ANESTHESIA CONSIDERATIONS AND MANAGEMENT OF STRIDOR

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WHAT IS STRIDOR

- Noisy breathing
- Symptom not a disease
- Generated by turbulent airflow caused by some form of incomplete airway obstruction
- Ominous clinical symptom due to the possibility of the airway becoming completely obstructed
- Usually not heard until circumference of the airway decreases to 4.5 millimeters or less
- Poiseuille’s Equation: Resistance is inversely proportional to the radius to the 4th power
  - Resistance = (Viscosity)(Length of Tube)/Radius^4
WHAT DOES STRIDOR SOUND LIKE?
Types of Stridor

- Inspiratory, expiratory, or biphasic
- Different types signify obstruction at different levels of the airway
- Inspiratory: Obstruction above the true vocal cords
- Expiratory: Obstruction below the true vocal cords
- Biphasic: Obstruction at the level of the vocal cords
CAUSES OF STRIDOR

- More common in pediatric patients
- Pediatric patients more likely to have congenital causes of stridor
- Croup
- Inhalation of foreign bodies
- Traumatic or multiple intubation attempts
- Laryngospasm
- Hemorrhage
- Vocal cord paralysis
- Anaphylactic reactions
TREATMENT

- Initial management regardless of cause
  - Sit patient up
  - 100% oxygen via facemask
  - Nebulized racemic epinephrine
  - Intravenous dexamethasone
  - Heliox
- Reintubation or tracheostomy placement may be necessary if obstruction continues
**DOSING**

### Pediatrics
- Racemic epinephrine (2.25%): 0.05-0.1mL/kg (max dose 0.5mL) in 2mL NS, may repeat every 20 minutes
- Dexamethasone IV: 0.6mg/kg once, Max dose 16mg

### Adults
- Racemic epinephrine (1:1000): 1mg in 5mL NS every 30 minutes
- Dexamethasone IV: 0.1mg/kg every 6 hours
ANESTHESIA CONSIDERATIONS

• Can occur pre, peri, or postoperatively
• Minimize airway irritation from intubation and extubation
• Be aware of anesthesia events that can lead to stridor (knocking out a tooth)
• Quickly recognize and provide swift management
  • Know treatment for stridor before it progresses to complete airway obstruction
Cuffed endotracheal tube use in pediatric patients

- Weiss et al. studied incidence of post-extubation stridor when using cuffed vs. uncuffed ET tubes
- Found no increased incidence of stridor with cuffed tubes
- Reduced the need for ET tube changes
QUESTIONS?
REFERENCES


