4TH ANNUAL OSAS SURGERY INTERNATIONAL COURSE

Surgical Procedure Handbook

1. Nasal Valve Stabilization
2. Uvulopalatopharyngoplasty
    a. Australian modified uvulopalatopharyngoplasty (mUPPP)
    b. Lateral Pharyngoplasty
3. Trans-palatal Advancement
4. Hyoid Suspension
5. CELL tongue base technique

1. Nasal Valve Stabilization

Equipment & Supplies:

- Nasal speculum (Cottle)
- Cottle elevator
- Drill with 0.76mm 6mm drill bit (shortest smallest bit in the maxillofacial set)
- Sutures: 2-0 Vicryl on CV-23 needle and 5-0 Chromic on a fine needle

Technique:

- Injection: Lidocaine + epinephrine along the piriform rim.
- Incision: Along piriform rim up toward nasal bone.
- Dissection: Subperiosteal plane 3mm medial & lateral to piriform rim.
- Drill: 3 holes along piriform rim (smallest drill bit).
- Suture: 1-3 sutures between upper lateral cartilage and piriform rim through the drill holes (I use 2-0 Vicryl on a CV-23 needle).
- Adjunctive Procedures: Local soft tissue techniques as indicated:
    - Excision of excessive caudal aspect of the upper lateral cartilage.
    - Excision and closure of intranasal skin near the scroll (5-0 Vicryl mattress sutures).
    - Suture lower lateral cartilage to piriform rim for alar rim collapse, but be careful to avoid nasal deformation.
- Closure: 3 sutures (I use 5-0 Chromic suture).
- Post-op Care:
    - Vaseline to incision BID x 3 weeks or longer.
    - Nasal saline PRN dryness/crusting.

2. UPPP

a) Australian mUPPP
Equipment & Supplies:

- Suture: 2/0 and 3/0 vicryl on a RB-1 needle

Technique:

- Resection of tonsils with preservation of the pillar mucosa
- Traction of the uvula caudally while elevating a triangular mucosa on each side
- Resection of supratonsillar fat bilaterally
- Division of posterior pillar muscosa and musculature at the junction of the upper third/lower two-thirds
- Suture advancement of upper part of the posterior pillar musculature into the superolateral velopharyngeal port created in steps 2 and 3 using 2/0 vicryl
- Closure of the overlying mucosa using 3/0 vicryl
- Resection of approximately 50%-75% of the uvula in a beveled fashion to create a neo-uvula

b) Lateral Pharyngoplasty/Cahali (Jacobowitz Version)

Equipment & Supplies:
Hartman nasal dressing forceps (long, ie 8 inch)
Hartman needle holder (long ie 8 inch/21cm)
Debakey forcepts bipolar
Coblator
3/0 vicryl (22mm needle)
Fibrin glue or similar
Dingman retractor

Technique:
Note: (steps 4 & 5 may be interchanged in order)

- Local infiltration
- Excise superior-lateral palate corner to form a right angle
- Tonsillectomy
- Divide palatopharyngeus from constrictor
- Dissect constrictor superiorly (see the buccopharyngeal fascia),

- Ablate and lyse superior 1cm of constrictor
- Lyse palatopharyngeus inferiorly in tonsillar fossa
- (Periuvular incisions)
- Lateral Sutures: interrupted deep bites through raphe & mucosa (or layered closure); tie
- Uvuloplasty
- Palatal margin sutures
- Vertical posterior pharyngeal wall relaxing incisions paramedian
- (fibrin glue in lateral pharynx)

Post op:
VPI short term:
Suture removal at 3 weeks
Advise Balloon inflation for VPI treatment

3. Trans-palatal Advancement

Equipment & Supplies:

- Drill: 7mm cutting burr, 2mm cutting burr
- 3mm Kerrison Punch
- Suture: 0-vicryl 5/8 needle

Technique:

- Nasal tube, supine, tonsil gag with short blade.
- UPPP usually done first, then change to short blade / remove poles
- Inject hard palate with Marcain / adrenaline
- Incision: either propeller or "McFee" incision
- Elevate palate mucosa with Freer
- Elevate right up to Greater Palatine arteries both sides
- Elevate to hard / soft palate junction
- Bone removal: 7mm cutting burr and irrigation.
- Drill bone carefully down to nasal floor mucosa
- Try to preserve mucosa
- When mucosa is visible each side of septum, use Kerrison punch
- 3mm Kerrison punch to nibble bone right out to GP foraminae
- Preserve 3mm bar of bone at end of hard palate
- Drill / punch out at least 10mm of bone in AP dimension
- Divide palatine aponeurosis both sides with cautery, medial to Hamulus
- Cut bar of bone each end with 2mm cutting burr, near GP foraminae

- Drill / cut septal connection to bar of bone.
- Cut through nasal floor mucosa on superior aspect of bony bar
- Gently free up the bony bar and aponeurosis cuts with spreading scissors
- Make sure bony bar / soft palate is COMPLETELY free
- Drill 2 suture holes with 2mm cutting burr, 4-5mm from edge of hard palate
- Pass 2 x 0-vicryl sutures on 5/8 needle (#603)
- 2 sutures in each hole: both around bony bar: 1 central, 1 lateral
- Hand tie sutures to close the osteotomy
- Close flaps and trim conservatively as needed.
- Suture with 0-vicryl on 5/8 needle (#603)

4. Hyoid Suspension

Equipment & Supplies:

- Routine neck surgery instruments set
- Suture: Mercilene 0

Technique:

- General anesthesia with oral intubation
- Local anesthetic with vasoactive infiltration
- A horizontal skin incision of approximately 5 cm in skin crease at the level of the thyrohyoid membrane, between the hyoid and thyroid cartilage
- There is no need to go further lateral than the medial border of the sternocleidomastoid muscle
- Soft tissue dissection with ligation of anterior jugular veins
- Strap muscles are dissected inferiorly as close to the hyoid as possible, using cautery
- The hyoid bone is then mobilised in anterocaudal direction and permanently fixated to the thyroid cartilage with two nonresorbable sutures on each side
- A sharp cutting needle is used to pierce the thyroid cartilage
- The two permanent sutures per side are brought through the cartilage of the thyroid and around the bone of the hyoid
- After approximation, the hyoid should be against or slightly on top the thyroid
- Hemostasis
- Drain without suction
- Close skin in layers with absorbable suture
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5. CELL Tongue Base Resection

Equipment & Supplies:

- 30 degree 10mm laparoscope
- Scope holder (Storz or Mitaka pneumatic device)
- Mouth gag (Davis Myer, Crowe Davis, McGiver)
- Evac 70 Coblation wand (Smith Nephew)
- Suction cautery
- Clip applier
- Alligator grasping forceps

Technique:

- Position tongue blade to allow optimal visualization of lingual tonsil tissue (most often a small size Davis-Meyer 1 or 1.5 blade)
- Position scope and lock in place
- Be sure Fi02 is under 30
- Bedside assistant is optional – can help with retraction or grasping tissue
- Dissection
    - Channeling
        - With this technique 3 channels are created (midline and 1 cm to right and left of midline). Intervening tissue is removed by grasping tissue and resecting intervening tissue. Specimen is preserved for pathology
    - Ablation
        - The target tissue is ablated without channeling – there is no specimen. Surgeon ablates tissue using a painting motion both medial to lateral and cranial to caudal.
- Vascular structures
    - Dorsal lingual artery will not be encountered in lymphoid tissue. If muscular dissection is performed, surgeon must stay within 1 cm on either side of midline to avoid this structure. The superior laryngeal artery will be encountered in the pharyngo-epiglottic fold and should be avoided.
    - It is wise to have suction cautery and a clip applier available should significant bleeding occur.
- Tongue compression
    - These are relatively quick cases, however if the surgery time is over 30 minutes it is worth considering relaxing the mouth gag to allow reperfusion of the tongue in order to avoid post-op edema and paresthesia.

6. Coblation of Tongue Base

Equipment & Supplies:

- ReFlex Ultra SP Coblator wand

Technique:

- The probe can be passed into seven or nine anatomically safe channels preserving the integrity of the major neurovascular bundles
- The first three channels should be in the midline, directing the probe posteriorly on an angle, starting from no closer than 3cm from the tip of the tongue and ending no closer than 0.5cm from the most anterior part of the circumvallate papillae
- Two lateral channels on each side are performed introducing the probe at the junction of the dorsal and lateral tongue mucosa
- The probe is orientated towards the circumvallate papillae without angulation cranially or caudally
- Two additional channels may be carried out by passing the probe midway between the midline and lateral tongue orientating the probe towards the posterolateral tongue
- Ensure delivery is performed superficially so as to preserve the integrity of the neurovascular bundle