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Epidemio-Clinical-Histopathological Aspects and Therapeutics of Squamous Cell Carcinoma of the Conjunctival at the University Hospital Center of Bouake

Philippe Emile France Koffi Bile[1*], Pierre Windinmanegde Djiguimde[2], Gossé François Diomandé[1], Zana Diabate[1], Kouassi Franck-Hermann Koffi[1], Liliale Ella Godé[1], Ange Mickael Goule[1], Opeyemi Babayeju[1], Yves Ouattara[1], Ibrahim Abib Diomande[1]

[1]Ophthalmology Department, University Hospital Center, Bouake, Côte d'Ivoire
[2]Ophthalmology Department, University Hospital Center, Bogodogo, Ouagadougou, Burkina Faso
Email: *philippebile@yahoo.fr

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Abstract

Introduction: Squamous cell carcinoma of the conjunctiva is one of the most common malignancies in the elderly. **Purpose:** To describe the specific aspects of squamous cell carcinoma of the conjunctiva and to determine the therapeutic modalities. **Materials and Methods:** Descriptive cross-sectional retrospective study carried out at the University Hospital Center of Bouake over a period of 9 years (From January 2015 to December 2023). We identified all malignant oculo-adnexal and orbital tumors whose histopathological diagnosis was confirmed; monitoring the sorting of squamous cell carcinomas of the conjunctiva among these cancers and studying the different parameters linked to them. **Results:** The average age of patients is 44.3 years. Male predominance with a sex ratio of 1.12. HIV was the majority ATCD with 64.7%. The main reason for consultation was exophthalmos (36.11%). The average consultation time was 10 months 13 days. Invasive differentiated conjunctival squamous cell carcinoma was predominant at 55.56%. Enucleation was the most performed surgical method. **Conclusion:** Squamous cell carcinoma of the conjunctiva is a malignant ocular tumor of the elderly whose frequency increases in young adults infected with HIV-AIDS. Invasive differentiated forms are increasingly encountered, limiting treatment to mutilating surgery.

Keywords

Malignant Tumor, Ocular, Carcinoma, Conjunctiva

1. Introduction

Ocular tumors are defined as benign or malignant cellular proliferations developed at the expense of the histological structures of the eye and its appendages [1]. Malignant ocular tumor pathologies account for 0.7% of ocular diseases according to certain African studies [2] [3]. They are serious and can sometimes threaten the patient's visual and vital prognosis [4]. Squamous cell carcinoma of the conjunctiva is one of the most common ocular malignancies in the elderly and represents the terminal stage of squamous cell neoplasia of the ocular surface [5]. Exposure to solar ultraviolet s radiation, HIV/AIDS, human papilloma virus and allergic conjunctivitis are all factors that favor the onset of this condition [5]. Fragile sunlight exposes the conjunctiva to the early onset of precancerous lesions, which will develop into neoplastic lesions if the means of defense are reduced by immunodepression to HIV/AIDS. It usually occurs in elderly subjects, but its appearance in young people or young adults should prompt a search for associated immunosuppression. The aim of this study was to describe the specific aspects of squamous cell carcinoma of the conjunctiva, and to determine its therapeutic modalities.

2. Material and Methods

We carried out a descriptive cross-sectional study over a period of 9 years (from January 2015 to December 2023) at the University Hospital Center of Bouake. We identified all malignant oculo-adnexal and orbital tumors whose histopathological diagnosis had been confirmed after surgical excision, enucleation or exenteration. Files without a precise histopathological result or with inadequate information were excluded (files in which the histopathological result did not include an identifying number, was not authenticated by a pathologist, and the macroscopic aspect was not specified or detailed). Then we listed squamous cell carcinomas of the conjunctiva among the malignant tumors selected and studied the different parameters concerning them: epidemiological (age, sex, medical history), clinical (reason for consultation, time elapsed before the first consultation, visual acuity), anatomo-pathological type, therapeutic (therapeutic modality). Data were collected from patient files, operative report registers, and registers of results of anatomo-pathological examination reports. They were collected from a survey sheet, entered, analyzed, and presented in the form of tables or commented figures using WORLD 2010 and EPI INFO version 7 software.

3. Results

Out of 39,985 files we counted 91 cases of malignant tumors confirmed by histopathology corresponding to a frequency of 0.23%. Among these, 36 cases of conjunctival squamous cell carcinoma were identified, reflecting a frequency of 39.56% of all malignant oculo-adnexal and orbital tumors diagnosed (**Table 1**). The average age of the patients was 44.3 years with extremes of 12 and 87 years.

Table 1. Distribution of malignant tumors according to histopathological type.

Histopathological type	Numbers N = 91	Percentage %
Retinoblastoma	40	43.9
squamous cell carcinoma Conjunctival	36	39.56
Angiosarcoma	5	5.48
Rhabdomyosarcoma	3	3.30
Burkitt's disease	3	3.30
Iris melanoma	1	1.10
Metastases	1	1.10
Leiomyosarcoma	2	2.20
Total	91	100

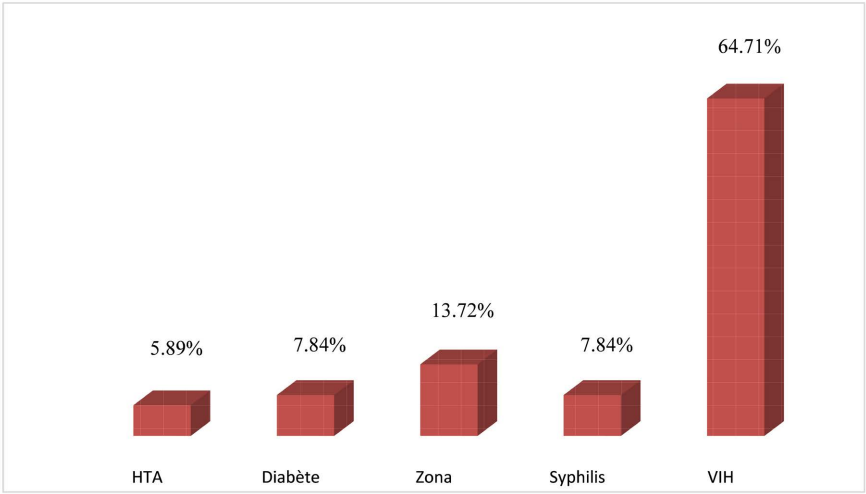

Figure 1. Distribution of patients with conjunctival squamous cell carcinoma according to medical history.

The male gender was in the majority with a sex ratio of 1.12. Exophthalmos was the most frequent reason for consultation (36.11%) (**Table 2**). Regarding the time before the first consultation, 40% of patients had consulted between the 10th and 12th month after the onset of signs (**Table 3**). According to medical history, HIV with 64.71%, is the most common associated pathology seen in patients with squamous cell carcinoma of the conjunctiva (**Figure 1**).

Most of our patients had an AVL ≤ 1/20th (72.22%) (**Figure 2**). Budding "cauliflower" tumors were the most frequent with 36.2%. The majority histopathological form was invasive differentiated conjunctival squamous cell carcinoma with 55.56% followed by the in-situ form (22.22%) (**Table 4**). Enucleation was the most practiced surgical method in our series with 38.46% followed by tumor excision associated with mitomycin (30.77%) (**Figure 3**, **Figure 4**).

- Reason for consultation

Table 2. Distribution of patients showing squamous cell carcinoma conjonctival depending on the reason for consultation.

Reason for consultation	Numbers N = 36	Percentage %
Exophtalmos	13	36.11
Building conjunctival mass	11	30.56
Conjunctival ulceration	8	22.22
Eyelid swelling	4	11.11
Total	36	100

Table 3. Distribution of patients with squamous cell carcinoma conjunctival depending on the time elapsed before the first consultation.

Time elapsed (months)	Numbers N = 25	Percentage %
[0 - 2]	0	0
[2 - 4]	**1**	4
[4 - 6]	1	4
[6 - 8]	2	8
[8 - 10]	6	24
[10 - 12]	**10**	**40**
>12	5	20
Total	25	100

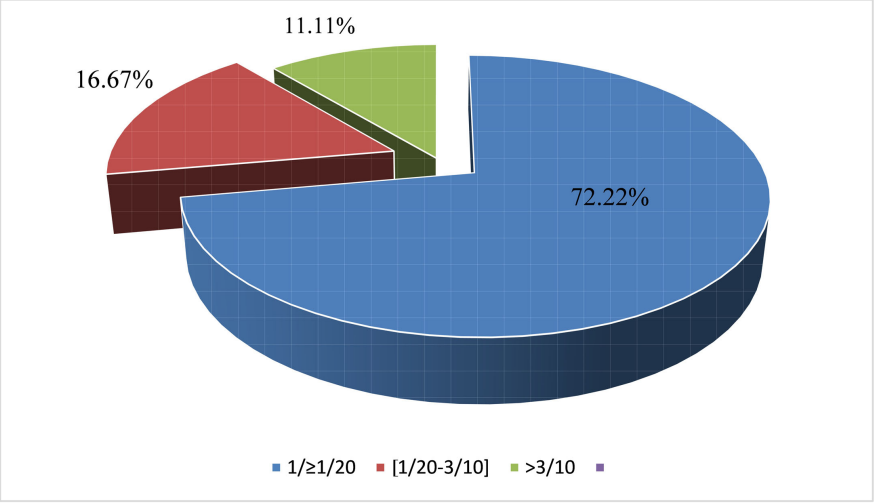

Figure 2. Distribution of patients showing squamous cell carcinoma conjunctival depending on visual acuity.

- Time elapsed before the first consultation
- Visual Acuity
- Conventional histopathology

Table 4. Distribution of patients according to histological of carcinoma conjunctival squamous cell.

Histopathology	Numbers N = 36	Percentage %
Invasive differentiated squamous Cell carcinoma	**20**	**55.56**
Moderately differentiated squamous cell carcinoma	3	8.33
Little differentiated squamous cell carcinoma	5	13.89
Squamous cell carcinoma *in situ*	8	22.22
Total	36	100

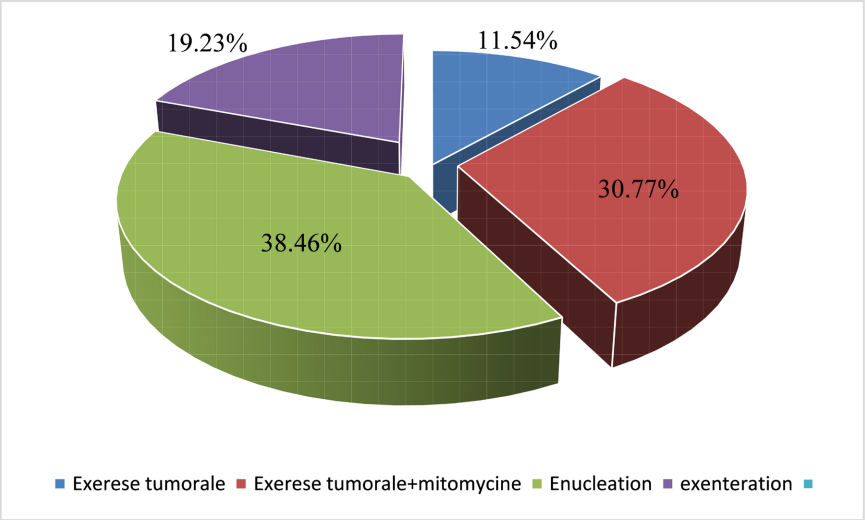

Figure 3. Distribution of patients with squamous cell carcinoma conjunctival depending on therapeutic methods.

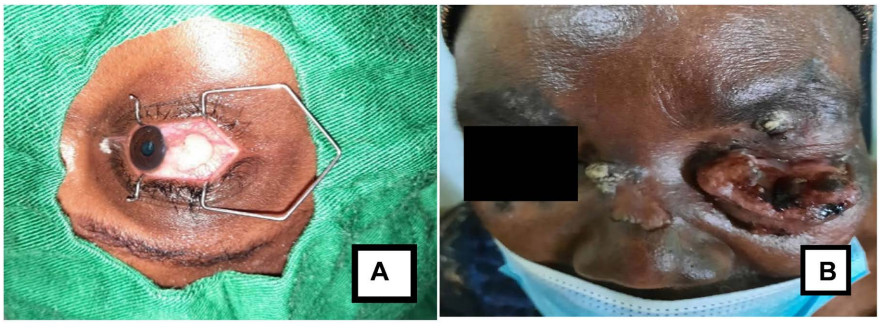

Figure 4. Squamous cell carcinoma of the conjunctiva. (A: localized, B: destruction of the eyeball).

Treatment

- Therapeutic method

4. Discussion

Epidemiology

- Frequency

The frequency of malignant ocular tumors was 0.23% in our series. Kasongo

[6] in the DRC noted 0.24%, while Seck [7] in Senegal found 0.05%. The low incidence of malignant ocular tumors in our Sahelian regions could be explained by the low attendance rate at health centers for financial reasons and the scarcity of specialized centers [8], leading to an underestimate of the incidence of these conditions. The malignant tumors including squamous cell carcinoma of the conjunctiva which constitutes the topic of our study present diversities in their location, their appearance and their histological type. Squamous cell carcinoma of the conjunctiva with 39.56% represented the 2nd ocular cancer of all malignant tumors according to our study. Same remark made by Sanfo [9] in Burkina and Sylla [2] in Mali who noted a predominance of squamous cell carcinoma of the conjunctiva at respective frequencies of 43.48% and 36.5%. According to Asis [10] the permanent sunshine in our living environments exposes the population to ultraviolet rays which would be the source of the occurrence of this tumor.

HIV and xeroderma pigmentosum are pathologies implicated in the occurrence of squamous cell carcinoma of the conjunctiva according to Dalton [11] and Khitibari [12], respectively.

- Age

The average age of our patients was 44.3 years with extremes of 12 and 87 years. This malignant tumor of the conjunctiva would generally appear in elderly subjects as reported by Seck [7] and Chebbi [13] who had noted respective average ages of 50 years and 62 years. The resurgence in young adults in our study would be linked to the HIV pandemic; which is also the antecedent mainly observed in our patients (64.71%). This very common immunosuppression in young adults exposes them to the early transformation of ocular surface neoplasia into conjunctival squamous cell carcinoma [11].

- Gender

The male gender was the majority in our work with a sex ratio of 1.12. Male predominance was also observed by Poso [8] in the DRC and Khtibari [12] in Morocco who found respective sex ratios of 1.5 and 1.77. Our results differ from those of Vonor [14] in Togo who found a female predominance with sex ratios of 0.88 and Acis [10] who noted sex equality in Martinique. Seeing of these results, we can say that there would be no correlation between the occurrence of squamous cell carcinoma of the conjunctiva and gender. However, a more informed statistical study would be indicated to investigate the existence of a correlation between this pathology and gender.

Clinic

- Reason for consultation

Exophthalmos was the most frequent reason for consultation in our series with 36.11%. Poso [8] and Pate [15] noted in their work a predominance of exophthalmos as a reason for consultation in respective proportions of 22% and 59.37%.

- Consultation deadline

The average consultation time for received patients was 10 months 13 days. Our results are close to those of Berete [16] and Chebbi [13] who found respec-

tively average consultation durations of 14.28 months and 8.8 months. The exophthalmos observed as the main reason for consultation in the various studies would be the consequence of the late consultations observed in the majority of patients. These results could be explained by several reasons, namely lack of knowledge of the disease, the remoteness of specialized centers and the low socio-economic level of patients.

- Visual Acuity

Our patients with conjunctival squamous cell carcinoma were in a state of blindness (AVL ≤ 1/20th) with 72.22%. Berete and colleagues [16] reported a picture of blindness in 42.30% of patients included in their series. The poor visual acuity observed in these studies reflects the reasons for admission and the long consultation times, thus patients are admitted to a blindness table. This collapsed visual acuity in patients seen for oculo-adnexal and or orbital neoplasia would be due to self-medication, the choice of sometimes inexpensive traditional therapy and finally to the African conception of cancerous pathologies as a fatality forcing the patient to isolate himself and consult at the terminal stage.

Anatomo-pathological aspects

- Macroscopy

Conjunctival epidermoid carcinoma presents as a bulbar conjunctival elevation more localized in the nasal area, sometimes reddish or brownish in appearance, sometimes taking on a brownish appearance due to sunlight. Diagnosis is anatomopathological, with imaging exploration being used only to assess extension. Budding "cauliflower" tumors were the most frequent with 36.2%, followed by those that were ulcero-budding 25%. The same observation was made by Salam and colleagues [17] in Morocco who found a predominance of budding forms with (48.3%).

- Histopathology

Histologically, conjunctival squamous cell carcinomas appear under the microscope as epidermal keratinocytes in varying stages of evolution.The majority histopathological form in our study was invasive differentiated conjunctival squamous cell carcinoma with 55.56% followed by the in-situ form (22.22%). Our results are close to those of Bérété [16] and Chebbi [13] who found differentiated conjunctival squamous cell carcinoma invasive in proportions of 69.23% and 57.70%. The predominance of these forms observed both macroscopically and histologically by various authors would testify to the late treatment caused by the choice of less expensive traditional therapy and the African conception of cancerous pathologies as an inevitability forcing the patient to isolate. These facts are at the origin of the large tumors seen in the terminal stage of the disease in patients who are sometimes malnourished and cachexic. This complex clinical picture summarizes the treatment as a mutilating surgery whose sole aim is to preserve the vital prognosis of the patients.

Treatment

The most practiced surgical method in our series was enucleation with 38.46% followed by tumor excision associated with mitomycin (30.77%). Enucleation

was the surgical technique most practiced by Kasongo [6] and Sanfo [9] in respective proportions of 50% and 31.25%.

However, our results differ from those of Chebbi [13] in Tunisia who noted tumor excision biopsy as the surgical method almost practiced in all patients (98.7%). Many reasons could explain the frequent use of mutilating surgery in subjects with ocular cancers in our departments. The diagnostic delay favors the reception of large tumors with a non-functional eyeball, the sometimes-deficient technical platform not allowing a reduction of the tumor volume by neoadjuvant chemotherapy before the choice of surgical procedure. These arguments could be associated with the refusal of surgery at the first consultation by the profit of traditional medicine for financial reasons or cultural conceptions. Recurrences were observed in 2 subjects, one from the group of patients who underwent simple excision and the second from the group who underwent tumor excision combined with mitomycin.

5. Conclusion

Squamous cell carcinoma of the conjunctiva is the most common ocular malignancy encountered in elderly patients in our practice. Its occurrence in young adults is favored by opportunistic conditions. The diagnosis of squamous cell carcinoma of the conjunctiva is late in our regions, giving rise to invasive differentiated forms whose medical care is limited to mutilating surgery in most of cases.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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