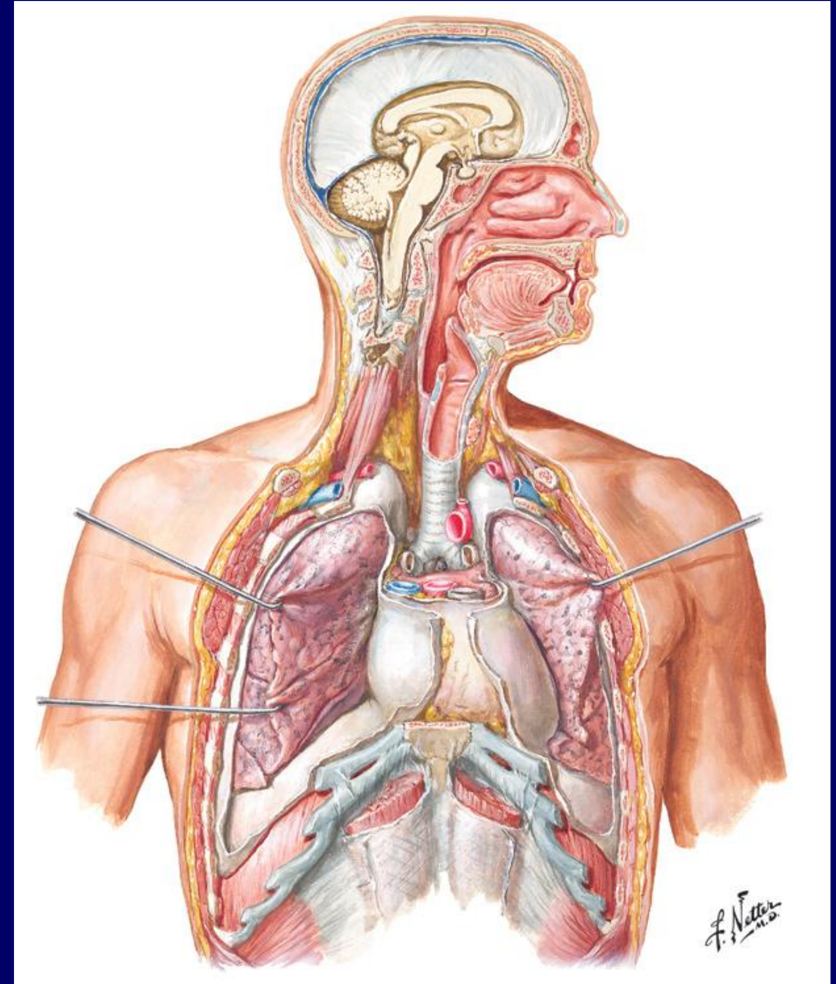
Managing the Child with an Acute Upper Respiratory Infection

Myron Yaster, MD

David Steward, MD

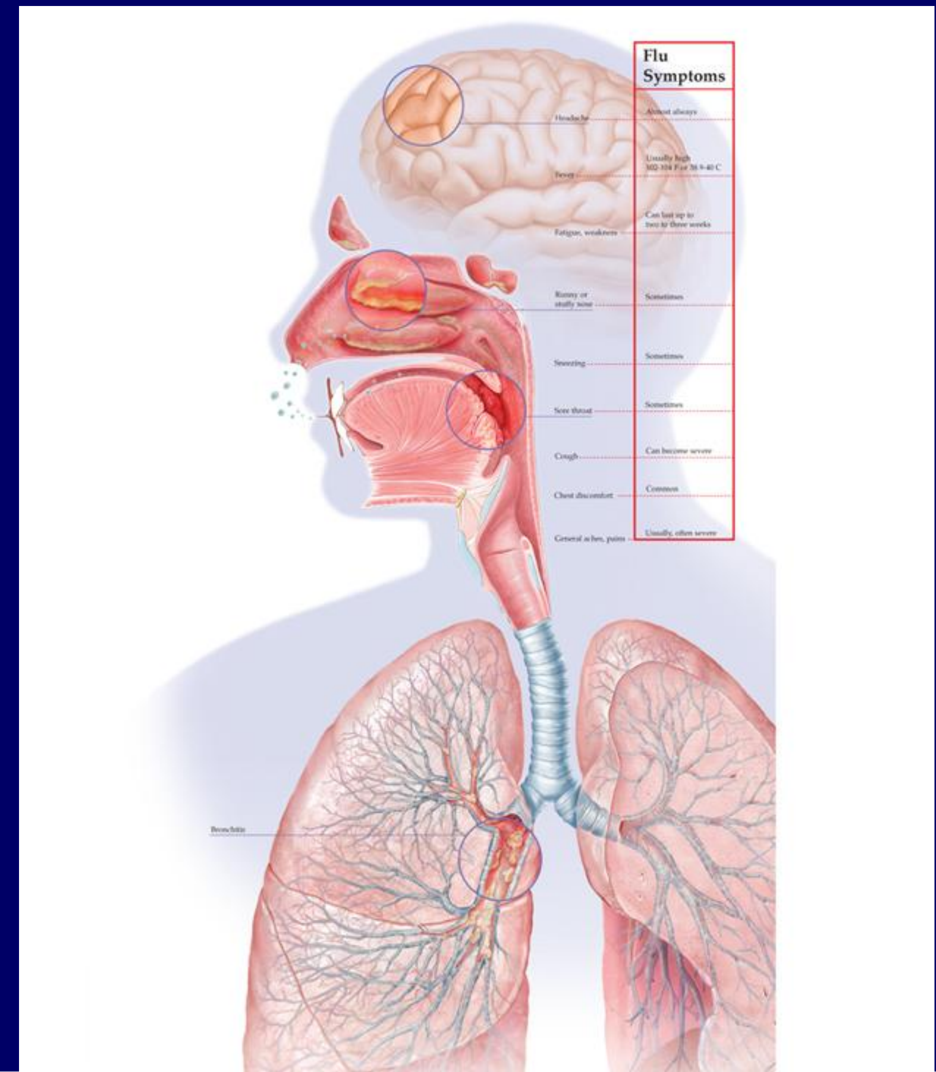
Objectives

- Is there really a pro con issue to debate in 2009?
- Discuss the anesthetic implications of managing the patient with an acute upper respiratory infection



Upper Respiratory Infections

- Most common cause of cancellation of surgery
- Children with acute URIs are at increased risk of:
  - Breath holding and mild O2 desaturation
  - Bronchospasm
  - Laryngospasm

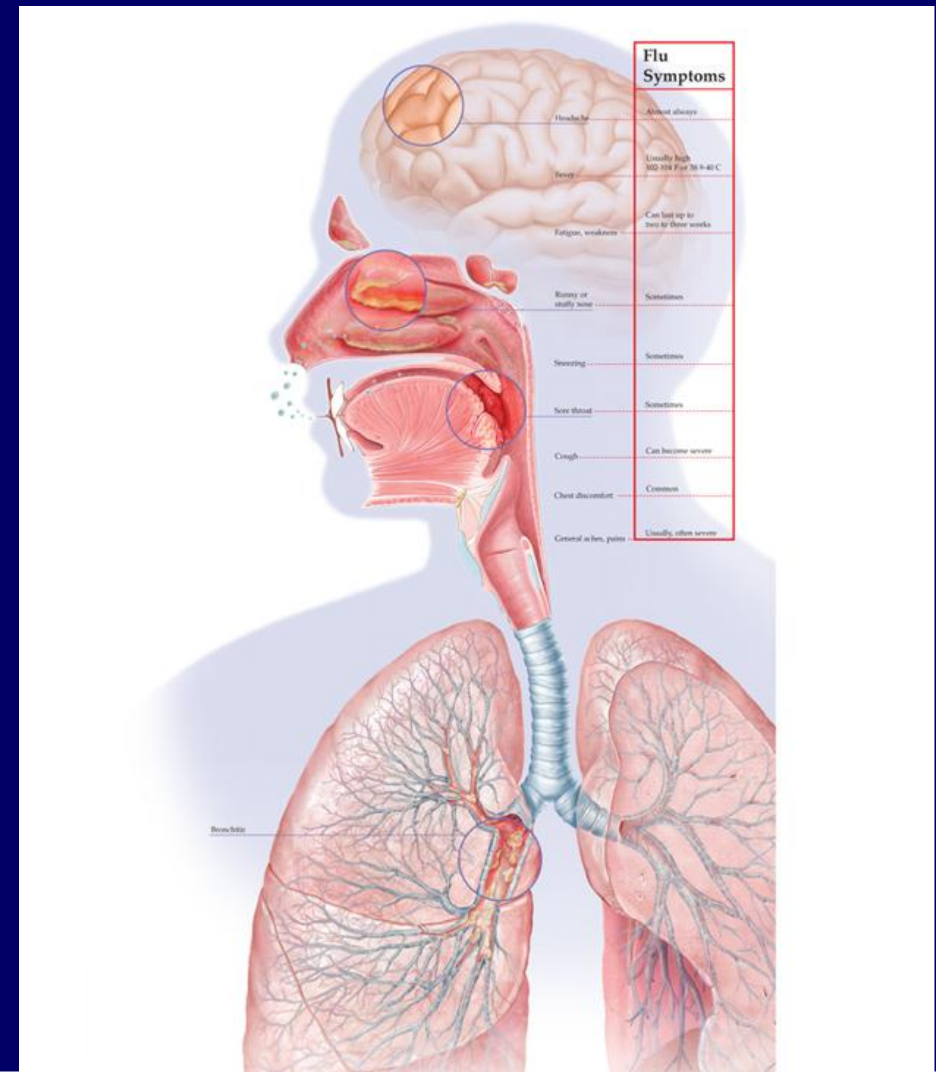


Upper Respiratory Infections Reality:

- The average child has 6-7 URIs a year
- If child is in day care at least 1 episode/month
- The risk of respiratory problems exists for 4 - 7 weeks after the URI
- Bottom line: if you are going to cancel these patients they'll never get done!

Upper Respiratory Infections Risks of Complications

- Endotracheal intubation
- Prematurity
- Surgical procedure of the airway
- Asthma
- Nasal congestion
- Younger age
- Congenital Heart Disease
- Passive smoke



URI: Who Might You Cancel?

- Parents say their child is "sick"
- Fever > 38.5
- Wheezing or evidence of lower respiratory tract infection (rales)
- Active infection: rhinorrhea, congestion, sore throat, malaise

- Specific patients
  - Asthma
  - BPD
  - Congenital Heart Disease
  - Sickle Cell Anemia
  - Children under 1 year of age

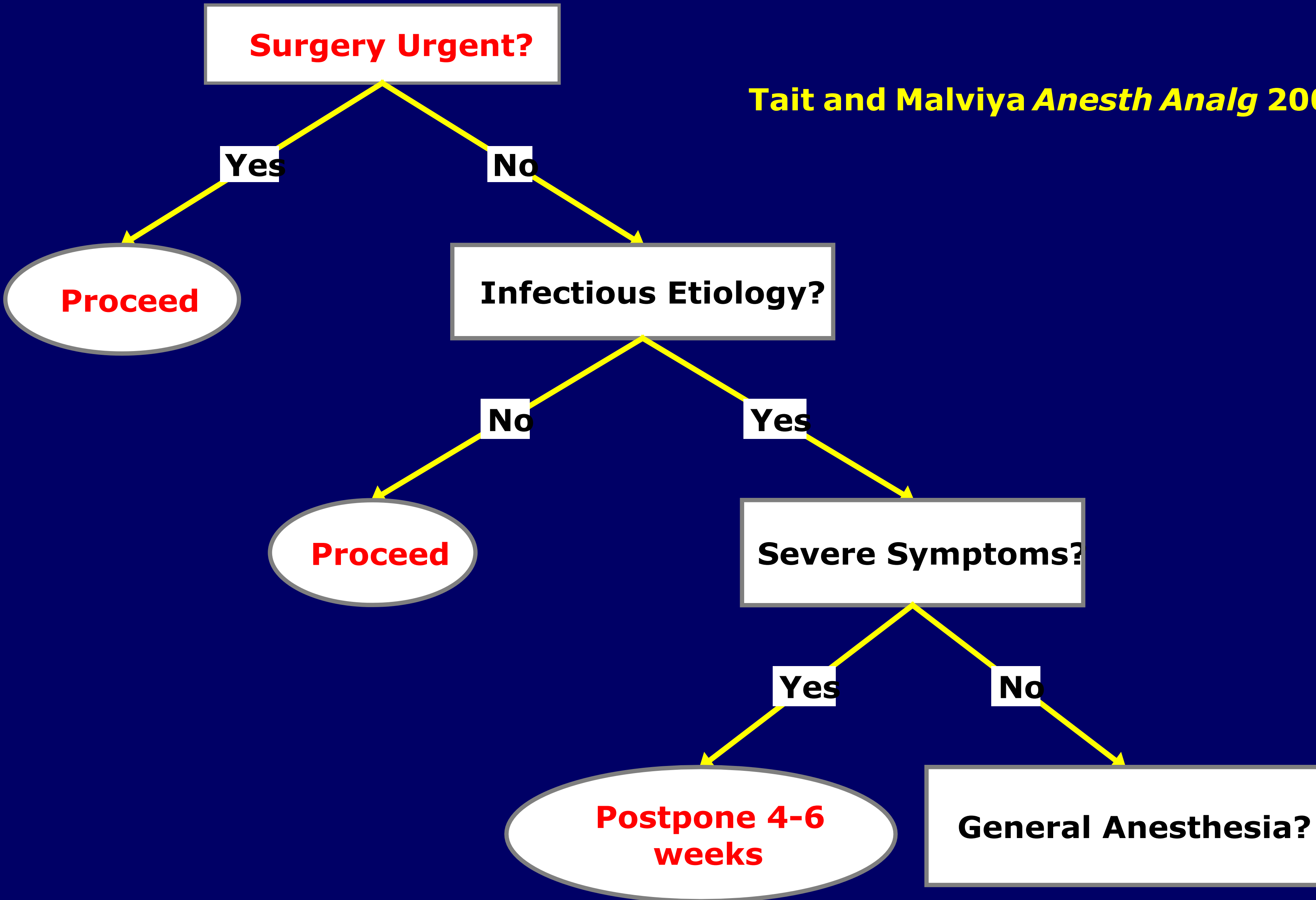
Upper Respiratory Infections

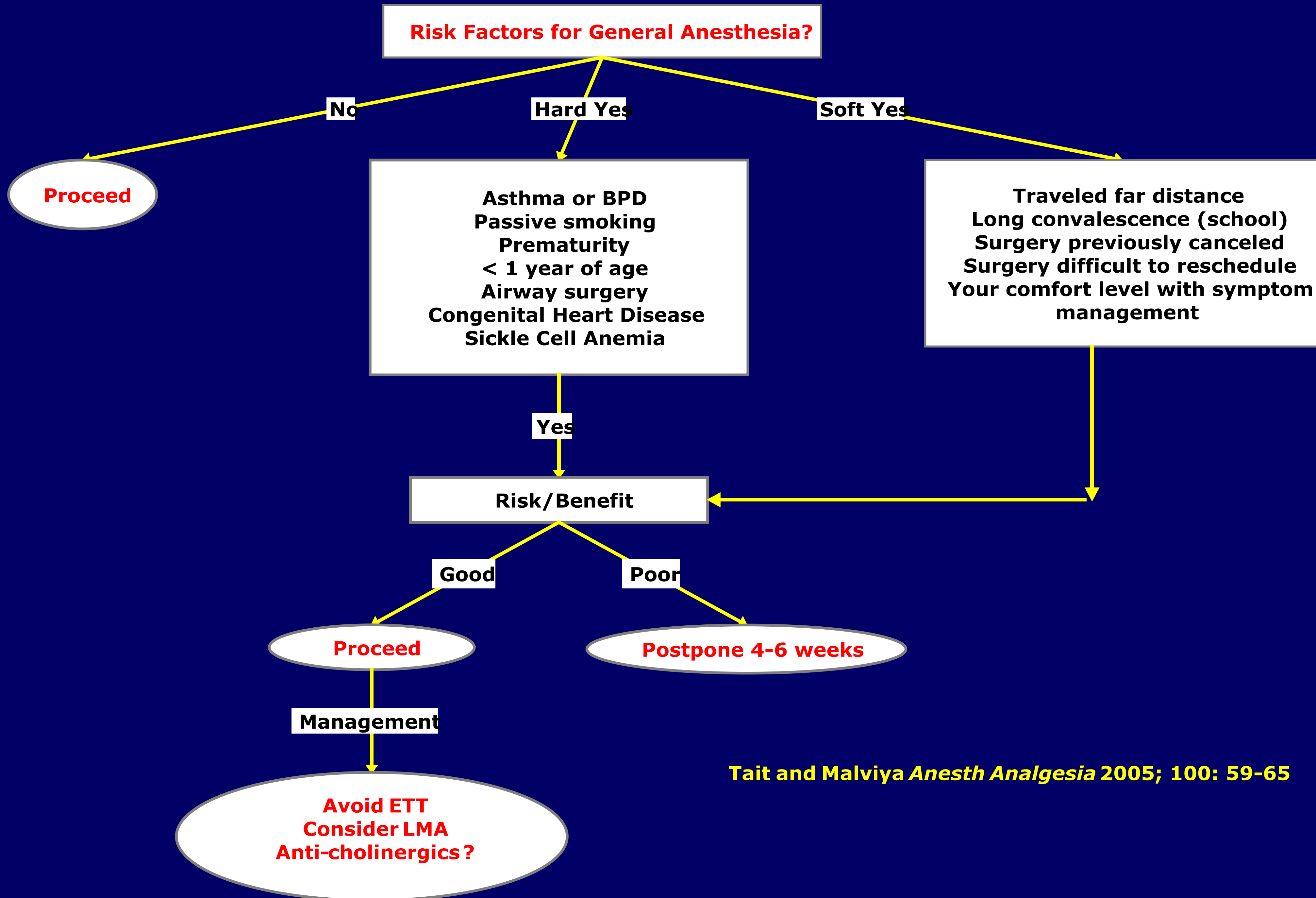
- OK, who should you cancel?
  - Patients who are “sick”
    - Fever > 38.5
    - Wheezing or evidence of lower respiratory tract infection (rales)
    - Active infection: rhinorrhea, congestion, sore throat, malaise
  - Congenital Heart Disease for heart surgery

Reality v Theory

- Parents (patient) traveled far
- Long convalescence/recovery. Surgery was timed for school breaks and vacation
- Surgical “superstar”…surgical schedule is booked months in advance
- Surgery was previously canceled
- Your comfort anesthetizing a child with a URI and/or managing the complications that will occur

Tait and Malviya *Anesth Analg* 2005;100:59-65




Risk Factors for General Anesthesia?
No
Hard Yes
Soft Yes
Proceed
Asthma or BPD
Passive smoking
Prematurity
< 1 year of age
Airway surgery
Congenital Heart Disease
Sickle Cell Anemia
Traveled far distance
Long convalescence (school)
Surgery previously canceled
Surgery difficult to reschedule
Your comfort level with symptom management
Yes
Risk/Benefit
Good
Poor
Proceed
Postpone 4-6 weeks
Management
Avoid ETT
Consider LMA
Anti-cholinergics ?
Tait and Malviya Anesth Analgesia 2005; 100: 59-65

Tricks of the Trade

- The most common perioperative complications in children with URIs are
  - Laryngospasm
  - Bronchospasm
  - Oxygen desaturation
- Rescue and treatment are therefore directed at symptom management

Rx: Intraop Bronchospasm
Think asthma

- Start from your machine!!!:
  - Make sure there are no kinks in the circuit and endotracheal tube ("not all that wheezes is bronchospasm!")
  - 100% FiO2 and deepen the inhalational agent (SEVO)
- IV ketamine (0.5-2 mg/kg) or propofol (2-3 mg/kg) (deepen anesthetic)
- Inhaled beta-2 agonists: LIMITED delivery
- Sub Q or IV epinephrine

Tricks of the Trade

- Inhalational induction with SEVOFLURANE and get the patient DEEP and I mean DEEP before intubation
- IV induction (emergencies, RSI):
  - Ketamine 2 mg/kg OR
  - Propofol 3 mg/kg
- 1-3 minutes prior to intubation consider IV LIDOCAINE 1-1.5 mg/kg
- Anti-cholinergics (remember our old friend Atropine?)
- Plan on DEEP EXTUBATION

Tricks of the Trade: Laryngospasm

- 100% oxygen
- Continuous Positive Airway Pressure
- Painful jaw thrust
- Rapid paralysis with IV atropine and succinylcholine
  - It's hard but don't panic you really don't need much succinylcholine

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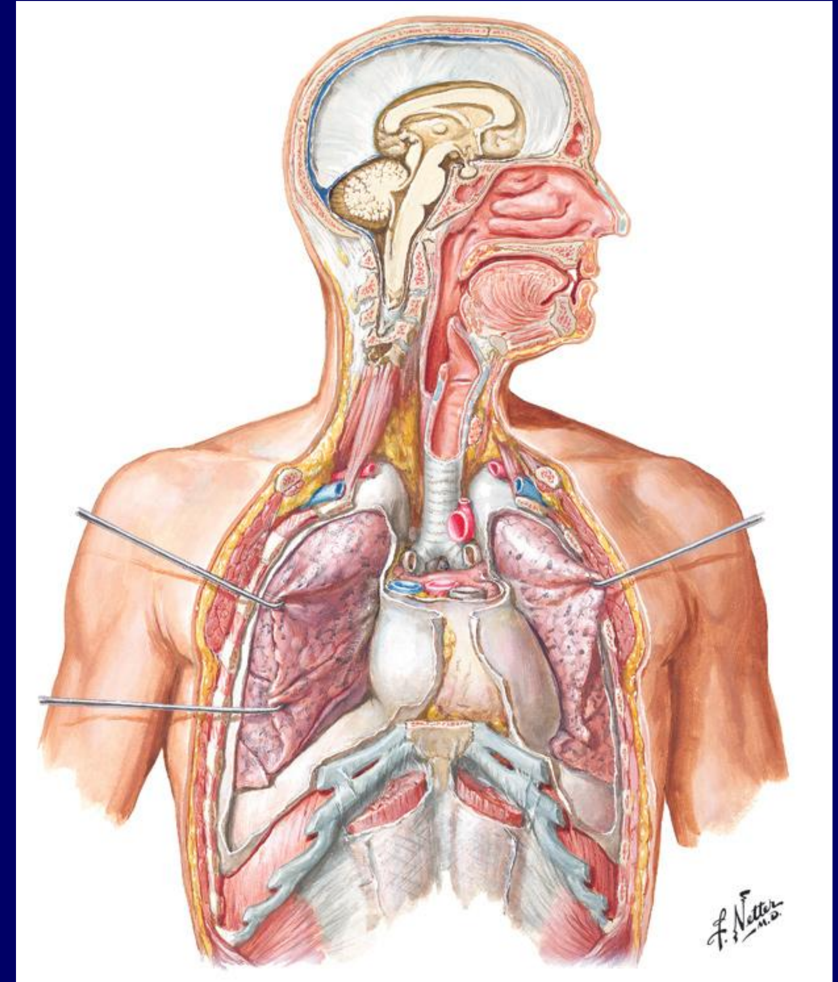

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