Tonsillitis, Tonsillectomy and Adenoidectomy

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Adenotonsillectomy

- Most commonly performed procedure in the history of surgery
- $500 million annually in healthcare expenditures
History

- Almost exclusively by Otolaryngologists
- Celsus in 50 A.D.
- Caque of Rheims
- Phillip Syng developed the tonsillotome
Anatomy
Histology
Clinical Evaluation

- Acute Tonsillitis
- Chronic Tonsillitis
- Obstructive Tonsillar Hyperplasia
Clinical Evaluation

- Odynophagia, fever, tender cervical lymphadenopathy.
- Supporting documents, 2 or more
  - Fever > 38.5
  - Tonsillar Exudate
  - Tender cervical LAD > 2cm
  - Positive throat culture
Clinical evaluation

- **Viral**
  - Lower grade fever
  - Lower WBC, Lymphocytic shift
  - Less tonsillar exudate

- **Bacterial**
  - Higher WBC, Granulocytic shift
  - More exudative
Recurrent Acute Tonsillitis

- Seven episodes in a single year
- Five or more episodes in 2 years
- Three or more episodes in 3 years
Chronic Tonsillitis

- No true consensus on the definition.
- Symptoms greater than 4 weeks
Differential Diagnosis

- Infectious Mononucleosis
  - EBV
- Scarlet Fever
- Corynebacterium diptheriae
- Malignancy
Complications of Tonsillitis

- Cervical Adenitis
- Neck Abscess
- Peritonsillar abscess
- Intratonsillar abscess
- Lemierre’s syndrome
Post Streptococcal Glomerulonephritis

- Joint Pain and oliguric renal failure 10 days after the pharyngitis.
- Treatment aimed at eliminating the infection and supportive therapy for renal failure.
- Excellent prognosis in children.
Adenoid Hyperplasia

- Triad
  - Hyponasality
  - Snoring
  - Open mouth breathing

- Purulent rhinorrhea, post nasal drip, chronic cough, and headache
Obstructive Airway Symptoms

- Snoring
- Apneic episodes with gasping or choking
- Daytime hypersomnolence
- Nocturnal enuresis
- Behavioral disturbances
- Heart failure and Failure to thrive
Tonsil Size

- Grade | %
- 1     | <25
- 2     | 25-50
- 3     | 51-75
- 4     | >75
Obstructive Sleep Apnea

- Polysomnography is the gold standard of diagnosis.
  - Imperative in Adults
  - In children, a convincing history is adequate

- OSA: RDI > 5, SpO2<90%
- UARS: RDI <5, SpO2 >90%
- Primary Snoring: RDI <1, SpO2>90%
Medical Therapy

- TCHP recommends confirming bacterial pharyngitis before beginning antibiotics.
- Rapid Strep Test
- Throat Culture
Medical Therapy

- **First Line**
  - Penicillin/Cephalosporin for 10 days
  - Injectable forms for noncompliance
- **BLPO, co pathogens**
- **Macrolides**
  - Penicillin allergy
  - Erythromycin/Clarithromycin 10 days
  - Azithromycin (12mg/kg/day) 5 days
Medical Therapy

- Patients with recurrent otitis media history have higher bacterial concentrations with BLPO.
  - Initial treatment with anti-BLP antibiotic.
- Adenotonsillar size may respond to a one month course of antibiotic therapy.
- Adenoid hyperplasia may respond to a 6-8 week course of intranasal steroid.
Surgical Indications

- Adenoidectomy
  - Absolute
    - Airway obstruction w/ cor pulmonale
    - Failure to thrive
  - Relative
    - Chronic Nasal Obstruction
    - Recurrent/ Chronic Adenoiditis
    - Recurrent/ Chronic Sinusitis
    - Recurrent acute otitis media/ Recurrent COME
Surgical Indications

- **Absolute**
  - Obstructive airway with cor pulmonale
  - Severe dysphagia
  - Failure to thrive

- **Relative**
  - Recurrent acute tonsillitis
  - Chronic tonsillitis
  - Obstructive Sleep Apnea
  - Peritonsillar Abscess
  - Halitosis
  - Suspected Neoplasia/ Tonsillar hyperplasia
Preoperative evaluation

- Most common lab test is a CBC
- Coagulation studies when the history or physical examination suggests a bleeding disorder.
- Lateral Neck/Adenoid films
Von Willebrand’s Disease

- Autosomal dominant bleeding disorder
- Increased bleeding time and prolonged aPTT.

Perioperative management
  - IV Desmopressin (0.3ugm/kg)
  - Serum Sodium
Idiopathic Thrombocytopenic Purpura

- Most common thrombocytopenia of childhood.
- 90% resolution by 9-12 months
- Splenectomy
- IVIG preoperatively
Innovative Surgical Techniques

- Cold Dissection
- Electrosurgery
- Intracapsular partial tonsillectomy
- Harmonic Scalpel
- Radiofrequency tonsillar ablation and coblation.
Electrosurgery

- Most popular technique for tonsillectomy
- Equivalent or superior to the other methods of tonsillectomy.
Intracapsular Partial Tonsillectomy

- 45 degree Microdebrider (1500rpm).

- Advantages
  - As effective as standard tonsillectomy in relieving obstruction.
  - Less pain, quicker return to normal diet

- Disadvantages:
  - Tonsillar regrowth
  - Greater intraoperative blood loss
Harmonic Scalpel

- **Advantages:**
  - Better visibility
  - Smaller risk of stray energy shocks
  - Improved post operative pain

- **Disadvantages:**
  - Must use alternate device for adenoidectomy
  - Similar intraoperative blood loss.
Radiofrequency tonsillar coblation

- Coblation is superior to ablation.
- Early elimination of pain and reduced pain medicine usage.
- Early resumption of normal diet.
- Currently inadequate for adenoidectomy
Adjuvant Therapies

Perioperative local anesthetic
0.25% bupivacaine w/ 1:100,000 Epinephrine

Advantages:
ease of dissection, postoperative pain

Disadvantages:
Airway obstruction, cardiac dysrrhythmias, seizures
Adjuvant Therapies

- Perioperative antibiotics
  - Fewer episodes of fever, offensive odor, improved oral intake, less pain, fewer days to return to normal activity
  - Cardiac abnormality
Adjuvant Therapies

- Perioperative Steroids
  - Dexamethasone (0.15-1.0mg/kg)
  - Two times less likely to have an episode of postoperative emesis, and more likely to advance to eating a soft diet.
  - Reducing postoperative pulmonary distress, subglottic edema, pain reduction.
Adjuvant Therapies

- Pain control
  - Tylenol and Tylenol w/ codeine are the most commonly used.
  - Similar pain control, less oral intake with codeine versus Tylenol alone.
  - NSAIDS still controversial.
Complications

- Mortality rate is 1 in 16000-35000.
- Anesthetic complications
- Eustachian tube injury
- VPI
- Nasopharyngeal stenosis
- Pulmonary Edema
- Atlantoaxial subluxation
23 hour observation

- Age younger than 3.
- Obstructive sleep apnea/craniofacial syndromes involving the airway.
- Systemic disorders
- Poor socioeconomic situation
- Peritonsillar abscess
- Emesis or Hemorrhage
Post Operative Hemorrhage

- The best treatment is prevention.
- Early vs. Delayed hemorrhage.
- Overnight observation and venous access
- Surgical intervention.
- Carotid angiography if any suspicion of carotid artery injury.
Case Study

- 8yo male referred to the Pediatric clinic for evaluation and treatment of recurrent tonsillitis.
History

- Only 2 episodes of documented pharyngitis in the past 12 months, strep negative, only missed 5 days of school total last year.
- Loud snoring, frequent pauses up to 5 seconds terminated with gasps of breath.
Physical Examination

- Normal facies, open mouth breathing, tonsils 3+, no cleft deformities.
- Remainder of exam is normal.
Case Study

- Undergoes uneventful tonsillectomy and adenoidectomy with 23 hour observation.
- On follow up visit 2 weeks postoperatively, his mom complains that he doesn’t like some of his favorite foods. He says they taste “yucky”.
- Decreased perception of taste with no smell abnormalities.
Diagnosis

- Dysgeusia
- Unknown mechanism- thought to be due to prolonged pressure on the tongue by the mouth retractor.
- Treatment is reassurance.
Bibliography


