Management Options (Algorithms) for Mediastinal Masses Presenting with Impending Airway Obstruction

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Introduction & Discussion

Mediastinum is one of the most enigmatic areas of the human body with several important vital structures and its pathology can be equally riveting [1]. Malignant masses present more frequently with symptoms of invasion, compression, obstruction or sometimes, paraneoplastic features. Even though there are several articles and studies on anaesthetic management of mediastinal masses, there is paucity of literature on emergency management of acute presentation of mediastinal masses. An intra-thoracic or extra-thoracic airway obstruction by a large mass can be rapidly fatal, especially under anaesthesia [2]. The major precautions [3] which need to be taken include maintaining spontaneous respiration, passage of definitive airway (by awake fibre-optic intubation) distal to the site of airway compression, positioning adjustments, avoidance of muscle relaxants till the confirmation of correct tube placement and immediate availability of rigid bronchoscopy and cardio-pulmonary bypass.

Positive pressure ventilation in the face of unrelieved mechanical airway obstruction can be disastrous. The availability of a standby cardiopulmonary bypass can be made possible only in an operation theatre environment. Extra-corporeal membrane oxygenation (ECMO) [4] is a recent and promising addition to the armamentarium of emergency life support systems available in select centres for such life-threatening scenarios. It can be used as a temporising measure till the patient is stabilised and prepared for surgery, after a definitive CTVS (cardio-thoracic vascular surgeon) opinion. The patients’ femoral vessels may be cannulated prophylactically. Facilities for institution of life support or ECMO are desirable in intensive care units caring for patients with mediastinal masses. This article depicts the algorithm for management of acute respiratory distress due to hitherto undiagnosed airway-compressing mediastinal masses.

Keywords: Mediastinal mass; Airway obstruction; Positive-pressure ventilation; Extra-Corporeal Membrane Oxygenator; Intensive care

Abbreviations: ECMO: Extra-corporeal Membrane Oxygenation; CTVS: Cardio-Thoracic Vascular Surgeon; DLT’s: Double Lumen Tubes
Figure 1: Flowchart depicting unrelieved airway obstruction due to Mediastinal Masses and Clinical deterioration with Positive Pressure Ventilation.

Figure 2: Algorithm demonstrating the Management of Mediastinal Masses in the Emergency and Intensive Care Unit.

References


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