INTUBATION FOLLOWING
UPPER ESOPHAGEAL
PERFORATION

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Clinical Presentation

• 72 year-old female status-post endotracheal intubation for bilateral mastectomies at referring hospital
• Presented to referring ER on post-operative day #5
  – Chest CT revealed mediastinitis, likely secondary to upper esophageal perforation
  – Prompted immediate transfer for surgical management

Pre-Operative Considerations

• Location of perforation
  – Suspected high cervical
• Potential difficult intubation
  – Iatrogenic, traumatic etiology of perforation
  – No prior airway history available
  – Physical exam findings
• Requiring double-lumen endotracheal tube
  – Primary placement versus exchange
• Patient counseling
  – Risks of anesthesia
  – Post-operative course and expectations
Execution of Anesthetic Plan

1. Glottic visualization with Glidescope laryngoscopy
2. Placement of single lumen endotracheal tube
3. Tube exchanger placed through single lumen tube
4. Double lumen endotracheal tube in place following removal of single lumen tube
5. Double lumen endotracheal tube in place following removal of the exchange

Background on Esophageal Injuries

• More than half are iatrogenic, most occurring following upper endoscopy
• Commonly occur at 3 anatomical points of narrowing:
  – Cricopharyngeus muscle
  – Broncho-aortic constriction
  – Esophagogastric junction
• Common Symptoms: neck pain, fever, crepitus
• Rarity and variability in presentation make diagnosis difficult
• Complications: hydropneumothorax, mediastinitis, fever, sepsis

Management and Treatment

• Management: early recognition, stabilization, and assessment for surgical intervention
  – Incision and drainage
  – Primary repair
  – Esophageal resection
• Intervention depends on location and patient presentation
  – Incision and drainage
  – Primary repair
  – Esophageal resection
• Considered surgical emergency
  – Leakage of gastric/oral contents into mediastinum initiates inflammatory process leading to sepsis with associated high morbidity
  – Doubling of overall mortality from 14 to 27% with delay in diagnosis for every 24 hours after perforation
• Post-operative complications: pneumonia (5-10%), esophageal leak (2-5%), periarditis (1-3%)
Post-Operative Course

- No large series available to examine typical post-op complications but based on several small series:
  - Persistent leak, fistula formation, mediastinitis, empyema, esophageal stricture, pneumonia, abscess, and sepsis

Regarding our patient’s course:
- Re-intubated on POD 9 using same technique
  - Remained intubated for 48 hours post-operatively secondary to vocal cord edema evidenced during intubation
- Thoracotomy and muscle flap repair on POD 20 for continued high cervical leak
- Prolonged IV antibiotic course (3 months)
- Seen in Thoracic Surgery clinic 2 and 5 months post-operatively, doing well