PEDS ER CASES
Pediatric ED Cases
Stridor is not always croup

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Conflict Disclosure Slide

• I have no financial or personal relationships to disclose.
Objectives

• Using cases understand the differential diagnosis for pediatric patients with stridor
• Tips on management of these patients
Case 1

- 8 month male presents to the ED with 7 day history of fever
- Initially started with URTI symptoms
- Seen x 3 in community clinics told viral

VS in ED: T 39.3°C, HR 174, RR 40, O2 sats 98% RA
- Child alert, fussy but calms with mother
- Lymph node Lt neck 3x4 cm, oropharynx red tonsils 3+, no exudate
Case 1

- Blood work: WBC 34 with left shift. Venous gas, lytes, BUN, CR, glucose all normal
- Soft tissue neck Xray WNL
- Started on IV cefazolin for lymphadenitis
- Admission request

Case 1

- Senior resident had examined patient and was writing orders.
- RN requests reassessment because child now has stridor
- Taken into resuscitation room
- Significant inspiratory stridor, drooling
  - Racemic epinephrine and decadron IV given
Case 1

• Exam by ED MD – large paratonsillar abscess crossing midline obstructing upper airway
• Stat ENT, anesthesia and PICU consult
• To OR for definitive airway. Difficult intubation
  – Large Paratonsillar and parapharyngeal abscess
    • Culture GAS

Case 2

• 3 year old boy presents to ED with stridor x 12 hours
• Immediately to Resusc room
• VS T 38.9 axillary, HR 150, O2 sats 97% on RA, BP 85/60
• Child restless
Case 2

- Racemic epinephrine given with some improvement in stridor
- Decadron 0.6 mg/kg PO x1
- Worsening stridor, decreased O2 sats 95%
- Repeat racemic epinephrine, with minimal response. RT called
- Continuous nebulized racemic epinephrine
- IV initiated, BC, CBC, Gas, lytes

Case 2

- Decressing LOC, more sleepy, O2 sats 91%
- Detailed history from mother. Has had croup before but this is different.
- No URTI symptoms. Fever x 4 days
- Never had barky cough, coughing up “chunky” material
- Lateral ST Neck Xray normal
- ENT, anesthesia, PICU consult
- IV Cefazolin
Case 2

• Taken to OR intubated, semi-solid purulent material in distal trachea unable to be suctioned
• GAS bacterial tracheitis
• PICU x 3 days

Case 3

• 9 year old boy collapses at triage.
• Hx of barky cough, URTI and stridor
• O2Sats 70, HR 60 difficult to bag
• HR increases to 90 with bagging,
• O2 Sats up to 85%
Case 3

- RT, Anesthesia, PICU and ENT paged
- Decision to intubate with 5.0 cuffed ETT
  - (9/4 +4 =6 or 6.5 ETT)
- Intubated, easy to ventilate
- CXR ETT at sternal notch
- ETT changed in PICU
- Extubated the next day
- Dx: laryngospasm secondary to croup

Case 4

- 4 year old ex 26 week presents to ED at 3 am with URTI symptoms, barky cough
- Known history of subglottic stenosis, followed by ENT
- Mother gave 0.15 mg/kg decadron at home
- Croup score 5 at triage
- Racemic epinephrine/budesonide mask
- Additional decadron 0.45mg/kg PO
Case 4

• 1 hour later return of stridor, Croup score 5
• Racemic epinephrine mask repeated
• Croup score 2
• 40 minutes later mother rings nurse as child not breathing
• Taken to Resusc room

• Very difficult to bag, minimal respiratory effort
• O2Sats 80, HR 80
• Anesthesia paged
• Unable to pass 4.0 ETT or 3.5 ETT
• Anesthesia intubated child with 3.0 uncuffed ETT with no air leak
• PICU x 5 days with 75% subglottic narrowing secondary to croup
Case 5

- 8 month old girl presented to ED on Jan 3rd with barky cough and URTI symptoms and fever x 2 days. Looked well. Drinking normally
- Croup score 2
- Decadron 0.6 mg/kg PO
- Discharged with follow up instructions

Case 5

- Returned to ED the next day with barky cough, stridor and poor PO intake. HR, BP, O2Sats normal normal. Febrile 38.9 rectal
- Repeat dose of decadron, racemic epinephrine mask. Still did not drink well.
- Given IVF, BW: CBC BUN Cr all normal
- Responded well, ORT successful, smiling and discharged home
Case 5

• Returned the next evening
• HR 160, RR 40, O2 sats 98%
• Lethargic in mothers arms, inspiratory stridor
• Taken into Resusc room
• Racemic epinephrine given
• HR188, RR54, O2 sats 97%

Case 5

• IV started NS bolus and blood work sent
• HR 204, RR50
• BW CBC, gas, lytes, BUN, Cr all normal. Blood culture pending

• Soft tissue neck ordered
Case 5

• Cefazolin IV started. Decadron IV
• Consult ENT, Anesthesia, PICU
• Taken to OR
• Staph aureus epiglottis
• 4 days in PICU

Case 5

• 3 month girl
• Presents to ED with hx URTI x 2 days and wheezing x 12 hours
• Treated with racemic epinephrine by RN as per bronchiolitis medical directive
• Not breastfeeding normally but still voiding well
• Mother gives history of intermittent stridor since birth. Worsen when laying flat better when upright,
Case 5

- NPA for virology sent
- Baby monitored for 3 hours, fed well and was discharged home
- Outpatient ENT referral for laryngo/tracheomalacia
- In car on the way home infant had apneic episode taken to Gatineau ED

Case 5

- O2 sats in the 60’s able to bag with some resistance and O2 sats increased to 94%
- Unable to intubated in Gatineau ED
- Transferred to CHEO with BVM ventilation
- Unable to pass ETT in ED, by ED staff, senior anesthesia resident.
- ENT attempted cricothyrotomy, unsuccessful
Case 5

• Anesthesia staff unable to intubate but able to pass ETT just below cords resistance felt.
• ?edema from multiple intubation attempts
• ETT tube sutured to infants nose
• Transferred to PICU

Case 5

• Diagnosed with long segment tracheal stenosis with vascular sling.
• Airway diameter 3 mm
• Infant developed seizures in PICU. MRI severe hypoxic injury and care was withdrawn.
Case 5

FIGURE 1
Anatomic classification of CTS from Cantrell and Guild, type 1 is generalized hypoplasia, type 2 is funnel type stenosis, and type 3 is segmental stenosis.
Things I have learned

• If you can BVM you have time
• Racemic epinephrine can help with local vasoconstriction despite the cause
• Small ETT below the cords is better than a needle cricotomy
• Stridor makes me sit up and take notice

Questions?