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A rare case of Bowen disease mimicking seborrheic keratosis

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ABSTRACT

Bowen disease is well documented, but it is commonly misdiagnosed in clinical practice. Seborrheic keratosis appears very similar to Bowen's disease on cutaneous examination and is practically undifferentiable unless a biopsy is performed for histopathology. Pathologically, Bowen's disease is considered a squamous cell carcinoma in situ. At the same time, seborrheic keratosis shows keratin cysts and the presence of keratin-filled cysts with hyperkeratosis, acanthosis, hyperpigmentation, and inflammation also present. The lesions of Bowen disease usually present with good demarcation, are isolated and are observed with scaly plaques with an erythematous base. Pigmentation, fissures, and crusting of skin at the lesion's site may be rarely seen. Histopathologically, atypical keratinocytes are observed in the epidermis of the skin. The basement membrane is intact, and the disease cannot be termed squamous cell carcinoma yet. In the following case discussed, the lesion present on the patient was initially misdiagnosed as seborrheic keratosis. However, it recurred after some time, so a biopsy was performed, after which the diagnosis of Bowen's disease was made based on the histopathological report. Development of Bowen disease to squamous cell carcinoma is seen only in 3-5% of cases. Diagnosis can be made by performing a biopsy or by detecting fluorescence after the application of photosensitizers, indicating the presence of tumour cells. The effective treatment of the disease consists of cryotherapy, imiquimod cream and 5-fluorouracil, curettage, and cautery, which is a very common method, and photodynamic therapy (PDT), which is a recent form of treatment.

Keywords: benign tumor, seborrehic keratosis, bowen disease, skin lesion, histopathology

1. INTRODUCTION

A Dermatologist named Dr John T Bowen first described Bowen's disease in 1912. Bowen disease is primarily seen in the mean age group of 60 and above, and it is also the age group widely predisposed to seborrheic keratosis (Lee and Wick, 1990). The exact cause of the disease is unknown. The risk factors identified for Bowen disease are arsenic poisoning, sun exposure, and Human papillomavirus infection. The patient with Bowen disease typically presents with an asymptomatic, well-demarcated, single patch of plaque, usually on a site exposed to the sun, such as the neck, head or limbs and can be easily mistaken as seborrheic keratosis on initial examination. The lesion is slow-

growing in diameter and tends to grow over months and years. A skin biopsy may be advised if a diagnostic doubt exists (Mohandas et al., 2020). The exact cause of the disease is unknown. The presentation of the disease may be in the form of a plaque, a papule or a macule. The appearance of the presenting lesion is scaly, fissured, crusted and erythematous.

The active regions include mucosa of the oral cavity, anywhere on the skin or nail bed. The lesion on the mucosal surface is velvety red, whereas the lesion on the nail bed is periungual in a location with discolouration of the nail (Morton et al., 2014). Many treatment modalities are available for the treatment of Bowen's disease. The treatment option depends on the practitioner's availability, patient compliance, and clinical experience (Kao, 1986). The treatment modalities include the surgical option, which is considered the gold standard but has limitations such as cosmetic outcome, situation of the lesion, and healing properties. Cryotherapy is the most widely used treatment option as it has shown a high-efficiency rate and cost-effectiveness, and the drugs 5-fluorouracil and imiquimod have provided the patients with an opportunity for self-treatment. Nonetheless, close medical supervision is required, radiological interventions have been proven to cure Bowen's disease with a high success rate, and photodynamic Therapy (PDT) is the new and upcoming treatment modality (Moreno et al., 2007).

2. CASE PRESENTATION

A 67-year-old female reported to the outpatient department with a complaint of an asymptomatic lesion, which was progressively increasing in size, located on the back for two years. The patient is a farmer. Figure 1 below depicts a dark patch of dry, scaly lesion present on the back of the patient. Three years previously, it was cauterized by another dermatologist suspecting it to be seborrheic keratosis, but within six months, it recurred and had gradually increased in size. Figure 1, given below, depicts a dark patch of dry, scaly lesion on the back of the patient. On examination, a well-defined hyperpigmented solitary verrucous plaque 1x1.5 cm was present on the back of the patient. There was no oozing or crusting from the lesion. Clinically, it appeared like seborrheic keratosis, but since it recurred after cautery, it was imperative to perform a biopsy for histopathology.

The biopsy report of the lesion indicated an epidermal proliferation made up of thickening and irregular elongation of rete ridges, some of which are confluent. A slide of magnification 10X is also shown in (Figure 2). The keratinocytes here show moderate nuclear pleomorphism, loss of orientation, and crowding. The above histopathological features are described in (Figure 3). The nuclear atypia is present throughout the thickness of the epidermis; scattered pyknotic cells are seen along with a few dyskeratotic cells. The dermis shows a moderately dense lichenoid infiltrate of lymphocytes and plasma cells. The surface is covered by broad parakeratosis. The clinical diagnosis was made on the reflection of clinical examination and histological report. The patient underwent excisional therapy, i.e., curette and cautery, after which the patient was advised for a regular monthly follow-up. After a month's follow-up, there has been no recurrence.

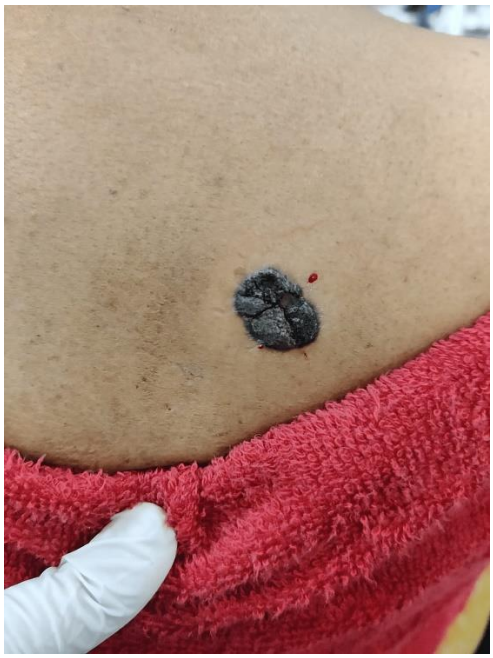

Figure 1 Blackish patch of dry scaly lesion on the back.

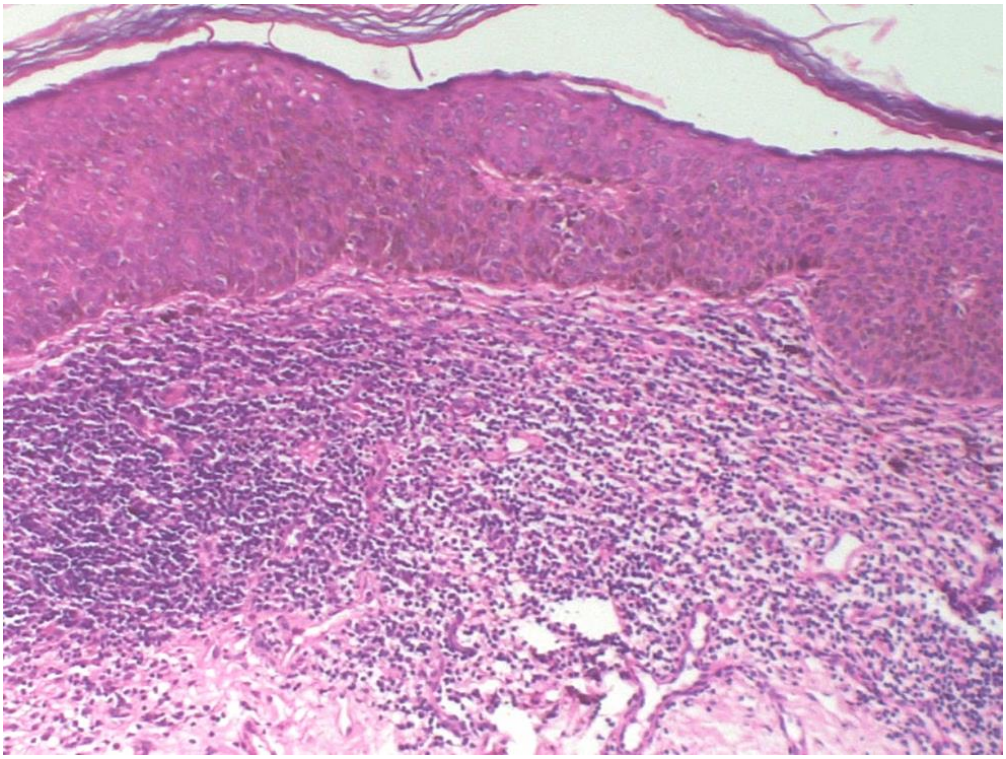

Figure 2 Image from Histopathological slide shown in 10x magnification.

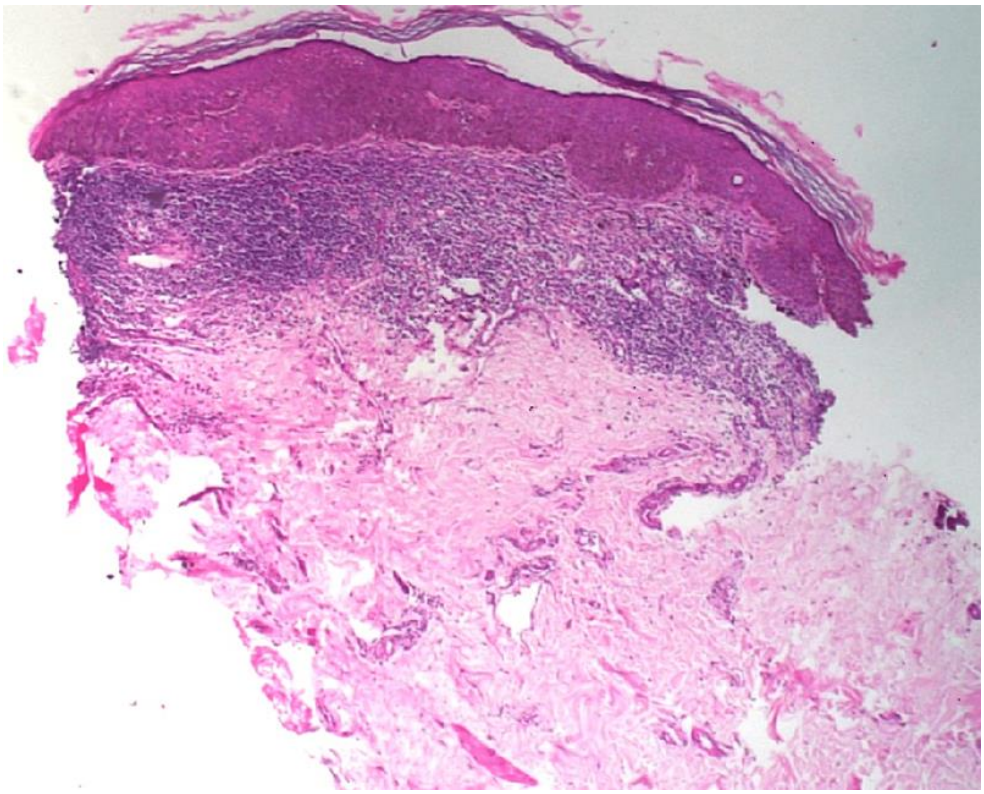

Figure 3 The Histomorphograph showing epidermal proliferation due to thickening and irregular elongation of Rete Ridges with moderate nuclear pleomorphism of keratinocytes at 40x.

3. DISCUSSION

The exact pathogenesis of Bowen's disease is not known and is suspected to be multifactorial. Chronic sun exposure and ageing are considered the two major risk factors. Individuals infected with cutaneous human papillomavirus are found at a higher risk of developing Bowen's disease. The most common strain of virus associated with this disease is HPV 16. Chronic exposure to Arsenic

is also considered a risk factor. Arsenic is colourless and tasteless, and hence, chronic exposure can go unnoticed (Palaniappan and Karthikeyan, 2022). Risk factors of Bowen Disease and seborrheic keratosis show some overlaps, such as age and sun exposure being common risk factors. Seborrheic keratosis and Bowen Disease are common entities in clinical practice. However, the two diseases are misdiagnosed commonly. Seborrheic keratosis, on cutaneous examination, appears as a waxy or scaly lesion which may be of black, brown or tan colour.

In this case of Bowen's disease, the lesion was black and scaly and was hence misdiagnosed as a simple case of seborrheic keratosis. Without a histopathological examination, it is extremely difficult to differentiate between the two entities. It may be dangerous to misdiagnose Bowen disease as it has been shown to progress to invasive skin carcinoma. Hence, it is imperative to perform a biopsy for histopathological reports (Neagu et al., 2017). The clinical presentation of Bowen's disease in this particular case is asymptomatic. The typical lesions of the disease are dry and scaly. The lesions are not associated with any symptoms, but rarely, the lesion may itch, bleed or ooze pus if infected. The clinical features are not very dissimilar to seborrheic keratosis, which is the main cause that it is wrongly diagnosed. In most cases, the lesion is single, but in around 20-25% of individuals, the lesions may be multiple.

In contrast, seborrheic keratosis can be multiple or single. The lesions almost develop on the sun-exposed parts such as the neck, back, legs, or arms. In the rarest of rare cases, the benign Bowen's disease might progress to invasive squamous cell carcinoma. This development is more common in elderly age groups and individuals on immunosuppressive drugs (Fania et al., 2021). The histopathological examination of the biopsied tissue is considered the gold standard for correctly diagnosing Bowen's disease. The histopathological report reveals the presence of hyperkeratosis (thickening of stratum corneum), parakeratosis and marked acanthosis (thickening of epidermis). The rete bridges are thickened and elongated. Atypia keratinocytes are all over the epidermis but do not penetrate the dermo-epidermal junction. Keratinocytes show high mitotic activity, the presence of large nuclei, and pleomorphism (Wozniak-Rito and Rudnicka, 2018).

Dermoscopy of Bowen Disease reveals glomerular vessels, typically tortuous capillaries, in a cluster distribution bordered by a white halo, a sign of keratinization. Lesions showing pigmentation are packed in patches of greyish-brown lobules (Zhong et al., 2020). Some new dermoscopic features of Bowen disease were labelled, namely the double-edge sign, described as two parallel pigmented lesions on the periphery of the pigmented lesion and brown structureless areas in cluster formation. Meanwhile, seborrheic keratosis shows irregular crypts, fissures, multiple colours, and blue-grey lobules. Also, the blood vessels are prominent and are seen as tiny hairpin structured capillaries and are surrounded by a halo. Hence, due to these unique and distinguishing features, Dermoscopy can be used as a diagnosing tool (Bath-Hextall et al., 2013).

Treatment modalities of Bowen Disease are several and can be selected according to the skill of the doctor and the availability of facilities. Different treatment modalities have different recurrence rates; the treatment may be administered in combination to prevent a recurrence. Regular followup helps monitor the lesion, and signs of recurrence can be noticed clinically, and timely intervention can be done (Wu et al., 2020). The treatment of choice for many dermatologists is curette and cautery, where the lesion is excised completely. The recurrence rate varies due to different equipment used, regimes and skill sets of the doctor. Nonetheless, the cure rate ranges from 93% to 97% with regular follow-ups. Cryotherapy is also one of the popular therapies and is found to be very effective with liquid nitrogen.

The clearance rate differs due to different techniques, freeze-thaw cycles and freeze times. It is popular as it is favourable for small singular lesions, is cheap and has better wound healing. Topical fluorouracil has shown a high clearance rate, especially when used in combination with other treatment modalities such as photodynamic therapy. Another cream, imiquimod, an immune response modifier, has shown antiviral and anti-tumour properties. It binds to TLR-8 and TLR-7 receptors and induces the production of tumour necrosing factor. Photodynamic therapy is another well-known entity and is widely used to treat actinic keratosis, Bowen disease and basal cell carcinoma (Neubert and Lehmann, 2008).

4. CONCLUSION

Bowens Disease is a rare skin condition. Many lesions may clinically resemble Seborrheic Keratosis. It is imperative to perform a biopsy and thorough investigation to rule out any other malignant condition. Our patient was initially diagnosed as a case of Seborrheic Keratosis and given treatment accordingly. After recurrence, a biopsy was performed, which revealed histopathological features of Bowen Disease. The patient underwent Curette and Cautery with regular follow-up advice to check signs of recurrence. Hence, this case proves how essential it is to perform a biopsy to confirm the diagnosis of a malignant lesion such as Bowen's Disease, which may mimic Seborrheic Keratosis on initial clinical assessment.

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Author Contributions

Details of contribution of each authors regards manuscript work & production.

Informed Consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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