CASE REPORT

Basal Cell Carcinoma of The Skin Diagnostic Challenges: A Case Report.

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Submitted: 22/04/2024. Revised edition: 05/05/2024. Accepted: 13/05/2024. Published online: 01/06/2024.

Abstract

Basal cell carcinoma (BCC) is the most prevalent skin cancer, with the reported incidence within the country remaining relatively low. This trend may lead to instances where the condition is underestimated, particularly when skin lesions persist over an extended period. Consequently, there is a risk of overlooking the potential for malignant transformation of chronic non-healing ulcers, especially as the emphasis often shifts to treating skin infections, a common complication in patients with comorbid conditions such as diabetes mellitus, which itself is a risk factor for delayed wound healing. Although squamous cell carcinoma (SCC) is the most frequent malignant transformation arising from chronic wounds, this case report highlights BCC as a possibility. We also emphasise the importance of early referral as opposed to delayed intervention, as timely management can significantly impact patient's functional and cosmetic outcomes as well as their psychological well-being and that of their family members.

Keywords: *Basal cell carcinoma; psychological well-being; skin neoplasms; wound healing,*

Introduction

Basal cell carcinoma (BCC) is a type of malignant epithelial neoplasm of skin [1]. While BCC itself is not lethal, it can lead to significant functional and cosmetic complications due to localised tissue invasion, particularly as most lesions occur on the face and head [1]. Prolonged sun exposure is the most common risk factor, often resulting in lesions on the head and neck. Delayed diagnosis may lead to delayed treatment, thereby causing complications. In this case report, we present a 71-year-old man with undiagnosed large BCC despite undergoing regular medical follow-up for his underlying diseases.

Case report

A 71-year-old man, with a ten-year history of Type 2 diabetes mellitus(T2DM), hypertension, and dyslipidaemia, was compliant with treatment and follow-up at his primary health care clinic. For more than ten years, he had a skin lesion on the left side of his head. It first developed after a sharp plant punctured the area, causing an abrasion wound. It began as a small lesion but gradually grew over the years. Despite regular follow-up for his underlying diseases, the lesion was unnoticed, and no referral was made for further evaluation. However, the lesion and ulcer grew rapidly during this one-year period. Initially, it was treated as an infected wound, and several courses of antimicrobial therapy were administered, but the lesion did not resolve. The lesion bled easily, especially during friction. He denied a history of weight and appetite loss, and there was no family history of malignancy. After several months of changing antimicrobial regimens without improvement of the skin lesion, he was referred to dermatology department for skin biopsy and further management.

On physical examination, there was a 4 cm x 6 cm hyperpigmented warty plaque with pearly nodules at the left scalp periphery. The centre of the lesion was erythematous and ulcerated. There was no pus discharge or active bleeding as seen in Figure 1. No palpable lymph nodes detected, and other system examinations were normal.

A skin biopsy was performed. The specimen consisted of a piece of greyish-brownish tissue measuring 10 x 6 x 5 mm, bisected and all submitted in one block. The histopathology examination revealed an intradermal tumour composed of nodules and islands of tumour cells with peripheral palisading nuclei, focally overlying the epidermis. The tumour cells exhibited mild to moderate nuclear pleomorphism, hyperchromatic nuclei with scanty cytoplasm, and frequently identified mitoses. Keratin cysts were also noted. The surrounding stroma showed fibromyxiod change with dense mixed inflammatory cells. Solar elastoses were present. Images of histopathology results are shown in Figure 2, 3 and 4. These findings were interpreted as nodular type of BCC. Therefore, our final diagnosis is nodular type of BCC at stage two.

Based on the diagnosis, local excision of the tumour was performed, and the lesion was in the healing process. Diligent wound dressing was applied to keep the wound clean, as diabetes mellitus may increase the risk of post-surgical infection. Regular surveillance was conducted to monitor possible recurrence.

Discussion

The incidence of BCC is rising worldwide[1] [2]. In Asia, skin cancer is the sixth most common cancer among men and the seventh most common among women, with non-melanoma skin cancer (NMSC) is currently the twelfth most common cancer in Malaysia[1]. To date, epidemiological data on the incidence of BCC in Malaysia are scarce[1]. The low incidence of BCC locally implies that primary health care providers may have relatively limited experience in diagnosing the disease[3]. In our case, although the size of lesion was large, it was confined to the local area only. Based on TNM classification, the lesion was categorised as stage two[4].

There are six types of BCC, namely nodular, pigmented, cystic, sclerosing or morphoeaform, superficial and naevoid[5]. The commonest type

is nodular type[5]. Diagnosis is based on histological findings. Microscopic examination of basal cell carcinoma typically reveals clusters of basal cells featuring minimal cytoplasm and enlarged, hyperchromatic nuclei, as well as apoptotic cells, all embedded within a fibromyxoid connective tissue, accompanied by spaces indicative of tumour shrinkage[6]. Upon microscopic examination for the subtype of nodular BCC, the findings include large nests or islands of malignant basaloid cells with a central, haphazard cell arrangement, with cells on the edges aligned in a palisade formation, a cleft emerging from the nearby tumour stroma, with or without the presence of amyloid deposits, and stroma composed of spindle cells within a mucoid or myxoid matrix. The cancerous cell clusters penetrate deeply into the dermal layer and apoptotic cells typically located in the central region. A distinguishing characteristic from other basaloid cutaneous tumours is the existence of a mucinous stroma [6]. This finding is similar in our case. BCC grows slowly and tends to be locally invasive but rarely metastasis[5] The head and neck are the most common sites involved [5]. BCC risk factors include genetics, ultraviolet light exposure, ionizing radiation, chemicals (e.g., arsenic), immunosuppression and phenotypical factors (e.g., light skin, light and red hair colour and light eye colour[7]. Trauma is also one of the contributing factors [7].

Malignant transformation of wounds and scars is a well-accepted concept, but the underlying mechanisms are still debated. BCC arising in scars or chronic wounds is known as scar tissue carcinomas[7]. The term Marjolin ulcer (MU) is often used to describe malignancy that arises in chronic wounds and cutaneous scars [7]. MU presents with a lesion that is ulcerative, hardened, or fails to heal as seen in this case[8] . Specific treatment guidelines for the management of Marjolin ulcers have not been established. Nonetheless, for lesions that appear on areas like the face, scalp, hands, feet, or areolae, where a better cosmetic result is desired, local excision might be taken into consideration [8]. In literature review, 71% of MUs were referred to as squamous cell carcinoma (SCC), 12% as BCC and 6% as melanoma [7] [9]. Most cases often show a chronic course, with an average of 32 years from injury to malignant development[7]. In this case, the patient had a skin lesion with a minor ulcer for ten years after trauma. Initially, the lesion grew slowly over the years and was disregarded. However, within this one-year period, the lesion began to expand rapidly and worsen. Changes in the wound appearance or chronicity should prompt a biopsy. According to Bazalinki et al, SCC is more frequently observed in chronic, non-healing wounds [7][10]. This case report shares the transformation of a non-healing ulcer into malignant and is diagnosed as BCC rather than SCC. This case report aims to raise awareness among primary care doctors of the need to suspect skin malignancy in all non-healing wounds and to consider referral to a tertiary centre for skin biopsy and further evaluation.

Additionally, the patient had Type 2 diabetes mellitus (T2DM), a condition that delays wound healing. Individuals with T2DM are prone to persistent ulcers, which are a predisposing factor for malignant changes[7][11]. T2DM is also a risk factor for certain types of cancer and has been associated with non-melanoma skin cancer[7][11].

Conclusion

BCC is the most prevalent skin cancer. Surprisingly, local data revealed a relatively low incidence of BCC presenting to primary health care clinics. Therefore, primary health care practitioners have less exposure to its diagnosis. This case report emphasizes the need for comprehensive patient examination from head to toe, even if they primarily visit for underlying disease management. This ensures that no potential abnormalities are overlooked and crucial for identifying possible skin malignancies at an early stage.

Conflict of interest

There was no conflict of interest.

Patient's consent for the use of images and content for publication

Informed consent was obtained from patient before the preparation of this case repot.

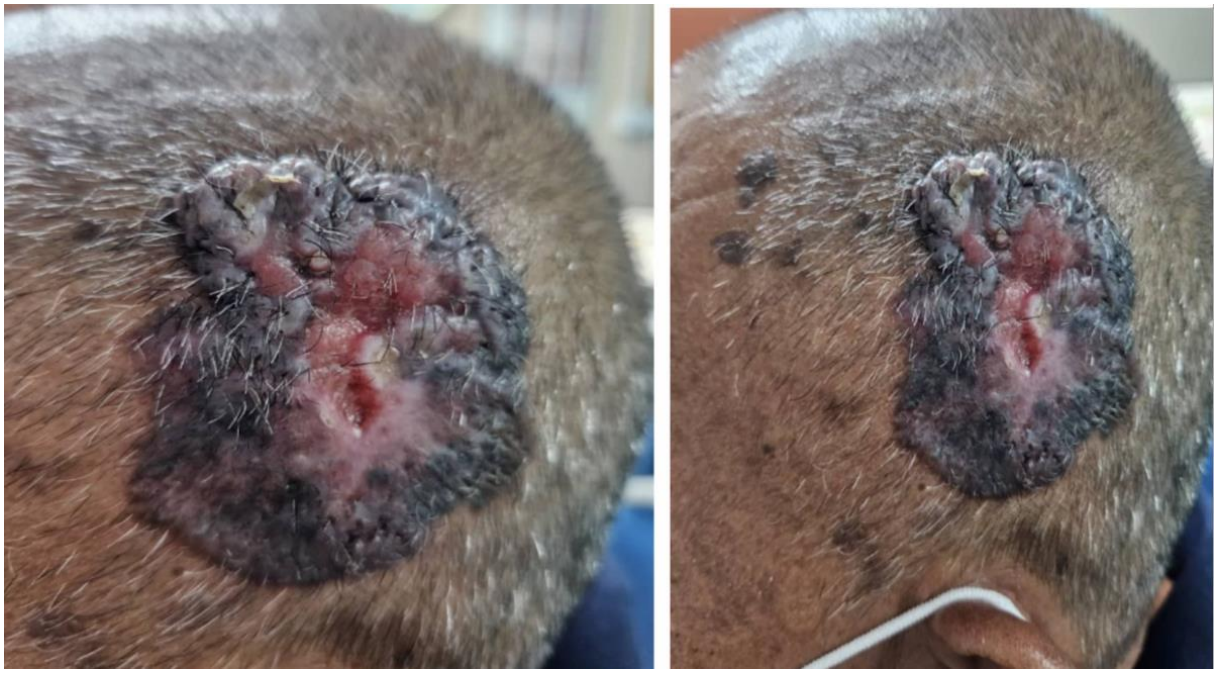

Figure 1. Hyperpigmented warty plaques with pearly nodules at the periphery. Its centre was erythematous and ulcerated.

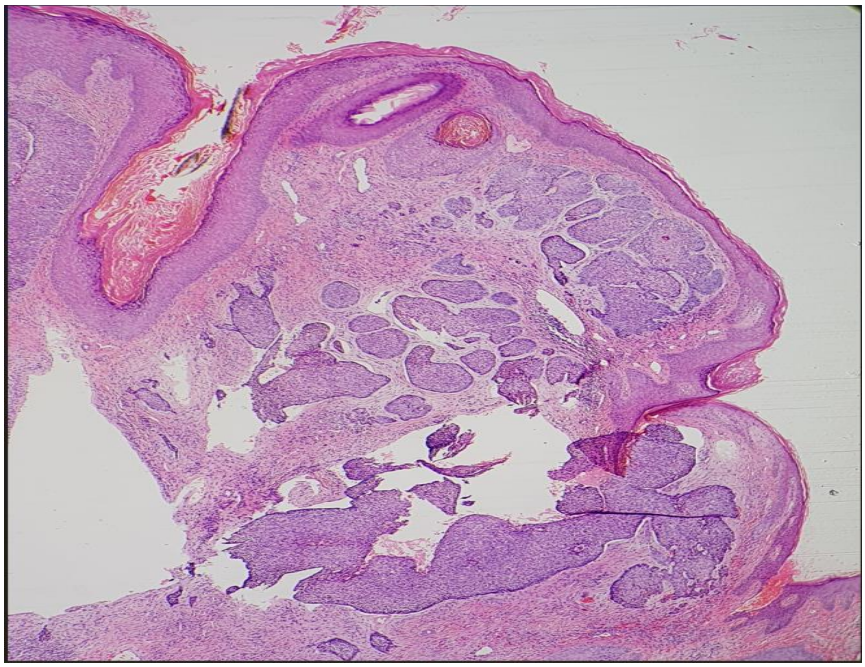

Figure 2. Skin tissue with intradermal tumour composed of nodules and islands of basaloid tumour cells with peripheral palisading nuclei. (4x magnification).

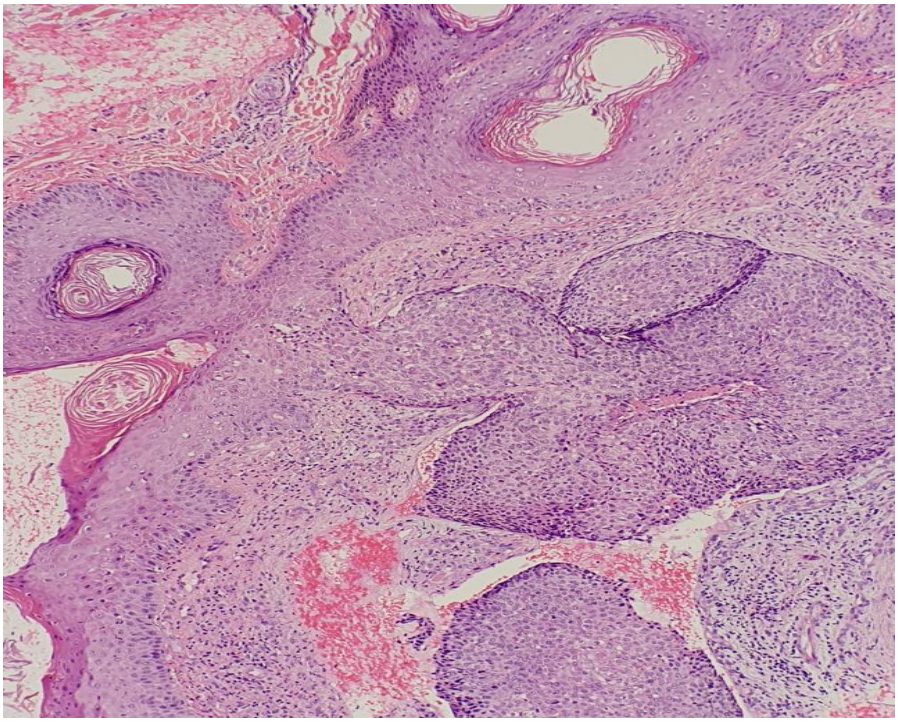

Figure 3. Tumour was focally attached to the epidermis. (10x magnification)

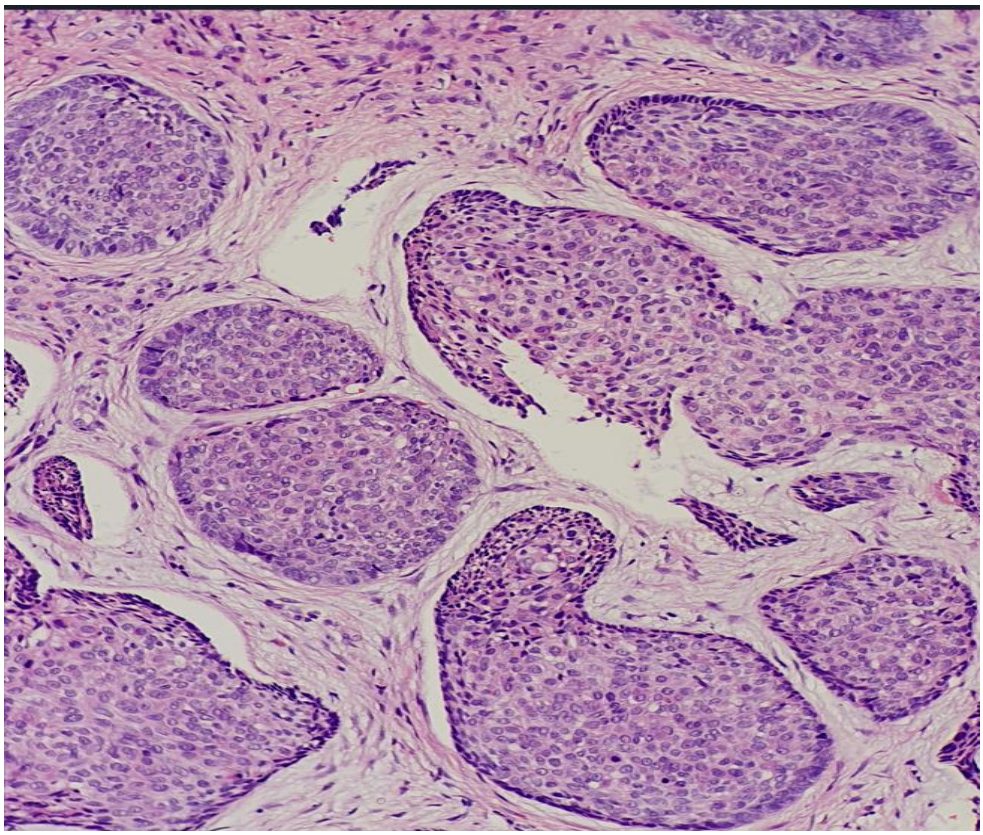

Figure 4. Tumour cells displayed mild to moderate nuclear pleomorphism, hyperchromatic nuclei with scant cytoplasm with cleft formation between tumour lobules and stroma. The surrounding stroma appeared fibromyxoid feature. (20x magnification).

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