Emergency Management of Child with Anterior Mediastinal Mass

CASE PRESENTATION

- 8 y/o female with large anterior mediastinal mass admitted to oncology
- Presents with fatigue and dyspnea
- Rapid progression of orthopnea and SVC syndrome
- Acute respiratory failure on the floor with hypoxia, agitation, and loss of IV access
- PICU team placed IO line and requested anesthesia assistance
- Two pediatric attending anesthesiologists respond immediately
- ECMO team also consulted but not eligible due to SVC syndrome and small femoral vessels

ANESTHESIA EMERGENCY AIRWAY MANAGEMENT

- Oxygenation improved with positioning maneuvers – semi lateral decubitus with neck rotation in contralateral direction
- CT images quickly reviewed to determine level of obstruction
- PIV placed, RSI performed with ketamine and succinylcholine
- Successful intubation on 1st attempt
- Improved oxygenation
- Dynamic airway compression with any change in position
- Transported to PICU
- Airway exchange catheter used to place reinforced ETT
- Emergency steroid dose administered after consultation with oncologist

DISCUSSION

- Airway management if respiratory collapse occurs is not well described
- Supine positioning is not possible with unsecured airway
- Emergency radiation is not an option in setting of respiratory collapse
- Emergency steroids can be given but results not immediate in life threatening situations
- Obstruction of airway can be distal to carina and dynamic
- Reinforced ETT may help but not readily available outside OR
- ECMO is time intensive and may not be successful due to location and compression of major vessels and/or SVC syndrome

ANTERIOR MEDIASTINAL MASSES IN CHILDREN

- Children with anterior mediastinal masses are at high risk for respiratory collapse
- Acute respiratory or cardiovascular collapse requires immediate intervention and multidisciplinary cooperation
- Clinical symptoms may not correlate with radiologic evidence
- Tracheal cross sectional area and peak expiratory flow rate less than 50% are high risk for general anesthesia
- Bronchus collapse and obstruction may cause significant respiratory collapse not relieved by intubation
- SVC syndrome and compression of major vessels contribute to cardiovascular compromise
- Lymphomas can rapidly progress over hours to days

References


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