A BRUSH WITH DANGER

AN EMERGENT TRAUMATIC TRANSORAL INTRADURAL TOOTHBRUSH PERFORATION WITH SUPERIOR CERVICAL LAMINECTOMY AND DURAL REPAIR

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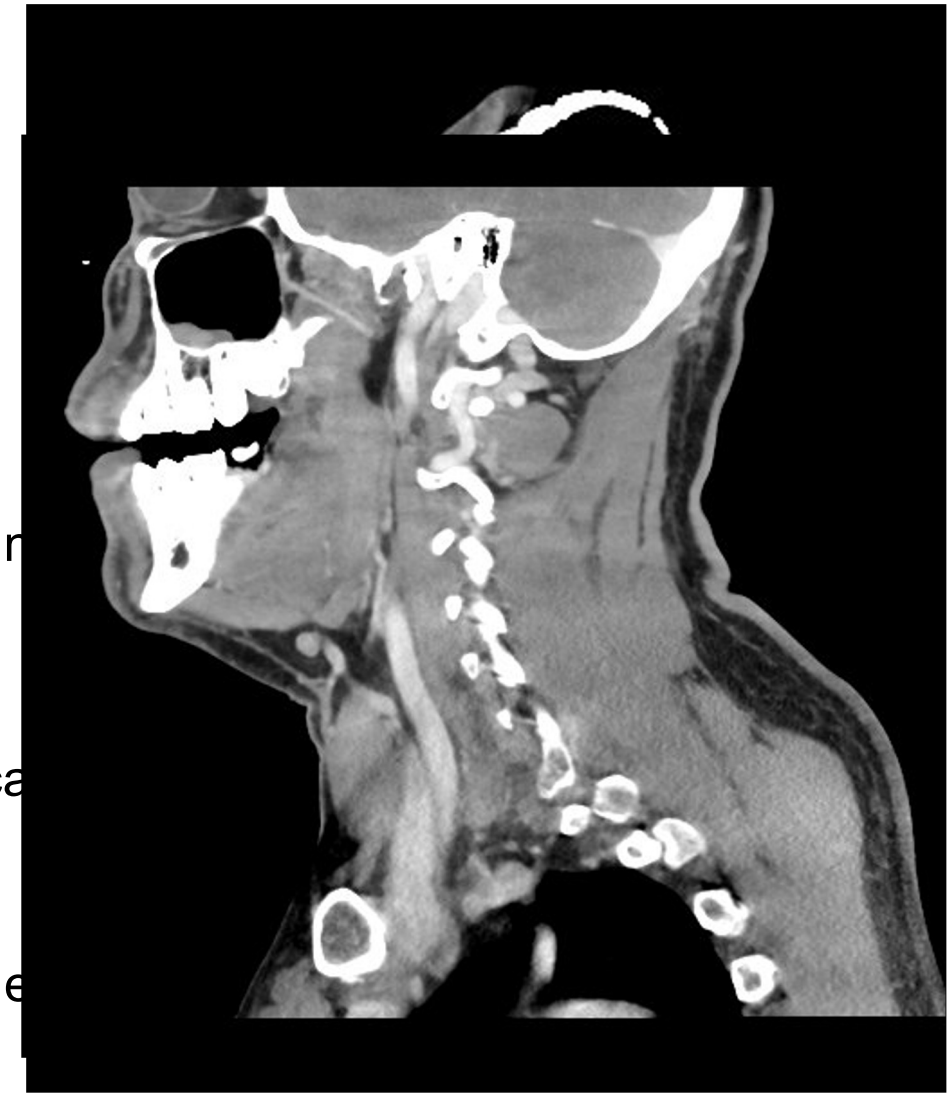
CASE BACKGROUND

- Previously healthy 40-year-old male
- Acutely alcohol intoxicated (231 mg/dl)
- Fell on electric toothbrush
- On presentation
  - Limited speech, neck movement (pain
  - Normal neuro exam

CT READ

- **Through C2-3 foramen** into spinal ca
- **Spinal cord deviation**
- **Abuts vertebral artery**
- Significant pharyngeal, soft tissue ede
- **Anterior C2 displacement**



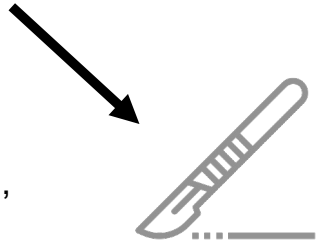
MAJOR ANESTHETIC CONCERNS

PROCEDURE: Planned awake tracheostomy → anterior/posterior approach C2-3 laminectomy, duraplasty, removal of toothbrush

MAIN CONCERNS:

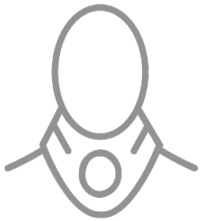
TIME

Between CT and induction could exacerbate bleeding, and edema



AIRWAY LOSS

Risk of bleeding, edema, aspiration

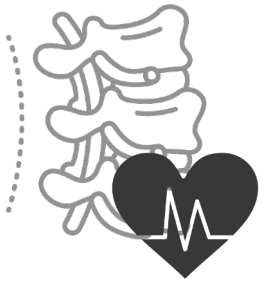


C-SPINE PRECAUTIONS

Unstable, immediate proximity to exquisitely sensitive anatomy

ACUTE EtOH INTOXICATION

Patient unable to follow commands



NEURO-HEMODYNAMICS

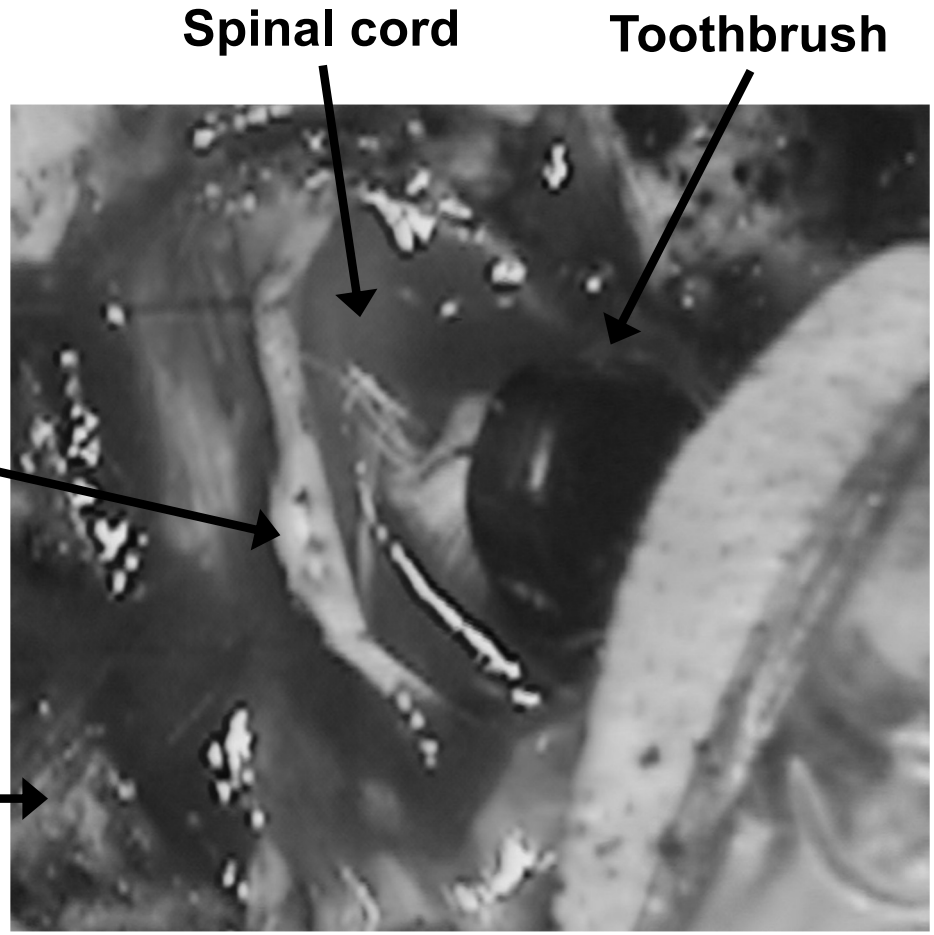
Risk of neurogenic shock, bleeding, and hypotension: increased risk for spinal cord hypoperfusion

ANESTHETIC PLAN

Management technique	Perioperative implications
Limit head movement	1. Proximity to vertebral & spinal arteries 2. Bristles embedded within spinal cord 3. Anterior C2 displacement
Close attention to oxygenation, ventilation	Worsening edema, bleeding from injury site often seen at 3 – 24 hours post trauma
Carefully titrated sedation: dexmedetomidine, fentanyl	1. Acute alcohol intoxication - ↓MAC 2. ? NPO status - aspiration risk
Procedure: TIVA – propofol, remifentanil	Neuromonitoring
Vascular access: 2 IVs, arterial line	High risk procedure, frequent lab draws
Remain intubated to ICU	Edema, bleeding

PATIENT OUTCOME

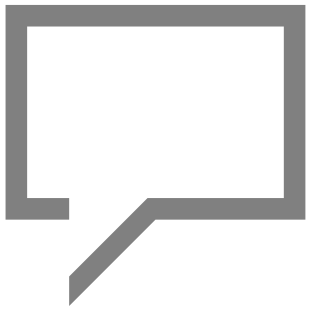
- Intra-operative
  - Difficulty removing toothbrush
  - Anterior removal
- POD1: precipitous neurologic decline
  - Cerebellar ischemia
  - Emergent C1 laminectomy, suboccipital decompression, removal of necrotic cerebellar tissue, placement of EVD
- POD20: discharged to inpatient rehab
- POD32: discharged home
  - Slight left sided cerebellar symptoms



FOCUSED LEARNING POINTS

1. **2500 toothbrush related oropharyngeal trauma cases/year**
   - Mostly children
   - Few require urgent/emergent surgical intervention
2. **Exclude vascular involvement**
   - CT angiography
   - Blunt objects – high risk for arterial dissection & thrombosis
3. **Airway management** in oropharyngeal and neurological compromise
   - Extreme caution with neck movement
   - Consider surgical airway
   - High risk to acutely worsen between 3 – 24 hours
4. **Post-operative considerations**
   - Admission to ICU
   - Low threshold for re-imaging

QUESTIONS & ANSWERS



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