Hadad-Bassagasteguy flap

Prof. Dr. Balasubramanian Thiagarajan

Introduction:

Hadad-Bassagasteguy flap is a vascular pedicled flap of nasal septal mucoperiosteum and mucoperichondrium based on the posterior septal artery, which is in turn a branch of sphenopalatine artery. It is considered to be a workhorse for reconstruction in extended endonasal skull base surgery. It should be noted that the success rate of endoscopic endonasal repair of traumatic CSF leaks with this type of nasoseptal flap is about 95%.

Indication:

1. Skull base reconstruction after endonasal surgery

2. Reconstruction following transnasal hypophysectomy

3. Management of traumatic CSF leaks

Advantages:

1. Well vascularized with pedicled blood supply (nasoseptal artery)

2. Superior arc of rotation

3. Customizable surface area which can be modified

4. Provides adequate surface area to cover the entire anterior skull base

5. Can be stored in the nasopharynx during the entire procedure

6. Promotes fast healing and decreases the risk of CSF leak

7. It is sturdy and pliable

8. Can be taken down and reused in revision cases

9. No external incision needed

The following are the important preop considerations:

1. Size of the anticipated post surgical defect

2. History of prior nasal septal flap harvest, nasal or endoscopic sinus surgery or septoplasty

3. History of nasal trauma and septal fracture

4. History of septal perforation

5. This is not a viable option for reconstruction of very anterior fossa defects or when cancer involves septal tissue or if the sphenoid rostrum is involved by malignancy

6. This may not be a viable option in children less than 10 years of age as the size may not be adequate to cover the skull base defect in this age group

Technique of harvesting Hadad flap:

Nasal hairs should be trimmed. Nasal passages should be examined and mucous if present should be removed using suction.

Nasal mucosa and turbinates are decongested by packing with Cotton pledgets soaked in 4% xylocaine mixed with 1 in 100,000 adrenaline. Care should be taken not to exceed the toxic dose of xylocaine which is 7 ml. The pledgets should be squeezed dry before packing the nasal cavity.
Using a 2 ml syringe filled with 1% xylocaine with 1:100,000 adrenaline infiltration is given in the following areas:

1. Sublabial area

2. Posterior portion of nasal septum

3. Posterior portion of middle turbinate

4. Anterior face of sphenoid

5. Over the sphenopalatine artery

6. Anterior portion of the septum on the side of surgery

Using a 15 blade knife or angled Colorado tipped Bovie cautery (setting at 10) posterior incisions are given first.

Superior incision - Is made just beneath the sphenoid ostium which should be identified in the first place. This incision is carried forward onto the nasal septum at a level approximately 1-2 cm below and parallel to the most superior aspect of the septum (avoiding the olfactory epithelium). The incision is carried forward along the septum until it is across the anterior edge of the inferior turbinate. At this point this incision is carried downwards vertically in order to connect it with the planned inferior incision.

Inferior incision - Is made above the level of the choana. It is carried down to the nasal septum and just above the maxillary crest, all the way forward to meet the vertical limb of the superior incision. If a larger flap is needed then this incision can be carried even along the floor of the nasal cavity.

The flap is elevated from anterior to posterior using a Cottle elevator, once started one can use a suction Freer to elevate the flap. The nasoseptal flap is elevated in a subperichondrial and subperiosteal plane back to the anterior face of the sphenoid sinus between the posterior superior and inferior incisions in order to preserve the vascular pedicle. Once fully elevated this flap can be tucked into the nasopharynx.

After completion of surgical procedure, the flap is rotated and placed over the defect in such a way that the entire skull base defect is covered by the flap. Fibrin glue can be used to secure the flap in its position.

Inflatable foleys catheter can be used to secure the graft in its place.

Post op instructions:

1. No nose blowing

2. Humidification of inspired air to prevent formation of nasal crusts

3. Increase in intracranial pressure is avoided by using stool softners and open mouth sneezing.

4. Foley's catheter can be removed on the 5 th day following the surgery

5. Use of saline nasal spray reduces the incidence of crusting in the nose.

Reverse Hadad flap:

This flap helps in prevention of crusting of the exposed nasal septal cartilage. This flap is harvested from the other side after creating a septal window by excising the septal cartilage. It is used to cover the exposed cartilage.

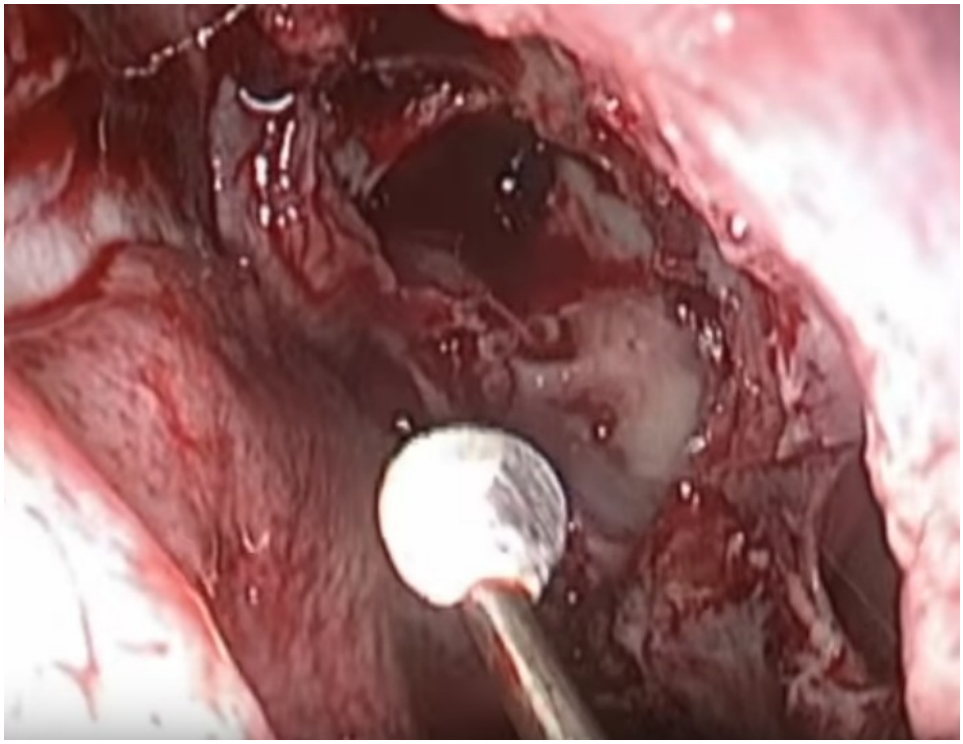

Image showing superior incision of Hadad flap

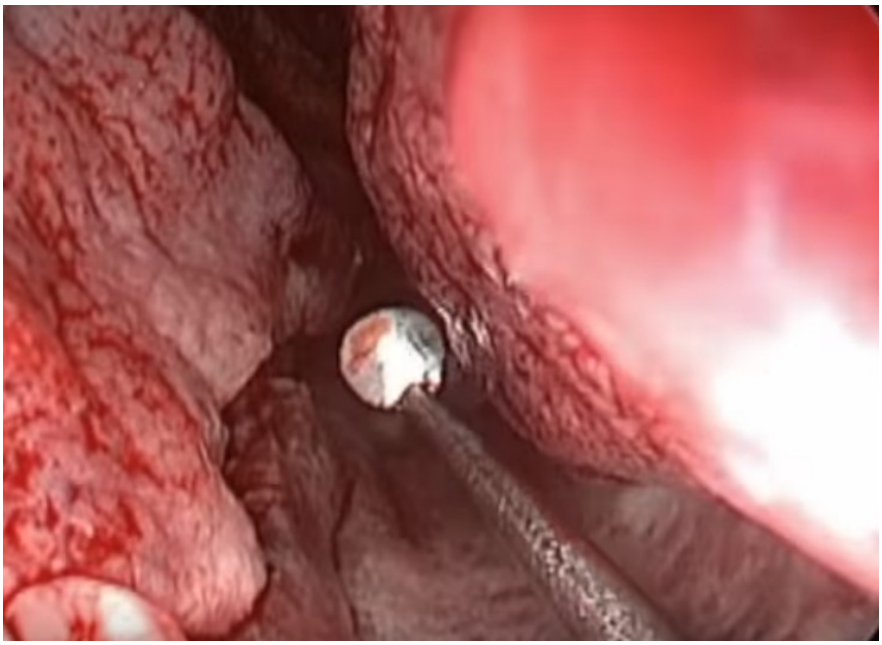

Image showing inferior incision of Hadad flap

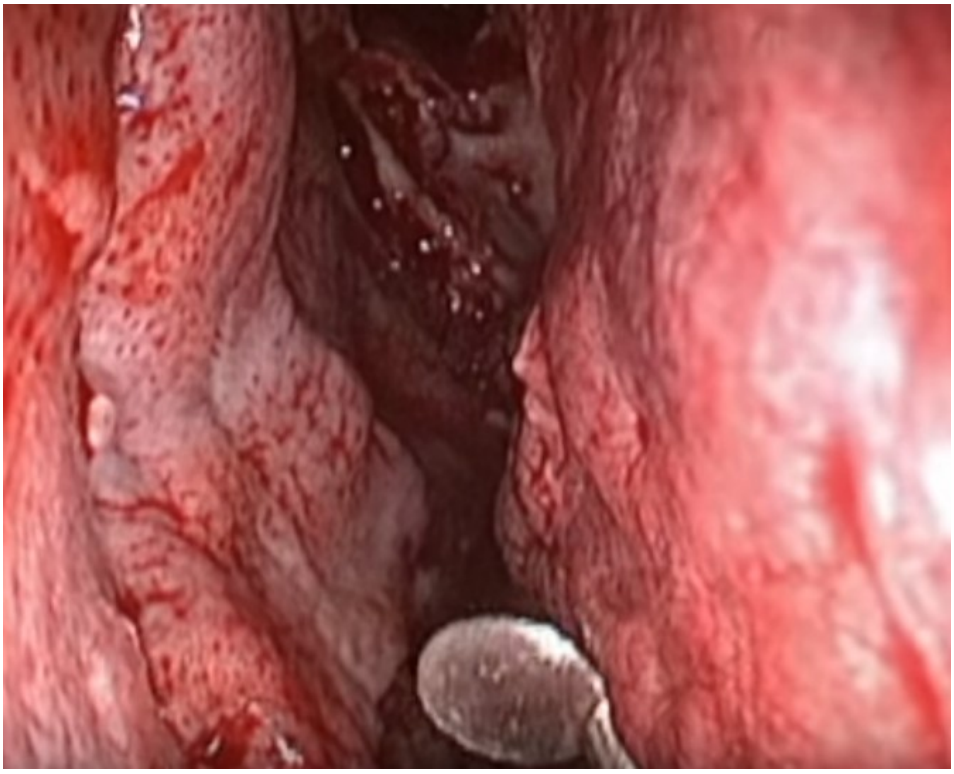

Image showing the vertical incision joining both the superior & inferior incisions