Emergency Airway Management
Challenges in Button Battery Tracheal Injuries

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Summary
• We discuss two cases where emergency management of the child’s airway was crucial following removal of the oesophageal button battery
• Cases of button battery ingestion can prove challenging due to the size and location of the injury
• When there are symptoms of airway compromise, early laryngotracheobronchoscopy (LTB) should be undertaken

Introduction
• Ingestion of button batteries may cause significant injury and death.
• Electrical current discharged from the battery causes sodium hydroxide to build up in tissues
• Sodium hydroxide causes burns
• This can occur even in flat or discharged batteries
• Complications may manifest later and specialist input is essential in these cases

Case Presentation
Case 1
• 20 month old presented with increased work of breathing
• 6 days generally unwell, temperatures and wheeze
• Day 1: oesophageal battery removed in theatre
• Post-op: large aspiration pneumonia from fistula rupture caused significant airway compromise, requiring major ventilatory support
• Day 8: LTB showed tracheoesophageal fistula in close proximity to the carina
• Transferred to GOSH – complicated repair with multiple procedures

Case 2
• 12 month old presented with respiratory distress
• 48 hours of preceding symptoms
• Day 1: oesophageal battery removed in DGH
• Transferred to Southampton
• Day 1: LTB showed signs of posterior tracheal wall injury. No evidence of fistula
• Post-op: increased secretions and increased work of breathing
• Day 7: LTB showed a large (1.6cm) posterior tracheal perforation and tracheoesophageal fistula
• Transfer to GOSH delayed as patient unstable due to leak into the fistula from the tip of ETT
• Day 8: LTB and replacement of ETT into right main bronchus
• Transferred to GOSH – complicated TOF repair

Discussion
1) Unwitnessed battery ingestion
• Both cases presented with non-specific symptoms following unwitnessed battery ingestion
• Symptoms can manifest up to 28 days following ingestion
2) Early assessment and repeat laryngotracheobronchoscopy
• Both cases had no sign of fistula on initial LTB and developed tracheoesophageal fistulae later
• Have a low threshold for early repeated LTB -do not be reassured by normal supraglottic appearances
• If struggling to ventilate, consider a tracheoesophageal fistula distal to the ETT
3) Safe transfer
• Refer to specialist national centre for major complications
• For safe transfer, placement of the endotracheal tube under direct vision may be required

http://www.poison.org/battery/guideline

References

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