Case Report

Diagnosis and Treatment of an Infected Supraorbital Ethmoid Cell Cyst

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1. Case Report
A 79-year-old woman with no significant medical history visited an emergency room with a complaint of diplopia. Ocular motility disorder was noted, and a central lesion was suspected. Contrast-enhanced computed tomography (CT) revealed a cystic lesion, and cyst infection was suspected based on the rim enhancement. Coronal images (Figure 1) suggested a frontal sinus cyst, but horizontal (Figure 2) and sagittal (Figure 3) sections revealed a Supraorbital Ethmoid-Cell (SOEC) cyst extending into the orbit. Diplopia disappeared immediately after endoscopic surgery for cyst enucleation. Anatomically, SOECs are associated with the anterior ethmoidal artery (AEA), which runs within or in continuity with the posterior border of the SOEC opening [1] (Figure 4). Therefore, in endoscopic surgery, the risk of AEA damage increases with a posterior approach, and an approach from the front is recommended. If an axillary flap [2] is not created and the nasal ridge is not sufficiently excised, it is difficult to operate using an endoscope.

Keywords: Supraorbital Ethmoid-Cell; Computed tomography; Endoscopic surgery

Abbreviations: AEA: Anterior ethmoidal artery; CT: Computed tomography; SOEC: Supraorbital ethmoid-cell cyst
**Figure 1:** Coronal section: a frontal sinus cyst invading the orbit.

**Figure 2:** Horizontal section: cyst is posterior to the frontal sinus.
2.1. Teaching point
Sinus lesions should be localized using horizontal, sagittal, and coronal CT images. Regarding the surgical technique, it is recommended to create a flap, remove the nasal ridge sufficiently, and approach from the front.

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References
