Temporary tracheal stenting as an extubation strategy in a patient with large anterior mediastinal mass

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Introduction

Anesthetic management of patients with large anterior mediastinal masses (AMM) aims at preventing complications associated with airway compression. Even carefully managed AMM can lead to morbidity and death. Existing literature is replete with strategies for preoperative planning and induction of these patients. However, less attention is given to extubation strategies; specifically in instances where a patient has undergone general anesthesia for a procedure other than complete AMM resection.

As Interventional Pulmonology and Radiology techniques expand, more procedures are done outside the operating room. Patients with AMM are presenting in these non-operating room settings, requiring general anesthesia and extubation post-procedure with compressive mediastinal tumors still in place; thereby posing a threat of airway compression upon extubation. We report the use of a temporary tracheal stent as a strategy to improve extubation success and provide symptomatic relief in a patient with a large AMM.

Case

A 72-year-old woman with recently diagnosed lymphoma and an 8x7x6cm AMM with mid-trachea and superior vena cava compression presented for definitive tissue biopsy. She presented with a choking sensation and cyanosis with minimal reclining position. Awake fiberoptic intubation was performed, and a reinforced endotracheal tube was placed beyond the tracheal compression. Positive pressure ventilation and paralysis were gradually initiated without incidence. The patient remained hemodynamically stable throughout.

The surgical procedure was completed in the supine position albeit with worsening neck and facial edema. Due to concerns for safe extubation, decision for tracheal stent placement was made to relieve compression. A 18x40 mm endo-tracheal stent was placed, and the patient was extubated in the recumbent position while maintaining spontaneous ventilation. She was monitored overnight and discharged home the next day without complications. The biopsy demonstrated diffuse large B-cell lymphoma. Chemotherapy was initiated with good response and the tracheal stent was removed one month later after significant improvement in symptomatology.

Learning Points

• Anesthetic management of patients with large AMM aims at preventing complications associated with airway and cardiovascular compression

• Existing literature is replete with strategies for preoperative planning and induction of these patients

• Despite many complications occurring postoperatively, less attention is given to extubation

• This case demonstrates the utility of temporary tracheal stenting to improve extubation success and provide symptomatic relief in a patient with a large AMM

References

Blank, Randal S., and Duncan G. de Souza. "Anesthetic management of patients with an anterior mediastinal mass: continuing professional development." *Canadian Journal of Anesthesia/Journal canadien d'anesthésie* 58.9 (2011): 853-867.

Erdös, Gabor, and Irene Tzanova. "Perioperative anaesthetic management of mediastinal mass in adults." *European Journal of Anaesthesiology| EJA* 26.8 (2009): 627-632.

Matsumoto, Ryoichi, Mitsuoka, Masahiro, Hashiguchi, Toshihiro, et al. "Temporary airway stenting for giant anterior mediastinal tumor biopsy: Two case reports." *International Journal of Surgery Case Reports* 64 (2019):157-160.



Fig.1 CT chest (axial view) demonstrating mass effect on right anterior aspect of trachea

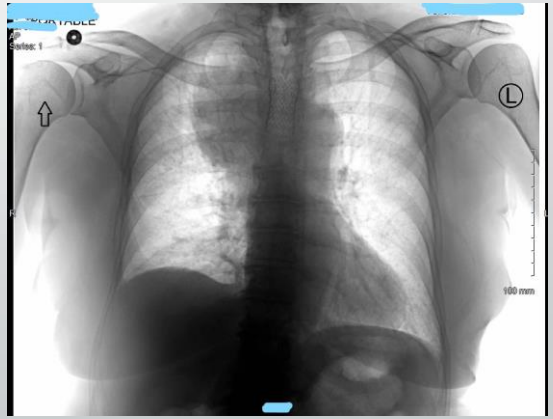


Fig.2 CXR with stent in place post-extubation