

Anesthesia for tonsillectomy

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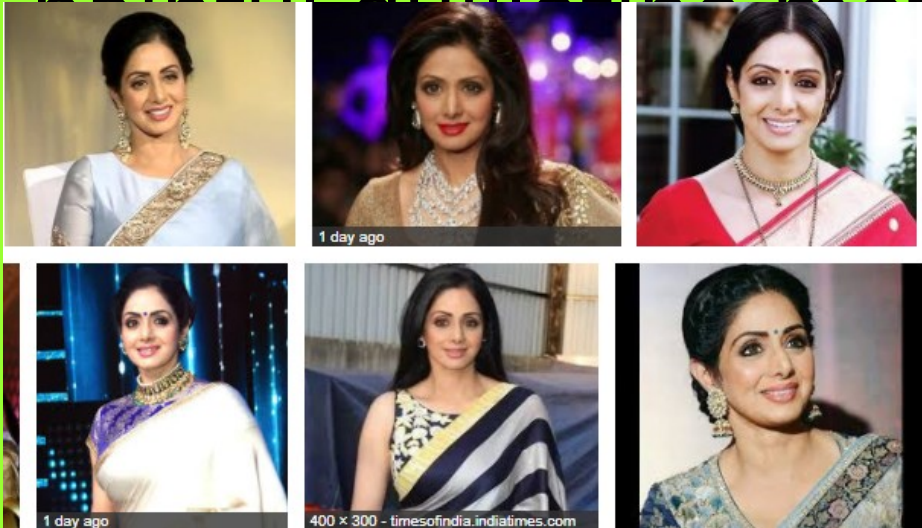
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Pictures are taken from the internet for closed academic
purpose only

History

- It was first described by Celsus in AD 30 who used a hook to grasp the tonsil then used his finger to incise it. This developed to the common painful cauterization method.



**Sometimes
we need to
some old
things**

Incidence

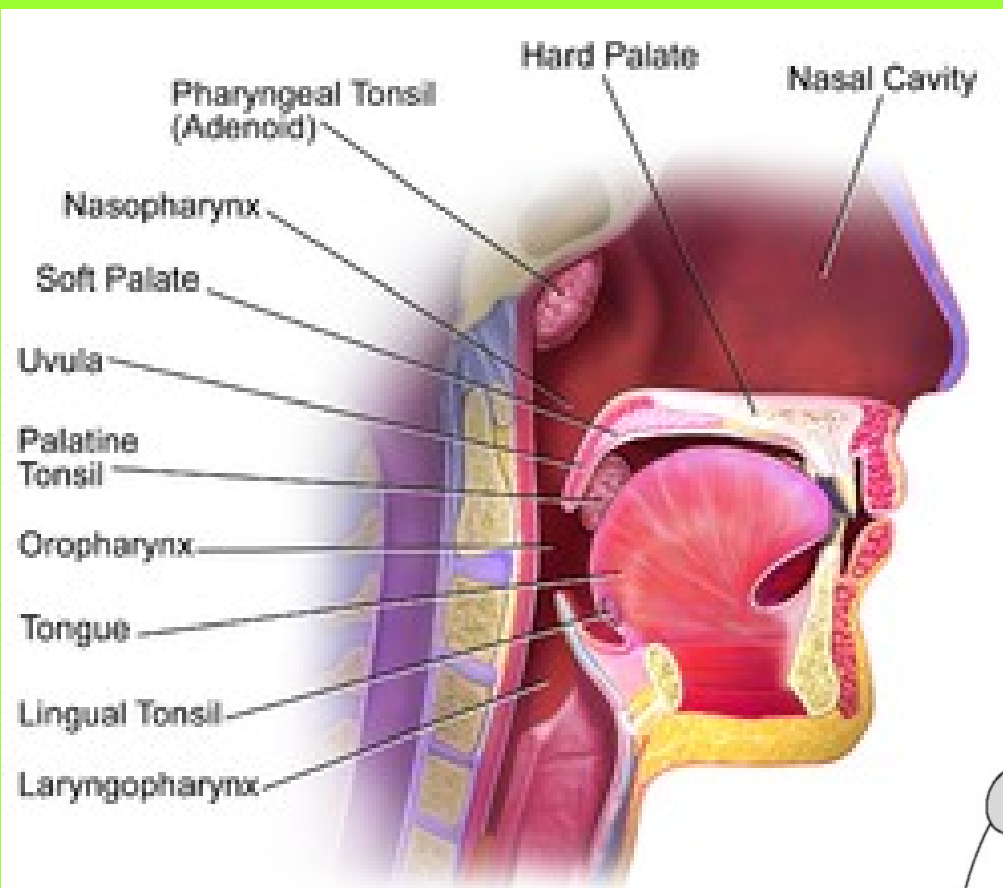
- 200000 operations in a year all over USA
- 11 – 20 years – maximal
- In an Inpatient department in India
- 510 ENT admissions
- 90 chronic tonsillitis
- 45 underwent surgery

Clinical features

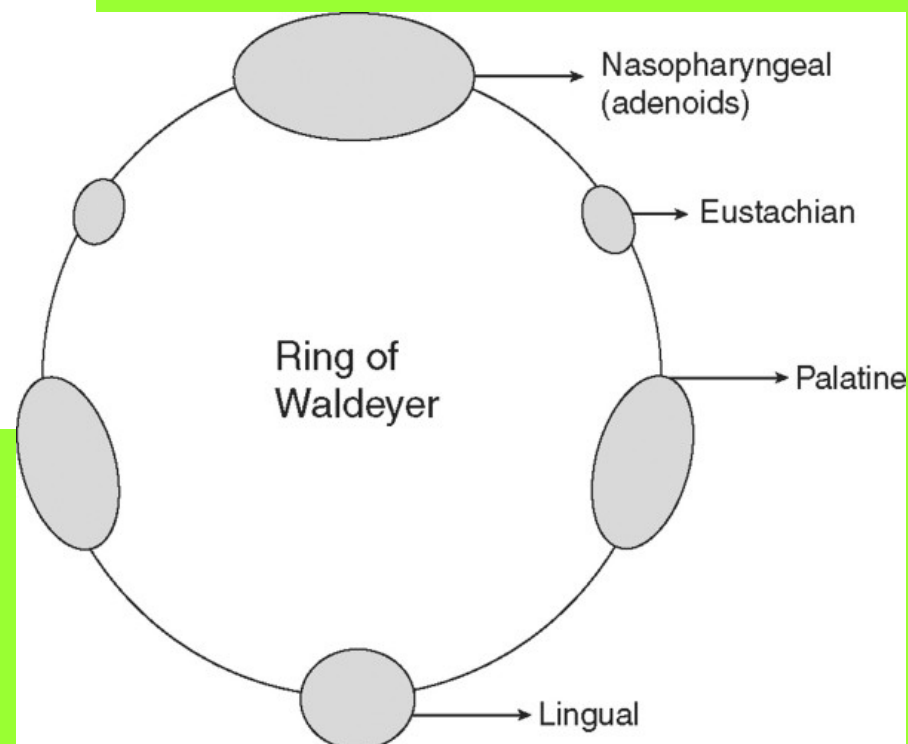
- Sore throat,
- fever,
- difficulty and/or painful swallowing,
- tender lymph nodes in the neck,
- bad breath,
- the tonsils may appear red and swollen

What happens when adenoid swollen ?

- Symptoms include
- **nasal obstruction,**
- **sleep disturbances,**
- middle **ear** effusions with **hearing loss.**



Tonsils and Throat



Think of surgery when ?

- Recurring tonsillitis,
- chronic tonsillitis or bacterial tonsillitis that doesn't respond to antibiotic treatment
- More than seven episodes in one year
- More than four to five episodes a year in each of the preceding two years
- More than three episodes a year in each of the preceding three years

Think of surgery when ?

- Obstructive sleep apnea
- Breathing difficulty
- Swallowing difficulty, especially meats and other chunky foods
- An abscess that doesn't improve with antibiotic treatment

Friedman Grading Scale

Grade	Description
0	No tonsils seen
I	In tonsillar fossa
II	Visible beyond anterior pillars
III	Extended 3/4 of way to midline
IV	Completely obstructing airway; "kissing tonsils"

Table 1. Brodsky Table

(Degree of Tonsils Blockage)	Ratio of the Tonsil in the Oropharynx
Degree 0	Tonsils in the Fossa
Degree 1	Tonsil occupies less than 25% of the Oropharynx
Degree 2	Tonsil occupies from 25 to 50% of the Oropharynx
Degree 3	Tonsil occupies from 50 to 75% of the Oropharynx
Degree 4	Tonsil occupies more than 75% of the Oropharynx

Unilateral Tonsillar Enlargement

Apparent enlargement vs true enlargement

Non-neoplastic:

- Acute infective
- Chronic infective
- Hypertrophy
- Congenital

Neoplastic



Called for tonsillectomy
Found one side
Could not intubate
Lateral shift
LMA , ventilate recover and refer

Adenoids

Investigations

- **Lateral soft tissue X ray of the nasopharynx**

It is not the size of the nasopharyngeal tonsil which is important but the size of the mass in relation to the nasopharyngeal space



Grading

Clemens & mcmurray

- GRADE I- adenoid tissue filling $1/3^{\text{rd}}$ the vertical ht of choana
- GRADE II- upto $2/3^{\text{rd}}$
- GRADE III- from $2/3^{\text{rd}}$ to nearly all but not completely filling of choana
- GRADE IV- with complete choanal obstruction



Anesthetic managemen nt

Investigations

- Many investigations like
- **total count , throat swab** are more significant for acute cases
- Hb anemia or polycythemia (OSAS)
- Bleeding time clotting time , INR if indicated as easy bruising history
- Preoperative room air saturation

A blue scroll graphic with a dark blue border and rounded corners, featuring a vertical strip on the left side and a small circular detail at the top right corner. The text is centered on the scroll.

Full history of OSAS and cardiac evaluation

Preoperative assessment – coagulation

- Frequent epistaxis
 - Easy bruising
 - family history of bleeding
-
- Thorough evaluation of coagulation status
 - PT aPTT and platelets

Preop

- history of drug ingestion, especially acetylsalicylic acid ---- Postpone for one week !!
- patency of oral and nasal air passages is carefully examine
- Open the mouth to examine to
- Close the mouth to see nasal
Obstruction--- but if we close like



Teeth

- Time of change of dentition
- Try to save permanent teeth
- Inform attendants
- Loose tooth remove
but don't remove during
laryngoscopy



Preoperative visit

- Active infection
 - Mucopurulent sputum
 - Severe obstruction
 - Added sounds
 - Leucocytosis
-
- Plan a postponement
 - But mild running nose in an active child – OK ??

Premedication !

- Pedicloryl (triclofos), which is commonly used for younger children, has the potential to cause airway obstruction, especially in patients with big tonsils.
- Intranasal midazolam, fenta

Beware in OSAS !

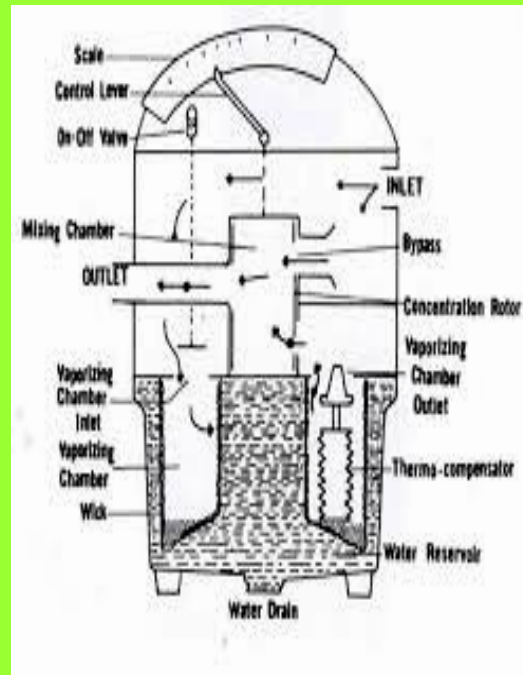
Antibiotics !!



Premedication !

- Anticholinergics
- Inj, glyco used my many
- Inj. Decadron
- Used by some to decrease PONV and decrease airway related problems

Anesthetic technique EMO vaporizer



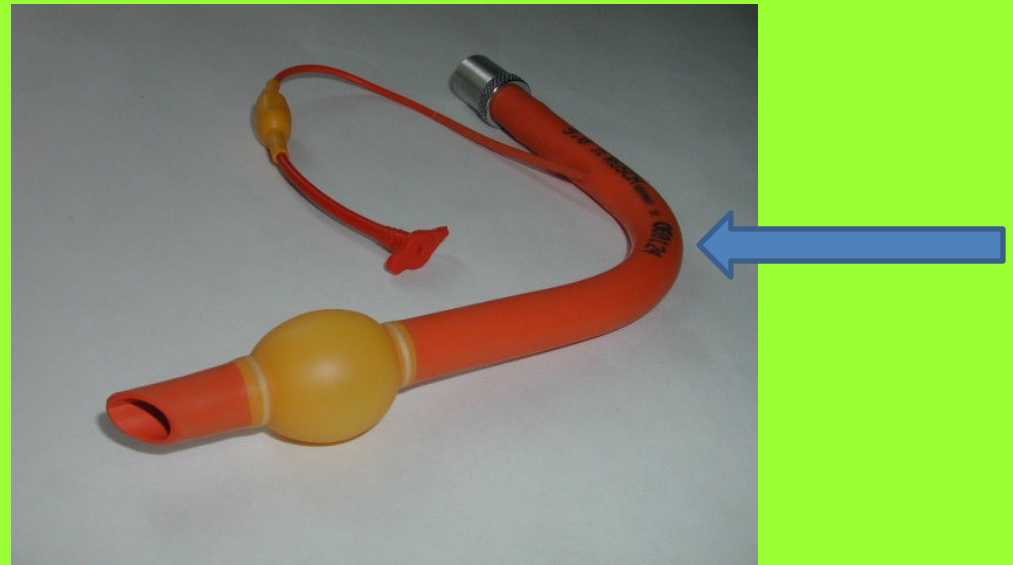
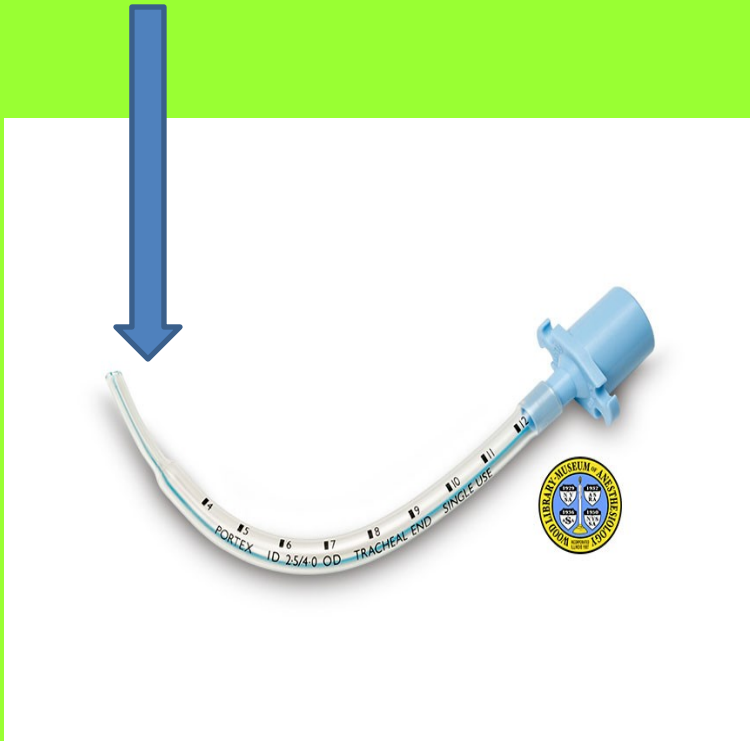
**Atropine , thio, scoline ,tube O2, nitrous
oxide ether spontaneous
Before that -- no tube !!**

Another era !!

- Fentanyl
- Propofol – better PONV
- NDPs
- Intubation or LMA



Oral tube

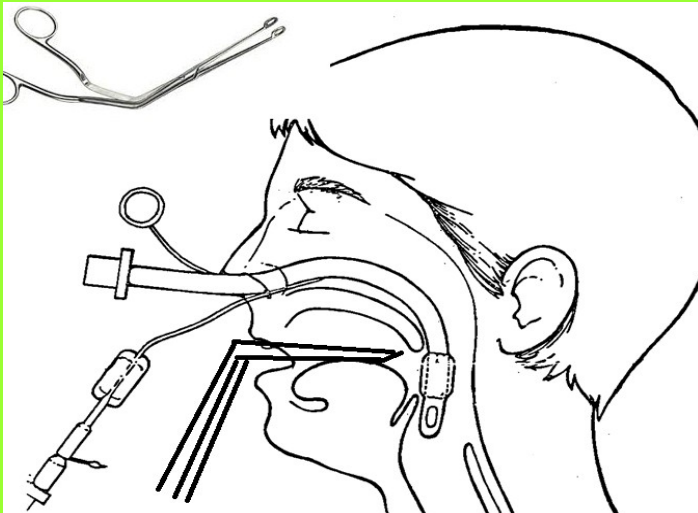


**Cole and oxford tubes - not used
nowadays**
**Nasal tube if no adenoids - but think of
preop exam and which nostril with
decongestants**

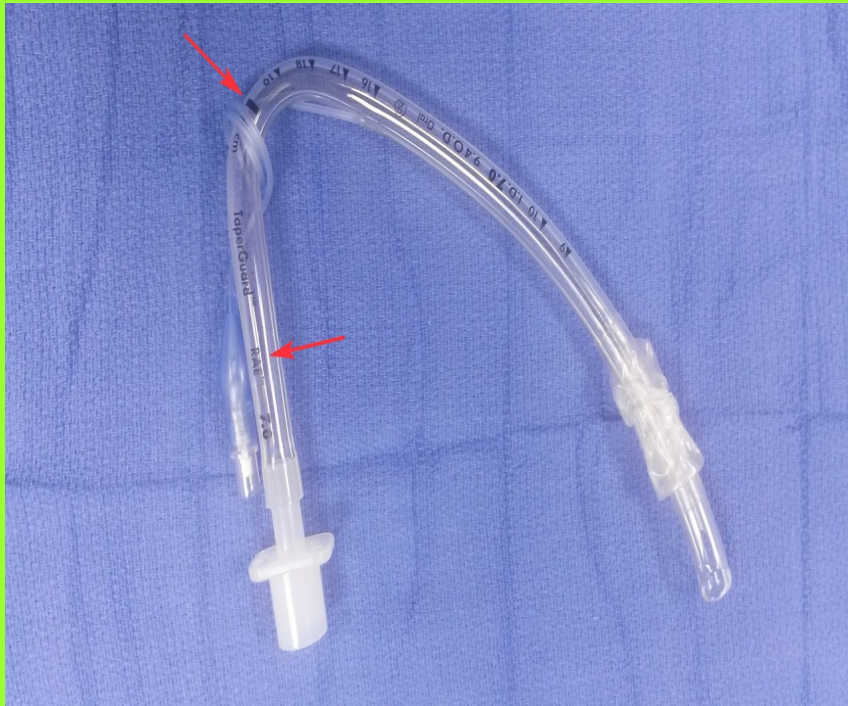
Reinforced oral intubation



- Most tracheal tubes will kink if bent into an acute enough
- if compressed by an external force
- . Both can occur during the course of an operation.
- Tubes may be made kink-resistant (but not kink-proof!) by embedding a reinforcing spiral of steel or nylon wire into the wall of the tube,



Ring Adaire elwyn



- Preformed tubes are easy to secure and may reduce the risk of unintended extubation.
- The curve allows the connection to the breathing system to be placed away from the surgical field during surgery around the head without using special connectors.

Suction catheter ?

Reinforced LMA s

No fixing by tape ??



The use of flexible laryngeal mask airway for Adenoidectomies: An experience of 814 Paediatric patients

[Ozlem Ozmete](#),¹ [Mesut Sener](#),² [Esra Caliskan](#),³ [Meltem Kipri](#),⁴ and [Anis Aribogan](#)⁵

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Our data show that the use of F-LMA for pediatric adenoidectomies has well tolerability profile and resulted in a lower incidence of complications. We think that the use of F-LMA for pediatric adenoidectomy is safer, simpler and speedier method.

Intraoperative !!



- Tube is in--
- Position with shoulder blade and head extension
- Boyle davis gag
- Doughty blade
- Throat pack
- Look for tight bag
- ETCO2
- Sterilisation ??

- Opioid
- Ondansetron
- Paracetamol
- Clonidine
sometimes
- Extubate awake is
my opinion !

- Flexion of the neck
during
laryngoscopy can
be useful to bring
the clot more
anterior and
facilitate removal
by suction..
- Coroners clot

Monitors

- All children should be monitored with a
 - pulse oximeter,
 - end-tidal CO₂
 - precordial stethoscope,
 - electrocardiogram,
 - thermometer,
 - automated blood pressure

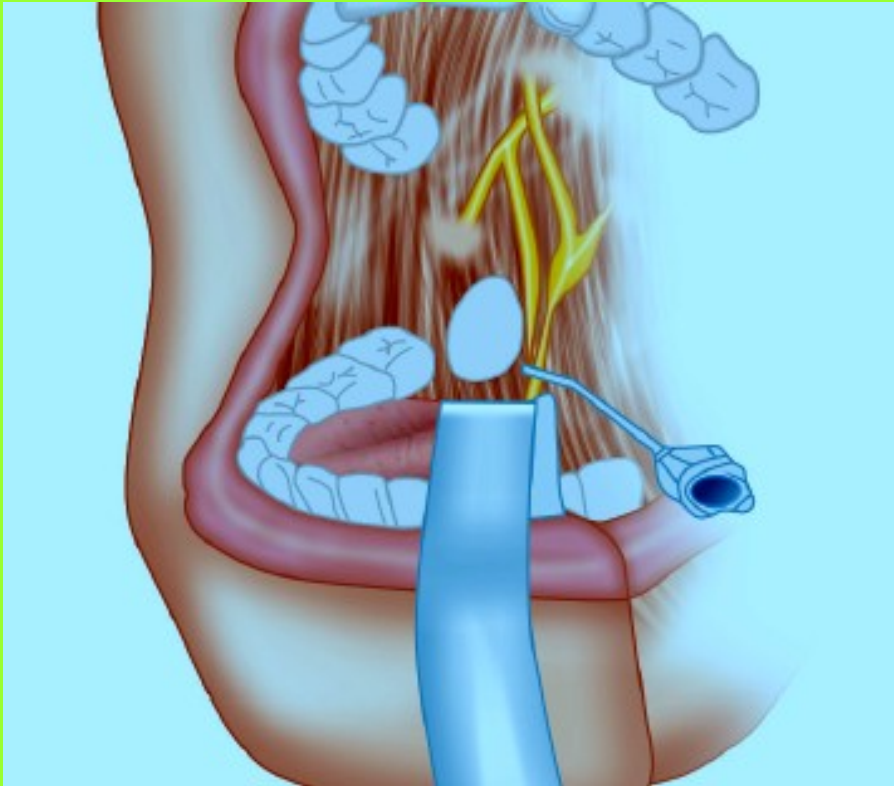
Tonsil position

- **No bleeding**
- **No secretions**
- **No gauze piece**
- After the surgery, patients must be extubated in lateral and head low position (post-tonsillectomy position) which should be maintained in the post-operative period

Day-care tonsillectomy

- involves careful patient selection and good communication with families regarding the postoperative phase and potential complications.
- Exclusion criteria include age ,3 yr, significant comorbidity, OSA, and living 1 h drive from the hospital or having no private transport.
- No PONV – No bleeding possibility !

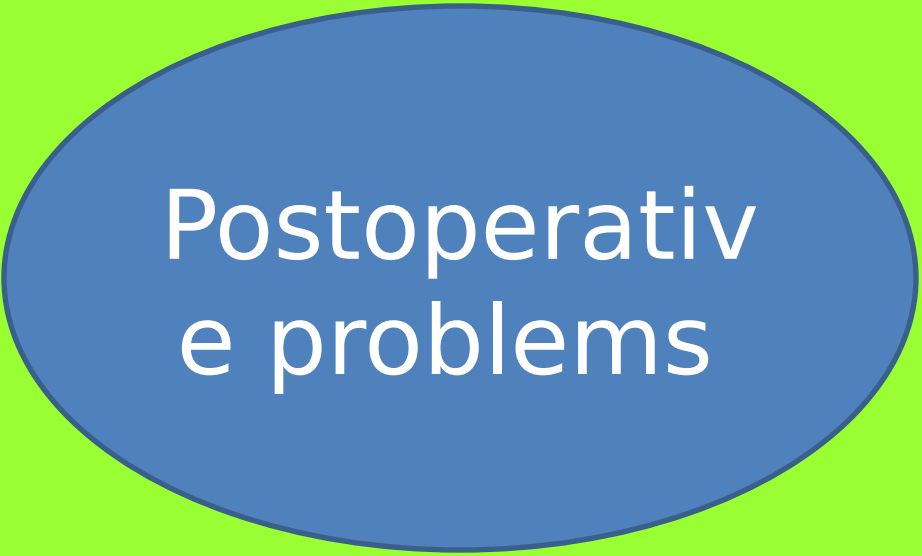
Local anesthesia for tonsillectomy



- Local
- Lignocaine with adrenaline
- Nebulize with local prior
- 1 -2 ml - Anterior and posterior pillar - Upper and lower poles
- Glossopharyngeal nerve block bilateral
- Position acceptance !!

- Can be done under LA also





Postoperativ
e problems

Pain

- Tonsillectomy involves often **underestimated** moderate to severe postoperative pain
- Local infiltration ? Help
- I am not in favour personally for fear of blunting reflexes !
- NSAIDs ? Bleed increase !
- Opioids + para + ? Dexa

PONV

- As high as 60–80% has been reported . Suctioning the stomach free from blood before emergence from anaesthesia may be helpful, but prophylactic anti-emetic medication is usually given.
- Often the combined administration of a 5HT3 antagonist and dexamethasone is used.
- A combination of ondansetron 0.1–0.2 mg/ kg and dexamethasone 0.1–0.5 mg/ kg

Post tonsillectomy bleeding (2 - 3 %)

- **Primary** - this may occur within 24 hrs of surgery.
- **Secondary** – this may occur up to 28 days post surgery and is associated with sloughing of the eschar (dead tissue) overlying the tonsillar bed, loosened vessel ties or infection from underlying chronic tonsillitis.

Blood supply

- **Superior pole**
- Ascending pharyngeal artery (tonsillar branches)
- Lesser palatine artery
- **Inferior pole**
- Facial artery branches
- Dorsal lingual artery
- Ascending palatine art

Venous return is to the plexus around the tonsillar capsule, the lingual vein and the pharyngeal plexus.

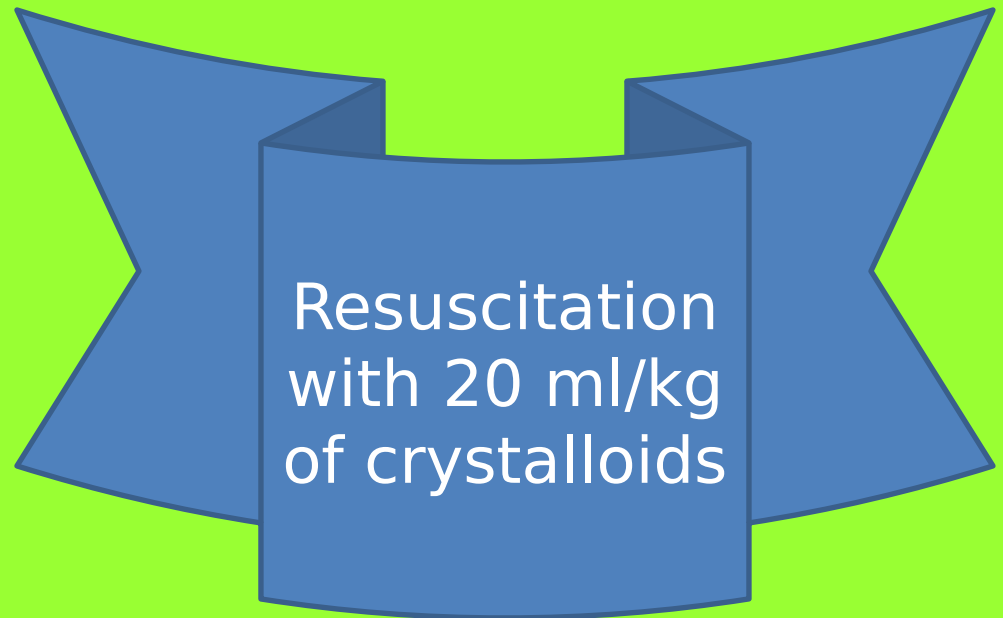
Post tonsillectomy bleeding is usually venous in origin

Problems

- Potential or hidden hypovolaemic shock
- Pulmonary aspiration (of regurgitated swallowed blood or postoperative oral intake)
- Potential difficult intubation - bleeding obscuring the view, edema from previous airway instrumentation and surgery.
- • A second general anaesthetic

Clinical signs

- Heart rate
- Capillary refill time
- Blood pressure
- Temperature
- Tachypnea
- Urine output
- Clots in mouth
- Airway
- Full stomach
- Note the chart



- Ryles tube aspiration
- Two IV lines
- blood reservation
- Surgeon and staff ready

Inhalational induction

- Gets under with breathing spontaneous
- Lateral
- Suxa
- Supine and intubate

RSI

- Intravenous induction careful
- Modified RSI with possible mask ventilation
- Ryle tube atleast after intubation
- Blood products

Post tonsillectomy bleeds – continue

- No NSAIDs
- Fentanyl and para
- Oral diet
- No bleeding
- Discharge later

Summary

Thank you all

- Indication
- Preoperative tips
- Intraoperative
- Post operative
- Three complications

