MUCOCELE

DEFINITION

- A mucocoele is an epithelial-lined, mucus-containing sac completely filling the sinus and capable of expansion.
- Frontoethmoid >> Maxillary and Sphenoid due to complexity of drainage. I.e. Frontoethmoid >>>>> Ethmoid > Sphenoid > Maxillary.

AETIOLOGY

- Mucocoeles arise mainly due to obstruction and inflammation.
- Three theories:
  1. Pressure erosion
  2. Cystic degeneration of glandular tissue
  3. Active bone resorption and regeneration.
- Aetiology:
  - Idiopathic >>> Infection > Polyps > Trauma
  - In the normal situation, new bone formation is balanced by osteolysis. In chronic rhinosinusitis the balance is tipped in favour of osteogenesis and sclerosis, whereas in acute complicated sinusitis there is significant bone resorption leading to spread of infection. In the mucocoele, the balance is just tipped in favour of osteolysis, facilitating expansion of the lesion unless acute infection supervenes with pyocele formation.

CLINICAL FEATURES

- Typically, patients with Mucocoeles in the frontoethmoid region are referred to ophthalmic surgeons in the first instance due to orbital displacement.
- Endoscopic examination may reveal the expanded mass presenting in the nasal cavity and acute infection, and/or attempts at drainage may result in fistulas through the upper lid.
- In the sphenoid the intimate relation of the sinus to the orbital apex and cavernous sinus may lead to an acute presentation with visual disturbance, including diplopia and blindness. The patient may also complain of headache which is typically referred to the occipitoparietal region.
- Ophthalmic complaints in frontoethmoid mucocoeles ➔ Proptosis >> Lateral displacement >> Inferior displacement >> Diplopia >> Limited ocular mobility >> Decreased Visual Acuity.

IMAGING

- Computed tomography (CT) scanning is the optimum method of demonstrating a mucocoele
- The differential diagnosis is shown below:
  - Fungal disease.
  - Cholesterol granuloma
- Odontogenic cyst (maxilla)
- Neoplasia
  - benign;
  - malignant.

**TREATMENT**

- In the majority of cases an endonasal endoscopic approach may be utilized.
- Although there will be significant reduction in the orbital displacement, a residuum of expanded bone may take some weeks or months to remodel.
- Patients should therefore be warned that the final cosmetic result may not be apparent for several months.
- An endoscopic approach is ideal in those Mucocoeles which can be accessed and widely marsupialized.
- In a number of more complicated cases, particularly in the presence of significant pathology and/or previous surgery, a combined endoscopic and external approach may be necessary in the frontal region.
- With combined approach, need for stenting and chances of circumferential scarring is avoided.
- Whatever approach is used, there is absolutely no necessity to reconstruct areas of bone resorption even when there is widespread dehiscence of the skull base.
- As long as the mucosal lining is intact, restitution of contour occurs very rapidly and in younger patients may even reossify.

**COMPLICATIONS**

- The complications of endoscopic surgery are minimal
- There is a potential risk of haemorrhage, a cerebrospinal fluid (CSF) leak and/or orbital damage.
- Webbing, Frontal bossing or depression.
- Mucocele in children is extremely rare and can be completely treated via endoscopic approach.