Critical Airway Obstruction in the Trauma Bay

Continue ED assessment and management

Patient with critical airway obstruction who is in imminent danger of respiratory collapse?

YES

Critical Airway Team (CAT) Page:

1. BLACK phone in bay 2 – direct line to STATLINE
2. Ask for "Critical Airway Team page"

CAT Members expected: ENT, Anesthesia, OR nurse and B5 RT with airway cart

Is the patient deteriorating and in need of immediate intervention?

NO

Supportive Care:
1. Supplemental oxygen
2. Consider IV placement
3. Continue medical support
4. Prepare for possible rapid transport to OR and/or PICU
5. Confirm CAT oae sent

YES

ED team intervention:
1. Heimlich/chest thrusts
2. Confirm CAT page sent
3. Prep for laryngoscopy
4. If patient not arrested, consider sedation with ketamine before laryngoscopy (prep succinylcholine)
5. Prepare needle cricothyroidotomy kit
6. Remove foreign body with McGills
7. Intubate
8. If non-removable foreign body, consider right mainstem intubation
9. Need for surgical airway anticipated – see Pediatric Surgery resident

Is the patient deteriorating and in need of immediate intervention?

NO

Continue support care and await CAT

YES

Critical Airway Team Arrival

Is the patient deteriorating and in need of immediate intervention?

NO

Continue support, prepare for transfer
1. Disposition and definitive management in consultation with Anesthesia, ENT, and Pediatric Surgery if present
2. Prepare patient and family for transport

YES

CAT Interventions:
1. Heimlich/chest thrust
2. Anesthesia: Support airway, prep for laryngoscopy
3. ENT and RT prep for bronchoscopy
4. ED staff: Prepare for OR and/or PICU
5. Anesthesia/ENT: Intubation if indicated
6. ENT: Bronchoscopy if indicated
7. Need for surgical airway anticipated – see Pediatric Surgery resident

Critical airway obstruction:
A condition in a patient whose airway may require bronchoscopy and/or a surgical airway to secure AND is severe enough to cause:
- hypoxemia (O2 sat < 90%)
- severe reduction in air movement, or
- altered mental status

Examples of conditions causing critical airway obstruction:
- Foreign body aspiration
- Epiglottitis
- Tracheitis
- Croup
- Airway trauma
- Known difficult airway

Roles and Hierarchy
- Anesthesia: Airway control and laryngoscopy
- ENT: bronchoscopy, surgical airway
- ED: ensure others fill roles
- Surgery: support and surgical airway
Critical Airway Obstruction

**Critical Airway Team page** = ENT, Anesthesia, OR nurse and BSRT with airway cart respond for potential airway procedure when intubation may not be enough. Specifically, you are predicting need for bronchoscopy, surgical airway, or emergent move to the OR.

**Anesthesia Stat page** = Anesthesia comes to help intubate when intubation attempts are unsuccessful. Specifically, you are consulting a laryngoscopist.

**Immediate ED Intervention:**
- First principles, BLS and be careful not to aggravate the child
- Oral exam: **do not perform laryngoscopy on a stable patient**
- Available maneuvers: right mainstem intubation, cricothyroidotomy, direct removal

**Basic BLS maneuvers**
- Back blows and chest thrusts for an infant
- Heimlich maneuver for age > 1

**Intentional right mainstem intubation (RMI)**
- Used when foreign body is causing obstruction and cannot be removed with McGill’s
- Use ETT to push foreign body into the right mainstem bronchus
- Withdraw the ETT to the mid-trachea, should then be able to ventilate the left lung
- Must use a stylet with the ETT or foreign material could clog the ETT
- **Temporizing measure** only

**Medications to consider**
- Racemic epinephrine
  - Dose: 2.25% (0.5 mL), dilute with 3 mL saline neb for delivery
- Dexamethasone (Decadron)
  - Dose: 0.6 mg/kg (max 10 mg) for croup.
  - Concentration: 4 mg/mL (IV), 10 mg/mL (PO and IM)
- Epinephrine IM
  - 1:1000 preparation: **0.01 mg/kg** (max of 0.3-0.5 mg every 20 min x 3)
  - IM (not SQ) − evidence supports the more rapid absorption and higher serum levels of epinephrine when administered IM in thigh compared to SQ or IM in the arm (check Codebook for current concentrations)

**Approach to RSI (Avoid paralysis if possible)**
- Ketamine
  - Sedation and analgesia
  - Dose: 1-2 mg/kg (max 100 mg)
  - Administration: Rapid IVP without dilution (10 mg/mL) when succinylcholine OR IVP over 60 seconds when alone
- Succinylcholine
  - Paralysis
  - Dose: 1-2 mg/kg (max 150 mg)
  - Administration: Rapid IVP without dilution (20 mg/mL)

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