

Original Article

Clinical characterization of recurring basal cell carcinoma in the dermatology department of the hospital de clínicas (2020 – 2024)

Caracterización clínica del carcinoma basocelular recidivante en el servicio de dermatología del hospital de clínicas (2020 – 2024)

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ABSTRACT

Introduction: Basal cell carcinoma (BCC) is the most prevalent type of non-melanoma skin cancer, primarily associated with chronic exposure to ultraviolet (UV) radiation. Additional determinants—such as histopathological subtype and the adequacy of initial therapeutic intervention—play a critical role in disease progression and recurrence. **Methodology:** A cross-sectional, observational, and descriptive study was conducted involving 18 patients with recurrent BCC, identified from a cohort of 239 medical records of individuals who underwent BCC surgery between 2020 and 2024 at the Hospital de Clínicas. Variables analyzed included demographic characteristics (sex, age), tumor features (anatomical site, histological subtype), treatment modalities (primary and secondary), and adherence to postoperative follow-up. Descriptive statistical analyses were performed. **Results:** The study population had a mean age of 61.3 years, with a predominance of male patients (55.6%) and urban residents (83.3%). Nodular BCC was the most common subtype (55.6%), with the nasal region being the most frequently affected site (27.8%). The most frequently employed primary surgical technique was direct closure (61.1%), with an average interval of 2.63 years between procedures. Only 27.8% of patients adhered to postoperative follow-up protocols. **Conclusion:** The higher incidence of BCC in urban populations may be attributed to differential environmental exposures and improved access to healthcare services. The observed recurrence rate highlights the necessity for effective initial interventions—such as Mohs micrographic surgery for high-risk cases—alongside structured, long-term monitoring. The anatomical location and histological subtype of BCC demand a personalized, multidisciplinary treatment strategy, especially for facial tumors due to their functional and aesthetic relevance.

Keywords: basal cell carcinoma, recurrence, histopathology, surgical oncology, dermatologic oncology.

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RESUMEN

Introducción: El carcinoma basocelular (CBC) es el tipo más frecuente de cáncer de piel no melanoma, asociado principalmente a la exposición crónica a la radiación ultravioleta (UV). Factores adicionales—como el subtipo histopatológico y la adecuación del tratamiento terapéutico inicial—desempeñan un papel crítico en la progresión de la enfermedad y su recurrencia. **Metodología:** Se realizó un estudio observacional, descriptivo y de corte transversal en 18 pacientes con CBC recidivante, seleccionados a partir de un total de 239 historias clínicas de pacientes sometidos a cirugía por CBC entre los años 2020 y 2024 en el Hospital de Clínicas. Se analizaron variables demográficas (sexo, edad), características tumorales (localización anatómica, subtipo histológico), modalidades terapéuticas (iniciales y secundarias) y adherencia al seguimiento posoperatorio. Se aplicaron análisis estadísticos descriptivos. **Resultados:** La cohorte incluyó pacientes con una edad media de 61,3 años, predominantemente masculinos (55,6%) y residentes urbanos (83,3%). El subtipo nodular fue el más frecuente (55,6%) y la nariz fue la región anatómica más afectada (27,8%). El tratamiento inicial elegido fue el quirúrgico, siendo la escisión simple con cierre directo, la técnica más frecuentemente utilizada (61,1%), con un intervalo medio de 2,63 años entre procedimientos. Solo el 27,8% de los pacientes cumplió con el seguimiento posquirúrgico. **Conclusión:** La mayor incidencia de CBC en zonas urbanas podría atribuirse a exposiciones ambientales diferenciadas y a un mayor acceso a los servicios de salud. La recurrencia observada subraya la necesidad de intervenciones iniciales eficaces—como la cirugía micrográfica de Mohs en casos de alto riesgo—acompañadas de un seguimiento estructurado y a largo plazo. La localización anatómica y el subtipo histológico del CBC requieren una estrategia terapéutica personalizada y multidisciplinaria, especialmente en tumores faciales debido a sus implicancias funcionales y estéticas.

Palabras clave: carcinoma basocelular, recurrencia, histopatología, oncología quirúrgica, oncología dermatológica.

Introduction

The clinical characterization of recurrent basal cell carcinoma (BCC) is a critical area of research within dermatology, particularly given the increasing global incidence of this malignant neoplasm. Basal cell carcinoma, as the most prevalent form of skin cancer, represents a significant proportion of non-melanoma skin cancers, accounting for nearly 80% of such cases ⁽¹⁾. The pathogenesis of BCC is often related to prolonged exposure to ultraviolet (UV) light, which leads to mutations in the basal cells of the epidermis. These mutations inhibit normal apoptotic processes, resulting in uncontrolled cellular proliferation ⁽²⁾. Clinical manifestations of BCC may vary widely, with different histological subtypes, including nodular, infiltrative, and sclerodermiform forms, each presenting unique challenges in diagnosis and treatment ^(3,4).

Recurrence of basal cell carcinoma remains a relevant clinical challenge, particularly in patients with a history of multiple lesions. Although various demographic and clinical factors, such as tumor size, histological subtype, and the quality of initial treatment ⁽⁵⁾, influence the risk of recurrence, current evidence emphasizes that in cases of incomplete excision, especially with involvement of the deep margin, reintervention should be considered the priority therapeutic strategy. This approach is particularly important in high-risk anatomical areas, such as the periorbital, nasal, or labial regions, where recurrence rates and functional implications are significantly higher. Some studies, although proposing close follow-up as an alternative, acknowledge that this strategy may not be adequate in these high-risk contexts ^(6,7).

Mohs micrographic surgery, for example, has been recognized as a superior treatment option for high-risk basal cell carcinomas due to its ability to ensure complete tumor removal while preserving surrounding healthy tissue ⁽⁷⁾. In contrast, non-surgical treatments, such as photodynamic therapy and topical chemotherapy, may be more appropriate for superficial basal cell carcinomas or in patients with significant comorbidities ^(8,9).

The anatomical regions affected by basal cell carcinoma also play a crucial role in determining treatment approaches and outcomes. Lesions located on the face, particularly around the eyes and nose, are often treated more aggressively due to the cosmetic and functional implications of recurrence in these areas ⁽¹⁰⁾. This study categorizes lesions according to their anatomical location, which will allow for a nuanced understanding of how location influences recurrence rates and treatment decisions.

Materials and Methods

An observational, descriptive cross-sectional association study was conducted ⁽¹¹⁾. The population consisted of adult patients with recurrent basal cell carcinoma who were treated at Hospital de Clínicas between 2020 and 2024. The variables included in the study were: sex (male, female); age (years completed); area (urban, rural); histological subtype (nodular, sclerodermiform, nodular infiltrative, infundibulocystic); anatomical region (labial, nasal, right malar, right infraorbital, among others); grouped anatomical region (labial, nose, malar, temple, among others); time (years elapsed between treatments); first treatment (initial procedures such as direct closure, graft, flap, cryotherapy); second treatment (procedures for recurrence such as radiotherapy, direct closure, or no additional treatment); year of first intervention (year of the first surgical intervention); year of second intervention (year of the second surgical intervention); follow-up (yes, no); place of first surgery (type of institution where

it was performed: clínicas, other center). For statistical analysis, SPSS version 29 software was used, applying descriptive statistics to all variables.

The study complies with the principles of research ethics and with the principles of the Declaration of Helsinki. The study was approved by the Department and Service of Dermatology of the Faculty of Medical Sciences of the National University of Asunción, in accordance with the current provisions of the Research Directorate.

Results

A total of 18 patients were included, with ages ranging from 28 to 91 years, with a mean age of 61.3 ± 17.43 years; 55.6% were male. The 83.3% were from urban areas. Sociodemographic characteristics are detailed in Table 1. Regarding diagnosis, the most frequent subtype was nodular (55.6%), followed by nodular infiltrative (22.2%); the remaining subtypes are specified in **Figure 1**.

La región anatómica más frecuente fue nariz con 27,8 %, malar con 16,7 % y sien con 16,7 %, las zonas de afectación restantes están detalladas en la **Tabla 2**.

The time interval between the first and second surgical interventions ranged from 6 months to 5 years, with a mean of 2.63 ± 1.59 years. In previously untreated patients, the most frequent initial approach was surgical excision (61.1%). The most commonly used technique was simple excision with direct closure, followed by flaps (16.7%), grafts (16.7%), and cryotherapy (5.6%).

Regarding the treatment of recurrence, the most commonly used therapeutic option was again surgical excision. The preferred reconstruction technique was direct closure (68.8%), followed by flaps (12.5%). A total of 12.5% of patients were referred to radiotherapy. The remaining 5.6% of cases were referred to the plastic surgery department, as they required extensive reconstruction under general anesthesia. The

first surgical intervention was performed at Hospital de Clínicas in 77.8% of cases. Only 27.8% of patients completed postoperative follow-up.

Table 1. Sociodemographic characteristics of the included patients (n=18).

Characteristics	Frequency	Percentage
Age		
28 – 45 years	5	27,8
46 – 60 years	3	16,7
61 – 75 years	5	27,8
76 – 91 years	5	27,8
Sex		
Male	10	55,6
Female	8	44,4
Area		
Urban	15	83,3
Rural	3	16,7

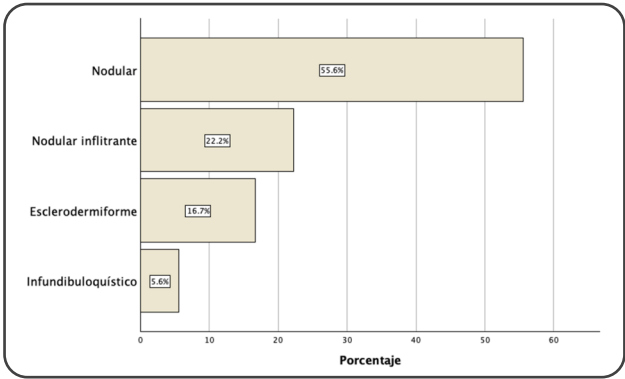


Figure 1. Histological subtype of patients included in the study (n=18).

Table 2. Región anatómica del carcinoma en los pacientes incluidos (n=18).

Region	Frequency	Percentage
Nose	5	27,8
Malar	3	16,7
Temple	3	16,7
Medial canthus of the eye	2	11,1
Nasolabial fold	1	5,6
Lip	1	5,6
Lower eyelid	1	5,6
Ciliary region	1	5,6
Infraorbital region	1	5,6

Discussion

The cohort consisted of 18 patients with a mean age of 61.3 years, predominantly male (55.6%) and largely from urban areas (83.3%). This demographic distribution aligns with findings from several studies indicating a higher incidence of certain cancers in urban populations compared to rural ones, often attributed to factors such as greater exposure to carcinogens, lifestyle differences, and better access to healthcare services ^(12,13).

The predominance of nodular BCC and nodular infiltrative BCC as histological subtypes is consistent with the literature that highlights these types as common forms of skin cancer, particularly in older populations. For example, studies have shown that non-melanoma skin cancers, including basal cell carcinoma and squamous cell carcinoma, are frequent in older adults, and the average age at diagnosis gradually increases over time due to longer life expectancy and greater sun exposure ^(15,16). Specifically, 55.6% of cases were classified as nodular, while 22.2% were nodular infiltrative. This is consistent with findings from other studies reporting that nodular basal cell carcinoma is the most common subtype across various populations ^(16,17). This higher frequency may be attributed to its biological behavior and the anatomical locations where it commonly arises, as nodular BCCs are typically found in sun-exposed areas, which correlates with the high incidence of skin cancers in populations with significant sun exposure ^(18,19).

In terms of anatomical distribution, the regions most frequently affected in this study were the nose (27.8%), the malar area (16.7%), and the temple (16.7%). This distribution is consistent with the literature highlighting the nose as a common site for skin cancers, particularly basal cell carcinoma and squamous cell carcinoma ^(20,21). The nose as a frequent site of skin malignancies may be attributed to its exposure to ultraviolet (UV) radiation, a major risk factor ⁽²²⁾. Additionally, studies have shown

that the anatomical characteristics of the nose, including skin thickness and vascularization, may influence the behavior of skin cancers, making it a common site for such lesions ⁽²³⁾.

The treatment modalities employed in this cohort also reflect common practices in the management of skin cancer. The initial treatment of choice was surgical, with simple excision and direct closure being the most frequently used technique (61.1%), which aligns with standard surgical approaches for non-melanoma skin cancers ⁽²⁴⁾. The use of flaps and grafts indicates consideration of more complex defects, which is consistent with the literature emphasizing the importance of reconstructive options in facial skin cancer surgery ^(25,26). Subsequent treatments, including flap and graft procedures, indicate a progression in the complexity of care as the disease may have advanced or recurred, which is consistent with treatment patterns observed in larger studies ^(27,28,29). The mean interval between the first and second surgical interventions (2.63 years) suggests a significant follow-up period, which is crucial for monitoring recurrence and managing complications, as highlighted in the literature ^(13,30).

Author's contributions:

María Noemí Da Ponte Rojas: conceptualization, study design, drafting of the manuscript.

Diana Milagros Narváez: data collection, analysis of results, critical review of the manuscript.

Arnaldo Benjamín Aldama Caballero: supervision, scientific validation, final review of the manuscript.

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