

Peritonsillar/Retropharyngeal Abscess

Retropharyngeal abscesses occur much less commonly today than in the past because of the widespread use of antibiotics; physical signs include fever, cervical adenopathy, stridor, torticollis, neck stiffness and drooling with treatment consisting of surgical drainage and intravenous antibiotics; protection of the airway from becoming completely blocked by the retropharyngeal swelling is rarely indicated

ANESTHETIC CONSIDERATIONS:

- Emergency, full stomach
- Need for surgical drainage
 - Shared airway
- Potential difficult airway
- Airway obstruction
- Risk of abscess rupture → soiling of lungs
- Potential for sepsis
- Postoperative extubation criteria

ANESTHETIC GOALS:

- Ensure patient adequately resuscitated and IV antibiotics started
- Anticipate difficult airway and risk of abscess rupture (prepare difficult airway equipment, surgeon present at induction, suction available, gentle intubation)
- Awake extubation (consider TIVA maintenance)

HISTORY

- Fever, pharyngeal swelling (cervical adenopathy), sore throat, difficulty swallowing
- Severe pain, trismus (pterygoid spasm), torticollis, dysphagia, drooling, positional dyspnea
- Dehydration
- Ludwig's angina
 - Cellulitis of submandibular / sublingual space including anterior neck
 - Glottic opening frequently impossible to visualize
 - Stridor at rest is high risk

PHYSICAL

- **GENERAL** - sitting up, anxious
- **VITALS** - increased RR, temperature
- **HEENT** – careful airway examination
 - Airway edema and distortion
 - Visible mass
 - Mouth opening, presence / degree of trismus
 - Stridor
- **RESP** - positional dyspnea, accessory muscle use, tachypnea, cyanosis
- **CVS** - volume status assessment

INVESTIGATIONS

- **Labs**
 - CBC (↑ WBC)
 - Lytes, BUN, Cr (dehydration)
 - Blood cultures
- **Imaging**
 - CT neck
 - Location and size of abscess
 - Degree of airway stenosis and distortion
 - CXR

OPTIMIZATION

- IV fluids
- IV antibiotics
 - Most organisms, even the anaerobes, remain penicillin sensitive; and penicillin is the antibiotic of choice

ANESTHETIC OPTIONS

- The three different procedures presently used to drain a peritonsillar abscess are:
 - Needle aspiration
 - Incision and drainage
 - Abscess tonsillectomy
- Most children undergo general anesthesia for treatment of peritonsillar abscess by incision and drainage, although some have reported good results when conscious sedation was used
- If the abscess is small and well confined, immediate tonsillectomy is performed
- Needle aspiration of the peritonsillar abscess in an awake adolescent is sometimes possible

ANESTHETIC SETUP

- **Drugs**
 - Standard emergency drugs
- **Equipment**

- CAS monitors
- For any difficult airway case, the operating room should be prepared with different sizes of endotracheal tubes, stylets, two sets of well-illuminated laryngoscopes, and a tonsil tip suction catheter attached to a powerful suction device
- The surgeon must be present in the operating room, ready to start as the induction of anesthesia starts

MANAGEMENT OF ANESTHESIA

- **Induction**
 - Difficult intubation risk
 - **Spontaneous breathing intubation** esp. if trismus present (allows examination of jaw relaxation – sevoflurane or TIVA and O₂)
 - When trismus resolves or minimal in first place, short-acting muscle relaxant given to avoid trauma during laryngoscopy and intubation
 - Alternatively if a/w assessment indicates minimal distortion an RSI IV induction with preoxygenation may be best to avoid trauma
 - Risk of abscess rupture and soiling with intubation
 - To avoid aspiration of pus during intubation and drainage, the patient may be positioned in a slightly head-down position, and a cuffed endotracheal tube should be inserted carefully without touching the abscess
- **Maintenance**
 - TIVA would be an excellent choice considering a/w involvement and risk of laryngospasm
- **Emergence**
 - At the end of surgery, the patient must be extubated awake, preferably in the lateral position

DISPOSITION & MONITORING

- Monitored setting – consider HDU initially

COMPLICATIONS

- Rupture of abscess and aspiration
- Difficult airway

PATHOPHYSIOLOGY

- Peritonsillar abscess tends to occur in older children or young adults
- It is the most common deep neck space infection treated by otolaryngologists
- Infection originates in the tonsil, spreading to the peritonsillar space between the tonsillar capsule and the superior constrictor muscle usually into the soft palate in the region of the superior pole of the tonsil
- Common cultured organisms are aerobes, such as:
 - Streptococcus pyogenes
 - Streptococcus milleri
 - Streptococcus viridans
 - β-hemolytic streptococci
 - H. influenzae
 - Anaerobes, such as Fusobacterium prevotella species

REFERENCES

- Verhegese et al. Pediatric Otolaryngologic Emergencies. Anesth Clin NA. 19(2) June 2001
- Jurg Hammer - Acquired upper airway obstruction - Paediatric respiratory reviews (2004) 5, 25–33