A large anterior mediastinal mass with complete opacification of Left hemithorax

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Airway management of a patient with an anterior mediastinal mass with complete opacification of left hemithorax

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Introduction

An anterior mediastinal mass may compress the major airway and may result in total compression during induction of anesthesia. Identification of airway compression warning signs preoperatively and adequate preoperative preparation for airway management in the event of total airway compression is a vital part of anesthetic technique in the anesthetic management of a patient with large anterior mediastinal mass.

Case description

A 74 year old woman with an anterior mediastinal mass with total obstruction of the left main stem bronchus presented for flexible bronchoscopy. Her imaging studies showed a large lobulated mediastinal mass measuring 15 cm X 13 cm X 12cm with complete obstruction of left main stem bronchus with opacification of left hemithorax secondary to atelectasis of the left lung. An underlying pleural effusion is also a contributory factor for this opacification.

A gentle induction of general anesthesia (GA) was performed with a combination of propofol and sevoflurane, with patient breathing spontaneously. After confirming easy mask ventilation, rocuronium was administered and the airway was easily secured with an endotracheal tube with direct laryngoscopy.

Preoperative warning signs:2
- Dyspnea
- Inability to assume supine position
- Signs airway compromise on chest X-ray and CT scan
- Hypoxia with supplemental oxygen

Warning signs on CT:
- Narrowing of trachea or major bronchi
- Atelectasis of whole lung / one or more lobes

Unique preparation for a patient with a large mediastinal mass with airway compromise:2
- Rigid bronchoscope for high frequency ventilation
- Thoracic surgeon standby
- Cardiopulmonary (CPB) bypass standby
- ECMO standby

Possible Reasons for opacification of left hemithorax in our case:
1. Atelectasis due to left main stem bronchial obstruction
2. Atelectasis due to endobronchial extension
3. Underlying pleural effusion

CONCLUSIONS

Maintenance of spontaneous ventilation during induction of general anesthesia is paramount in a patient with airway compromise with an anterior mediastinal mass. In our patient we were able to intubate while maintaining spontaneous ventilation and after confirming of adequate ventilation we administered non depolarizing muscle relaxant.