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IP Indian Journal of Clinical and Experimental Dermatology

Journal homepage: www.ijced.org/

Case Report

Verrucous Bowen's disease: A case report of an unusual variant

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ARTICLE INFO

Article history:
Received 30-05-2024
Accepted 15-07-2024
Available online 04-09-2024

Keywords:
Intraepithelial carcinoma
Bowen's disease
Squamous cell carcinoma

ABSTRACT

Squamous cell carcinoma in situ, often known as Bowen's disease, is a type of intraepidermal carcinoma that is most frequently observed in the older population in places that are particularly exposed to the sun. The advancement of this neoplasm to invasive squamous cell carcinoma (SCC) occurs in fewer than five percent of instances, and it is often the case that it is indolent. An erythematous, crusty, and scaly plaque is the typical manifestation of Bowen's disease. However, reports have documented other rare presentations, including pigmented, atrophic, hypertrophic, or verrucous lesions. We present a case of a 72-year-old female patient who, over a period of four years, presented with a progressively increasing tumor on her left buttock. The clinical examination revealed a hyperkeratotic plaque that was well-defined, raised, verrucous, and crusted. The plaque measured 8 x 10 cm. The histopathological examination revealed a diagnosis of Bowen's disease, which was developing into squamous cell carcinoma. The plastic surgeon carried out a wide local excision, followed by full-thickness skin grafting. We hereby are reporting this case for its unusual presentation in a sun-protected area, its rapid progression to squamous cell carcinoma with no evidence of immunosuppression, and how early diagnosis, timely invasion, and treatment play a key role in avoiding metastasis.

1. Introduction

In 1912, John Bowen was the first person to define BD, which is an intraepithelial carcinoma that is extremely uncommon and progresses over time.[1] In extragenital lesions, the risk of developing invasive carcinoma ranges from three to five percent, while in genital lesions, the risk is ten percent.[2] It typically manifests itself in places that are exposed to the sun, like the head, neck, upper and lower limbs. From a clinical standpoint, it appears as a single, clearly delineated erythematous plaque that is covered in scales. Variations that are verrucous, atrophic, hyperkeratotic, and pigmented are examples of clinical variances that are uncommon. Here we report a case for its rarity of presentation in an uncommon sun-protected area, and its rapid progression to squamous cell carcinoma without any evidence of immunosuppression. An oncologically safe and function-preserving surgery effectively managed the case.

2. Case Report

An elderly female aged 75 years presented with complaints of a gradually expanding, itchy, thick raised lesion with crusts over her left buttock for 4 years. There was no history of fever spikes, chronic cough, weight loss, pain over the lesion, bleeding from the lesion, trauma preceding the lesion, exposure to chemicals and toxins, or a history of drug intake or associated systemic illness. There is no history of previous episodes of such lesions or similar complaints

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https://doi.org/10.18231/j.ijced.2024.062

in the family. The patient was initially treated with topical antifungals, for which there was no response.

On cutaneous examination, a well-demarcated hyperkeratotic, hyperpigmented, raised, verrucous, scaly, and crusted plaque measuring 8 x 10 cm was present over the left lateral gluteal region (Figure 1). The lesion was indurated and non-tender, with no local rise in temperature. No inguinal lymph node swelling was noted on either side. Based on history and cutaneous examination, the differential diagnoses that were considered were Bowen's disease, tuberculosis verruca cutis, lupus vulgaris, localized sporotrichosis, and majocchi's granuloma.

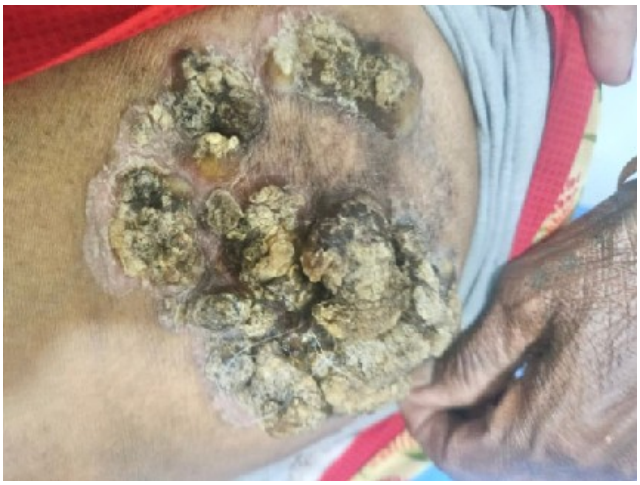

Figure 1: Pre-operative image showing verrucous Bowen's disease on left thigh.

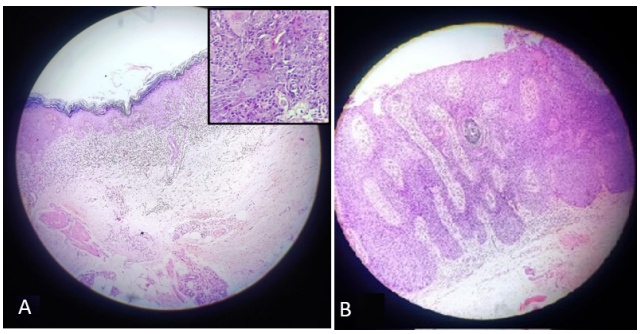

Figure 2: (**A1**) Histopathology image showing disorganized epidermis with irregularity. (A2) Atypical tumor cells with round to oval nuclei with moderate to abundant cytoplasm; **B:** Hyperkeratosis with broad and elongated rete ridges

All standard investigations, such as a comprehensive blood analysis, renal function tests, liver function tests, and a chest X-ray, yielded normal results. We performed CBNAAT to rule out cutaneous tuberculosis, and the results were negative. KOH examination was negative.

A punch biopsy was performed from the center of the lesion and sent for histopathological examination, which

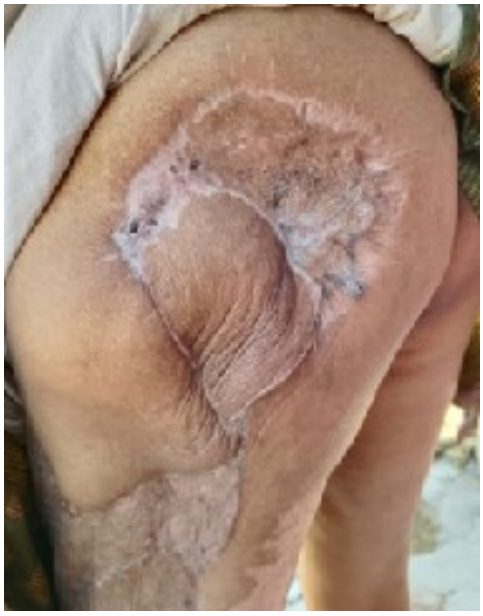

Figure 3: Post-operative image six months after surgery.

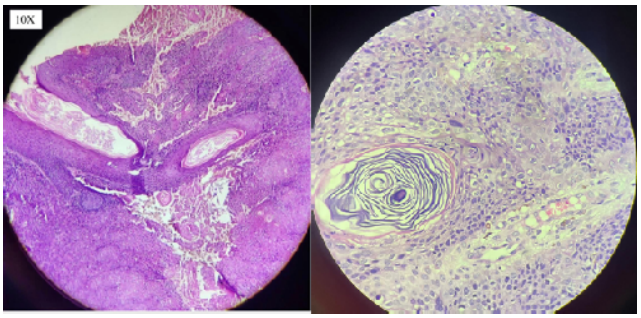

Figure 4: A: Histopathology image showing breech in the basement membrane at focal site with tumor cells proliferating into dermis. **B:** Keratin pearls suggestive of SCC.

demonstrated a tumor comprised of hyperplastic stratified squamous epithelium characterized by thick acanthotic papillae with inconspicuous fibrovascular cores with hyperkeratosis and broad and elongated rete ridges. The individual tumor cells are round to polygonal, with round to oval nuclei, moderate to abundant eosinophilic cytoplasm with minimal nuclear atypia, prominent intercellular bridges, increased mitotic figures, and moderate to dense lymphoplasmacytic infiltration in the dermis below the basement membrane. The tumor is not infiltrated into the dermis. (Figure 2)

Based on histopathology, the diagnosis of Bowen's disease was confirmed. After being advised of surgical treatment, the patient followed up. She returned six months later and was subsequently managed by a plastic surgeon, who performed a complete wide excision with normal skin margins and skin grafting. The patient healed well thereafter

(Figure 3).

Figure 4, shows the presence of abnormal cells with darkly stained nuclei, lack of normal arrangement, clusters of keratinized cells, and localized invasion into the dermis. These findings indicated the development of squamous cell carcinoma. After the surgical procedure, a subsequent histological investigation on a removed section of tissue revealed this development of squamous cell carcinoma.

3. Discussion

There are two kinds of skin cancers: melanoma and "non-melanoma skin cancers. The two most prevalent types of skin neoplasms, namely basal cell carcinoma and SCC, are included in the category of skin cancers that are not from the melanoma group.[3]

The condition known as Bowen's disease is a type of intraepidermal SCC in situ that has a low risk of developing into an invasive form" of cancer.[1] Its primary targets are the mucosa and the skin. About 1.42 cases are reported per 1000 people in the population.[4]

Although it may occur at any age, the elderly with an equal male-to-female sex preponderance are the most common recipients of it. Usually, it appears as a single lesion over sun-exposed regions.[5]

Sites that are frequently affected by BD include those that are exposed to light, such as the head and neck, as well as the dorsum of the hands and lower legs.[5,6] Its occurrence in sun-protected sites such as the abdomen, back, and gluteal region is rare. In our case report, the patient presented with a lesion on the gluteal region which is an unusual site.

In clinical settings, BD typically manifests as a single, well-defined, erythematous, crusty, or scaly plaque.[1] Actinic keratosis, discoid lupus erythematosus, psoriasis, and nummular eczema are frequently confused with this type of morphology. Additional rare clinical variations include pigmented, atrophic, hyperkeratotic, and verrucous forms.[1,7] our case was verrucous which is a rare type.

BD is caused by skin damage brought on by prolonged exposure to UV radiation, infection with the human papillomavirus, exposure to arsenic, prior radiation exposure, immunosuppression, trauma, and genetic factors.[4] Our investigation, on the other hand, did not uncover any predisposing factors that might have been the cause of the problem.

The history, clinical examination, and histology are the three components that are used to diagnose BD. The hyperkeratotic epidermis of BD is revealed by histological examination, along with varying degrees of parakeratosis and orthokeratosis within the epidermis. As a result of the cells of the epidermis being in a state of full disorder, the epidermis has a characteristic "windblown appearance" that is characterized by atypia, big nuclei that range from oval to round, and a basement membrane that is intact.[1] In our particular instance, we discovered cellular atypia with hyperchromatic nuclei, and loss of polarity with intact basement membrane on punch biopsy, but on re-examination of the specimen after surgery, we discovered keratin pearls and "a focal area of invasion of these cells into the dermis, which indicated that the cancer had progressed to squamous cell carcinoma.

Cryotherapy, excision surgery, curettage, electrocautery, photodynamic therapy, lasers, and topical diclofenac are some of the treatment methods that are performed. Other methods involve topical imiquimod cream and topical 5-fluorouracil cream.[8] Surgical excision" is the most common treatment for BD, yet there is no global agreement on the proper surgical margins.[9] Our case was treated with total wide excision with normal skin margins and skin grafting which was safe from an oncological viewpoint and maintained function.

Therefore, in order to diagnose and treat this condition as soon as possible, a high index of suspicion and a comprehensive clinical examination backed by histology is needed, which may lower the risk of metastasis.

4. Conclusion

We are reporting this case because:

1. A rare case of Bowen's disease appears like a verrucous lesion.
2. Presence on an unusual site such as a gluteal region (sun-protected site).
3. Progression to SCC with no evidence of arsenic exposure or immunosuppression.
4. Managed by oncologically safe and function-preserving surgery.

5. Declaration of Patient Consent

This document serves as a certification that the authors have all of the appropriate patient authorization documents in their possession. The patient(s) has(have) consented in writing to the publication of his/her images and other clinical data in the journal. Although every attempt will be made to hide their identity, the patients are aware that their names and initials will not be disclosed and that anonymity cannot be guaranteed.

6. Source of Funding

None.

7. Conflicts of Interest

None.

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Cite this article: Sneha V N, Banti S, Reddy AM, Rajesh G, Konappalli S. Verrucous Bowen's disease: A case report of an unusual variant. *IP Indian J Clin Exp Dermatol* 2024;10(3):353-356.