

Squamous Cell Carcinoma of Conjunctiva: A Case Report

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Abstract: Squamous cell carcinoma (SCC) of conjunctiva is a rare tumor of the ocular surface with an incidence rate of 0.02 to 3.5 per 100,000. It usually arises at the limbus as papillary exophytic grey-white mass. The main risk factors for both are exposure to solar ultraviolet radiation outdoors, HIV/AIDS, human papilloma virus and allergic conjunctivitis. We report a case of 64 years old male presenting with complaints of swelling and pain in left eye since 1 year. Complete enucleation was done. Histopathologically, it was diagnosed as well differentiated squamous cell carcinoma. There was a past history of similar complaints 4 years ago for which excision biopsy specimen was diagnosed as well differentiated squamous cell carcinoma following which patient underwent 4 cycles of chemotherapy. Thus, the final diagnosis of recurrent squamous cell carcinoma of conjunctiva was made. To conclude, Squamous cell carcinoma has high recurrence rate of 5 to 56%. So, complete orbital enucleation with adequate surgical margins should be done followed by adjuvant therapy to prevent recurrence.

Keywords: Squamous cell carcinoma; Conjunctiva; Enucleation

1. Introduction

Conjunctival squamous cell carcinoma (SCC) is a rare malignancy, the incidence of which varies geographically from 0.02 to 3.5 per 100,000.^[1] Ocular surface squamous neoplasia (OSSN) is an umbrella term that encompasses dysplastic lesions involving the squamous epithelium of the conjunctiva or cornea, which includes squamous papilloma, conjunctival-corneal intraepithelial neoplasia (CIN), carcinoma in situ (CIS) and invasive squamous cell carcinoma (SCC).^[2]

Epidemiological studies have shown that ultraviolet-B radiation (290–320 nm) may be important in its pathophysiology.^[3,4] Ultraviolet-Beta rays induced point mutations in the p53 tumor suppressor gene have been reported in other squamous cell carcinomas.^[5] Whereas HPV 6,8, and 11 have been linked with benign conjunctival epithelial lesions, HPV 16 and 18 have been associated with malignant neoplastic lesions.^[6] People with AIDS have an increased risk of developing certain cancers, including SCC of the conjunctiva. Histopathological examination is the gold standard diagnostic modality. Treatment modalities include surgery, radiotherapy and topical cytotoxic agents. The prognosis is generally good if the conjunctival tumor can be completely removed.

2. Case Report

We report a case of 64-years-old male, farmer by occupation who presented with the complaints of swelling and pain in left eye since 1 year associated with partial loss of vision.

Torchlight and slit-lamp examination revealed a fungating greyish-white lesion located in the conjunctiva adjacent to the limbus. Complete enucleation was performed and specimen was sent for histopathological examination. There

was past history of similar complaints 4 years back for which excision biopsy was done which was reported as well differentiated squamous cell carcinoma following which patient underwent 4 cycles of chemotherapy.

3. Gross

The excised specimen measured 2.2cm X 3cm X 3cm. Cornea measured 2cm X 1cm. External surface showed a grey-white proliferative growth over bulbar conjunctiva involving limbus measuring 3cm X 2cm X 1.8cm. Cut surface showed grey-white areas, which was not infiltrating to Sclera. In posterior chamber, vitreous cavity showed brownish membranous tissue.



Figure A: Clinical picture showing pearly white proliferative growth involving bulbar conjunctiva around limbal area.



Figure B: External surface shows grey-white proliferative growth over bulbar conjunctiva around limbus.



Figure C: Cut surface shows grey white areas.

Microscopy

The tumour was arising from conjunctival epithelium showing focal severe dysplastic changes with invasion. Keratinized squamous cells arranged in sheets, strands and nests intercepted by collagen along with keratin pearls. These cells had abundant eosinophilic cytoplasm and vesicular nucleus with prominent nucleoli. Invasion of anterior chamber also noted. Thus, diagnosed as recurrent well differentiated squamous cell carcinoma of conjunctiva.

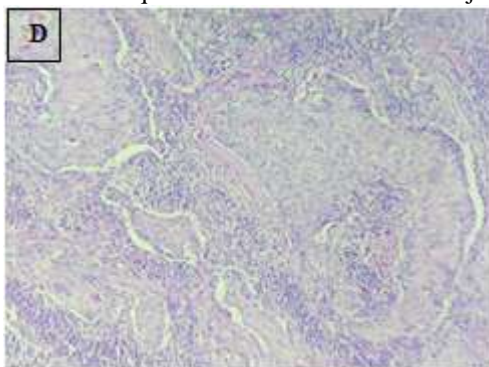


Figure D: Microscopy showing keratinised squamous cells arranged in sheets and nests. (5x, H & E stain).

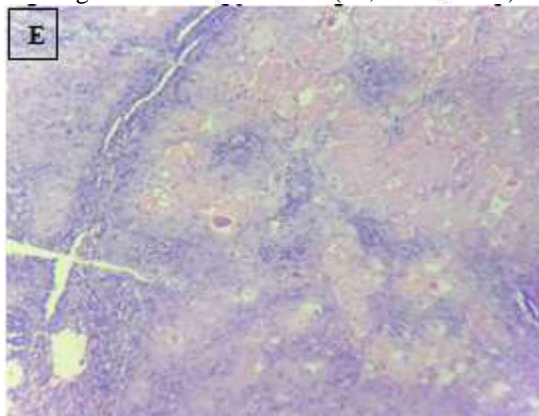


Figure E: Microscopy showing Keratinized squamous cells arranged in sheets, strands and nests intercepted by collagen along with keratin pearls. (10X, H & E stain)

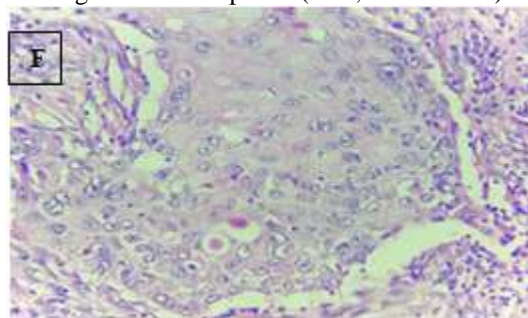


Figure F: Microscopy showing tumour cells having vesicular nucleus with prominent nucleoli and abundant eosinophilic cytoplasm. (40x, H & E stain)

4. Discussion

The stratified squamous epithelium of the conjunctiva can give rise to neoplastic lesions ranging from dysplasia to invasive squamous cell carcinoma, first described as epithelioma in 1860 by von Graefe.^[7] Squamous Cell Carcinoma (SCC) of conjunctiva is a rare malignancy; There is high incidence in men between the age of 50 and 75 years.^[8] Fair skin, pale iris, high propensity to sunburn and a past history of cancer have all proven to be risk factors. Other risk factors for Ocular surface squamous neoplasia (OSSN) include chronic infection by HPV (Human Papilloma Virus), HIV or Trachoma, Vitamin A deficiency, Xeroderma pigmentosum, chronic irritants and chronic epitheliopathies.^[9,10,11]

OSSN is an umbrella term that encompasses dysplastic lesions involving the squamous epithelium of the conjunctiva or cornea, which includes squamous papilloma, conjunctival-corneal intraepithelial neoplasia (CIN), carcinoma in situ (CIS) and invasive squamous cell carcinoma (SCC).^[12] The clinical presentation of OSSN varies across a wide spectrum and is classified by the degree of epithelial and stromal (substantia propria) infiltration. The epithelial infiltration can range from mild to severe dysplasia (i.e., mild, moderate, or severe CIN) to full thickness epithelial dysplasia (CIS) to invasive SCC, when tumour cells invade through the epithelial basement membrane.^[13]

Red eye, photophobia, irritation, foreign body sensation and a white, painless, progressive growth on the surface of the eye are common presenting symptoms.^[14] Most lesions occur in the interpalpebral fissure, especially on the nasal side.^[15] They involve the conjunctiva and may extend onto the peripheral cornea, so visual acuity is often normal in the early stages. The surface may be gelatinous, papillomatous or fibro-vascular. There is usually inflammation, leukoplakia and markedly dilated blood vessels, referred to as feeder vessels. Excision of the growth was carried out along with the healthy conjunctiva as freely as possible.

Postoperatively, the patient is advised to put on 0.04% mitomycin C (MMC) eye drops four times a day along with antibiotic eye drops, non-steroidal anti-inflammatory eye drops and lubricating eye drops four times a day. MMC 0.04% eye drops were applied four times a day for 4 days a week for 4 weeks with 2 weeks free interval. Adjacent to the lesion conjunctival congestion was present.

Cervantes et al. reviewed 287 cases of SCC of the conjunctiva, and only two cases had regional metastasis (0.7%).^[16] Grossniklaus et al. reviewed 2,455 cases of conjunctival lesions and only one case had a metastasized mass (0.04%).^[17] Thus, it is rare that a conjunctival SCC is associated with metastasis. Metastasis of squamous cell carcinoma of conjunctiva is also rare.^[18] Recurrence of conjunctival epithelial malignancies depends on the status of surgical margins. Simple excision of conjunctival intraepithelial or invasive neoplasia is associated with a 5–56% recurrence rate.^[19]

In our case, the patient was old aged male presented with swelling and pain in the left eye, with chronic exposure to UV rays and but not immunocompromised. Primary local

excision was done. Histopathologically it was diagnosed as well differentiated SCC.

Although, Patient underwent 4 cycles of chemotherapy of Mitomycin-C. Patient was fine for 3years. After 1 year, Patient presented with similar complaints. Complete enucleation was done. Histopathologically, which was diagnosed as recurrent well differentiated squamous cell carcinoma. In our case anterior chamber invasion was involved but cornea, sclera, ciliary body and other structures were not involved.

5. Conclusion

Conjunctival squamous cell carcinoma can cause significant morbidity. Early diagnosis and intervention can prevent major eye damage. Incompletely excised cases may develop high recurrence rates. Surgery and adjuvant chemotherapy have high success rate with regular follow up.

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