Conjunctival Dermoid Cyst Seen on Examination as a Chronically Red Eye

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We describe a patient who was seen with a unilateral red eye and purulent discharge refractory to antibiotic treatment with multiple antibiotic regimens over the previous 4 months. Initially it was believed to be a bacterial conjunctivitis, but when conventional treatments failed it was thought to be a viral conjunctivitis with bacterial superinfection. Cultures yielded only Enterococcus. There was a small mass with a draining fistulous tract at the lateral canthus. Symptoms persisted despite courses of topical and systemic antibiotics followed by a tapering dose of steroids. The patient was taken to the operating room for an orbitotomy through the conjunctiva at the lateral canthus. Findings from pathologic examination of the excised mass demonstrated a dermoid cyst of the conjunctiva. This clinical appearance obscured the diagnosis.

Dermoid cysts of conjunctival origin are uncommon orbital tumors. To our knowledge only 14 cases of conjunctival dermoid cysts have been reported. These cysts are typically seen in the second decade of life as noninflammatory, space-occupying lesions in the medial orbit that do not threaten vision. We report an unusual occurrence of a dermoid cyst of conjunctival origin. The appearance of our patient with a unilateral, chronic, purulent conjunctivitis unresponsive to multiple treatment modalities obscured the correct diagnosis.

REPORT OF A CASE

A 32-year-old woman was referred to the ophthalmology clinic of the University of North Carolina Hospitals at Chapel Hill for a chronically red eye with discharge and crusting that had been refractory to treatment with multiple antibiotic regimens during the previous 4 months. Initial treatment was with topical tobramycin. She was then switched to topical ciprofloxacin hydrochloride and prednisolone acetate and oral cephalexin monohydrate under the assumption that she had a viral conjunctivitis with possible bacterial superinfection. The condition seemed to improve but then recurred, and she was treated with several other topical antibiotics, finally appearing to respond to topical chloramphenicol. When culture of the discharge yielded Enterococcus, topical vancomycin was added to the regimen.

At our first examination of the patient, best-corrected visual acuity was 20/20 OU. There was slight swelling at the lateral canthus of the left eye, and there was a small amount of dried, crusted material on the skin about the lateral canthus (Figure 1). Extraocular movements were full, and both eyes retropulsed easily into the orbits. There was no proptosis. Palpation revealed a small, nontender mass at the lateral canthus. Results from biomicroscopy of the left eye revealed moderate conjunctival hyperemia. There was a pinpoint-sized area in the conjunctiva at the lateral canthus through which white, purulent material drained (Figure 2). Biomicroscopy of the right eye and ophthalmoscopy of each eye were normal. Computed tomographic scans of the orbits showed no abnormalities (Figure 3).
The patient was treated with an initial 3-week course of oral doxycycline hyclate, followed by 4 weeks of oral ciprofloxacin, resulting in moderately decreased purulent drainage. A tapering dose of prednisone was added, without success.

The patient was taken to the operating room for an orbitotomy through the conjunctiva at the lateral canthus. In the conjunctiva, a fistulous tract was identified. A probe was placed into the tract, and when the probe was removed, 2 hairs followed. Dissection along the tract opened a small pocket containing numerous hairs and sebaceous material.

**HISTOPATHOLOGIC FINDINGS**

Findings from histopathologic examination demonstrated a nonkeratinized, stratified, squamous epithelial cyst wall that contained goblet cells (Figure 4). Proteinaceous material representing degenerated, desquamated epithelial cells was found on the surface of the epithelium. The cyst wall contained hair shafts, sebaceous glands, and inflammatory cells (Figure 5). All sections were consistent with a diagnosis of a dermoid cyst of conjunctival origin.

**COMMENT**

Orbital conjunctival dermoid cysts are a clinical and pathologic entity distinct from orbital dermoid cysts. Typical orbital dermoid cysts result from sequestration of surface epithelium during embryogenesis, are lined by keratinized squamous epithelium, and contain adnexal structures such as hair follicles and sebaceous glands. Dermoid cysts are the most common orbital tumor of childhood and are seen as a painless, superotemporal mass that frequently erodes adjacent bone. In contrast, conjunctival dermoid cysts are believed to result from embryonic sequestration of conjunctiva. Therefore, these cysts are lined by nonkeratinized squamous epithelium that contains goblet cells and adnexal structures. Uncommon and small, conjunctival dermoid cysts are found anteriorly in the orbit, sometimes in the fornices or eyelids. These cysts typically involve soft tissue and do not erode bone.

Our patient had a unique occurrence of a dermoid cyst of conjunctival origin. Initially, the diagnosis and management were obscured by a unilateral, purulent conjunctivitis. Additionally, the small, nontender mass involved the soft tissue of the lateral canthus, not the usual superomedial location. Purulent drainage exiting from a small fistulous tract in the conjunctiva suggested the possibility of an occult foreign body, and computed tomography was performed. The typical cystic lesion of a conjunctival dermoid cyst was not demonstrated. The lack of response to antibiotic
therapy and the palpation of a small lateral canthal mass prompted treatment with prednisone. Because of continued purulent drainage, planned surgical excision was performed. The diagnosis was apparent only when the fistulous tract was probed at surgery and hairs identified.

Thus, identification and management of dermoid cysts of conjunctival origin can be challenging. Ophthalmologists should be aware that a small, anterior orbital mass in an adult with no abnormal findings on computed tomography may be a dermoid cyst of conjunctival origin. For symptomatic tumors, surgical excision is the primary treatment.

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REFERENCES