RESPIRATORY EMERGENCIES SYMPOSIUM

6th March 2017

Dr. Saad Al Juma, MD, FRCP(C)
Adult Emergency Department
Royal Hospital
UPPER AIRWAY EMERGENCIES

- Upper Airways Infections
- Anaphylaxis
- Airways Burns
- Foreign Body
Upper airway infections

- Croup
- **Epiglottitis**
- Tracheitis
- Peritonsillar abscess
- Ludwig’s angina
- Retropharyngeal, danger or paravertebral abscess
Epiglottitis

- Cellulitis involving Supraglottic structures
- Hib vaccination – dramatic decline
- Incidence in Adults has risen
- Strp and Staph spp in children
- Rare- H.influenza in both immunized and non immunized
Epiglottitis

www.midwestsinus.com
Epiglottitis

• Males and smokers
• High risk:
  – Immunocompromised
  – DM
  – Rapid progression
Epiglottitis

• 1-2 days prodrome
• Toxic appearance
• Rapid progression of fever, stridor, resp distress, drooling, throat pain/tenderness
• Younger children: Gradual and subtle symptoms
Epiglottitis

• Lateral neck film
  – “thumbprint” sign
  – Caution attempts of radiography
  – Laryngoscopy: diagnostic but not recommended – only in controlled setting
  • Video laryngoscopy is recommended
Epiglottitis

• IV Antibiotics
• Monitored observations
• Secure airways – Awake intubation
• IV steroids in adults, no studies in children
ANAPHYLAXIS

• Acute, life-threatening IgE or non-IgE-mediated response
• Foods, medications, latex, Blood products, contrast
ANAPHYLAXIS

• Typically in minutes after exposure to a trigger – 5-30 min
• Commonly cutaneous symptoms first
• Recurrence in up to 20%
  – Delayed epi use or multiple doses
• Rapid progression linked with more severe course
Part 2. Clinical criteria to diagnose an acute anaphylactic episode

Anaphylaxis is highly likely when any one of the following 3 criteria is fulfilled:

1. Acute onset of an illness involving the skin, mucosal tissue, or both and AT LEAST ONE of the following:
   - Respiratory compromise
   - Reduced BP or associated symptoms of end-organ dysfunction

   **OR**

2. Two or more of the following that occur rapidly after exposure to a likely allergen for the patient:
   - Involvement of the skin-mucosal tissue
   - Respiratory compromise
   - Reduced BP or associated symptoms of end-organ dysfunction
   - Persistent gastrointestinal symptoms

   **OR**

3. Reduced BP occurring rapidly after exposure to known allergen for the patient
   - Infants and children: low systolic BP (age specific) or >30% decrease in systolic BP
   - Adults: systolic BP <90 mm Hg or >30% decrease from baseline

Abbreviations: BP, blood pressure.

ANAPHYLAXIS

• Clinical diagnosis
• Labs can not rule in or out
• Multiple systems involvement
• Respiratory (up to 50%)
  – Swelling of face, tongue
  – Airways compromise

Swelling of face, airways compromise
ANAPHYLAXIS

• Markers
  – Tryptase: within 60 min
    • False negative in some food-induced anaphylaxis
  – Serum Histamine: minutes until 60 minutes
  – RAST: specific for IgE to suspected triggers- sensitivity
ANAPHYLAXIS

• Rapid Epi administration
• Airways and circulation
• Observation and management addressing “biphasic” pattern
ANAPHYLAXIS

• ABC
  – Secure airways and O2
  – IV access and hemodynamic status

• Epinephrine
  – 0.01ml/kg of 1:1000 (0.01 mg/kg) IM at lateral thigh
  – 5-10 min intervals PRN
  – IM > SC
ANAPHYLAXIS

• Steroids: prevent recurrence
• Diphenhydramine
• Ranitidine
• Inhaled Beta agonists
• Inhaled Epinephrine
• IV Epinephrine for refractory hypotension
ANAPHYLAXIS

• Observe 6-8 hours for late phase reaction
• Discharge:
  – Stable and no rebound
  – Always with 2 Epi Pens
  – Clear instructions
  – Allergist F/U
AIRWAY BURNS

• Common in Thermal and chemical burns
• Smoke or steam inhalation
• Aspiration/ swallowing of hot liquids
• Commonly above carina
• Thermal Epiglottitis
• Increased mortality of thermal when associated with inhalation burn ( from 10% to 50 %)
AIRWAY BURNS

- Singed nasal hair, facial burns, stridor, hoarseness, dyspnea
- Normal oropharynx
- Direct fibro-optic visualization under GA for diagnosis and prognosis

https://www.slideshare.net/NicholasKmanMDFACEP/ohio-acep-board-review-environmental-emergencies-1
AIRWAY BURNS

• Early Airways control
  – Cuffed tube
  – Succinylcholine safe within 24 hours of injury

• Steroid : no evidence of improved pulm. function

• Inhaled bronchodilators in bronchospasm
Foreign Bodies of the Airway

- Challenging DX
- 3000 death in USA
- Before arriving to ED
- High Index of suspicion
- More common in young children (1-3)
- Majority lodge in bronchi
- Large FB in larynx and trachea
Foreign Bodies of the Airway
Foreign Bodies of the Airway

• Initial phase: Choking and gasping, coughing, or airway obstruction

• Asymptomatic phase - relaxation of reflexes

• Complications phase - Foreign body producing erosion or obstruction
Foreign Bodies of the Airway

- **Laryngeal FB**: Hoarseness or aphonia

- **Tracheal FB**: Similarly to laryngeal FB, without hoarseness or aphonia.

- **Bronchial FB**: Cough, unilateral wheezing, and decreased breath sounds, (65%)
Foreign Bodies of the Airway

• Immediate medical attention
  – Aphonic and unable to breath = complete
  – Gagging , coughing = partial

• Heimlich maneuver : improved mortality

• BLS
Foreign Bodies of the Airway

- Complete examination and imaging
  - Decision of surgical/endoscopic removal
  - Majority are stable and sufficient time to arrange urgent bronchoscopy in OR
  - Controlled setting
  - Anesthesia back up
Foreign Bodies of the Airway

• IF Urgent Bronchoscopy not available and Laryngeal FB suspected:
  – Direct laryngoscopy in ED and removal of a visualized foreign body with a McGill forceps can be attempted.
  
  – If fail: cricothyroidotomy or percutaneous transtracheal jet ventilation
Foreign Bodies of the Airway

- IF FB in distal trachea or bronchus :
  - Orotracheal intubation to one main stem bronchus
UPPER AIRWAY EMERGENCIES

- Epiglottitis
  - Upper Airways Infections
    - Epi
  - Anaphylaxis
    - Chemical Thermal

- Airways Burns

- Foreign Body
  - One mainstem intubation

Oman Society of Emergency Medicine
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