

SURGICAL TREATMENT IN A CASE OF LOWER EYELID BASAL CEL CARCINOMA INVOLVING THE CILIARY MARGIN

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ABSTRACT

Basal cell carcinoma is the most common eyelid malignancy most often located on the lower eyelid and the medial canthus. We report the case of an 85-year-old patient who presented with a vegetative and ulcerative tumor in the middle 1/3 of the lower eyelid involving the ciliary margin that occurred 2 years earlier.

Surgical excision of the tumor within the oncologic safety limits, reconstruction of the tarsoconjunctival plane with a pedicle flap from the upper eyelid and reconstruction of the cutaneous defect with a free skin graft from the retroauricular region were performed (Hughes technique). Anatomic pathology diagnosis of solid basal cell carcinoma was made by routine morphological methods. Eyelid basal cell carcinoma being a slow-growing tumor that causes lesions by direct extension and rarely metastasizes, early diagnosis and appropriate surgical treatment are essential for preventing invasion of adjacent structures.

Keywords: Basal cell carcinoma, eyelid, treatment, Hughes technique

INTRODUCTION

Basal cell carcinoma is the most common malignant tumor of the eyelids [1]. It is a slow-growing tumor that does not metastasize, but can cause major complications, with aesthetic implications for patients [2]. The most common location of the tumor is on the lower eyelid and the most

important risk factor is ultraviolet light exposure [1,3,4]. The aim of the therapeutic management is to ensure complete healing and implies the primary excision of the tumor within oncologic safety margins. The aggressive forms of basal cell carcinoma are more frequently found in young patients, surgery being sometimes followed radiation

therapy [5]. Depending on the size of the resulting surgical excision defect various methods of eyelid plasty are used [6].

PATIENT AND METHODS

We present the case of an 85-year old woman admitted to the Ophthalmology Clinic, „Prof.Dr. Nicolae Oblu” Clinical Emergency Hospital, Iassy, with a 2-year history of a lower eyelid tumor gradually increasing in size. Ophthalmologic examination revealed a vegetative-ulcerative mass infiltrating the ciliary margin of 8/6 mm in diameter located in the middle 1/3 of the left lower eyelid (figure 1).

Surgical excision of the tumor within oncologic safety limits (safety margins of 2

mm) and lower eyelid reconstruction using Hughes technique were performed.

The surgical technique consisted of the rectangular excesion of the skin area containing the tumor (figure 2), harvesting a tarsoconjunctival pedicle flap from the upper eyelid (figure 3), suture of the tarsoconjunctival flap from the upper eyelid to the deep plane of the lower eyelid defect (figure 4), harvesting a free skin graft from the retroauricular region (figure 5) and suture of the free skin graft to the superficial lower eyelid defect (figure 6). The postoperative course was favorable. After 3 weeks the flap was transected to create a palpebral fissure (figure 7,8).

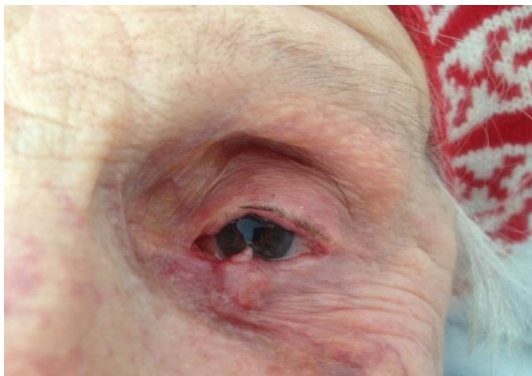


Figure 1. The patient photography: a vegetative and ulcerated tumor located in the medial 1/3 of the lower eyelid, which involves the ciliary margin



Figure 2. Rectangular excision of the tumor



Figure 3. Excision of a tarsoconjunctival pedicle flap from the upper eyelid at 4 mm above the inner surface margin



Figure 4. Suture of the tarsoconjunctival flap to the lower eyelid defect



Figure 5. Harvesting a free skin graft from the retroauricular region



Figure 6. Suture of the free skin graft to the superficial plane of lower eyelid defect



Figure 7. Post operative results at first day



Figure 8. The patient photography: 3 weeks after surgery

Anatomic pathology diagnosis of solid basal cell carcinoma was made by routine morphological methods. It revealed a solid and ulcerated basal cell carcinoma originating from the basal layer of the epidermis and growing deep into the eyelid composed of multiple "nests" and "islands" of basaloid tumor cells with hyperchromatic nuclei (figure 9). The islands of tumor cells vary in

size but are always delimited by an eosinophilic basement membrane (figure 10). Cells on the periphery of tumor islands have elongated nuclei and are disposed perpendicular to the basal membrane, aspect known as "the palisade arrangement"; on the contrary, cells on the center of tumor islands lack any orientation (figure 11).

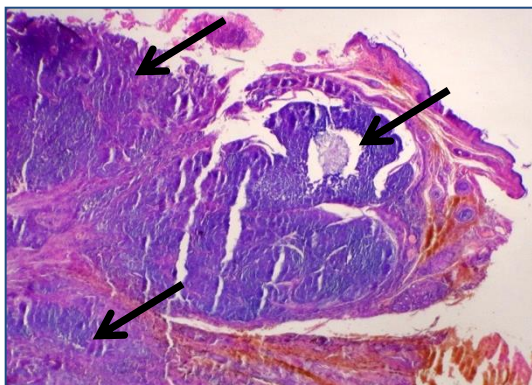


Figure 9. Solid basal cell carcinoma, nests and islands of basaloid tumor cells with hyper-chromatic nuclei (black arrows) (H-E,x40)

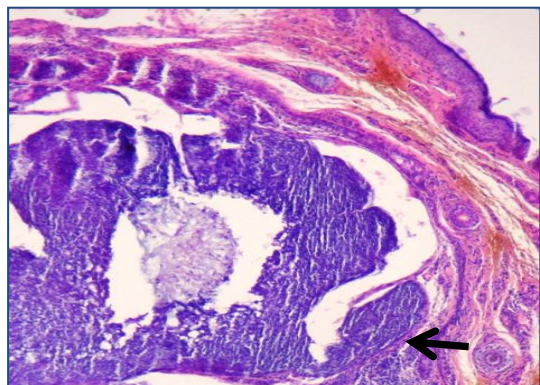


Figure 10. "Islands" of tumor cells, well-delimited, of various sizes (black arrow) (H-E,x100)

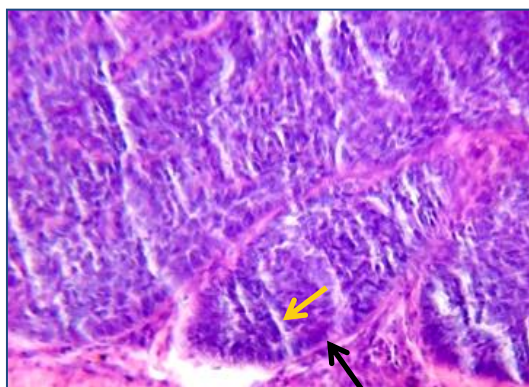


Figure 11. Tumor cells with “palisade arrangement” (black arrow), in the center of tumor islands, cells lacking any orientation (yellow arrow) (H-E,x200)

DISCUSSIONS

Basal cell carcinoma of the eyelid is the most common malignancy encountered in ophthalmic practice [7].

It is most commonly found on the lower eyelid, followed by medial canthus and upper eyelid [1,8].

Surgical treatment involves direct tumor excision with safety margins of 3 to 5 mm, followed by eyelid reconstruction techniques, depending on the location and size of the defect. Since the eyelids are made up of several layers, plane by plane reconstruction is essential for ensuring their periocular function and minimizing ocular postoperative complications. The principles of eyelid reconstruction following surgical excision depend on the size and depth of the defect, inclusion of the internal or external canthus and lacrimal system involvement [9].

Defects less than 30% of eyelid length can be closed directly.

In older patients eyelid defects between 30% and 50% of its length cannot be sutured directly and require different eyelid plasty techniques: lateral canthotomy, cantholysis, sliding plasty, and Tenzel semicircular advancement flap.

For defects greater than 50% of the free lower eyelid margin a Hughes tarsoconjunctival flap with free skin graft or a Mustarde cheek rotation flap with a free graft of tarsus and conjunctiva are used to restore

the posterior lamella of the lower eyelid. The tarsoconjunctival flap may be opened in 3 weeks.

In defects greater than 50% of the upper eyelid a Cutler-Beard flap or a Leone flap are used [10].

Posterior lamellar eyelid reconstruction involves the harvesting of free grafts from the opposite eyelid tarsus, nasal cartilage and hard palate or a flap from the adjacent tarsus. The anterior lamella is reconstructed using free skin grafts from the upper eyelid, retroauricular, supraclavicular and inner upper arm areas.

The use of free skin grafts for the restoration of anterior lamella of the eyelid is not associated with free grafts for posterior lamellar reconstruction and vice versa, due to lack of vascularity and increased risk of tissue necrosis. Compared to the posterior lamella, the anterior lamellar reconstruction influences more the aesthetic outcome [9,11,12].

In our patient the tumor was located in the middle 1/3 of the lower eyelid and involved over 50% of its length. The loss of tissue following the excision of the lower eyelid tumor (2 mm safety margins) required the restoration of the deep tarsoconjunctival plane with a tarsoconjunctival flap from the upper eyelid and of the superficial plane with a free skin graft from the retroauricular region, according to Hughes technique.

The goal of surgery was the complete

removal of the tumor with the restoration, as much as possible, of the original shape of the eyelid and of palpebral fissure and motility with a satisfactory aesthetic outcome.

CONCLUSIONS

In large tumors located on the eyelids we recommend that the size of the resulting

surgical excision defect to be measured and adequate techniques for eyelid plasty to be used for preserving the normal appearance and function of the eyelids. A surgical plan tailored to each individual patient will ensure complete healing without recurrences and other postoperative complications.

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