.² Evidence of a pericardial effusion is also strongly predictive of hemodynamic complications intraoperatively.^{1,3}

Cardiorespiratory complications occur from mechanical compression of the tracheobronchial tree and great vessels, as well as a reduction in functional residual capacity¹⁻³. The risk of perioperative respiratory complications appears to be highest in pediatric patients due to the mass effect on smaller intrathoracic volumes and more collapsible airway structures.¹ No standard protocol exists for AMM management; however, a thorough preoperative assessment of positional symptoms should be performed in addition to imaging studies to predict perioperative complications. After risk stratification, airway and hemodynamic management options such as reinforced endotracheal tubes or cardiopulmonary bypass can be considered.² If superior vena cava compression is a concern, femoral access can be placed prior to induction.² Preservation of spontaneous ventilation and avoidance of muscle relaxants are recommended due to concerns for mediastinal compression.^{1,2} Rescue positions identified preoperatively may be implemented to decrease the gravitational effects of the mass should complications occur intraoperatively.^{1,2}

Competing Interests

The authors declare no competing interests.

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References

1. Pearson JK, Tan GM: Pediatric anterior mediastinal mass: A review article. *Semin Cardiothorac Vasc Anesth* 2015; 19:248–54
2. Erdős G, Tzanova I: Perioperative anaesthetic management of mediastinal mass in adults. *Eur J Anaesthesiol* 2009; 26:627–32
3. Béchard P, Létourneau L, Lacasse Y, Côté D, Bussièrès JS: Perioperative cardiorespiratory complications in adults with mediastinal mass: Incidence and risk factors. *ANESTHESIOLOGY* 2004; 100:826–34; discussion 5A

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