

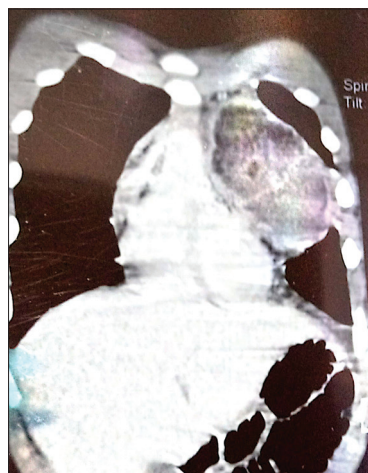
## Anesthetic management for large anterior mediastinal mass compressing great vessels of heart

Dear Editor,

Anesthesia management for large mediastinum masses poses distinctive challenges. With the induction of anesthesia, complications are usually the consequence of extrinsic compression of the airway, obstruction of the venous return, or obstruction to the output of the heart.<sup>[1]</sup> We present a case of large mediastinal mass which necessitated the use of one-lung awake intubation with beat-to-beat hemodynamic monitoring.

A 14-year-old boy presented with history of chest pain, weight loss, facial puffiness, dyspnea for 3 months and Computed tomography (CT) thorax revealed a heterogeneous mass lesion of  $9 \times 8 \times 12$  cm, involving anterior mediastinum, abutting cardiac chambers, pulmonary vessels, and trachea [Figure 1]. Echo cardiography revealed shifting of heart to right hemithorax but with normal ejection fraction. He was diagnosed with mature teratoma in the anterior mediastinum and was planned for excision through left anterolateral thoractomy with one-lung ventilation. On the day of surgery, standard monitors were attached. Two large-bore intravenous (IV) access were taken. Premedication was done with midazolam 1 mg IV and fentanyl 50  $\mu$ g IV. Awake intubation was done under mild sedation and recurrent laryngeal nerve block. An Eighteen G epidural catheter was placed in T<sub>9,10</sub> space. Right radial artery was

cannulated and transduced. The child was intubated using a 6.5 mm Univent single-lumen tube with bronchial blocker/ fixed at 20 cm. Anesthesia was maintained with O<sub>2</sub>:N<sub>2</sub>O, sevoflurane, and intermittent dose of muscle relaxant. The right internal jugular vein was cannulated. Just before thoracotomy, the bronchial blocker was inflated and one-lung ventilation was initiated. The patient's hemodynamic and ventilatory parameters were maintained throughout. For analgesia, he was administered 2 mg morphine with 0.25% bupivacaine (total volume 6 ml) through the epidural catheter. At the end of the surgery, the bronchial blocker was deflated and the neuromuscular blockade was antagonized, and the trachea was extubated. A volume of 2500 ml of crystalloids was infused over 4 h with 700 ml blood loss. The patient was discharged on 8<sup>th</sup> postoperative day.



**Figure 1:** Computed tomography thorax showing large heterogeneous mass compressing cardiac chambers, pulmonary vessels, and trachea

The most useful information for the anesthesiologist to guide management is imaging studies. Any deviation or compression of heart, airway, or great vessels needs to be evaluated. Head elevated position and awake intubation was adopted to avoid respiratory distress and hemodynamic instability due to superior vena cava (SVC) obstruction. Maintaining spontaneous respiration may be a good alternative because positive pressure ventilation may increase the risk of hypotension. Chemotherapy with bleomycin used in this child may have further contributed to pulmonary toxicity.<sup>[2]</sup> In case of SVC involvement, it is prudent to place a large IV cannula in the femoral vein to facilitate transfusion of blood and drug administration. In the event of complete loss of airway or cardiovascular collapse, institution of extracorporeal membrane oxygenation was kept ready.<sup>[3]</sup> Atelectasis post one-lung ventilation is the main cause of difficulty in weaning these patients off mechanical ventilation. Intraoperatively, anesthesiologist should be vigilant for excessive hemorrhage, herniation of heart or pulmonary torsion, dysrhythmias, and even cardiac arrest.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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