International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2025: 7.089

Conjunctival Epithelial Inclusion Cyst in Pre-Existing Pterygium: A Case Report

Dr. Smita Gavade[1], Dr. Tanvi Ajmera[2]

Abstract: ***Background: Pterygium is a common degenerative disorder of the ocular surface characterized by a fibrovascular growth extending from the bulbar conjunctiva onto the cornea, most commonly on the nasal side. Although typically benign, it may occasionally be associated with secondary epithelial and stromal changes. The occurrence of a conjunctival epithelial inclusion cyst within a pre-existing pterygium is rare. Aim: To report a rare case of a conjunctival epithelial inclusion cyst arising within a pterygium and to highlight its clinical significance. Case Presentation: A 69-year-old woman presented with a painless, translucent cystic swelling within a nasal pterygium of the left eye for six months. The lesion measured approximately 8 × 3 mm, was freely mobile, and not adherent to the underlying sclera. There was no history of trauma, prior ocular surgery, or inflammation. Complete excision of the pterygium along with the cyst was performed, followed by conjunctival autografting. Histopathological examination showed stratified squamous epithelium with goblet cells, a fibrovascular stroma with congested blood vessels, and a cystic cavity lined by cuboidal to stratified epithelium, confirming a conjunctival epithelial inclusion cyst within pterygium. Clinical Significance: This rare association may mimic other cystic or neoplastic ocular surface lesions and can alter clinical assessment. Conclusion: Surgical excision with histopathological evaluation is both diagnostic and curative, and awareness of this entity is important in the differential diagnosis of cystic lesions in pterygium.***

Keywords: Pterygium, Conjunctival epithelial inclusion cyst, Histopathology, ocular surface lesions, surgical excision

1. Introduction

Pterygium is a common degenerative disorder of the ocular surface, characterized by a wingshaped fibrovascular growth arising from the bulbar conjunctiva and encroaching onto the cornea, most commonly on the nasal side. Histopathologically, it represents a proliferation of subconjunctival connective tissue forming vascularized granulation tissue with a tendency to invade the cornea.[1] Although pterygium usually follows a benign clinical course, rare epithelial and stromal alterations have been reported. The epithelial component may undergo dysplastic or malignant transformation, while the stromal tissue may exhibit degenerative changes, including cyst formation, calcification.[2]

Conjunctival inclusion cysts occurring within a pterygium are uncommon and are believed be secondary to chronic inflammation or epithelial implantation. We report a rare case of a conjunctival epithelial inclusion cyst in pre existing a nasal pterygium and discuss its possible pathogenesis

2. Case Report

A 69-year-old woman presented with a painless swelling over a wing shaped mass on nasal side in the left eye, noticed for the past six months. The lesion had remained stationary in size. On examination, a horizontally oval, translucent cyst measuring approximately 8 × 3 mm was noted within the body of the pterygium. The cyst was freely mobile and not adherent to the underlying sclera or deeper structures. The pterygium appeared pale, and no surface or intrinsic vascularity was noted over the cyst. The swelling was non-tender, with no history of ocular trauma, surgery, or prior inflammatory episodes. Ocular movements were normal, and preauricular lymph nodes were not palpable.

The pterygium along with the cystic lesion was excised completely with conjunctival autograft. The excised specimen was submitted for histopathological examination. Histopathological evaluation revealed conjunctival tissue lined by stratified squamous epithelium with goblet cells. Subepithelium shows cyst lined by single to stratified cuboidal layer. Sub epithelium shows fibrovascular core composed of collagen mixed with basophilic fibrillar structures and congested blood vessels. All these features suggest conjunctival inclusion cyst with pterygium.

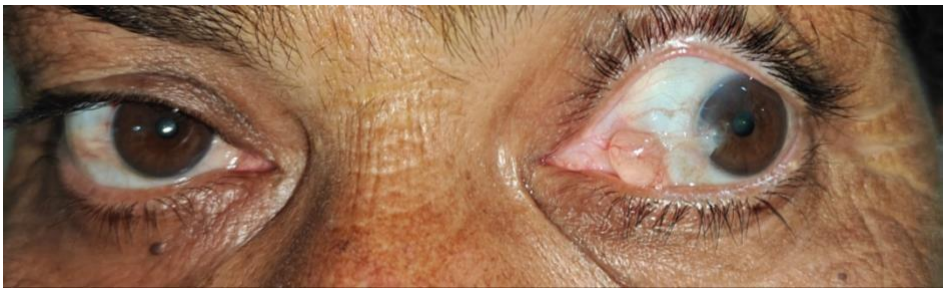

Figure 1: showing conjunctival cyst attached to head pterygium

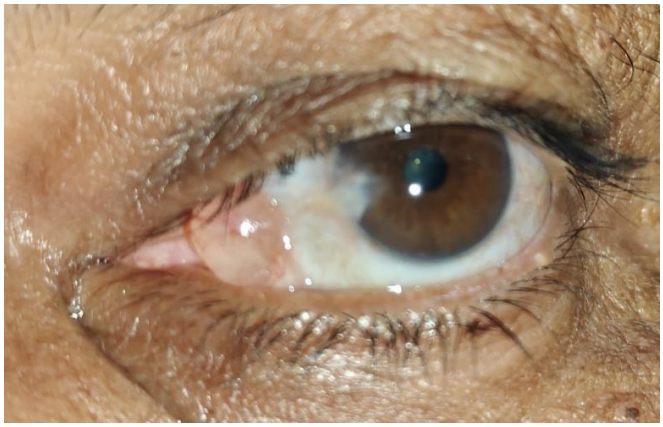

Figure 2: showing conjunctival cyst in pre existing Pterygium

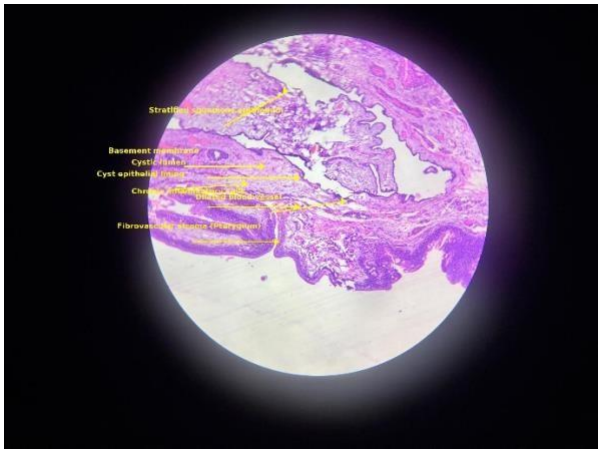

Figure 3: Histopathology image showing features of pterygium

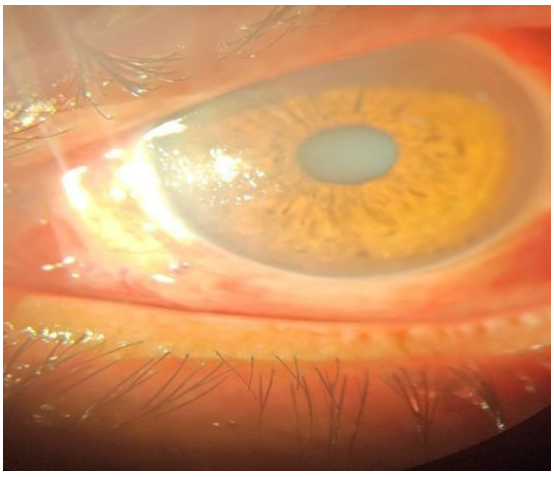

Figure 4: Post operative image showing conjunctival autograft

3. Discussion

Conjunctival inclusion cysts are benign, fluid-filled lesions containing clear serous fluid, shed epithelial cells, or gelatinous mucoid material. Histologically, the cyst wall is composed of several layers of non-keratinised stratified squamous epithelium supported by connective tissue. Inclusion cysts account for nearly 80% of all conjunctival cystic lesions and may be classified as primary (congenital) or secondary (acquired).[3] Secondary inclusion cysts commonly develop following ocular surgery, trauma, or chronic inflammatory conditions such as pterygium.

Kiratli et al. reported conjunctival epithelial inclusion cysts arising in association with pterygium and attributed their development to chronic inflammatory changes within the conjunctival tissue.[4] An inflammatory hypothesis has been proposed to explain cystic degeneration in pterygium, wherein persistent stromal inflammation leads to downgrowth of surface epithelial cells into the stroma. Subsequent degenerative changes in the central portion of these epithelial nests result in the formation of cystic cavities, which may be unilocular or multilocular.[5]We also documented similar findings in our case.

Congenital inclusion cysts, in contrast, are typically located deeper, fixed to underlying structures, and show limited mobility on clinical examination.

Similarly, Kapoor et al. demonstrated a cyst lined by stratified squamous epithelium with surrounding inflammatory reaction on histopathological examination, supporting the theory of epithelial implantation secondary to stromal degeneration in pterygium.[2].

Although rare, conjunctival inclusion cysts should be considered in the differential diagnosis of cystic lesions arising within a pterygium. Complete surgical excision with histopathological evaluation remains both diagnostic and curative.

4. Clinical Significance

The presence of a conjunctival epithelial inclusion cyst within a pterygium is a rare but important clinical entity that may mimic other cystic or neoplastic ocular surface lesions. It can cause cosmetic concern, irritation, or foreign body sensation and may alter the typical appearance of pterygium, making clinical assessment difficult. Recognition of this association is essential for accurate diagnosis and appropriate surgical planning. Complete excision with histopathological evaluation is both diagnostic and curative, helping to rule out malignancy and prevent recurrence.

References

[1] Duke-Elder S, Leigh AG. *System of Ophthalmology*. Vol 3. London: Henry Kimpton; 1965. p. 573.
[2] Kapoor S, Sood GC, Aurora AL, Kapoor MS. Cystic degeneration of the pterygium. *Indian J Ophthalmol*. 1977;25(1):37-38.
[3] Thatte S, Jain J, Thatte S, et al. Clinical study of histologically proven conjunctival cysts. *Saudi J Ophthalmol*. 2014;28(2):141-145.
[4] Kiratli H, Bilgic S, Gokoz O, Sokmensuer C. Conjunctival epithelial inclusion cyst arising from a pterygium. *Br J Ophthalmol*. 1996; 80: 769-770.
[5] Mathur SP. Cystic degeneration of pterygium. *Br J Ophthalmol*. 1959; 43: 763-766.