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Clinical pathologic reviews

Conjunctival inverted squamous papilloma: A case report with immunohistochemical analysis and review of the literature

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ABSTRACT

A 63-year-old man presented with an asymptomatic papillary, sessile lesion of the juxtalimbal bulbar conjunctiva that was surgically excised with cryotherapy. Histopathologically, the lesion created some diagnostic confusion as it displayed an endophytic, or inverted, growth pattern-with squamous cells pushing into the substantia propria around fibrovascular cores, but without significant cytologic atypia, consistent with a conjunctival inverted papilloma (IP). Unlike previously reported cases of conjunctival IP, there were no goblet cells or cysts within the tumor. Immunostaining was diffusely positive for cytokeratin (CK) 7, and CK14 stained the basilar and suprabasilar cells, as in normal conjunctiva. CK17 weakly and non-uniformly stained the tumor, ruling out a dysplasia, which is usually strongly positive. The lesion's cytokeratin profile therefore paralleled that of normal conjunctiva. The proliferation index with Ki67 nuclear staining was extremely low (<1%), as was p53 nuclear staining (10–20%), both in contrast to squamous cell dysplasias or carcinomas that have a much higher percentage of positive cells. The lesion was negative for human papillomavirus subtypes associated with squamous neoplasias including carcinomas. We review the previous literature devoted to this comparatively rare condition and contrast its benign clinical course with that of inverted papillomas of the sinonasal, lacrimal drainage, and genitourinary systems and provide a set of criteria for establishing the diagnosis.

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1. Introduction

Squamous papillomas of the conjunctiva are common, benign, epithelial neoplasms that grow exophytically around fibrovascular fronds. They constitute 14.5% of epithelial lesions excised from the conjunctival sac[5] and 13–32% of all tumors of the caruncle.[4] They typically do not exhibit an endophytic growth pattern, but rather tend to be pedunculated and project outward from the eyelid margin or caruncle and are more likely to be sessile at the limbus.[18,22] In contrast, endophytic or inverted papillomas (IPs) expand into the substantia propria of the conjunctiva and are quite unusual, with only nine examples in the literature since their initial description in 1979.[1,6,7,10,11,18]

Classically, such inverted or Schneiderian papillomas arise in the sinonasal tract or, less frequently, in the genitourinary system. In these locations, they can exhibit locally destructive behavior, and many undergo malignant transformation.[12,16] Conjunctival IPs appear histopathologically more benign and behave less aggressively.[7] We report a case of an asymptomatic IP of the bulbar conjunctiva that extended from the limbus without involving the corneal epithelium and covered most of the inferonasal epibulbar quadrant of the globe. The correct pathologic diagnosis initially eluded several general anatomic and dermatologic pathologists.

Avoiding an erroneous diagnosis should prevent the aggressive therapy that is usually reserved for malignancies such as invasive squamous cell carcinoma. The correct diagnosis also relieves the patient of needless anxiety and prevents the emergence of any future issues regarding insurability. We review the previously reported cases of conjunctival IP and supply a detailed histopathologic description and the first immunohistochemical analysis of such a lesion.

2. Case report

2.1. *Clinical findings*

A 63-year-old Hispanic man of Cuban origin presented for a routine eye examination without complaints. He was in good health with a past medical history significant only for hypertension. He was noted to have a right epibulbar, large, inferonasal, red-pink, papillary lesion which stained readily with rose bengal and extended up to the corneoscleral limbus. The peripheral corneal epithelium did not have an abnormal frosted appearance (Fig. 1A). The lesion was removed and, at the time of surgery, the patient underwent repeated cryotherapy to the area including the base of the excision. Re-epithelialization was complete 1 week postoperatively, and he has not experienced a recurrence after 6 months of follow-up. The histopathologic diagnosis was not immediately apparent to two general and two dermatologic pathologists.

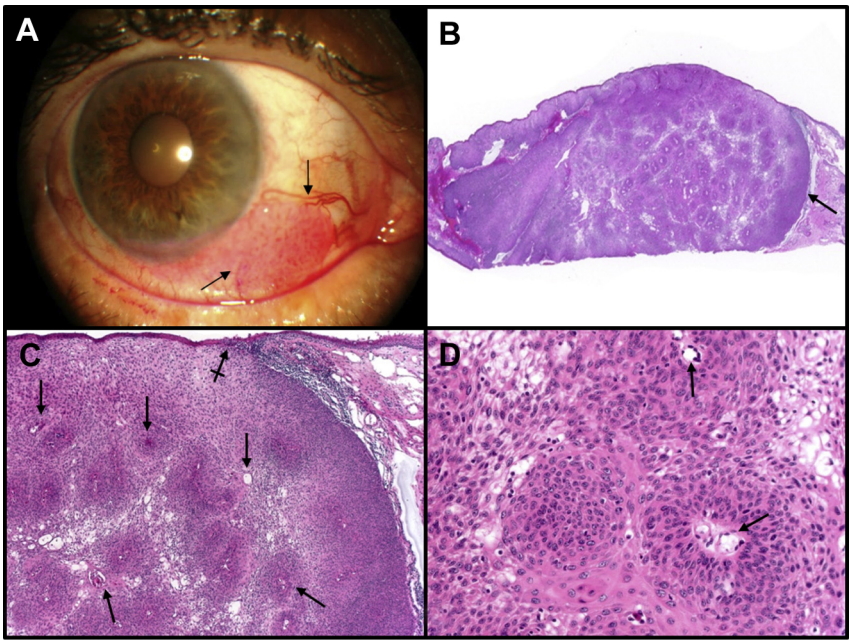

Fig. 1 – Conjunctival inverted squamous papilloma. *A:* An inferonasal epibulbar lesion in a 63-year-old man has a sessile and papillary character. The tumor approximates the corneoscleral limbus. *B:* The lesion displays an inverted (endophytic) growth pattern wherein it has pushed down into the substantia propria with a rounded, non-infiltrative pushing margin (*arrow*). The deep margin is represented by a straight line, an artifactual nonsurgical edge, resulting from malorientation of the tissue in the paraffin block. *C:* The tumor cells blend with a non-dysplastic surface epithelium (*crossed arrow*). The *arrows* indicate widely spaced small papillary vascular cores. *D:* The eosinophilic squamous cells have small, regular nuclei without significant pleomorphism. The *arrows* point to small papillary cores. (*B*, *C*, *D:* hematoxylin and eosin, ×12.5, ×40, ×200).