1052208 - ANAESTHETIC MANAGEMENT OF IATROGENIC TRACHEAL RUPTURE

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Purpose: This case report presents an intra-operative iatrogenic anterior tracheal rupture, occurring during sternotomy for coronary artery bypass grafting (CABG). The focus is recognition and early management of unexpected airway injury. Also presented is a literature review defining risk factors for, and incidence, complications and management of, iatrogenic tracheal injury.

Clinical Features: Informed consent was obtained as per our institutional research ethics board via the consent form.

This 74 year old male was undergoing urgent CABG. Anterior tracheal rupture occurred during sternotomy or subsequent cautery dissection. The anesthesia team suddenly recognized a leak in the breathing circuit localized to the endotracheal tube (ETT) cuff, damaged in addition to the trachea. The surgical team was immediately notified, and they subsequently discovered an 8-9 mm diameter laceration to the anterior trachea between the second and third tracheal rings. The ETT was gently advanced distally and ventilation and oxygenation were achieved with frequent cuff re-inflation until the fiberoptic bronchoscope was brought to the operating room. Tracheobronchoscopy was then used to confirm the tip of the ETT just above the carina. Fortunately, there was minimal bleeding, and the ETT position allowed safe ventilation of both lungs. The surgical team requested the laceration be repaired prior to tube exchange, which was completed with a pericardial patch. A tube exchanger was used to replace the ETT with the cuff below the tracheal repair, verified with fiberoptic visualization.

Conclusion: There have been two case reports of anterior tracheal injury during sternotomy for CABG 1,2. This case was complicated by damage to the ETT cuff, necessitating replacement and complicating ventilation. Iatrogenic rupture of the tracheobronchial tree is rare, most commonly occurring during endotracheal intubation causing injury to the posterior membraneous trachea. Double lumen ETTs and the use of stylets have the highest risk estimated as 0.000013% to 0.35% 3,4. Other iatrogenic causes of tracheal injury include tracheal dilation, tracheostomy, other endoscopic procedures 4, and esophagectomy 5. Management of tracheal injury includes airway protection, maintenance of oxygenation and ventilation and surgical consultation. Early tracheobronchoscopy is vital to delineate the injury and execute treatment. Tracheal injury can result in catastrophic bleeding or mechanical complications like tension pneumothorax. Immediate lung isolation and chest tube insertion could be required for patient stabilization. In this case, airway control was maintained through temporary ventilation distal to the laceration with a damaged ETT. This allowed surgical repair and controlled replacement of the ETT. Although this patient developed subsequent mediastinitis requiring re-operation and temporary tracheostomy, he was discharged home.