Bacterial Tracheitis

Rare **bacterial infection of the tracheal soft tissues** that can cause potentially life-threatening airway narrowing.

This typically occurs after a viral illness and is most common in children **< 6 years of age**.

PRESENTATION

History	Physical Exam
▪ Exhibiting viral URTI symptoms for 1-3 days prior ▪ A sudden onset of worrisome symptoms such as high fever, stridor, hoarseness and/or odynophagia	▪ Toxic appearance ▪ High fever ▪ Stridor ▪ Deep cough ▪ Hoarseness or voice changes ▪ Signs of impending respiratory failure – Hypoxemia, cyanosis, tachypnea, stridor (soft, higher pitched, biphasic), accessory muscle use, decreased breath sounds and/or altered level of consciousness (agitation, somnolence)

IMPORTANT! These patients are very sick and can be in critical condition!
Consult anesthesia/ENT for urgent airway assessment and management if there are signs of impending respiratory failure.

DIAGNOSIS

Definitively achieved with **direct airway visualization** via laryngoscopy and bronchoscopy
- Presence of thick, purulent, or membranous secretions adherent to the tracheal mucosa

Other investigations:
- **Radiograph series of neck:** signs of exudates, narrowing of subglottic trachea (tracheal border margins hazy and irregular), ± Steeple sign
- **Bacterial culture** of respiratory specimens from expectorated sputum represents colonization not acute infection

In non-severe cases, direct visualization is not always necessary. A combination of consistent radiographic features and clinical picture is sufficient.

PATHOPHYSIOLOGY

Most commonly a **secondary bacterial infection**
- *S. Aureus* (MSSA and MRSA)
- *Group A Streptococcus*
- *Haemophilus influenzae*

DIFFERENTIAL DIAGNOSIS

- Epiglottitis
- Croup
- Diphtheria
- Peritonsillar or retropharyngeal abscess or cellulitis
- Foreign body
- Angioedema

MANAGEMENT

- **Treat all cases with appropriate empiric antibiotics then tailor based on cultures and susceptibility**
- Empiric antibiotic: Third generation cephalosporin or amoxicillin-clavulanate ± vancomycin if MRSA suspected

Management of severe cases

SpO2 ≤ 92% on supplemental O2 and/or signs of respiratory failure

- **Stabilization of airway/airway management with possible intubation**
- Anesthesia/ENT for airway assessment and securement of airway due to narrowing
- Possible debridement of tracheal exudates under bronchoscopy with ENT
- Regular inline suction often needed while intubated to address obstruction

Management of non-severe cases

- Supportive respiratory care
- Supplemental care

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Peter Wright (Medical Student, University of Alberta) and Dr. Jessica Foulds (Pediatrician, University of Alberta) for www.pedscases.com