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Light of Chronic Inflammation with Distortion of Normal Canalicular Architecture

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Description

The soft tissue structures of the malar fat pad and SOOF constitute the fatty component of the midface. The lower lid-cheek junction is represented by a curved line that runs inferior and parallel to the infraorbital rim, delineating the transition between the palpebral and orbital divisions of the orbicularis oculi muscle. The skin of the lower eyelid superior to this junction is thin and directly lies over the muscle while the skin inferior to this junction is thicker and separated from the muscle by the malar fat pad. The orbicularis oculi muscle attaches firmly to the bony orbital rim along the medial aspect of the lid-cheek junction.

A 92 year-old woman with a past medical history of hypertension and hyperlipidemia was initially referred for evaluation of an eyelid mass that had been enlarging with periods of waxing and waning over the prior year. She endorsed persistent blurry vision, pain, bloody tears, pruritus, and erythema, all of which had been refractory to oral cephalexin and topical erythromycin, moxifloxacin, ofloxacin, and azestaline.

On examination, she was afebrile with no palpable preauricular, submandibular, or cervical lymphadenopathy. Visual acuity was 20/50 in both eyes, and intraocular pressure was 15 and 13 mmHg in the right and left eye, respectively. External examination revealed a large well-circumscribed mass along the right medial upper eyelid with papillomatous extension from the upper punctum, appearing pink with fronds of vessels. There was no obvious obliteration of the surrounding punctal architecture, and no purulent or bloody discharge could be manually expressed. On attempted probing and irrigation, the right upper eyelid punctum was found to be completely obstructed by the mass.

Magnetic Resonance

Due to concern for an infiltrative process, a same-day biopsy of the anterior portion of the mass extruding from the punctum was performed. The histopathology revealed a benign pyogenic granuloma. Magnetic resonance imaging of the orbits demonstrated a peripherally contrast-enhancing, well-circumscribed lesion of the right anterior supero-medial orbit measuring 6 x 9 x 8 millimeters.

Given the associated discomfort, progressive increase in size of the mass, visual obstruction, and possibility of an underlying tumor or infection suggested by radiographic findings, the decision was made to proceed with a right medial orbitotomy with removal of the mass. On gross examination, the mass was well-encapsulated with a fibrous appearance. It exhibited extension with a cicatricial process into the anterior medial orbit, tarsus, superior conjunctival fornix, and additionally through the superior punctum. A nasolacrimal stent was placed concurrently to minimize the risk of post-operative obstruction in light of chronic inflammation with distortion of normal canalicular architecture. The patient was incidentally found to have spontaneous discharge from the left lower punctum intraoperatively, which prompted culture and analysis.

Cases of Mid Facial

Cases of grade III midfacial ptosis present a challenge best addressed by the authors with a transtemporal subperiosteal midface lift. The advantages of this technique include improved lifting of the malar fat pads and the SOOF given the subperiosteal plane of dissection. This technique effaces the pseudoherniation of the orbital fat pads, effectively contouring the inferior orbital rim. The subperiosteal dissection allows the periosteum to be secured in a more superior position, significantly increasing the longevity of the lift. The more vertical orientation of the elevation vector is more effective in raising the midfacial fat pads. Despite the longer recovery time and transient lateral canthal distortion of the midface lift, its benefits for severe midfacial ptosis are exceptional. The transtemporal midface lift also has an added benefit of decreasing the vertical height of the lower lid [21] as well as an elevation of the lower lid-cheek junction with the addition of a transconjunctival lower lid blepharoplasty with skin pinch. This emphasizes that the role of lower eyelid treatment is integral to the perception of midfacial ptosis.

Both a transtemporal subperiosteal midface lift with transconjunctival lower lid blepharoplasty with skin pinch and lower lid blepharoplasty with fat transposition can improve the orbital rim angle to achieve a more youthful, smooth convexity. The mid face lift approach attempts to restore the anatomical position of the midfacial soft tissues while a lower lid blepharoplasty with fat transposition camouflages the orbital rim angle by re-positioning the orbital fat over the inferior orbital rim.

However, it remains important to rule out an underlying malignancy. Specifically, when a pyogenic granuloma is associated with a discrete mass, it is imperative to determine whether the mass itself is malignant and disturbing the underlying tissue architecture thereby leading to chronic inflammation and pyogenic granuloma formation. In our patient, imaging revealed a ring-enhancing component, which also raised suspicion for an infectious etiology, as the enhancement suggested edema and inflammation surrounding a uniform mass.

Laterally between the medial limbus and mid-pupillary line in the area of the SOOF, the muscle attaches to the orbicularis retaining ligament, which in turn attaches to the bony orbital rim. The SOOF is comprised of two compartments: the medial compartment extending from the medial limbus to the lateral canthus, and the lateral compartment extending from the lateral canthus to the temporal fat pad. The malar fat pad contains a triangular thickening of the subcutaneous fat in the cheek superficial to the superficial musculoaponeurotic system (SMAS) overlying the maxilla, which constitutes the majority of the midface volume. The zygomaticus

major and minor muscles are enveloped by the SMAS and are located superficial to the SOOF and deep to the malar fat pads.