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Title

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Case report

An 8-year-old boy presented with a non-healing skin pit and purulent drainage near the medial canthus of the right eye. The lesion developed after the excision of a cyst containing sebaceous material and hairs. A sinus with sebaceous secretion was also present at the nasal tip (Figure 1). Subsequent imaging (Figure 2) and management established the diagnosis of recurrent nasal dermoid fistula

Nasal dermoid is a congenital lesion arising typically in the midline, and presents as a cyst, sinus or fistula located anywhere along the nasal pyramid between the glabella and the nasal tip. It derives from incomplete closure or trapped remnants of the dural diverticulum. This developmental structure connects the anterior cranial fossa to the nasal tip passing under the nasal bones, the so-called prenasal space, during embryogenesis (1,2). Nasal bones can be defective or displaced because of the dermoid (3). Nasal location accounts for 1-3% of all dermoids. Nasal dermoids are usually diagnosed at birth or during early childhood. The presence of hairs or other adnexal structures, such as sebaceous or sweat glands, is typical of dermoids and helps differentiate these from epidermoid cysts. Soft tissue and bone deformities, recurrent local infection with purulent discharge, osteomyelitis, meningitis, and brain abscess are all possible presentations (2). Remarkably, the formation of the nasal pyramid depends on the fusion of the medial and lateral nasal processes and the resorption of the dural diverticulum during embryogenesis. An anomaly of this development will cause defects in the nasal bones and paramedian fistulous openings. Both openings of the fistula can give access to

bacteria into the fistulous tract, causing purulent infection. There is no demonstration of ascending infection in the literature, but canthal involvement is often reported.

In this case, we can hypothesize that the infection of the canthal opening of the fistula was due to local factors, eg, the proximity of the nasolacrimal duct, or repeated trauma of this area from fingers/fingernails. Preoperative imaging is mandatory to rule out intracranial extension (Figure 2), which can be suspected in the case of other bony anomalies (eg, enlarged foramen caecum of the anterior cranial fossa, bifid crista galli). MRI is essential for the preoperative differential diagnosis (eg, encephalocele, vascular anomalies, low-grade tumors) (4). Surgical planning is based on the location and extension of the dermoid. Direct excision through a midline vertical approach is often sufficient. Other interventions such as rhinoplasty, craniotomy, endoscopic-assisted procedures, and local flaps may be required to provide a radical excision with acceptable aesthetic results. Incomplete removal of the whole dermoid tract allows for disease recurrence (3,4).

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Figure 1. Nasal dermoid fistula extending from the medial cantus of the right eye to the nasal tip.

Figure 2. Imaging rules out intracranial extension of the dermoid and is essential for differential diagnosis. A. CT scan. Sagittal view (up) showing a large defect in the right nasal bone (arrow) and no communication between nasal space and anterior cranial fossa; coronal view (down) showing a bifid and pneumatized crista galli (arrow). Frontal sinus aplasia is noticeable. B. Sagittal MRI shows the nasal dermoid fistula course from the prenasal space to the nasal tip (arrow).

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