

# Primary Basal Cell Carcinoma of the Caruncle

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**W**e describe a 24-year-old man with primary basal cell carcinoma of the caruncle. Clinically the lesion was a whitish, slightly prominent nodule surrounded by fine vessels. No associated cutaneous lesion and no connection to the surrounding skin was present. The lesion was subsequently completely excised, and histopathological examination revealed a solid-cystic basal cell carcinoma of the caruncle. Primary basal cell carcinoma of the caruncle is an extremely rare but distinct entity. To our knowledge, review of the literature has not demonstrated a previous photographically documented case of primary basal cell carcinoma of the caruncle.

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Basal cell carcinoma is the most common human malignant neoplasm, and accounts for nearly 80% of all nonmelanoma skin cancers. It is a slow-growing, locally invasive epidermal tumor that rarely metastasizes. Basal cell carcinomas have the potential to cause death by invasion of the central nervous system.<sup>1</sup> Most basal cell carcinomas are skin cancers and only a few basal cell carcinomas of the conjunctiva have been described, with the overwhelming majority of these resulting from the local spread of adjacent eyelid neoplasms. Primary basal cell carcinoma of the conjunctiva including the caruncle is extremely rare.

## REPORT OF A CASE

A 24-year-old man was seen by an ophthalmologist because of a slowly enlarging lesion on the caruncle of his left eye. The patient had no other prior cutaneous or visceral malignant neoplasms and showed no signs of skin, skeletal, endocrine, or ophthalmic anomalies. There was no family history of skin cancer. For the past 8 years he had worked outdoors for a road construction company in Germany. The lesion was a slightly prominent whitish nodule with a reddish center and fine vessels surrounded the lesion

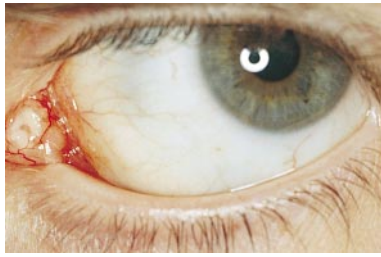
with minimal surrounding hyperemia (**Figure 1**). The lesion measured 3×5 mm with no connection to the surrounding skin. The lesion had been noticed 3 months previously as a painless swelling. The lesion was excised under local anesthesia and confirmed histologically as a basal cell carcinoma of the solid-cystic type. Nonkeratinized stratified squamous epithelium was found overlying solid lobules of basaloid cells with islands of cystic clusters (**Figure 2**). The nonkeratinized stratified squamous epithelium showed central ulceration with overlying debris, granulocytes, and fibrin. The tumor cells exhibited small round to ovoid hyperchromatic nuclei. The nuclei appeared relatively isomorphic. Mild mitotic activity was present. There was a nuclear palisading at the periphery of the solid tumor.

Follow-up examination results have showed no evidence of recurrence 14 months after surgical excision.

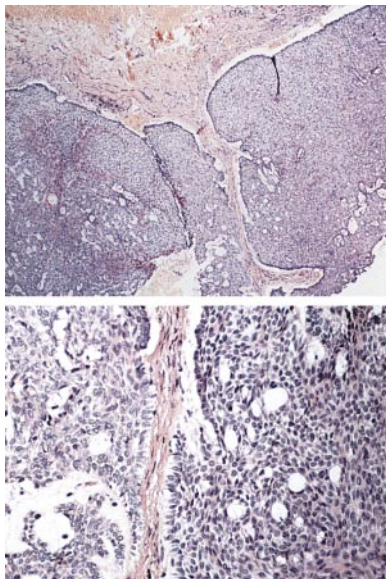
## COMMENT

The exact origin of basal cell carcinoma is still controversial. Based solely on its microscopic appearance, basal cell carcinoma could arise from the basal cells of the epidermis or infundibular cells of the outer root sheath of the hair follicle. The presence of pilar, sebaceous, apocrine, and

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**Figure 1.** Clinical appearance of the tumor located on the caruncle. The whitish lesion is slightly prominent, has a redish center, and fine vessels surround the tumor.



**Figure 2.** Top, Low-power photomicrograph demonstrating invasive epithelial lobules of solid-cystic basaloid cells surrounded by bands of connective tissue. The overlying nonkeratinized stratified squamous epithelium is centrally ulcerated with overlying debris, granulocytes, and fibrin (hematoxylin-eosin, original magnification  $\times 62$ ). Bottom, High-power photomicrograph demonstrating typical palisading of tumor cell nuclei at the periphery of the cluster (hematoxylin-eosin, original magnification  $\times 250$ ).

squamous elements in basal cell carcinoma support the hypothesis that a pluripotential stem cell gives rise to most basal cell carcinomas.<sup>1</sup> However, most authors believe basal cell carcinoma is derived from the basal cells of the pilosebaceous structures,<sup>2</sup> and the findings in our case would support this hypothesis. The caruncle is the only part of the conjunctiva containing adnexal elements. The surface of the caruncle

consists of a nonkeratinized stratified squamous epithelium overlying a stroma that contains sebaceous glands, hair follicles, and, in some patients, lacrimal and sweat gland elements.<sup>3</sup>

All reported and well-documented cases of primary conjunctival basal cell carcinoma have been located in the medial canthal region, ie, near the caruncle.<sup>2,4,5</sup> Ash,<sup>6</sup> in a representative series of 1120 epibulbar tumors, described 25 basal cell carcinomas that involved the conjunctiva or the limbus, but none of these tumors was illustrated and the author suggested that most of these tumors probably resulted from local spread of cutaneous basal cell carcinomas.

Approximately 95% of all basal cell carcinoma are found in people between 40 and 79 years of age.<sup>1</sup> All well-documented conjunctival basal cell carcinomas described in the ophthalmic literature occurred in elderly patients ( $>65$  years).<sup>2,4,5</sup> Primary basal cell carcinoma of the conjunctiva or caruncle has not been described before in such a young patient.

Basal cell carcinoma in children or young adults is rare and many of these young patients have an inherited predisposition such as xeroderma pigmentosum, albinism, and nevoid basal cell carcinoma syndrome. Our patient had no clinical signs of these heritable syndromes. Some authors consider basal cell carcinoma in young people to be a form fruste of the nevoid basal cell carcinoma syndrome.<sup>3</sup>

It also must be noted that 60% of patients with basal cell carcinoma of the eyelid may have other basal cell carcinomatous foci elsewhere on the face.<sup>7</sup> Furthermore, consideration must be given to the fact that young patients have an increased risk to develop secondary cancer in their life, as well as other cancers located elsewhere in the body.<sup>8</sup>

Most basal cell carcinomas arise as lesions in sun-exposed areas of the body, particularly the face. In young adults the eyelids and nose are the

most common sites of basal cell carcinoma.<sup>1</sup> The location of all well-documented primary conjunctival basal cell carcinomas was in the actinically exposed interpalpebral conjunctiva.<sup>2</sup> The long-term exposure to sunlight and thus to UV light was the only significant factor predisposing to basal cell carcinoma observed in our patient. The patient worked outdoors for 6 years until the appearance of the lesion, and a prolonged exposure to sunlight must be considered as a potential predisposing factor.

In conclusion, primary basal cell carcinoma of the caruncle, including the conjunctiva, is a very rare entity. Patients with basal cell carcinoma should have follow-up examinations to detect the development of actinically related or secondary tumors.

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