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Anaesthesia Challenges in Trauma to Airway During Thoracotomy Surgeries

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Abstract: ***Thoracic re-operations present significant anaesthetic challenges, particularly when prior airway trauma and the need for lung isolation coexist. We describe the anaesthetic management of a patient undergoing re-do left thoracotomy planned for lobectomy with the possibility of pneumonectomy. The initial surgical attempt was abandoned after transection of the left main bronchus due to unavailability of appropriate equipment, following which the patient developed clinical features suggestive of bronchopleural communication. During the subsequent surgery, lung isolation with a left-sided double-lumen tube was attempted; however, airway contamination with blood and secretions in the lateral position led to inadequate ventilation. Prompt exchange to a single-lumen endotracheal tube restored effective ventilation, allowing the procedure to proceed as a pneumonectomy. The patient was successfully extubated at the end of surgery with stable postoperative respiratory status. This case highlights the importance of anticipation of airway difficulties, continuous vigilance, and flexibility in airway management strategies during complex thoracic re-operations.***

Keywords: Re-do thoracotomy; Thoracic anaesthesia; One-lung ventilation; Double-lumen tube; Airway trauma; Pneumonectomy; Bronchopleural communication

1. Background

Thoracic surgeries such as lobectomy and pneumonectomy pose unique anaesthetic challenges due to the need for one-lung ventilation and the risk of airway compromise. Re-do thoracotomies add further complexity because of altered anatomy and higher risk of intraoperative complications.

2. Case Presentation:

We report the anaesthetic management of a patient scheduled for left thoracotomy with left lobectomy sos pneumonectomy. In the first attempt, the left main bronchus was transected to facilitate dissection, but the procedure was abandoned due to lack of suitable equipment. Postoperatively, the patient developed cough and bubbling in the intercostal drain, suggestive of bronchopleural communication.

During the second attempt, a left-sided double-lumen tube was placed for lung isolation. However, in the lateral position, leakage of blood and secretions into the airway resulted in inadequate ventilation. The double-lumen tube was immediately exchanged for a single-lumen tube, which restored ventilation. The procedure proceeded as a pneumonectomy, and the patient was extubated at the end of surgery with stable oxygen saturation on supplemental oxygen.

3. Discussion

This case illustrates the challenges of re-do thoracotomy in the presence of airway trauma, including difficulty in achieving lung isolation, risk of contamination of the dependent lung, and maintenance of effective ventilation. Prompt recognition and timely modification of the airway device were critical to safe management.

4. Conclusion

Meticulous preparation, vigilance, and adaptability in airway strategies are essential for safe anaesthetic management in complex thoracic re-operations.

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