

Advanced Tumors of the Cephalic Extremity: A Retrospective Epidemiological, Clinical and Therapeutic Study about 25 Cases: UHC Tanger Tetouan Al Hoceima

Dehhaze Adil¹, Daghouri Nada-Imane^{2*}, Labbaci Rim², Taybi Otmame², Diher Issam², Tazi Hanae², Tita Sara², Echmili Mouad²

¹Assistant Professor and Head of the Department of Plastic, Reconstructive and Aesthetic Surgery, Center for Burned Patients, CHU Tanger-Tetouan-Al Hoceima, Morocco

²Resident, Department of Plastic, Reconstructive and Aesthetic Surgery, Center for Burned Patients, CHU Tanger-Tetouan-Al Hoceima, Morocco

DOI: [10.36347/sasjs.2022.v08i08.007](https://doi.org/10.36347/sasjs.2022.v08i08.007)

| Received: 06.07.2022 | Accepted: 10.08.2022 | Published: 13.08.2022

*Corresponding author: Daghouri Nada-Imane

Resident, Department of Plastic, Reconstructive and Aesthetic Surgery, Center for Burned Patients, CHU Tanger-Tetouan-Al Hoceima, Morocco

Abstract

Original Research Article

Skin cancers are a real scourge and a public health problem in our country. This facial localization in its advanced form is a source of aesthetic, functional, and life-threatening after-effects, which defines their seriousness and the difficulties of management both for carcinological excision and reconstruction. From a retrospective study spread over a period of 16 months, collected in the department of reconstructive and plastic surgery of the CHU Tanger Tetouan Al Hoceima, we analyzed the clinical and histological epidemiological characteristics, the time of diagnosis, the type of therapy, and the fate of 25 patients. The age of our patients ranged from 9 to 83 years with an average age of 53 years and a male predominance (sex ratio = 1.5). Rural origin represented 72% and the majority of the professions were exposed to the sun. All regions of the face were involved with a concentration of lesions in the midface (60%). Xeroderma pigmentosum was the most common precancerous condition (16%). Basal cell carcinoma was the most frequent histological type (60%), followed by squamous cell carcinoma (36%) and melanoma (4%). The macroscopic appearance of the tumors was ulcerative in the majority of cases (52%). Tumors were classified as T4 in 48%. Tumor removal was the rule in all our patients, with a safety margin adapted to the histological type and tumor size. A lymph node curage was performed in 6 patients. An exenteration was performed on 6 patients. A parotidectomy was performed on 1 patient. The repair was adapted to the location and extent of the defect. Reconstruction was deferred in 64% of cases and involved direct sutures in 3 cases, skin grafts in 7 cases, and essentially loco-regional flaps in 15 cases. The carcinological evolution was marked by recurrences in 2 patients with 3 cases of pulmonary and bone metastases. Finally, the therapeutic strategy can only be established and thought out on a case-by-case basis, using all the means at our disposal: sutures, directed healing, grafts, and flaps.

Keywords: Advanced skin tumors, Cephalic extremity, Reconstruction, Pluridisciplinarity.

Copyright © 2022 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Cutaneous malignancies of the face are the most common tumors of the skin and cancers in general. Cutaneous epithelial carcinomas develop at the expense of keratinocytes. They include squamous cell carcinomas (SC) and basal cell carcinomas (BCC). Melanomas develop by malignant transformation of melanocytes.

An advanced tumor is characterized by the extent of the surface and depth of the tumor, as well as

the extent of the loss of substance that it will generate and the noble structures that will be sacrificed.

The face is a special entity with a primarily social and functional role. It is a region where aesthetic integrity is in itself a function. The occurrence of these tumors in the face exposes several problems including the control of the margins of exeresis in a region full of sense organs and easily deformable orifices, and a tissue reconstruction after exeresis which must be as aesthetic and functional as possible.

Citation: Dehhaze Adil, Daghouri Nada-Imane, Labbaci Rim, Taybi Otmame, Diher Issam, Tazi Hanae, Tita Sara, Echmili Mouad. Advanced Tumors of the Cephalic Extremity: A Retrospective Epidemiological, Clinical and Therapeutic Study about 25 Cases: UHC Tanger Tetouan Al Hoceima. SAS J Surg, 2022 Aug 8(8): 530-540.

The objectives of this work are to define the epidemiological profile of patients with advanced malignant skin tumors of the face and their risk factors, to study the histological characteristics and the anatomical-clinical varieties as well as the modalities of carcinological and reparative surgical treatment.

MATERIALS AND METHODS

Our work is a retrospective study in the department of reconstructive, plastic, cosmetic, and burns surgery of the University Hospital Center Tangier Tetouan Al Hoceima, between March 2021 and June 2022, and focuses on 25 patients, treated for advanced malignant skin tumors of the face.

RESULTS

Epidemiologic Profile

- There was a male predominance: 15 men and 10 women with a sex ratio of M/F = 1.5.
- Our patients ranged in age from 07 to 89 years with an average age of 53 years.
- Regarding geographical origin, 72% of patients were from rural areas.

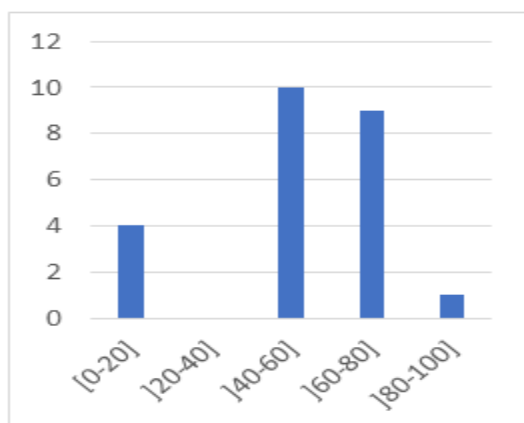


Figure 1: Distribution of patients by age group

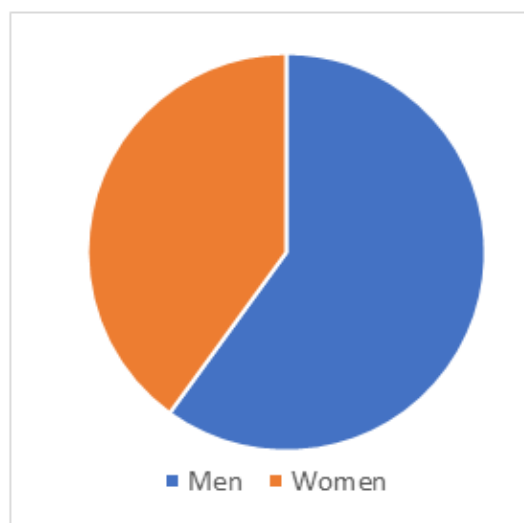


Figure 2: Gender distribution

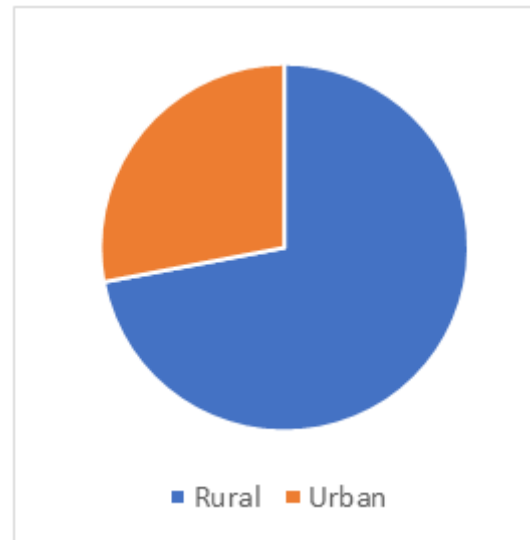


Figure 3: Distribution by geographic origin

In our series, we objectified risk factors:

Phototype: Type III was the predominant Phototype: in 64% of cases, followed by Phototype IV in 32% of cases.

All our patients were exposed to the sun during their childhood and adolescence, without significant protection. Sun exposure was found to be significant in 62% of our patients in connection with an outdoor professional activity.

Cancers on pre-existing lesions occurred in 09 cases. Three patients had actinic keratosis, 4 patients had xeroderma pigmentosum genodermatosis, and 2 patients had pigmented lesions.

Smoking was noted in 13 patients, 9 of them were active smokers and 4 were passive, and 12 patients were non-smokers. Other associated defects were dominated by hypertension 11 cases and 8 cases of diabetes.

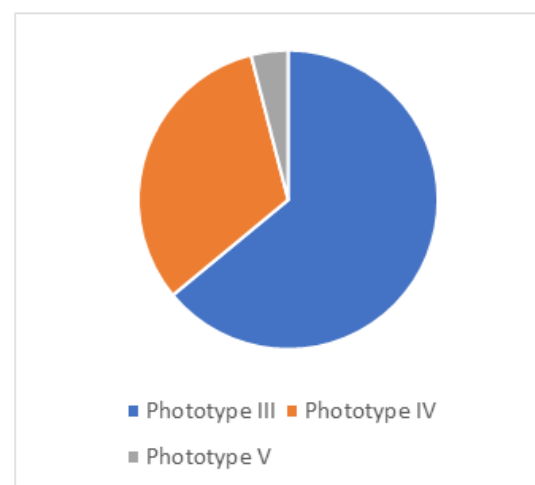


Figure 4: Distribution by phototype

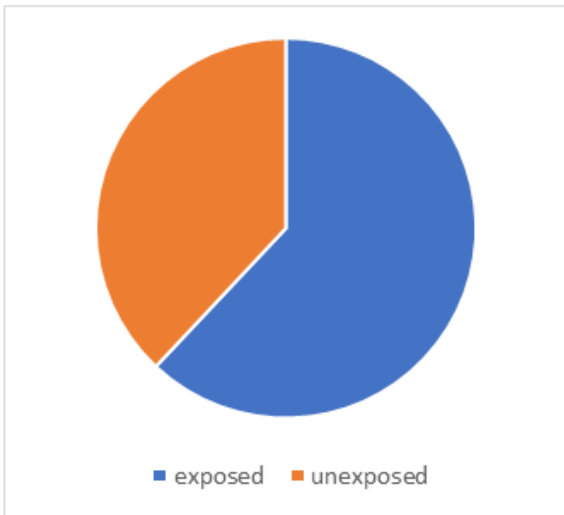


Figure 5: Distribution of patients according to photo exposure

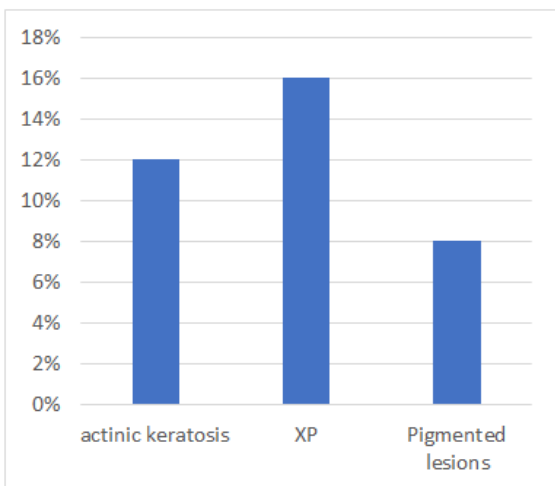


Figure 6: Percentage of patients with a precancerous condition

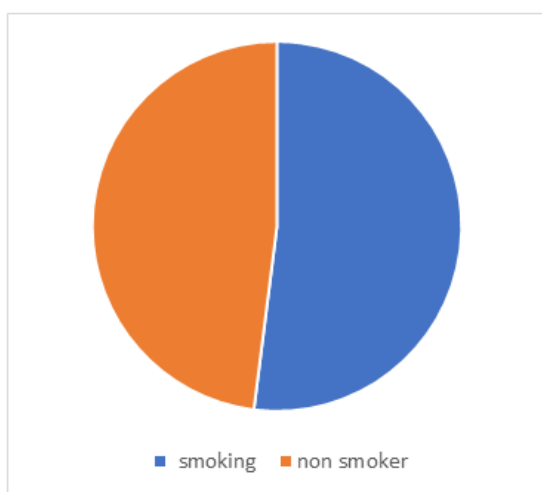


Figure 7: The incidence of smoking patients in our series

Clinical Profile

The period of consultation varied from 5 months to 10 years. The lesions involve practically all units of the face in different proportions and predominate at the centropacial level in 60% of cases.

Table 1: Répartition des lésions selon le siège

Location	Number of cases
Nasal	3
Jugal	3
Palpebral	6
Canthal	2
Labial	5
Temporal	3
Nasogenian	1
Frontal	2

The macroscopic appearance was dominated by ulcerating lesions in 72% of cases, followed by ulcerated lesions in 15%, then by budding lesions in 8% of cases and finally nodular lesions which represented only 5%.

The majority of patients (56%) consulted the following signs of local infiltration: pain, bleeding, and ulceration of tumor lesions. 32% following a locoregional infiltration: 6 cases at the stage of blindness. 12%, that is 3 patients, were consulted at the stage of metastasis.

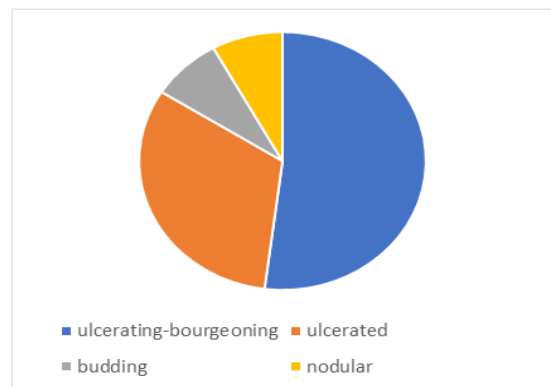


Figure 8: Distribution of tumors according to their macroscopic aspect

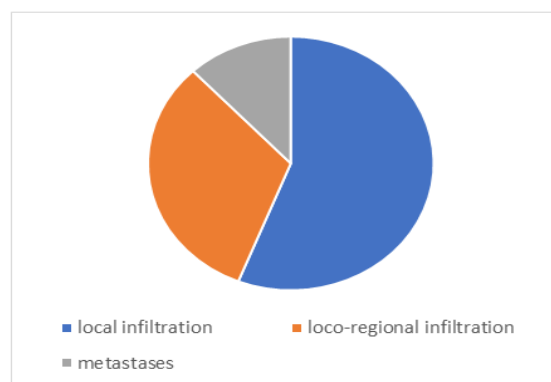


Figure 9: Functional signs in our patients

On clinical examination, the tumor size, measured along its long axis, was between 3 cm and 10 cm. Clear tumors were more prevalent (60%) than pigmented tumors. The lesion was infected in 6 cases and bled on contact in 8 cases. 18 patients had pain on palpation of the tumor.

In this study, 05 patients with squamous cell carcinoma had palpable cervical adenopathy, 2 had homolateral adenopathy and 3 cases had contralateral adenopathy. On the other hand, the only basal cell carcinoma case that had palpable cervical adenopathy was bilateral.

Table 2: Clinical lymph node involvement in our patients

	Homolateral	Bilateral
C	2 cases	3 cases
CC	0 case	1 case

Para-Clinical Profile

Biopsy was performed in 80% of the patients and 20% had an excisional biopsy. The extemporaneous examination of the surgical specimen was not performed in any case. The histological study had revealed:

Basal cell carcinoma (BCC): 15 cases = 60%. BCCs are divided as follows: 33% are nodular, 20% superficial, 14% infiltrative and finally 33% are scleroderma.

Squamous cell carcinoma (SCC): 9 cases = 36%

Melanoma: 1 case = 4%.

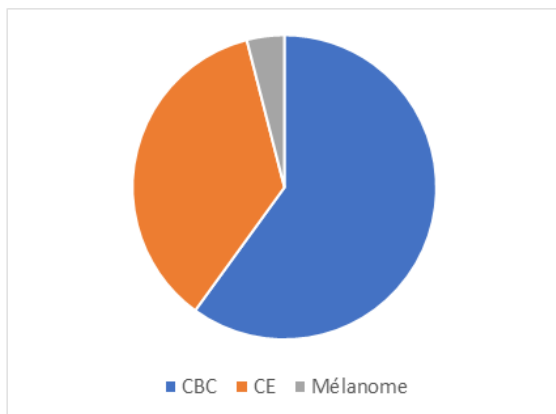


Figure 10: Distribution of lesions according to histological type

The paraclinical workup for local, locoregional, and distant metastasis was: A facial CT scan was requested in 13 patients: This workup showed bone extension in 7 patients, lymph node extension in 10 patients, and intraorbital extension in 6 patients. It also revealed invasion of adjacent subcutaneous structures with involvement of several facial units and local bone lysis in 3 cases.

Craniofacial MRI was performed in only one case and showed infiltration of the nerve and the optic canal. Thoracic-abdominal-pelvic CT scan was requested in 10 patients, it showed 3 cases of pulmonary and bone metastases.

Cervical ultrasound was performed in all patients with squamous cell carcinoma and showed adenopathy in 6 patients. Bone scintigraphy and pet scan were not requested in any case.

At the end of the clinical and para-clinical work-up, the carcinomas were classified according to the TNM classification of the International Union Against Cancer (UICC):

Table 3: The distribution of the tumors of our patients according to the TNM classification of non-melanoma tumors

T	N			M
	N1	N2	N3	
T1 : 0 cas	-	-	-	-
T2 : 4 cases	-	-	-	-
T3 : 9 cases	1	2	-	1
T4 : 12 cases	1	2	-	2

One case of melanoma was classified as stage IIC.

Therapeutic Profile

Surgical treatment with curative intent was planned for 23 patients (92%) and palliative for 2 patients (8%). The safety skin margins ranged from 10 to 30 mm (10 mm for 24 cases; 30 mm for 01 cases). Lymph node dissection was performed in 6 patients.

For the organs removed during the resection: in our series, we had recourse to exenteration on 06 occasions (24%), and to a parotidectomy in only one case (4%).

All the excised parts were sent for anatomopathological study, to confirm the diagnosis and to study the excision margins. The resection was complete in 80% of cases. Re-exeresis was necessary for the remaining patients because of margin damage.

Reconstruction was immediate in 09 cases (36%). For the majority of tumors (64%), histological confirmation was obtained before reconstruction in the remaining 16 cases. The size of the loss of substance, measured along its major axis, was between 4 cm and 11 cm.

Regarding the means of coverage, given the large size of the loss of substance, no directed healing was used as a definitive reconstruction technique. Closure by direct suture of the loss of substance was performed in 3 cases (12%). Skin grafts were used in 7 cases (28%). Total skin was used in all cases. The

harvesting site was in the supraclavicular fossa and on the inner side of the arm. The use of local or regional

flaps was necessary in 15 cases (60%).

Table 4 : Distribution of cases according to flap type

Types of flaps	Number of cases
Advancement flap	2
Advancement-rotation flap = Mustarde	2
Frontal flap	1
LLL transposition flap	3
Gillies Flap	2
Temporal flap	5

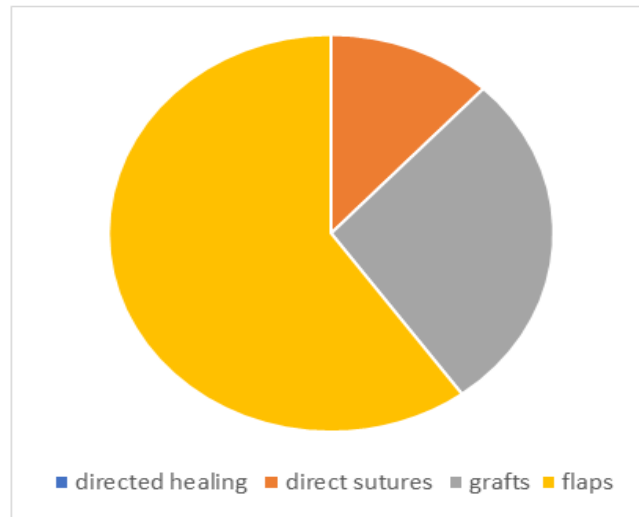


Figure 11: Distribution of the types of reconstructions used

The follow-up of the patients, based on the local and general clinical and paraclinical examination, was done regularly according to the nature and stage of the tumor and adapted to the means of reconstruction. No complications were recorded except for partial lysis

of the skin graft noted in 2 patients, which was controlled by close follow-up and adapted dressings. We found a recurrence rate of 8% (2 cases) in patients who correctly followed the surgical and adjuvant treatment.



Figure 12: Basal cell carcinoma of the eyelid infiltrating the eyeball

Orbital exenteration with reconstruction by temporal flap



Figure 13: Removal of a temporal squamous cell carcinoma with reconstruction by advancement flap and skin graft



Figure 14: Squamous cell carcinoma of the lower lip treated by surgical excision with reconstruction with a Gillies flap



Figure 15: Removal of a nasal squamous cell carcinoma with forehead flap reconstruction

DISCUSSION

Representing one-third of all tumors diagnosed each year. Cutaneous carcinomas are the most frequent tumors of the skin and cancers in general [1]. In Morocco, according to the National Cancer Registry, like in many other countries, skin cancers are very common: they rank 8th in men and 10th in women and represent 2.6% of all cancers.

In our study, 25 cases of advanced malignant skin tumors of the face were treated in this series over a period of 16 months with an estimated incidence of 2 new cases per month. This incidence remains very high in our population as elsewhere [2]. Basal cell carcinomas were the most frequent, at 60%, followed by squamous cell carcinomas at 36% and melanomas at 4%. Advanced carcinomas are described as being the prerogative of the elderly, the average age of diagnosis in our series is 53 years. It is higher in Brazil (68.5 years) [2] and France (71 years) [3].

Concerning the sex, we noted a clear predominance of men (15 men and 10 women), with a sex ratio of 1.5. In the majority of studies, there is a male predominance, a French study was done in Nantes [4] found a lower sex ratio of 1.02, the male predominance is more marked in the study by E. Rio *et al.*, [3] with a sex ratio equal to 1.7. The study made by Flavia Regina Ferreira *et al.*, [2] still shows the male predominance with a sex ratio of 1.4. This male predominance can be 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.

Regarding geographical origin, 72% of the patients recruited in our study were from rural areas while only 28% were from urban areas. This distribution can be explained by the recruitment bias, by 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 pre-exposure lesions and sun exposure. Our data are consistent with those of M. El haouri [5]: 60% of the patients lived in rural areas while 35% came from urban areas. For H. Boukind [6] the rural origin represented 54% whereas Mernissi [7] reported a rate of patients of rural origin of about 58%. Our results are also in line with the majority of other Moroccan, Maghrebian and African studies.

Subjected to identical sun exposure, not all individuals have the same risk of developing skin cancer. The phototype characterizes the sensitivity of the skin to ultraviolet radiation. The phototype is a major risk factor in the development of a skin tumor, particularly phototypes I and II, but their distribution varies according to ethnicity [8, 9]. Phototypes III and IV were predominant in our study with 96% of cases. In the study performed at the University Hospital of Fez [7], phototype III was the predominant phototype in 57% of cases, followed by phototype IV in 35% of cases, which is consistent with our results. In the study performed in Brazil [2], phototypes I and II were the predominant phototypes in 77% of cases, followed by phototypes III and IV in 23% of cases. Samarasinghe and Madan [8] found that 80.5% of their patients were Caucasian and finally the patients of Dumas *et al.*, [9] were all Caucasian. This distribution is not the same internationally due to the difference in the predominant phototype in each country.

The percentage of patients exposed to the sun is estimated at 62% in our study. Kim and Armstrong [10] report that 80% of their patients had childhood exposure to the sun or had been exposed to work as adults. Ahmad and Gupta [11] found a higher percentage of sun exposure at 89%. Dubas and Ingraffea [12] state that all of their patients were exposed to the sun, either intermittently or continuously. Samarasinghe and Madan [8] report that more than 80% of their patients were exposed to the sun or had received UV phototherapy. 95% of the patients of Pinatell and Mojallal [13] were exposed to the sun. These results confirm the relationship between sun exposure (ultraviolet) and skin carcinoma. This has

been reported by the French Society of Dermatology [14], which states that the main risk factor is exposure to UV, either by sunlight or artificially.

We observed 36% of precancerous lesions in our series. According to Kavoussi *et al.*, [15], actinic keratoses are by far the most frequent pre-cancerous lesions estimated at 40.2%, 1% of patients suffered from XP. The French Society of Dermatology [14], affirms these results, specifying that the most frequent precancerous lesion is AK, which can reach 60% of patients with cutaneous carcinoma. Dumas *et al.*, [9], reported that 13% of their patients had KA, 9% had pigmented lesions and 3% had unstable scars.

Table 5: The frequency of pre-cancerous conditions

	Our series	Kavoussi <i>et al.</i>,	French Society of Dermatology	Dumas <i>et al.</i>,
Actinic Keratoses	12%	40.2%	60%	13%
XP	16%	1%	-	-
Pigmented lesions	8%	-	-	9%

In our study, smoking was found in 52% of our patients. This is consistent with data from a study of 383 patients in Florida (26% of cases) [16]. In the study by Eskiizmir *et al.*, [17], the percentage of smoking was higher (50%).

The delay of consultation is a factor aggravating the prognosis of advanced tumors of the face. This delay is explained by the tendency to trivialize these slowly evolving tumors, the low socio-intellectual level, and the geographical origin. M. El Haouri [6] found in his series an average duration of evolution before the consultation of a few months to 2 years (24 months) while M. El Alami [18] reported duration of 39.6 months. A study was done in Dakar [19] reported an average duration of 2.9 years (34 months), while Felix Boon Bin [20] reported a shorter duration of 17.8 months on average. A. Belmahi [21] reported a longer duration (60 months). The long

duration of evolution before consultation accounts for the advanced forms found in our series, the frequency of bone involvement, intraorbital extension, and lymph node and distant metastases.

These tumors are located preferentially on sun-exposed areas; the face, on healthy skin (BCC), or on precancerous lesions (CSC) [13, 22]. In our work, 12% of carcinomas are located on the nose, 32% on the periorbital area, 12% on the cheeks, and 8% on the forehead. Girish *et al.*, [23] noted that nasal involvement is the most frequent at 25.5%, followed by the cheeks at 16%, periorbital involvement at 14%, forehead at 7.5%, lips at 6%, and finally 2% in the chin. Pinatel and Mojallal [13] noted that 25.5% of carcinomas were located in the nose, 16% in the jugal area, 14% in the periorbital area, and 11% in the forehead.

Table 6: Comparison between the topographical distribution

	Our series	Girich <i>et al.</i>,	Pinatel et mojallal
Nose	12%	25,5%	25,5%
Periorbital area	32%	14%	14%
Cheeks	12%	16%	16%
Forehead	8%	7,5%	11%

Clinically, carcinomas evolve in several forms. The ulcerating-burgeoning aspect was the most frequent in our series: 72%. This agrees with the clinical findings of the Dakar study (66.3%) [19] and M. EL Haouri (37%) [5].

Tumors 2 cm in diameter and larger are twice as likely to recur locally and three times as likely to metastasize at 5 years than tumors less than 2 cm in diameter. However, the 5-year recurrence and metastasis rates are 7.4 and 9.1%, respectively, which is not negligible [24, 25]. The dimensions in our study are

measured on the long axis between 3 cm and 10 cm. M. Haouri [5] found that 70% of facial BCCs were larger than 4 cm and that the size of facial BCCs was between 0.6 and 6 cm.

A positive diagnosis of cutaneous carcinomas is based on clinical examination and is confirmed by pathological examination. The pathological examination allows for accurate diagnosis, quality control of resection, and appropriate management. In our series, diagnostic biopsy showed the prevalence of basal cell carcinoma in 15 patients (60% of cases),

followed by squamous cell carcinoma in 9 cases (36% of cases), and only one case of melanoma. The same

finding has been reported by several studies [2, 25, 26].

Table 7: Comparison between the rate of carcinomas

	CC	CC	Melanoma
Our series	0%	6%	4%
Samarasinghe et Madan	5%	0%	5%
Staub <i>et al.</i> ,	0%	0%	-
Kim et Armstrong	0%	5%	5%
Girich <i>et al.</i> ,	7%	0%	3%
Ahmed et Gupta	0,47%	8,47%	-
H.Boukind	0%	2,5%	5,5%

Faced with local and locoregional flooding, a radiological assessment was performed according to the clinical signs of the histological type and the means of each patient. 48% of the carcinomas were T4, 24% had lymph node involvement and 12% had metastases. This could be explained by the late consultation and advanced stages.

Surgery is recognized as the treatment of choice for these tumors, allowing controlled total removal with the possibility of immediate or delayed repair, as well as adequate reconstruction while preserving the aesthetic function of the face. The excision must be carcinological to limit the risk of locoregional and distant recurrence. Malignant tumor lesions are removed with a lateral and deep safety margin because of their frequent microscopic extension, which is a source of local recurrence [27-29].

Histologically incomplete excision was found in 11% of cases according to the study by G. Staub *et al.*, [1] and in 13% in the study by Ganeval-Stoll *et al.*, [30], whereas L. Kani [31] found a higher rate (22.4%). In our series, excision was incomplete in 20% of patients, including those whose purpose of excision was initially palliative.

Node dissection was performed in 6 patients (24%) whereas A.Ganeval-Stoll *et al.*, [30] and S.Benazzou [21] reported a lower rate of 6.6%. L. Kani [60] also reported a lower rate of 0.5%. We had

recourse to orbital exenteration on 6 occasions (24%), which is close to the results of Benatiya [32] with a rate of 18%. L. Kani [31] reported a lower rate of 1.7%. Concerning parotidectomy, A. Ganeval-Stoll *et al.*, [30] reported a rate of 3.3%, whereas, in our study, a superficial parotidectomy preserving the facial nerve was performed for one patient or 8%.

Reconstruction after tumor removal aims at restoring as much as possible the anatomy and function of the reconstructed area. It should be as aesthetic as possible using the various means offered by plastic reconstructive surgery ranging from skin grafting to complex techniques [33]. Before proceeding with SDB coverage, histological confirmation that the margins and deep border are healthy is mandatory [34, 35]. In our series, skin grafts were used in 7 cases (28%). F. Mardi [36] reported a rate of 49%. While L. Kani [31] and A. Ganeval-Stoll *et al.*, [30] reported a lower rate. We used skin flaps for the repair of post-tumor excision loss of substance in 15 patients. The forehead flap was used for nasal reconstruction in only one patient (4%). For labial SDB, Gillies flap was used in 2 patients (8%) while Kerray [37] used this flap in 12% of patients. Two patients (8%) were covered with a Mustard flap, which is in line with the results of M. Benatiya [32] (5.8%). S. Benazzou [38] used this flap in 20% of cases. We used the temporal muscle to fill the exenteration cavity in 5 cases whereas S. Benazzou [38] used this flap in 10 cases (66.6%).

Table 8: Comparison of reconstruction methods

	Our series	A. Ganeval-Stoll <i>et al.</i> ,	S. Benazzou	M. Benatiya	Kerray
Skin grafts	7%	7%	-	-	-
Forehead flap	4%	-	-	-	5%
Gillies flap	8%	-	-	-	2%
Mustard flap	8%	-	20%	5,8%	-
Temporal muscle	20%	-	66,6%	-	-

Carcinoma recurrence was observed in 8% of patients. G. Staub *et al.*, [39] reported a recurrence rate of 3.8% for basal cell carcinoma and 5% for squamous cell carcinoma. Hence the importance of regular post-treatment surveillance to detect recurrence or a new lesion as early as possible.

Table 9: The recurrence rate of carcinomas

	Our series	G. Staub <i>et al.</i> ,
CC	4%	3,8%
CC	4%	5%

CONCLUSION

Advanced cutaneous carcinoma is a tumor whose surface and/or deep extension has made it inaccessible to a purely local reconstruction with often the involvement of several territories. Thus, the treatment is the same as that defined for "simple" carcinomas with complete tumor removal and reconstruction of the SDB while respecting aesthetics and function. Regular post-treatment follow-up is essential to detect and treat any complication or recurrence of the tumors in time. Only screening, early diagnosis, and access to care will eradicate these historical tumors.

REFERENCES

1. Staub, G., Revol, M., May, P., Bayol, J. C., Verola, O., & Servant, J. M. (2008, October). Marges d'exérèse chirurgicale et taux de récurrence des carcinomes cutanés: Étude prospective de 844 cas. In *Annales de chirurgie plastique esthétique* (Vol. 53, No. 5, pp. 389-398). Elsevier Masson.
2. Ferreira, F. R., Nascimento, L. F. C., & Rotta, O. (2011). Risk factors for non-melanoma skin cancer in Taubaté. *São Paul, Brazil: acase-control study*.
3. Rio, E., Bardet, E., Ferron, C., Peuvrel, P., Supiot, S., Campion, L., ... & Dreno, B. (2006). Curiethérapie interstitielle des cancers cutanés des zones péri-orificielles de la face. *Cancer/Radiothérapie*, 10(3), 101-106.
4. Arfi, C. (1994). *Exérèse en deux temps des carcinomes cutanés étendus de la face: étude rétrospective de 87 patients* (Doctoral dissertation, Nantes).
5. Elhaouri, M. (2014). *LES CANCERS DE PEAU (A propos de 194 cas)* (Doctoral dissertation, Thèse de médecine).
6. Boukind Dahmi, H., & Fatima, E. (2010). Cancer cutané de la face. Thèse de médecine. Université Hassan II, Faculté de Médecine et de Pharmacie, Casablanca.
7. Mernissi. (2008). Tumeurs cutanées malignes colligées au service de dermatologie du CHU Hassan II Sur une période de 2 ans. Thèse de médecine.
8. Samarasinghe, V., & Madan, V. (2012). Nonmelanoma skin cancer. *Journal of Cutaneous and Aesthetic Surgery*, 5(1), 3-10.
9. Dumas, P., Benatar, M., Cardot-Leccia, N., Lebreton, E., & Chignon-Sicard, B. (2012, April). Étude de la rétraction cutanée appliquée à la prise en charge des tumeurs cutanées. Cartographie du corps humain. In *Annales de chirurgie plastique esthétique* (Vol. 57, No. 2, pp. 118-124). Elsevier Masson.
10. Kim, R. H., & Armstrong, A. W. (2012). Nonmelanoma skin cancer. *Dermatologic clinics*, 30(1), 125-139.
11. Ahmad, I., & Gupta, A. D. (2001). Epidemiology of basal cell carcinoma and squamous cell carcinoma of the pinna. *The Journal of Laryngology & Otology*, 115(2), 85-86.
12. Dubas, L. E., & Ingraffea, A. (2013). Nonmelanoma Skin Cancer. *Facial Plastic Surgery Clinics of North America*, 21(1), 43-53.
13. Pinatel, B., & Mojallal, A. (2012, April). Prise en charge diagnostique et thérapeutique du carcinome cutané basocellulaire—Analyse des recommandations. In *Annales de chirurgie plastique esthétique* (Vol. 57, No. 2, pp. 92-105). Elsevier Masson.
14. La Société française de Dermatologie; label conjoint INCa-HAS. (2009). Prise en charge et thérapeutique du carcinome épidermoïde cutané (spinocellulaire) et de ses précurseurs.
15. Kavoussi, H., Rezaei, M., Ebrahimi, A., & Hosseini, S. (2012). Epidemiological indices of non-melanoma skin cancers in Kermanshah, Iran. *Journal of Pakistan Association of Dermatologists*, 22(2), 112-117.
16. Wojno, T. H. (1999). The association between cigarette smoking and basal cell carcinoma of the eyelids in women. *Ophthalmic plastic and reconstructive surgery*, 15(6), 390-392.
17. Akcam, T. M., Gubisch, W., & Unlu, H. (2012). Nonmelanoma skin cancer of the head and neck: surgical treatment. *Facial Plastic Surgery Clinics*, 20(4), 455-471.
18. Elaminemohamednour-Dine, E. (2015). *Carcinomes avancés du cuir chevelu. (A propos de 09 cas)* (Doctoral dissertation, Thèse de médecine).
19. Toure, P. (2001). *Carcinomes épidermoïdes cutanés à propos de 80 cas colligés à la Clinique dermatologique de l'hôpital Aristide Le Dantec de Dakar* (Doctoral dissertation, Thèse de médecine).
20. Bin Yap, F. B. (2010). Clinical characteristics of basal cell carcinoma in a tertiary hospital in Sarawak, Malaysia. *International journal of dermatology*, 49(2), 176-179.
21. Belmahi, A., & Oufkir, A. A. (2007, December). Lambeaux locaux pour pertes de substance transfixiantes du scalp sur tumeurs évoluées. À propos d'une série de 21 patients. In *Annales de chirurgie plastique esthétique* (Vol. 52, No. 6, pp. 569-576). Elsevier Masson.
22. Martin, L., & Bonerandi, J. J. (2009). Carcinome épidermoïde cutané (carcinome spinocellulaire). Recommandations de pratique clinique pour la prise en charge diagnostique et thérapeutique. In *Annales de Dermatologie et de Vénéréologie* (Vol. 136), 189-242.
23. Girish, B. K., Boyd, V., & Hollier, L. (2000). Basal Cell and Squamous Cell Carcinoma. *Integument*.
24. Beauvillai, N. (2009). Carcinome épidermoïde cutané (carcinome spinocellulaire) Recommandations de pratique clinique pour la prise en charge diagnostique et thérapeutique Argumentaire. *Annales de dermatologie et de vénéréologie*, 136, S189-S242.

25. Raasch, B. A., Buettner, P. G., & Garbe, C. (2006). Basal cell carcinoma: histological classification and body-site distribution. *British Journal of Dermatology*, 155(2), 401-407.
26. Guillot, B., & Du-Thanh, A. (2012). Q149: TUMEURS MALIGNES CUTANÉES ÉPITHÉLIALES ET MÉLANIQUES. *La Revue du praticien (Paris)*, 62(2), 247-254.
27. Lavie, A., Desouches, C., Casanova, D., Bardot, J., Grob, J. J., Legré, R., & Magalon, G. (2006, October). Surgical management of cutaneous malignant melanoma. Review. In *Annales de Chirurgie Plastique et Esthétique* (Vol. 52, No. 1, pp. 1-13).
28. Durbec, M., Couloigner, V., Tronche, S., Albert, S., Kanitakis, J., Boudrigua, A. L., & Malard, O. (2014). Recommandations de la SFORL. Bilan d'extension et principes d'exérèse des tumeurs de la face et du cou à point de départ cutané. *Annales française d'oto-rhino-laryngologie et de pathologie cervicofaciale*, 131, 366.
29. Eigentler, T. K., Radny, P., Kamin, A., Weide, B., Caroli, U. M., & Garbe, C. (2005). Experiences with the new American Joint Committee on Cancer (AJCC) classification of cutaneous melanoma. *Journal der Deutschen Dermatologischen Gesellschaft= Journal of the German Society of Dermatology: JDDG*, 3(8), 592-598.
30. Ganeval-Stoll, A., Bruant-Rodier, C., Dissaux, C., Lutz, J. C., Wilk, A., & Bodin, F. (2014, August). Carcinomes spinocellulaires de l'oreille: facteurs de gravité et traitement chirurgical, à propos de 30 cas. In *Annales de chirurgie plastique esthétique* (Vol. 59, No. 4, pp. 226-231). Elsevier Masson.
31. Meunier, L., Raison-Peyron, N., & Meynadier, J. (1998). Immunosuppression photo-induite et cancers cutanés. *La Revue de médecine interne*, 19(4), 247-254.
32. Idriss, M. B. (2012). *Lestumeurs Palpebrales Malignes (A propos de 51 cas)* (Doctoral dissertation, Thèse de médecine).
33. Rubin, P., Mykula, R., & Griffiths, R. W. (2005). Ectropion following excision of lower eyelid tumours and full thickness skin graft repair. *British journal of plastic surgery*, 58(3), 353-360.
34. Benatar, M., Dumas, P., Cardio-Leccia, N., Lebreton, E., & Chignon-Sicard, B. (2012, April). Intérêt et fiabilité de l'examen extemporané dans la prise en charge des tumeurs cutanées. In *Annales de chirurgie plastique esthétique* (Vol. 57, No. 2, pp. 125-131). Elsevier Masson.
35. Lau, C. K., Huang, S., & Cormack, G. (2008). Minimising the risk of ectropion when full thickness skin grafting lower eyelid defects. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 61(12), 1562-1564.
36. Mardi, F. (2003). Le traitement chirurgical des cancers cutanés de la face (Etude prospective à propos de 100 cas).
37. Kerrary, S., Drissi Qeytoni, H., Lakouichmi, M., & Nassih, M. (2008). Les reconstructions labiales après exérèse tumorale (à propos de 50 CAS). Service de chirurgie plastique, chirurgie maxillo-faciale et stomatologie Hôpital militaire d'instruction Mohamed V Rabat 2008. *Communications*.
38. Benazzou, S., Arkha, Y., Boulaadas, M., Essakalli, L., & Kzadri, M. (2011). L'exentération orbitaire. *Revue de Stomatologie et de Chirurgie Maxillo-faciale*, 112(2), 69-74.
39. Mécanismes De L'oncogenese & Histoire Naturelle Du Cancer.