CLINICAL MEDICINE

Image Diagnosis: Frontoethmoidal Mucocele

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CASE PRESENTATION

A 34-year-old woman presented with 2 months of right-sided congestion associated with 1 month of an external swelling on the right side of her nose. On examination, there was a firm swelling just above the right medial canthus (Figure 1). The computed tomography scan revealed a smooth, well-defined ovoid homogenous mass expanding and obliterating the ethmoid cells on the right side, with extension into the frontal sinus and orbit and lateral displacement of the globe (Figure 2). A diagnosis of right frontoethmoidal mucocele was made. The mucocele was drained and marsupialized under endoscopic guidance, and a postoperative biopsy confirmed the diagnosis (Figure 3). The patient was asymptomatic at 5-month follow-up.

DISCUSSION

The term mucocele was introduced by Rollet in 1896.1 It is an epithelial-lined cystic lesion of the paranasal sinuses, containing thick mucus and characterized by its slow growth and expansile nature.1 Its etiology is unclear but may be secondary to obstruction of the affected sinus by chronic processes such as rhinosinusitis, nasal polyposis, previous surgery, or craniofacial trauma.1

Mucoceles occur most frequently in the frontal and ethmoid sinuses. However, the maxillary and sphenoid sinuses may also be involved.1,2 They can occur at any age; however, the majority of mucoceles present in patients age 40 to 60 years.1,2 Both sexes are equally affected. The clinical picture depends on the involved region and symptoms include facial pain, headache, nasal obstruction, diplopia, displacement of the ocular globe, and meningitis. The differential diagnosis includes malignant lesions, cholesterol granuloma, dermoid cyst, and fungal and tubercular granulomas.2 The tendency for bony erosion is greater in the presence of infection. The direction of proptosis helps in localizing the sinus involved. Lesions near the orbital apex push the globe forward, and lesions arising from the frontoethmoid complex push the eyeball forward, laterally, and downward.2

Computed tomography scan is the investigation of choice, because it can assess intracranial and/or orbital extension and supports surgical planning. Magnetic resonance imaging scans are needed only when mucoceles extend intracrani ally, and to differentiate mucoceles from malignancy. Pathognomically, mucocoeles tend to be fairly bright on T1-weighted images, compared with the brain, and iso-hyperintense on T2-weighted images.3

Treatment of mucoceles involves surgical excision or marsupialization, with or without obliteration of the sinus. The goal of treatment is to drain the mucocele and ventilate the involved sinus, with minimal morbidity and recurrences. The surgical approach is based on the size, location, and extent of the mucocele.2,1 In the presence of infection, adjuvant antibiotic treatment is indicated. Initially, surgery for mucoceles involved an external approach like Lynch-Howarth frontoethmoidectomy or osteoplastic flaps with sinus cavity obliteration. Today, endoscopic drainage is the recommended treatment for frontal mucoceles as it is minimally invasive, preserves

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sinus architecture, and, more importantly, leaves no facial scarring. The presence of any sinonasal involvement preventing drainage of the ostium, the origin of the mucocele in endoscopically inaccessible regions, and the presence of major fibrosis on the floor of the sinus are a few contraindications for an endoscopic endonasal approach. In such cases it is possible to use an external route (craniotomy) or a combined approach with external treatment under endoscopic guidance. Recurrences are uncommon and usually occur within 4 years of surgery.

**Disclosure Statement**

The author(s) have no conflicts of interest to disclose.

**How to Cite this Article**


**References**

