

Palpebral tumors: Follow-up and evolution: About 27 cases

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Abstract

The eyelid is unique in that it contains tissues of very diverse origins in a small volume. All these tissues can degenerate malignantly or benignly, with the majority being benign. Orbito-palpebral tumors are characterized by histological diversity due to the architectural complexity of the orbito-palpebral region. Our study consists of an epidemiological, histological, therapeutic and evolutionary analysis of these carcinomas through a retrospective study extending over a period from September 2022 to March-September 2024, including 27 patients with eyelid tumors operated on in the Department of Plastic, Reconstructive and Aesthetic Surgery, Burns Center, CHU Tanger-Tétouan-Al Hoceima. Our patients ranged in age from 17 to 84 years, with an average age of 60.11 years and a clear male predominance. Rural origin was represented (68.75%), and the majority had been exposed to the sun. All regions of the eyelid were affected, with a concentration of lesions in the lower eyelid (62.96%). Basal cell carcinoma was the most frequent histological type (75%), followed by adenoid cystic carcinoma (18.75%).

Keywords: Tumor; Eyelids; Epidemiology; Exenteration; Palpebral reconstruction; Follow-up and evolution

1. Introduction

The eyelid, a complex and mobile cutaneous-musculo-tarso-conjunctival organ, covers the anterior part of the eyeball. Its thinness, combined with the diversity of its anatomical components, means that any tumoral lesion of the eyelid tissue inevitably results in visible deformity. In addition to the functional dysfunctions that a palpebral tumor can cause, it also affects the aesthetics of the eyelid. This underlines the vital importance of preserving or restoring the aesthetic appearance when reconstructing the eyelid after treatment.

Palpebral tumours account for around 15% of malignant tumours of the face and 5-10% of all skin tumours. The main risk factors are well known, and include cumulative sun exposure, the presence of precancerous lesions on the skin, and chronic skin degeneration and inflammation. The incidence of these tumors is increasing steadily with age, making it a growing concern in older populations. Basal cell carcinoma is the most common histological type.

Treatment options for these tumors include surgery, radiotherapy and chemotherapy, each with its own specific role depending on the nature and location of the lesion. However, surgery remains the mainstay in the management of palpebral tumors, particularly for precancerous and cancerous lesions. Surgical treatment not only ensures a better prognosis in terms of local control of the disease, but also minimizes the aesthetic impact on the eyelid.

2. Patients and Methods

This retrospective study was conducted on 27 patients with palpebral tumors, managed in the Plastic, Reconstructive and Aesthetic Surgery Department of the Centre des Grands Brûlés at CHU Tanger-Tétouan-Al Hoceima, between

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September 2023 and September 2024. The aim of this study was to describe the management of palpebral tumors, with particular emphasis on patient follow-up and changes in their condition.

All patients included in our study benefited from a complete clinical examination. Treatment was based on a combined approach, including surgery and, in some cases, radiotherapy. When the indication for surgery was established, a standard pre-anesthetic work-up was carried out for each patient, including a cardiological opinion and, if necessary, echocardiography for certain cases deemed at risk.

Patients were informed of the risks associated with surgery, including the possibility of functional or aesthetic deficits, as well as the possible need for exenteration. Clinical, radiological, histological and therapeutic data were collected from medical records. Pre- and post-operative photographs of each tumor were systematically taken to document evolution.

The data collected was analyzed using EXCEL software, enabling the creation of tables and the calculation of frequencies and percentages, to obtain an overview of therapeutic results and possible complications.

3. Results

Au total, 27 patients se sont présentés au service de chirurgie plastique, reconstructrice et esthétique, centre des grands brûlés, CHU Tanger-Tétouan-Al Hoceima durant la période étudiée. Tous patients confondus, l'âge moyen à la découverte de la tumeur était de 61,11 ans avec des extrêmes allant de 17 à 82 ans.

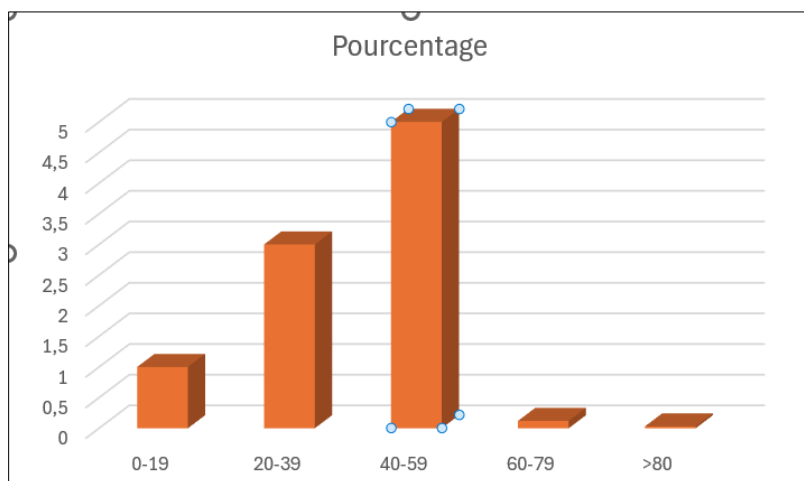


Figure 1 Distribution of patients according to age

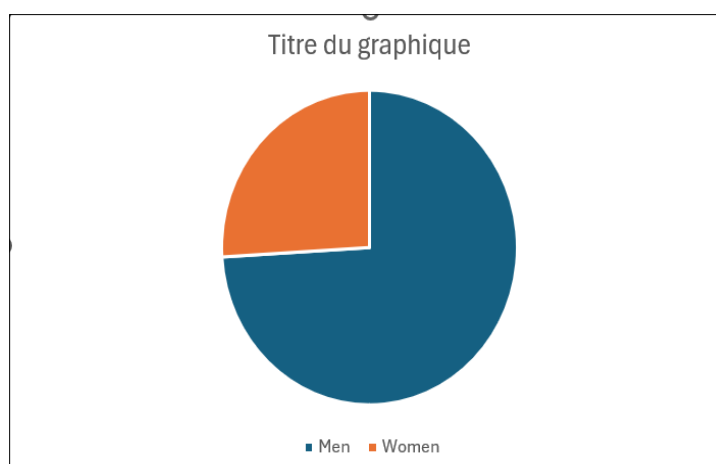


Figure 2 Distribution by gender

In men, the mean age was 60.5 years, with extremes ranging from 35 to 83 years. In women, the mean age was 59 years, with extremes ranging from 17 to 80 years. 63.75% of patients were over 60 years of age. Our series included 20 men (74.04%) and 7 women (25.96%). In our series, 68.75% of patients were from rural areas.

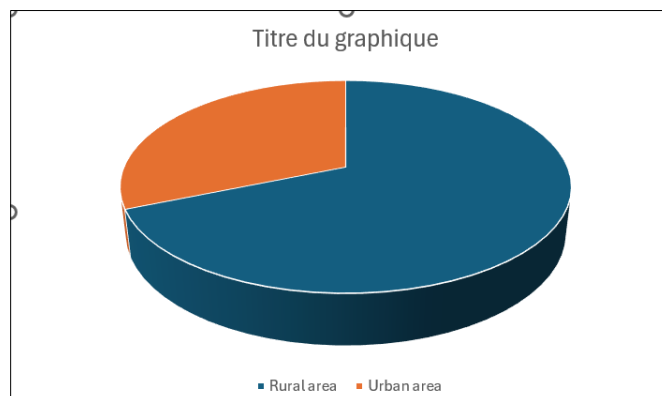


Figure 3 Geographical distribution

The time between onset of clinical symptoms and consultation ranged from 6 months to 4 years, with an average of 16 months. Indeed, many of our patients did not consult until 11 months after the first clinical sign. In our series, we reported 3 cases of tumor recurrence. Phototype III was the most frequent, accounting for 62.5% of cases, followed by phototype IV at 25% and phototype V at 12.5%.

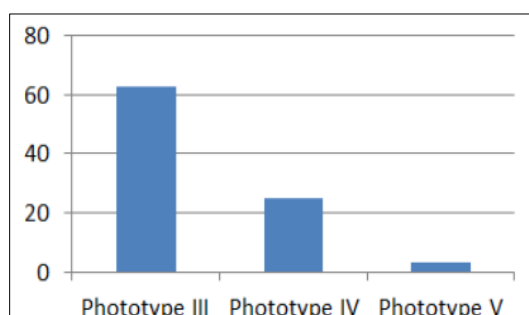


Figure 4 Distribution by phototype

All our patients were exposed to the sun during childhood and adolescence, without significant protection. Although sun exposure is difficult to quantify, it was considered significant in 72% of our patients, in association with outdoor professional activity. Chronic smoking was found in 12 patients, all male, corresponding to the 12 cases of basal cell carcinoma. Other histories included diabetes treated with oral antidiabetics and cases of arterial hypertension. In our series, the right eye was affected in 18 cases (66.66%), the left eye in 9 cases (33.33%).

The upper eyelid was affected in 10 cases (37.03%), while the lower eyelid was affected in 17 cases (62.96%).

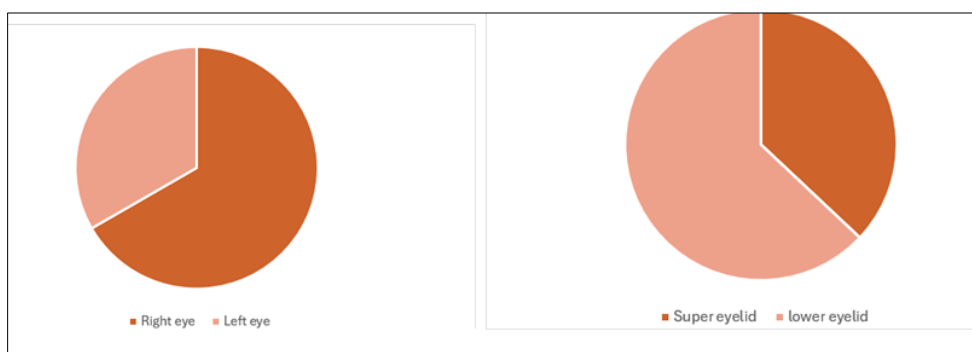


Figure 5 Distribution by tumor site

In our series, orbital infiltration of the palpebral tumor was observed in 50% of cases, with invasion of the optic nerve in two cases. Macroscopically, ulcerated lesions predominated, accounting for 48.22% of cases, followed by nodular lesions (38%) and ulcero-nodular lesions (13.78%).

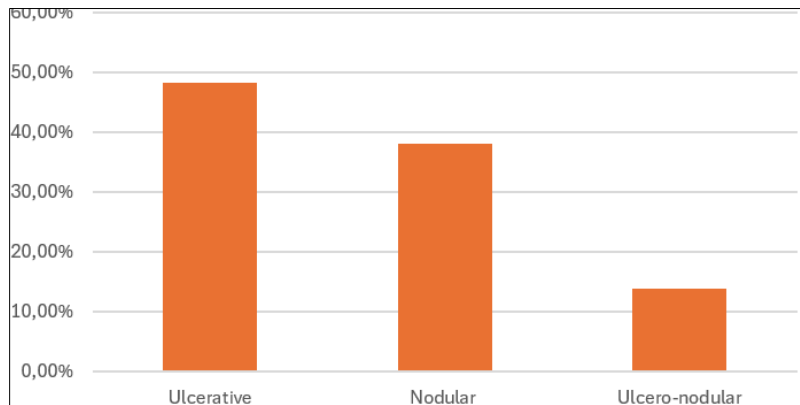


Figure 6 Distribution of carcinomas according to their macroscopic appearance

The otolaryngological examination revealed no particularity in our patients. The lymph nodes were free, without pretracheal or submandibular adenopathies. The rest of the clinical examination was also unremarkable. All patients in our series underwent a diagnostic biopsy, and the anatomopathological study allowed the following diagnosis: 21 basal cell carcinomas (77.77%), 5 adenoid cystic carcinomas (18.51%), and 1 case of plexiform neurofibroma (6.25%), the latter being part of a type 1 neurofibromatosis.

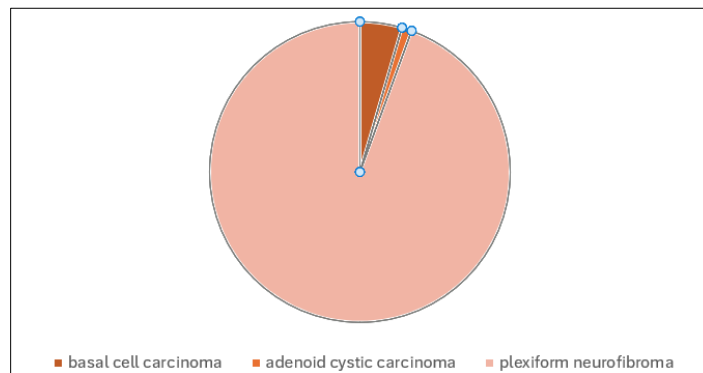


Figure 7 Histological types

All our patients underwent surgical treatment, including 14 cases of exenteration, or 51.85%. Among these patients, 2 underwent single-stage reconstruction, while 6 underwent two-stage reconstruction. Five of our patients were inoperable.

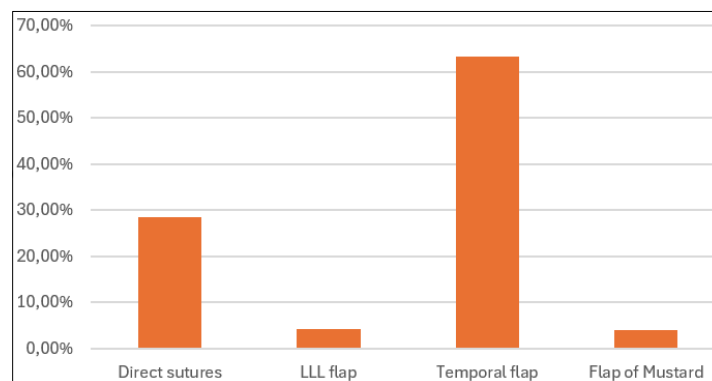


Figure 8 Hedging Techniques

In our series, no patient underwent lymph node dissection. External radiotherapy was used in addition to surgery in five cases. No chemotherapy was administered to our patients.



Figure 9 Exeresis suture of ET



Figure 10 Excision and coverage with a skin graft



Figure 11 Excision of lower papillary tumor then coverage of the skin with a "Tripiet" flap



Figure 12 Excision of an advanced palpebral and jugal tumor followed by coverage with a lateral frontal flap

Patient monitoring and progress are essential in these tumors, especially to preserve their vital function. This begins with patient education on the importance of early diagnosis of any suspicious lesion, as well as on lifestyle to prevent infectious complications, which are the most common in our patients. It is also crucial to emphasize the importance of regular check-ups: initially, once every 3 months for the first year, then every 6 months for the second year, and finally every year for 5 years.

- Among the patients who had incomplete excision on final pathology, surgical revision was performed in 10 of them, with the following interventions:
- Total exenteration in 5 patients,
- Widening of the tumor excision in 3 cases, followed by:
- Reconstruction with a midfrontal flap in one case,
- Total skin graft in another case “Let it be” in the last case.
- For the other 3 patients who also had incomplete excision on final pathology:
- One case was referred to radiotherapy,
- Another patient refused surgical revision,
- The last case was lost to follow-up.
- For the majority of operated patients, the postoperative course was simple (76%). However, complications were noted in 12 patients, including:
- 3 patients with ectropion,
- 3 others with infection of the exenteration cavity,
- 3 others with infection of the surgical wound.
- One patient had a reduction of the palpebral fissure due to a keloid scar, while another developed a hematoma under the flap, which became superinfected.
- The last case showed necrosis of a small part of the viable flap, treated by necrosectomy.

All these complications were treated either by medical treatments, mainly antibiotics, or by surgical interventions.

Five patients are not followed up in our structure. Among them:

- 2 patients were referred for additional radiotherapy,
- 2 others were referred to the dermatology department, One patient was discharged against medical advice after refusing exenteration.

In Long term: Follow-up was provided for 15 patients, while 5 were lost to follow-up from the start. The duration of monitoring varies from 2 months to 4 years and the long-term evolution was favorable, with only one recurrence reported in our series. This recurrence occurred 3 months after surgery in a patient initially hospitalized for a basal cell carcinoma recurrent in the same location. This patient had refused the recommended exenteration after an incomplete excision during the initial surgical procedure. A total exenteration was then performed, with a good long-term evolution.

4. Discussion

In our series the majority of patients were of advanced age, with 68.75% of cases being older than 60 years, which is consistent with the results of several studies. In Iceland, a study collated from the national cancer registry, reporting all cases of orbital-palpebral basal cell carcinoma observed over a period of 25 years, showed that the end of the sixth decade was the most affected [1]. The mean age of our series was 62.37 years, similarly, it was 60.6 years in the study

of Echachoui [2], 60 years for Halimi [3] and 62.7 years for Messaoudi. It was slightly higher (64 years) in the study of Ducasse [4].

Some studies cited a male predominance while others found no difference. In our study there was a male predominance with 74.7%. In Finland, the incidence of occurrence of orbito-palpebral tumors varies between 0.7 and 3.0 per 100,000 men/year and between 0.5 and 2.8 per 100,000 women/year [5]. Echachoui's study shows a female predominance of 39 women against 25 men [2]. This male predominance is explained by the fact that men are more exposed to the sun due to the nature of their work and that the majority of them do not use any means of protection unlike women. In our series, 68.75% came from rural areas. This distribution is due to the recruitment bias, to the rather difficult living conditions of the population concerned, accentuated by the lack of means to move around and a low level of education regarding preexposing lesions and sun exposure. Our data are consistent with those of M.Elhaouri: 60% of the patients lived in rural areas while 35% came from urban areas. For H. Boukind, the rural origin represented 54% [6] while Mernissi reported a rate of patients of rural origin of about 58% [7]. Our results are in line with the majority of other Moroccan, Maghrebian and African studies. Chronic sun exposure is the most important risk factor: Cumulative sun exposure in light-skinned subjects greatly increases the likelihood of developing

orbital-palpebral cancer. The pigmented skinned subject is more protected against this risk. In our series, all patients reported sun exposure. Light phototypes are considerably more prone to skin carcinomas according to the majority of studies. Thus Barro reports 65-75% of basal cell carcinomas of skin cancers found in whites and 3% of basal cell carcinomas of skin cancers found in blacks. Red or blond hair color, fair complexion, low tanning capacity and tendency to sunburn are risk factors for the occurrence of skin carcinomas. In a study performed at the Hassan II University Hospital by Mernissi, phototype III was the predominant phototype in 57% of cases, followed by phototype IV in 35% of cases [7], which is consistent with our results. In a study performed in Brazil, phototypes I and II were the predominant phototypes 77% of the cases, followed by phototypes III and IV in 23% of the cases, Samarasinghe and Madan found that 80.5% of their patients were Caucasian and finally the patients of Dumas et al were all Caucasian. This distribution is not the same internationally due to the difference in the predominant phototype in each country. In our series, the history of the disease lasted on average 18 months for all histological types combined. The long duration of evolution before the consultation accounts for the advanced forms found in our series and the frequency of intra-orbital extension. It is longer when compared to the one reported by Howard which is 1 year. Delay in diagnosis is common: the tendency to trivialize these carcinomas which evolve slowly, and the low socio-intellectual level, explain the delay in consultation. M.El Haouri found in his series an average duration of evolution before consultation of a few months to 2 years (24 months) whereas a recent study by Alli hassan which reported an average duration of 3.3 years (39.9 months) for all histological types combined [8]. A study done in Dakar reported an average duration of 2.9 years (34 months), while Felix Boon Bin reported a shorter duration of 1.48 years (17.8 months) on average.

The globe was totally destroyed in 50% of the cases, with invasion of the optic nerve in only one case. Another case has been published reporting destruction of the globe by evolving basal cell carcinoma, which shows that basal cell carcinoma can be aggressive [9]. Howard reported 11 cases out of 440 patients 2.5%, and Wong reported that 1.6% of 619 cases had orbital invasion. The superior eyelid and the medial canthus are the most common sites of orbital invasion [10], in our study the upper eyelid was the most common site (75%). In our series, the right eye was the most affected (68.75%). In Bonnay's series, the same finding was found, contrary to Ducasse, with a slight right-hand predominance at 50.25% [4].

Classically, the external part of the eyelids is drained to the preauricular nodes, and the internal part to the submandibular nodes [11]. The examination of the lymph nodes did not find any adenopathy, especially in the preauricular and submandibular nodes, which is also the case in our series. Basal cell carcinoma rarely leads to lymph node metastases. Clinically, the carcinomas evolved in several forms [12]. The ulcerated aspect was the most frequent in our series. This agrees with the clinical findings of Echachoui (43.73%) [2], while the Benaatiya and M.el haouri study reported a lower rate [13]. In our series, diagnostic biopsy showed the predominance of basal cell carcinoma in 12 patients (75% of cases), followed by 3 adenoid cystic carcinomas (18.75%) and 1 case of plexiform neurofibroma as part of a neurofibromatosis type 1 (6.25%) Basal cell carcinoma is the most frequent malignant tumor of the palpebral skin in the Maghreb countries. Our series is in line with the Maghrebian results, basal cell carcinoma is the most frequent and represents 66.66% of cases. This tumor is rare in black African countries. Basal cell carcinoma represents only 1/10th of the orbito-palpebral carcinomas in Africans because it is protected by a strong melanin pigmentation [14]. In France, an epidemiological study covering a period of 70 years from 1925 to 1995 and involving 1705 cases of tumors of the eye and its adnexa revealed 488 cases of basal cell carcinoma (i.e. 28.62%) [15]. A Polish study of 303 cases of basal cell carcinoma showed that the orbito-palpebral location occupied the second place with 16.6% of all patients. Direct marginal suture is used for fullthickness substance losses of less than or equal to 25%, or even 30% if there is horizontal palpebral hyperlaxity, in order to obtain the best possible aesthetic result, the palpebral resection must be

pentagonal and fullthickness and the vertical edges of the resection must be perpendicular to the free edge [16]. In our study, 36% of cases benefited from a direct suture.

classical histology. Some schools advocate immediate reconstruction, others the opposite. Immediate flap reconstruction provides a better immediate appearance and postoperative radiation is possible. In our series, only one patient benefited from immediate coverage. In fact, the methods of immediate reconstruction were hampered by the fact that they could mask a possible recurrence. The most common technique used in the literature for filling the orbital cavity is the temporalis muscle flap, which was used in half of the cases that underwent reconstruction, i.e. 50% [18]. The results of B. Langlois reported a lower rate of 17%, while S. Benazzou used this flap in 10 cases (66.6%) and Echachoui reported a lower rate (1.56) [2]. We also used the Mustard flap for the repair of the lower eyelid substance loss in only one patient in our series, while Benaatiya reported a rate of use of 5.88% and Echachoui reported a high rate of use (31.25%) [2]. The different teams present two radiotherapy techniques used in orbito-palpebral tumors: external radiotherapy and the linear particle gas pedal. In general, radiotherapy gives satisfactory results, both in terms of carcinology and aesthetics and function. Especially in cases of basal cell carcinoma which is known to be radiosensitive. In our series radiotherapy was performed for 31.25% of our patients (5 cases) which is close to the results of Khtibari with a rate of 20% and Benaatiya used radiotherapy for a lower rate of patients (4%) [13]. Systemic therapy is used in exceptional metastatic forms. It can also be also find its indication in very advanced forms imposing an excessively damaging procedure on a noble organ, it sometimes allows remissions or size reductions before another treatment. The short and medium term post-therapeutic follow-ups are satisfactory in 76% of operated cases. Our complications (ectropion, infection and necrosis) are also reported by other studies [19] [20]. It is necessary to emphasize again the importance of the reconstruction of the 2 lamellae and the importance of a quality mooring of the neo-eyelid to a solid deep plane to avoid ectropion. Poor hygiene seems to be the main factor favoring infection in our series. We emphasize the importance of daily care, thus Small proposes to institute antibiotic prophylaxis for the first ten days [21].

In the long term, we found only one tumor recurrence for 45 patients followed for an average duration of 15 months.

5. Conclusion

Finally, it is essential to remember that eyelid tumors are a frequent reason for consultation, with varied clinical presentations. Although dominated by basal cell carcinoma, malignant tumor pathology of the eyelids is well known. However, the aging of the population and the increase in repeated sun exposure make this pathology particularly topical. If the semiology of eyelid tumors has hardly evolved, their management is constantly evolving. This begins with prevention, which is based on educating the public, particularly parents of young children, as well as protecting photo-exposed skin using effective sun filters. Therapeutic management of a malignant eyelid tumor must be rigorous, with a precise pre-therapeutic assessment. In all cases, the anatomopathological examination is crucial, not only for an accurate diagnosis, but also for therapeutic orientation. The microscopic control of the excision, the quality of the functional and aesthetic results, as well as the low rate of complications, explain why surgery is considered by many authors as the treatment of choice for malignant eyelid tumors.

Thus, detailed preoperative information must be given to the patient, emphasizing the possibility of taking samples at a distance, as well as the possible need for a large flap or orbital exenteration.

One of the essential objectives of research, in particular the monitoring and progress of patients, is based on education, the adoption of a healthy lifestyle and, above all, close monitoring to avoid the occurrence of complications. Hence the paramount importance of prevention in this type of cancer. This prevention must aim to eliminate the causes of the appearance of skin cancer and will bring a benefit not only in terms of human lives, but also on the economic and social levels. It must be structured around three main components: avoidance, early detection, and finally, functional rehabilitation and social reintegration of patients.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Disclosure of conflict of interest

No conflict of interest to be disclosed

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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