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Basosquamous Carcinoma on the Chin: Case Report

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Abstract

Basosquamous carcinoma is a rare non-melanocytic skin cancer that combines characteristics of basal cell carcinoma and squamous cell carcinoma, the most common skin malignancies. It is an aggressive lesion with a risk of local recurrence and distant metastasis, which distinguishes it from other carcinomas. Consequently, there are uncertainties regarding its classification, diagnosis, and pathogenesis, which impact its management. This report describes the case of 75-year-old male with a history of multiple treated skin cancers presented for a dermatology follow-up at the Integrated Health Complex of Universidade Regional de Blumenau. On initial evaluation, a suspicious ulcerated chin lesion was biopsied, revealing infiltrative basosquamous carcinoma invading the deep reticular dermis, with involvement of the deep and circumferential surgical margins. A second excision confirmed tumor infiltration into the deep skeletal muscle, prompting referral to oncologic surgery. Six months later, the patient showed good postoperative recovery and was placed on a biannual follow-up plan. This case study highlights the importance of routine dermatological examination and histopathological examination in the accurate diagnosis of the lesion and appropriate referral to a specialized service. Furthermore, this case underscores the aggressive nature and diagnostic challenges of basosquamous carcinoma. Thus, early identification and complete excision with clear margins are essential to minimize complications. Multidisciplinary collaboration—including dermatologists, pathologists, and surgical teams—plays a pivotal role in ensuring optimal patient outcomes through coordinated and informed care.

Keywords: *Carcinoma, Basosquamous. Dermatology. Skin Neoplasms. Diagnosis, Differential. Carcinoma, Squamous Cell. Carcinoma, Basal Cell. Case Reports.*

1. Introduction

Basosquamous carcinoma (BSC) is a rare (1.7–2.7%) non-melanocytic skin cancer that combines characteristics of basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), the most common skin malignancies. It is an aggressive lesion with a risk of local recurrence and distant metastasis (5–10%), which distinguishes it from other carcinomas.[1] Consequently, there are uncertainties regarding its classification, diagnosis, and pathogenesis, which impact its management.

Previous studies have demonstrated the Hedgehog (Hh) signaling pathway - responsible for tissue maintenance and regeneration - as the main pathogenic mechanism of BSC. This pathway is present in 45% of tumors derived from basal BCC, with more aggressive features. Another case report from a Brazilian oncology hospital describes a patient with BSC on the left shoulder, presenting as an ulcerated lesion that later required shoulder amputation with preservation of the humeral head, as well as cervical lymphadenectomy. This highlights the extent such a lesion can reach when treatment is delayed.[2]

In dermoscopy, features of both known carcinoma types are present, including unfocused arborizing vessels, whitish areas, keratinized regions, ulcerations, blood crusts, and bluish-gray spots. The overlap of BCC and SCC criteria, along with the clinical characteristic of a long-standing nodule that has ulcerated, raises suspicion for BSC. However, due to its clinical similarity to other non-melanoma skin cancers, BSC diagnosis is confirmed through

histopathological analysis.[3] In this examination, following a superficial biopsy of the lesion, the presence of both BCC and SCC is observed, with a transition zone or an intermediate differentiation stage between them. Collision tumors and keratinizing SCC are important differential diagnoses during histopathological interpretation. Immunohistochemistry can also identify specific markers of BCC and SCC, with a decline in Ber-EP4 (a monoclonal antibody positive in BCC) within the transition zone as it approaches areas with squamous cells.

Surgical resection remains the first-line treatment for basosquamous carcinoma (BSC), a rare and aggressive form of nonmelanoma skin cancer that exhibits characteristics of both basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). Given its high recurrence rate and potential for metastasis, achieving clear histologic margins through surgical excision is crucial.[4] That said, complete excision with Mohs surgery is essential to prevent recurrence, especially in lesions located in areas such as the eyelids.[5] In this type of surgery, with the dermatologist acting as both surgeon and pathologist, it is possible to define margins, lesion depth, and perform reconstruction in a single procedure.[6,7] Still, other surgical and treatment options may be considered: wide surgical excision, sentinel lymph node biopsy, radiotherapy, or chemotherapy are therapeutic options that may even be combined, depending on the clinical case.[4]

Therefore, it is crucial to recognize that, despite its rarity, BSC shares clinical similarities with other carcinomas and exhibits a certain degree of aggressiveness, making it a subject of study for accurate lesion biopsy, differentiation, and diagnosis.[8] Lesions can appear as a large ulcerating lesion at the affected site, with extensive depth and spread.[9] Given this, it is possible to correlate this type of tumor with rapid growth and invasive resection when already advanced. Furthermore, diagnosis based solely on histopathological analysis was essential in all studied cases to rule out differential diagnoses.

All these efforts aim to ensure the best treatment and prognosis for affected patients. This article aims to review the current literature on basosquamous carcinoma, focusing on its accurate diagnosis and management.

2. Case Report

A 75-year-old male patient, diagnosed with multiple skin cancers (SCC and BCC) (ICD C44.3) over recent years and subsequently treated, returned for a dermatology follow-up appointment at the Integrated Health Complex of Universidade Regional de Blumenau, on 11/21/2023. During the first visit, a suspicious ulcerated lesion was noted in the chin and biopsied for dermatopathological analysis. The patient reported a history of occupational sun exposure without sunscreen use. He denied pruritus, bleeding, fever, or sunburn. All potentially identifying details have been omitted or anonymized to ensure the patient's privacy, in compliance with institutional and ethical standards.

The histopathology report from a chin biopsy performed on 10/16/2023 confirmed an infiltrative basosquamous carcinoma extending into the deep reticular dermis, with no observed vascular or perineural invasion. The affected skin consisted of irregular solid nests of polygonal, basaloid cells with slightly enlarged, hyperchromatic nucleus and mild pleomorphism, displaying peripheral palisading, occasional artifact clefts around the neoplastic nests, and isolated focus of concentric keratinization. The deep surgical margin and two circumferential margins were compromised by the neoplasm.

A second dermatological surgery was performed for tumor excision, with a subsequent histopathology report dated 11/09/2023 revealing malignant infiltration extending into the deep skeletal muscle, with one of the shortest circumferential margins and the corresponding deep dermal portion still affected.

The patient was then referred for oncologic surgery, where additional margin excision and a flap reconstruction were performed on 04/30/2024. The biopsy from this procedure demonstrated dermal fibrosis with chronic granulomatous foreign body-type inflammation and no residual neoplasia at the surgical margins. After six months, the patient returned for a follow-up oncology consultation, showing good postoperative healing with no complaints. He was then placed on a biannual follow-up plan.

3. Discussion

Histological sections of the first biopsy performed on the patient reveal a cutaneous epithelial neoplasm composed of two distinct components. The first component consists of basaloid cell clusters forming nodular and sometimes irregular arrangements, with peripheral palisading. A retraction artifact is observed between the cellular clusters and the

stroma, with focal deposition of mucinous material. These morphological findings are suggestive of basal cell carcinoma.[10] The second component is composed of irregular clusters of polygonal cells with abundant eosinophilic cytoplasm and the presence of intercellular bridges. Additionally, dyskeratotic cells, keratin pearls, and occasional mitotic figures are observed. These morphological findings are suggestive of squamous cell carcinoma.

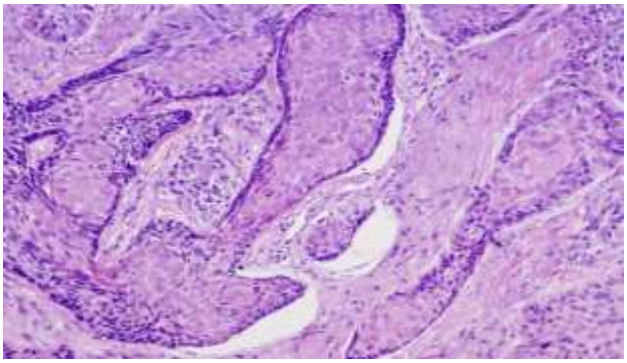

Figure 1. *Basal Cell Carcinoma. Hematoxylin-eosin staining, 20x magnification.*

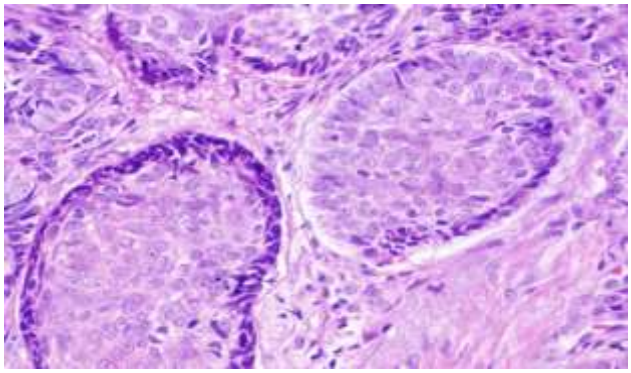

Figure 2. *Nodular Basal Cell Carcinoma. Hematoxylin-eosin staining, 40x magnification.*

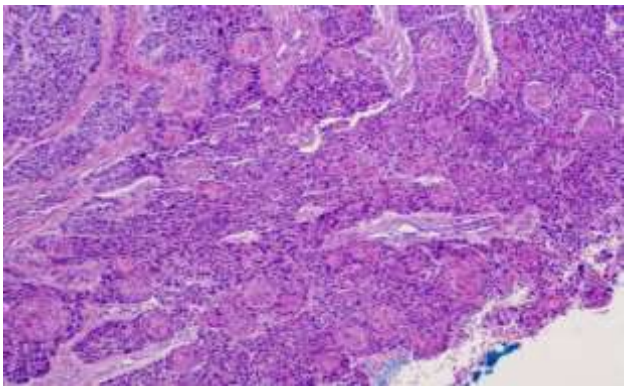

Figure 3. *Squamous Cell Component. Hematoxylin-eosin staining, 20x magnification.*

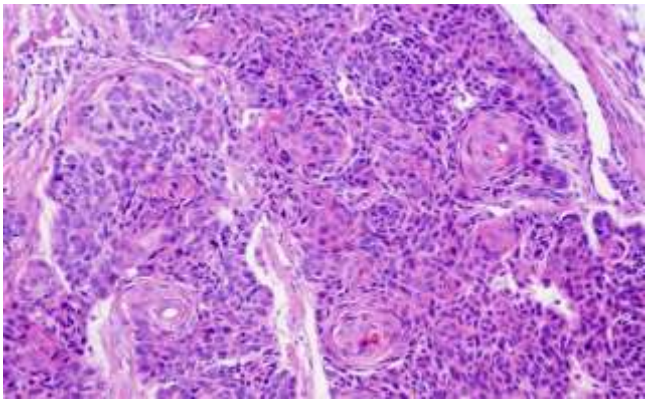

Figure 4. *Squamous Cell Component. Hematoxylin-eosin staining, 40x magnification.*

4. CONCLUSION

This case study highlights the importance of routine dermatological examination for the early detection of skin neoplasms, reducing morbidity and mortality. Additionally, it demonstrated the crucial role of histopathological examination in the accurate diagnosis of the lesion and appropriate referral to a specialized service. This approach enhances diagnostic precision and the efficiency of different medical specialties, ultimately contributing to a better prognosis for the patient.

Furthermore, this case underscores the aggressive nature and diagnostic challenges of basosquamous carcinoma (BSC), a rare hybrid tumor exhibiting features of both basal and squamous cell carcinomas. Given its higher potential for recurrence and metastasis compared to basal cell carcinoma, timely surgical intervention remains critical. Thus, early identification and complete excision with clear margins are essential to minimize complications. Multidisciplinary collaboration—including dermatologists, pathologists, and surgical teams—plays a pivotal role in ensuring optimal patient outcomes through coordinated and informed care.

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