Persistent oronasal fistula closure using a nasoseptal flap

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Our group describe the first use of an endoscopic endonasal nasal septal flap to repair secondary palatal fistula in congenital cleft palate. We present seven cases of successful repair with low complication and morbidity. The flap is successfully applied in a paediatric and adult population. The approach utilises a combined otolaryngology and plastic reconstructive team. To date there have been no failures of the nasal septal flap.

Background

Congenital cleft palate patients can have difficult to manage persistent oronasal fistula. Reported incidence of palatal fistula after primary cleft palate repair is 0.5-25%. The fistula can cause hyper resonant speech and nasal regurgitation. Multiple techniques have been described for repair of fistula including local, regional and free flap repairs. FAMM and tongue flap most commonly used. Conventional fistula repairs have a significant failure rate. Palatal fistulas can be multiply recurrent and present a difficult problem.

ADVANTAGES

Well vascularized with robust pedicled blood supply (nasoseptal artery)
Mucosal (like with like)
Customizable surface area/modifiable
Provides enough surface area to cover large fistula and can reach anteriorly and posteriorly
Endonasal (no external incisions)
Sturdy, pliable
No movement on pedicle (c.f. oral pedicled flaps)
Well tolerated
No need for flap division

DISADVANTAGES

Crusting
Nasal toilet required, difficult for children
Single layer

Diagnosis Location Size Previous repair Age Followup Complication
1 Unilateral CLP Anterior hard palate Large Nil 3 18/12 Healed Nil
2 Bilateral CLP Anterior hard palate Large Nil 10 12/12 Small asymptomatic fistula Nil
3 Unilateral CLP Anterior hard palate Large FAMM 9 9/12 Healed Nil
4 Bilateral CLP Anterior hard palate Large FAMM 13 9/12 Healed Nil
5 Bilateral CLP Anterior hard palate 8x5mm Nil 6 6/12 Healed Epistaxis
6 Cleft palate Mid hard palate 10x15mm 6 buccinator+ tongue + local 24 3/12 Healed Nil
7 Unilateral CLP Anterior hard palate 10mm Nil-this repair combined with anterior alveolar flap 13 6/52 Healed Nil

OUR TECHNIQUE

Raising flap
Topicalisation and local anaesthetic infiltration
Endoscopic approach
Middle turbinate lateralised (transect if needed)

Incisions with monopolar needlepoint
- Below sphenoid os and above choana extended to superior septum sparing olfactory mucosa and onto floor of nose

Elevated anterior to posterior in submucoperichondrial plane on pedicle

Inset
Nasal mucosa to nasal mucosa
Nasal mucosa to oral mucosa
Plane between layers for sandwich inset

Vicryl 4/0 to secure +/- tisseel glue
Copak splint

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