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CASE REPORT

An Atypical Presentation of Basal Cell Carcinoma: A Giant Verrucous Ulcer on the Upper Arm

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Abstract: Giant basal cell carcinoma (GBCC) is a rare and clinically aggressive subtype of BCC. We report an unusual case of a 71-year-old male with a 30-year history of a slowly enlarging tumor on the extensor surface of his left upper arm. The lesion presented as a giant, irregular ulceration measuring 12×10 cm with coalescing verrucous borders. Histopathological examination confirmed the diagnosis, revealing characteristic nests of basaloid cells with peripheral palisading and stromal retraction artifact in the dermis. Immunohistochemical staining was positive for Ber-EP4, CK15, Ki-67, Bcl-2. The patient was diagnosed with GBCC with Ulcer. Staging workup with computed tomography (CT) of the left humerus and axillary lymph node ultrasonography showed no evidence of metastasis. The patient was successfully treated with slow Mohs micrographic surgery. Subsequent histopathological assessment of the excised specimen confirmed tumor-free margins. At 12-month follow-up, no local recurrence was observed. This case highlights the importance of recognizing GBCC in uncommon locations and demonstrates the efficacy of slow Mohs technique for achieving complete excision in large, complex tumors.

Keywords: basal cell carcinoma, BCC, slow Mohs micrographic surgery, metastasis, standardized follow-up

Introduction

BCC is the most common cutaneous malignancy, predominantly affecting elderly individuals and frequently occurring in sun-exposed areas such as the face and neck. The development of BCC is closely associated with long-term, cumulative ultraviolet (UV) radiation exposure and genetic mutations. Dermoscopy is a widely utilized clinical tool for the detection of BCC.[1] Additional non-invasive diagnostic modalities include, but are not limited to, reflectance confocal microscopy (RCM), optical coherence tomography (OCT), and photofluorescence diagnosis (PFD). Nevertheless, histopathological examination remains the gold standard for the definitive diagnosis of BCC. Although BCC rarely metastasizes, early diagnosis and treatment are essential due to its locally invasive and destructive behavior. Surgical intervention is the primary treatment; however, adjunct modalities such as laser therapy, electrodesiccation, and cryotherapy may be indicated depending on disease characteristics and clinical severity.[2]

GBCC and locally advanced basal cell carcinoma (laBCC) represent distinct and clinically challenging subtypes of BCC, characterized by complex management requirements. GBCC is typically defined as a lesion exceeding 5 cm in diameter, with a propensity for invasion into adjacent and deep tissues, accompanied by an elevated risk of recurrence.[3] LaBCC is defined as a lesion not amenable to curative treatment with surgery or radiotherapy,[4] often necessitating systemic therapy. The management of both subtypes is complicated by their prolonged clinical course and therapeutic complexity, posing significant challenges in clinical practice. This article presents a case of a giant ulcerated BCC on the upper extremity with a 30-year history, discussing its clinicopathological characteristics, diagnostic approach, and treatment strategies, with the aim of improving clinicians' understanding and management of these rare and complex BCC subtypes.

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Clinical Information

A previously healthy 71-year-old man brought to the dermatology clinic with a 30-year history of chronic ulcer on his left upper arm. He first noted a 3-mm black papule at the site that progressed over six months to a 1-cm nodule with with central ulceration. The lesion subsequently enlarged slowly and asymptomatically over three decades, during which he did not seek medical attention. Physical examination revealed a 12×10 cm irregularly ulcer with coalescing verrucous borders on the extensor skin of left upper arm (Figure 1). Notably, there was no regional lymphadenopathy. The incisional biopsy finding revealed nests of basaloid cells with peripheral palisading, accompanied by characteristic retraction artifact between tumor aggregates and the surrounding stroma in the dermis (Figure 2A). Immunohistochemical demonstrated strong positivity for Ber-EP4 and CK15, alongside a Ki-67 proliferation index >20% and diffuse Bcl-2 expression (Figure 2B–E). Given these findings, the patient received a diagnosis of GBCC with Ulcer. After metastatic workup including computed tomography (CT) of the left humerus and ultrasonography of the left axillary lymph nodes revealed no evidence of dissemination. The patient subsequently underwent complete tumor excision using the slow Mohs micrographic surgery with 1 cm margins. Histopathological examination of the surgical

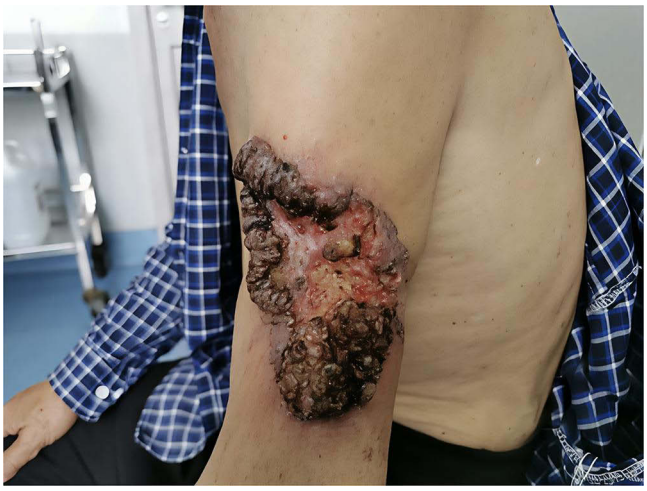

Figure 1 Clinical image on the left upper arm.

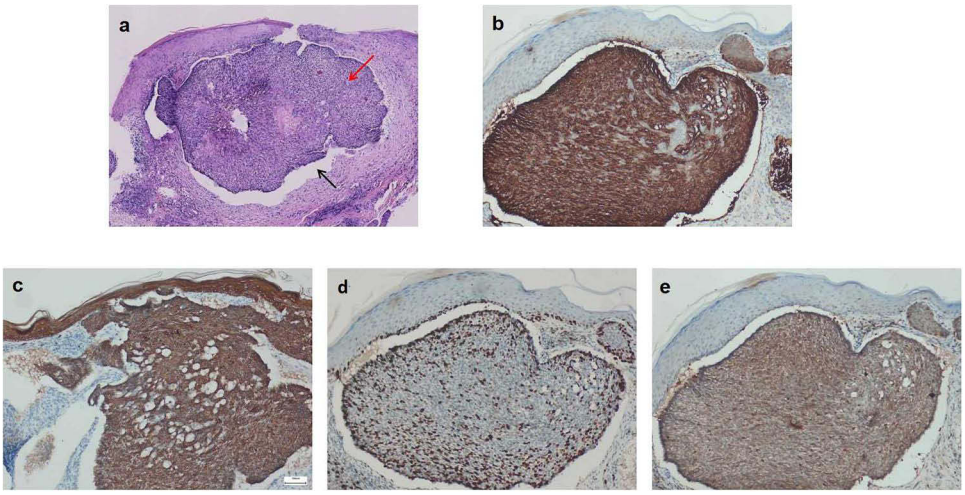

Figure 2 (**a**) Histopathologic examination showed nests of basaloid cells with peripheral palisading (red arrow), accompanied by characteristic retraction artifact (blue arrow). (**d** and **e**) Immunohistochemical staining: (**d**) Ber-EP4 (+), (**c**) CK15 (+), (**d**) Ki-67 (+, proliferation index >20%), (**e**) Bcl-2 (+).

specimen confirmed complete excision of the tumor. The patient was maintained on a standardized follow-up protocol and showed no evidence of recurrence at the 12-month evaluation.

Discussion

BCC, the most common cutaneous malignancy, demonstrates a predilection for individuals beyond the fourth decade of life. The global incidence exhibits a persistent upward trajectory. Its pathogenesis is multifactorial, involving ultraviolet radiation exposure and genetic alterations, particularly alterations in the sonic hedgehog (Hb) pathway.[4] Emerging evidence implicates matrix metalloproteinases (MMPs) in the pathogenesis of BCC.[5] Notably, recent epidemiological studies highlight a concerning rise in BCC incidence among adults under 40 years, underscoring the imperative for enhanced sun protective measures in younger populations.

BCC exhibits diverse clinical manifestations, with up to 66 subtypes recognized. To facilitate clinical management, the European Consensus Project has categorized BCC into several simplified subtypes:[6] infiltrative, nodular, superficial, infundibulocystic, fibroepithelioma, basosquamous, and sarcomatoid differentiation. Among these, the nodular subtype is the most common, typically presenting as asymptomatic, pearly-edged papules or plaques with characteristic telangiectasia and a waxy surface, predominantly occurring on sun-exposed facial regions.

GBCC is a rare subtype defined by a lesion diameter greater than 5 cm—regardless of histological subtype, local invasion, or metastatic status—and is classified as a T3 tumor. GBCC commonly arises on the trunk and head/neck regions, where it often manifests as a large ulcerated plaque or nodule. Due to its slow growth, it may be overlooked by patients.

The present case illustrates an exceptional clinical scenario: a giant (12 × 10 cm), chronically ulcerated tumor with prominent coalescing verrucous borders localized to the lateral upper arm – a relatively sun-protected site. Such atypical presentations may simulate cutaneous squamous cell carcinoma (cSCC) or melanoma.

CSCC is the second most common malignant tumor of keratinocyte origin, predominantly affecting middle-aged and elderly individuals in sun-exposed areas. It typically presents as hyperkeratotic plaques, nodules, or ulcerated lesions, often accompanied by scaling or crust formation. Histopathological features include downward invasive growth of atypical squamous cell nests, with characteristic keratin pearl formation and intercellular bridges.[7] These distinct clinical and pathological features allow cSCC to be readily distinguished from the present case.

Melanoma predominantly affects middle-aged to elderly individuals, with predilection for sun-exposed areas and acral sites (palms and soles). Lesions are characterized by irregular borders, blue-black pigmentation. There is a clear positive correlation between the frequency of ulceration in melanoma and tumor invasion depth. Ulceration is relatively rare in superficial tumors (Breslow ≤1.0 mm) but highly frequent in deep tumors (Breslow >4.0 mm). Histopathology reveals asymmetric proliferation of atypical melanocytes in the epidermis and dermis, often with melanin deposition.[8] The above characteristics can help in the identification of basal cell carcinoma, and immunohistochemistry may be utilized when necessary.

Most BCC are associated with a favorable prognosis; however, recurrence or metastasis may occur in a small proportion of patients. Recurrence risk is determined by clinical and histopathological subtypes, along with factors including tumor location, size, patient age, immune status, sex, and treatment modality. Based on these parameters, BCC are categorized into high- and low-risk groups to inform clinical management. High-risk BCC classification is assigned if any of the following features are present:[9] lesion size ≥2 cm on the trunk or extremities; location in the head, neck, hands, feet, pretibial, or anogenital regions (irrespective of size); ill-defined borders; recurrent tumor; immunosuppression; previous radiotherapy; infiltrative growth pattern; or perineural invasion. Cases not fulfilling any of these criteria are deemed low-risk BCC. Low-risk BCC may be managed with modalities such as standard excision, curettage and electrodesiccation, laser therapy. Standard excision is frequently preferred as it enables histopathological margin evaluation and is associated with comparatively lower recurrence rates.[10] High-risk BCC warrant interventions including Mohs micrographic surgery, the slow Mohs micrographic surgery, or radiation therapy. Owing to its high curative efficacy, tissue preservation advantages, and capacity for complete intraoperative margin assessment, Mohs micrographic surgery is recommended both for reexcision after positive margins in low-risk BCC treated with standard excision and as first-line surgical treatment for locally advanced high-risk BCC.[9] Systemic therapy is indicated for LaBCC and metastatic

BCC (MBCC), with Hedgehog pathway inhibitors (HHIs) serving as the cornerstone of management.[11] Alternative options such as itraconazole or paclitaxel are available but supported by limited evidence.[10]

Surgical excision with margins of ≤1 cm is generally sufficient for the effective treatment of GBCC. However, a subset of cases may demonstrate aggressive growth patterns or even metastasis, which are often associated with high-risk histological features. Treatment strategies should therefore be tailored to the individual patient's condition and risk profile. Slow Mohs micrographic surgery represents a modified Mohs technique that offers greater clinical feasibility while maintaining comparable efficacy to Mohs micrographic surgery, with demonstrated superiority over SE and equivalent recurrence rates.[12] Given this patient's presentation with an extensive, long-standing ulcerated tumor, metastatic evaluation was imperative. Metastasis was excluded through CT and ultrasonography. Slow Mohs micrographic surgery was performed successfully, followed by implementation of standardized follow-up protocol to facilitate early detection of local recurrence or secondary malignancies. The patient was counseled on comprehensive sun protection measures and instructed to reinforce these measures continuously.

Conclusion

BBC, while highly common and typically curable, can occasionally present in highly atypical forms, such as the giant ulcerative tumor with verrucous borders on the upper arm described here. This case underscores the importance of considering BCC in the differential diagnosis of large, chronic, ulcerative lesions even on less commonly affected sites. Histopathological examination remains essential for definitive diagnosis. Slow Mohs micrographic surgery represents an effective treatment modality for extensive lesions. Early recognition of atypical presentations, prompt histopathological confirmation, appropriate surgical intervention, and diligent follow-up are paramount for optimal patient outcomes.

Ethics and Consent Statements

Our institution does not require ethical approval for reporting individual cases or case series. We have obtained written informed consent from the patient to include his anonymized information, including images, in this publication.

Disclosure

The authors have no conflicts of interest to declare in this work.

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