CLOSURE OF LARGE OROANTRAL FISTULA

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- *Oroantral Fistula* persistent pathological communication between the maxillary sinus and the oral cavity

**Aetiology**

The commonest is due to *tooth extraction*.

- It is commoner in males.
- Highest rate in the 3rd decade.
- The commonest is in the upper 1st molar area.
In extraction, it is usually due to
- Plunging an **elevator** through the bony floor.
- **Forcing roots** tips or tooth into the sinus.
- **Penetration** while exposing impacted teeth.
- **Fracture** of a segment of the alveolar process.

**Aetiology**
- Destruction of the sinus walls by cyst or tumors.
- Erosion of sinus wall by longstanding dentoalveolar infection.
- Faulty implant surgery
Prolonged periapical infection
Faulty implant surgery

- Unilateral maxillary sinusitis.
- Fetid discharge from the fistula.
- Food & water regurge from the nose.

Manifestations
Management

Defects larger than 5 mm usually fail to close spontaneously

- Fistula excision
  + Closure
    - Soft tissue ± Bony defect
      ± Maxillary Sinus management

Management

Soft tissue

- Palatal flap
  - Palatal advancement rotation flap.
  - Palatal pedicle island flap.
  - Submucosal palatal flap
- Buccal Flap
  - Buccal advancement flap
  - Buccal pad of fat.
Palatal Flap

Advantages
- Good blood supply
- Rotated without tension
- Preserves the maxillary vestibular sulcus.

Disadvantages
- Raw area
- Bunching & kinking at flap base.
Buccal Flap

Disadvantages
- Obliteration of the vestibular sulcus
- Difficult for large defects
Management
Bony Defect Closure

**Why?**

- Oroantral fistulas are cavity dependent
- Closure of large defects may fail by soft tissue covering alone.
- Rehabilitation for implants may be needed.

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Management
Bony Defect Closure

- **Cancellous bone.** *(Whitney JS et al.)*
- **Polymethylacrylate (Al-Sibahi A, Shanoon A), hydroxylapatite blocks.** *(Zide M, Karas N.)*
- **Transplantation of the upper third molar.** *(Kitagawa Y et al.)*
- **Guided tissue regeneration & absorbable gelatin membrane.** *(Waldrop TC, Semba SE)*
- **Monocortical bone grafts** *(Haas R et al.)*
- **Biosorbable root analogue.** *(Thoma K et al.)*
- **Septal Cartilage**
Maxillary Sinus Management

- Traditional management is by *Caldwell-Luc’s operation* and *inferior meatal antrosotomy*.
- *Endoscopic sinus surgery* is now the method of choice.

Our Management Strategy

- Dental examination.
- ENT examination.
- Nasal endoscopy.
- Preoperative antibiotics (Macrolides + Metronidazole)
- CT scan PNS sinuses
Management
Our Technique For Large Difficult Cases

- Buccal Pyramidal Flap
- Septal Cartilage for Bone Defect
- FESS

Buccal Pyramidal Flap
Buccal Flap Modifications

- Periosteal incision
- Pyramidal crevicular incision

Septal cartilage

Closure
Post Operative Care

Medications
- Antibiotics (Amoxicillin clavulanate + metronidazole or Clindamycin)

Precautions
- opening mouth wide while sneezing
- not sucking on a straw / cigarette
- avoid nose blowing

Suture Removal
- 10-14 days

Patients
- 11 cases, 9 males 2 females
- Age : 18-65 (mean 39.5 yrs)
- 8 revision surgery.
- 4 diabetics, 1 irradiated.
- Aetiology 9 tooth extraction, 1 primordial cyst, 1 faulty implant.
Results

- Fistula size 8mm-3.5 cm (mean 1.4 cm) & involved >1 tooth in 3 cases.
- 2 cases had defect in anterior & inferior wall of the maxillary sinus.
- Concomitant FESS was performed in 4 cases.

Fistulas can appear smaller than their actual size
Results

Complete closure in 10 cases (91.9%):  
- 7 cases after 10 days  
- 3 cases closed within 3 weeks.  
- 1 case (9.1%) failed  
- Follow-up 1-60 mon. (mean 17.5 months.)

Conclusions

- Buccal pyramidal flap is a viable alternative for soft tissue closure of Oroantral fistula.  
- Septal cartilage for defect closure is a simple, cost-effective technique that assures an excellent success rate and allows for easier future sinus lift if dental implant is sought.
Prolonged periapical infection