00155 A Case of Intraoperative Tracheal Compression Following Ruptured Penetrating Thoracic Aortic Ulcer

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Aims: Penetrating aortic ulcers (PAU) result from atheromatose plaques perforating the internal elastic lamina. Complications of PAU include development of intramural hematoma due to erosion of aortic vasa vasorum by the ulcer, pseudoaneurysm formation, progression to overt aortic dissection, or rupture in up to 40% of patients. Here we described a case of intraoperative tracheal ompression following ruptured penetrating thoracic aortic ulcer and its learning points.

Methodology: This case report was written based on clinical observation and literature search.

Result: A 75 year old Chinese lady presented to the emergency department with sudden onset of chest pain. Urgent CT aortogram showed a ruptured 7mm atherosclerotic ulcer at the superior lateral wall of aortic arch distal to the subclavian artery, complicated by a large hemopericardium, mediastinal hematoma and small left hemothorax. Decision was made for emergency thoracic endovascular aortic repair (TEVAR). During rapid sequence induction, resistance during double lumen tube insertion was noted and regurgitation of gastric fluid occurred. After suctioning, the patient was intubated with a standard ETT. Subsequently, high ventilating pressures and bilateral crepitations were noted. Bronchoscopy was performed to rule out aspiration pneumonitis but revealed significant extrinsic compression of the posterior tracheal wall above and at the level of carina, presumably caused by a rapidly enlarging mediastinal hematoma.

There was no evidence of airway soiling and surgery proceeded uneventfully with the patient on pressure - control ventilation.

Conclusion: Airway compression by a large mediastinal hematoma, though rare, may be significant enough to prevent endotracheal intubation and ventilation, as well as haemodynamic instability. We advocate early assessment of mediastinal compression via a multifaceted approach involving patient symptoms, examination, haemodynamics, and imaging. Severe cases may require careful planning and support including tracheal stenting via rigid bronchoscopy or even extracorporeal membrane oxygenation.