Published in final edited form as:

Cornea. 2011 January ; 30(1): 95–96. doi:10.1097/ICO.0b013e3181e16dfb.

Clear Cell Carcinoma of the Conjunctiva

Jill R. Wells, MD, J. Bradley Randleman, MD, and Hans E. Grossniklaus, MD

Department of Ophthalmology, Emory University School of Medicine, Atlanta, GA

Abstract

Purpose—To describe a rare case of primary conjunctival clear cell carcinoma.

Methods—The clinical history and pathologic findings were reviewed.

Results—An 82-year-old white man presented with a lesion on his right conjunctiva for 8 months. An excisional biopsy was performed with wide margins and mitomycin C. Pathologic examination showed a papillary clear cell carcinoma of the conjunctiva. The patient has been followed for 6 months without recurrence.

Conclusions—Primary clear cell carcinoma, a variant of squamous cell carcinoma, can occur in the conjunctiva.

Keywords

conjunctiva; clear cell carcinoma

Clear cell carcinoma is a rare variant of squamous cell carcinoma.¹ Clear cell carcinoma is characterized by cytoplasmic hydropic changes, which may be mistaken for sebaceous carcinoma.^{1,2} Because the clear appearance of the cytoplasm is secondary to hydropic change, histochemical stains for glycogen, mucin, and lipid are negative. Primary clear cell carcinoma of the conjunctiva is extremely rare and has only been reported once in the literature.³ Margo and Groden³ described the case of a 79-year-old man with primary clear cell carcinoma of the conjunctiva, which recurred 4 times after excision over a period of 12 years. The pathology revealed clear cells that stained negative for mucin, glycogen, and lipid. He was free of recurrence 4 years after his fifth excision when he died of heart disease. Herein, we report a second case of primary clear cell carcinoma of the conjunctiva.

CASE REPORT

An 82-year-old white man was evaluated for a lesion on his right conjunctiva that had been present for 8 months. His visual acuity was 20/80 and 20/20 in the right and left eyes, respectively. Slit-lamp examination showed that the lesion extended from 9- to 2-o'clock position, covering the superior half of the cornea. The tumor had a papillary pattern of growth with vascular fronds (Fig. 1). The lesion was completely excised with wide margins, and mitomycin C was applied over the base for 1 minute. AmbioDry was used to cover the defect. Pathologic examination of the excised tumor showed a papillary proliferation of acanthotic epithelium overlying central fibrovascular cores. The keratinocytes had pleomorphic nuclei and abundant clear cytoplasm (Fig. 2A) that stained negative for glycogen, mucin, and lipid from the unembedded tissue. There were 3 mitotic figures in 10

high-power fields scattered throughout all the layers of the tumor. Examination of tissue submitted for electron microscopy from the embedded tissue showed tumor cells with clear cytoplasm and residual intracytoplasmic glycogen granules (Fig. 2B). The diagnosis was primary clear cell carcinoma of the conjunctiva. Examination at 6 months after excision showed no sign of recurrence.

Clear cell carcinoma of the skin is a rare variant of squamous cell carcinoma. Of the few reported cases, most tumors exhibited rapid growth, and 1 patient died of metastatic disease.¹ The main pathologic differential diagnosis is pagetoid spread of sebaceous carcinoma. There was no evidence of sebaceous carcinoma of the eyelid or caruncle in our patients. Clear cell carcinoma of the conjunctiva is extremely rare with only one previously reported case.³ That case demonstrated frequent local recurrences, although there was no evidence of regional or distant metastasis. Our patient's clinical appearance and histologic findings are virtually identical to the previously reported case.³ Our patient has had no evidence of recurrence of the lesion, although he has only been followed for 6 months. Close clinical follow-up is warranted.

Acknowledgments

Supported in part by an Unrestricted Departmental Grant from Research to Prevent Blindness, Inc.

REFERENCES

1. Kuo T. Clear cell carcinoma of the skin: a variant of the squamous cell carcinoma that simulates sebaceous carcinoma. *Am J Surg Pathol*. 1980; 4:573–583. [PubMed: 6163367]
2. Suster S. Clear cell tumors of the skin. *Semin Diagn Pathol*. 1996; 13:40–59. [PubMed: 8834514]
3. Margo C, Groden L. Primary clear cell carcinoma of the conjunctiva. *Arch Ophthalmol*. 2008; 126:436–438. [PubMed: 18332334]

FIGURE 1.
The tumor exhibits a papillary pattern with vascular fronds from 9- to 2-o'clock position along the limbus extending onto the superior half of the cornea.

FIGURE 2.

A, The tumor is composed of keratinocytes with abundant clear cytoplasm and atypical nuclei. These cells occupied approximately two-thirds of the tumor. B, Ultrastructural examination showing tumor cells with clear cytoplasm and residual intracytoplasmic glycogen granules (arrows). There are numerous intercellular junctions also present. A: hematoxylin–eosin, $\times 100$ and B: uranyl acetate lead citrate, $\times 3600$.