

Intratarsal keratinous cyst mimicking a large chalazion

Acquired cystic lesions in the eyelid can arise from a number of structures including the sweat glands (apocrine and eccrine hidrocystoma), from the pilosebaceous follicles (milia, trichilemmal cysts), from the epidermis (epidermal inclusion cysts), or from the meibomian glands (chalazia).¹ Intratarsal keratinous cysts are a recently described entity that also arise from the meibomian glands and clinically may look exactly like chalazia.^{2–8} Their treatment,

however, is different, and it is therefore important for the ophthalmologist to be aware of this entity. If these cystic lesions are simply opened and curetted as chalazia are commonly treated, they often recur.^{2,3} Complete removal is required. This study was performed with Institutional Review Board approval and in compliance with the Declaration of Helsinki.

A 47-year-old female was seen in consultation for a “chalazion” on her right upper eyelid that had been present for 24 months (Fig. 1A). It was slowly increasing in size. No inflammation, discharge, bleeding, or pain was



Fig. 1—A, Large, firm cystic lesion of right upper eyelid. B, Eversion of the right upper eyelid discloses a white cystic lesion that extends from the tarsal plate.

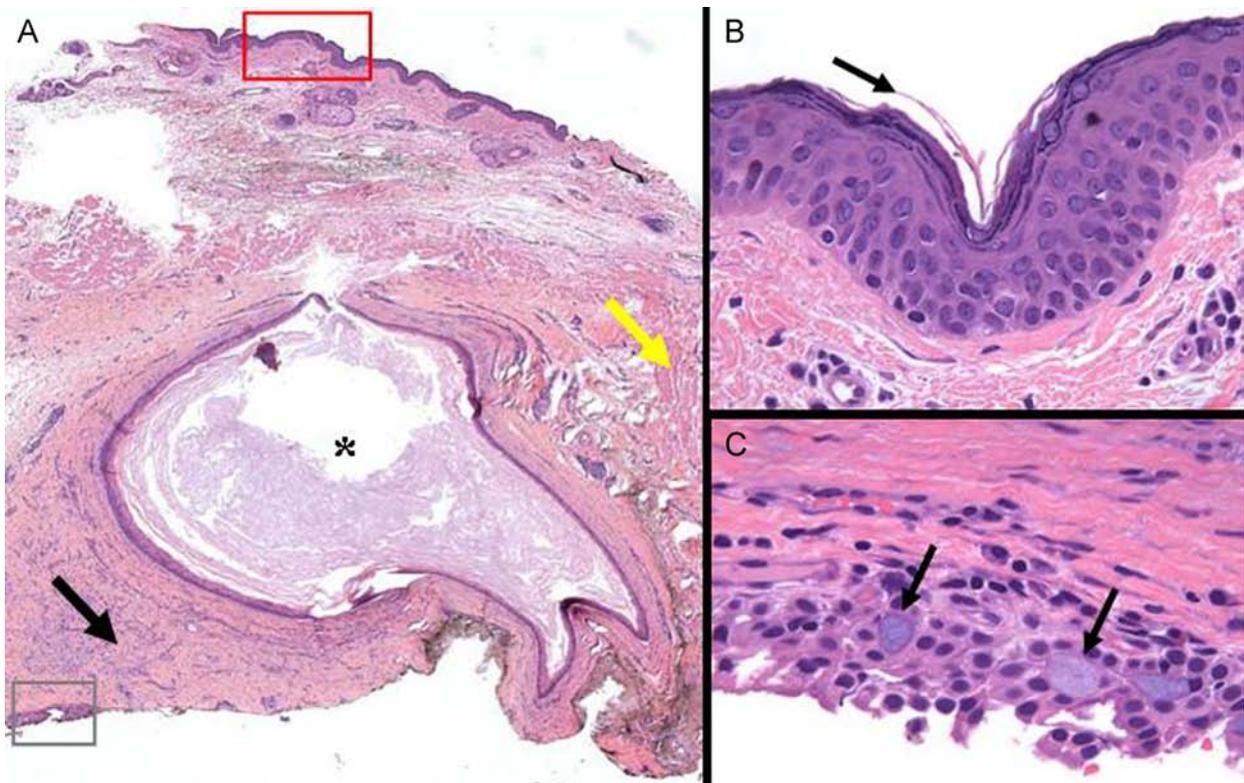


Fig. 2—A, Cross section of right upper eyelid, with surface epidermis (red box) and palpebral conjunctiva (grey box), contains a cystic lesion (black asterisk) within the tarsus that is surrounded by scar tissue in the tarsus (black arrow) and foci of orbicularis muscle anteriorly (yellow arrow). Hematoxylin and eosin stain. Original magnification $\times 25$. B, Normal surface epidermis of the eyelid is keratinized (black arrow). C, Normal epithelium of the palpebral conjunctiva contains goblet cells (black arrows). B, C, Hematoxylin and eosin stain. Original magnification $\times 640$.

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associated with it. It had been injected with cortisone 10 months earlier with no response. Her medical and ocular history was otherwise unremarkable. She was not using any topical drops and taking other systemic medication. On examination, her vision was 20/20 OU. There was a firm cystic growth in the right upper eyelid that was fixed to the tarsal plate on palpation. The overlying skin was freely mobile over the bump. There was no inflammation on the eyelid. Eyelid eversion revealed a white cystic lesion

(Fig. 1B). An intratarsal keratinous cyst was suspected, and a full-thickness lid resection was carried out.

Histopathologic examination disclosed within the tarsus of the right upper eyelid a large cyst (Fig. 2A) with normal dermal and epidermal components (Fig. 2B) anterior to it and palpebral conjunctival epithelium (Fig. 2C) more posteriorly. The material in the cyst stained strongly positive for mucin and contained laminated, keratin-like strands (Fig. 3A). The cyst epithelium showed areas that

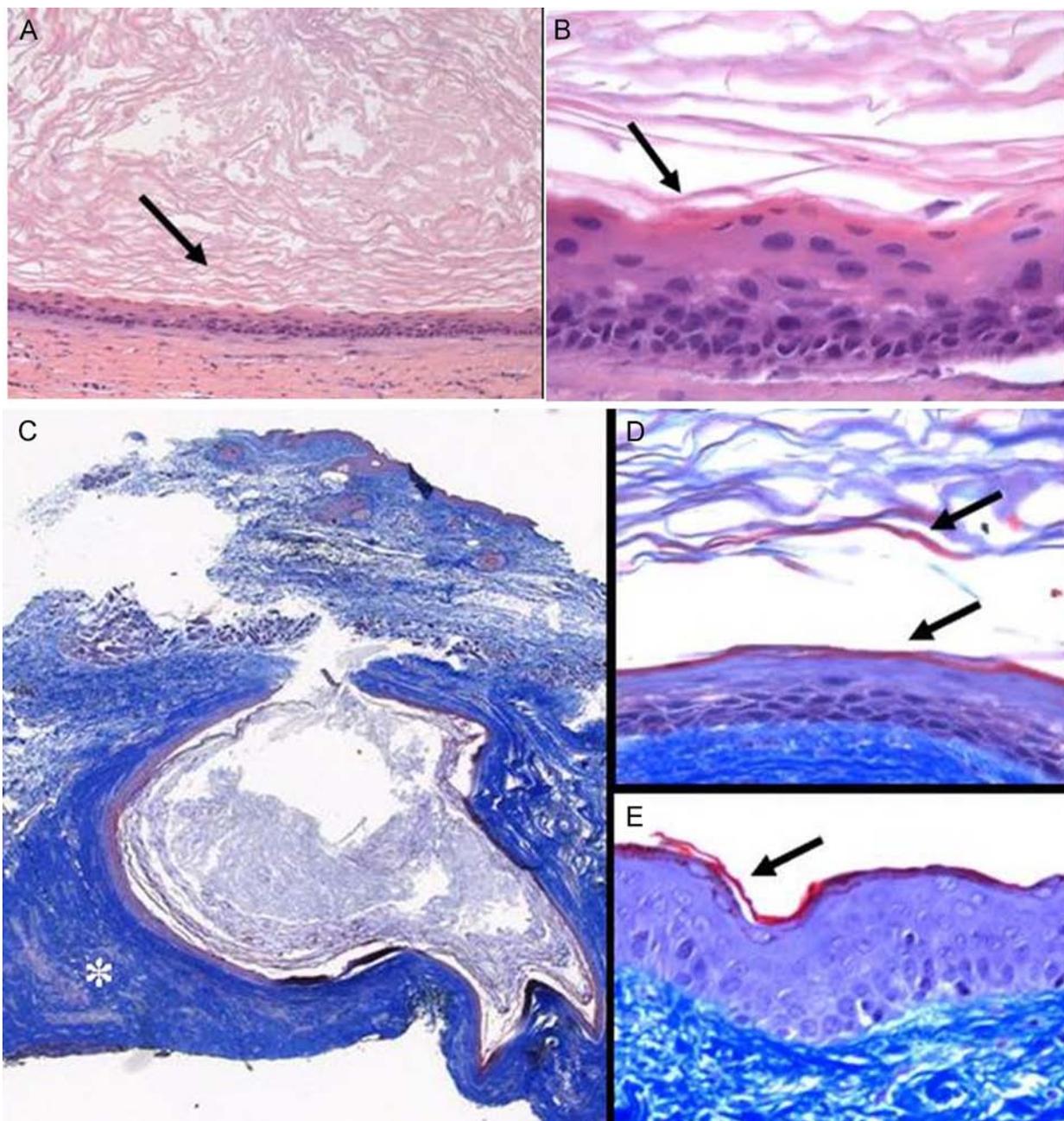


Fig. 3—A, Contents of cystic cavity shows laminated, keratin-like material (*black arrow*). Hematoxylin and eosin stain. Original magnification $\times 10$. B, Cyst epithelium displays focal keratinization with degenerated nuclei (*black arrow*) and parakeratosis with cytoplasmic staining a deep red with retention of cell nuclei consistent with early keratinization. Hematoxylin and eosin stain. Original magnification $\times 640$. C, The Masson trichrome stain of the upper eyelid shows fibrous tarsus surrounding the cyst (*white asterisk*). Original magnification $\times 25$. D, Focal keratinization of surface epithelium of cyst stains red, as well as in strands of adjacent keratin (*black arrows*). E, Normal surface epidermis of eyelid shows similar red staining of surface keratinization (*black arrow*). Masson trichrome stain. Original magnification $\times 640$ (D, E).

were mucinous, keratinized, with parakeratosis (Fig. 3B). The surface of the cyst epithelium and its adjacent keratin-like strands showed focal red staining with Masson trichrome (Figs. 3C, 3D), similar to the keratin of the surface epidermis of the eyelid (Fig. 3E). The diagnosis was an intratarsal keratinous cyst.

The patient has remained without recurrence with 8 months of follow-up.

After chalazia and sebaceous cell tumours, meibomian gland keratinous cysts (or intratarsal keratinous cysts) are the third most common primary intratarsal lesion.² However, their clinical presentation and appropriate treatment is not well-known. Clinically they are often misdiagnosed as a chalazion because they appear the same (i.e., quiet lumps in the eyelid). Several authors have described these in the recent literature and referred to them as “intratarsal epidermal inclusion cysts,” “epidermoid cysts,” and “intratarsal keratinous cysts.”^{2–8} Jakobiec et al.² have described the largest series of these lesions (6 patients) and they recommended “intratarsal keratinous cyst” as the most accurate term. It has been suggested that these lesions arise from the tarsus in the ducts of the meibomian glands, and although they have a stratified squamous epithelial lining and are filled with compact keratin and mucinous material, they are not of epidermal origin, nor are they inclusion cysts, consistent with origin in the tarsus.^{2–8} Clinically, there is no inflammation and the overlying skin can be freely moved over the nodule, which is fixed to the tarsus. They are usually isolated, although multiple intratarsal keratinous cysts have been known to occur.⁵ On eversion of the eyelid they are generally very obvious in most cases with posterior protrusion just beneath the palpebral conjunctiva.^{2,3,5–7} Transconjunctival leakage of the keratinous material may occasionally occur and cause eye irritation.⁵ The major reason to diagnose these lesions accurately and distinguish them from chalazia is that they can exhibit multiple recurrences after curettage and, therefore, require a more aggressive surgical approach in their management.^{2,3} Complete cyst excision with adjacent tarsectomy or full-thickness eyelid resection is recommended.^{2–4,8}

In summary, intratarsal keratinous cysts may be mistaken for chalazia and other benign eyelid cystic lesions. Unlike chalazia, however, simple drainage with curettage is not effective because of the tendency to recur. Anterior fixation to the tarsal plate, posterior protrusion beneath the palpebral conjunctiva, lack of inflammation or fluctuation in size, gradual continued slow growth, and recurrence after curettage of a suspected chalazion may be helpful findings to differentiate intratarsal keratinous cysts from chalazia.^{2,3}

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Fungal hyphae growing into anterior chamber from cornea

Fungal keratitis is an often severe disease for which the diagnosis can be challenging, the response to medical treatment slow, and the clinical outcome poor. It may extend to adjacent tissues, inducing scleritis or endophthalmitis that could potentially result in the loss of the eye.¹ Corneal perforation is 5 to 6 times more likely with fungal keratitis compared with bacterial keratitis.² The basis for an effective treatment is the rapid diagnosis of the disease by detection and identification of the

causative agent. In the early stages of the disease, detection of the fungus is difficult because of the mild symptoms and signs, slow progression of the disease, and slow growth in culture medium. Currently available topical antifungal drugs have limitations including poor penetration into the eye, limited spectrum of activity, and surface toxicity.^{3,4} We report cases of fungal keratitis with hyphae invading the anterior chamber, which we detected using anterior segment optical coherence tomography (AS-OCT) and treated with aspiration of the hyphae and an antifungal agent, at a relatively early stage of the disease.