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Case Report

Left Heel Bowen's Disease with Abscess-Like Clinical Presentation: A Case Report

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ABSTRACT

Bowen's disease or squamous cell carcinoma (SCC) *in situ* is precancerous skin lesion, distributed mostly in sun-exposed body areas, more common in older age groups and had small probability to progress into invasive SCC. We reported 26-year-old female with painful abscess-like mass surrounded by inflamed skin on her left heel. Lesions fluctuated and contained pus-like fluid. Excisional biopsy was performed, and from histopathology result, it was concluded as Bowen's disease with chronic inflammation which formed an abscess clinical feature. Due to its many variants and its tendency to malignant lesions, Bowen's disease should not be underestimated.

Keywords: Bowen's disease, Unusual clinical presentation, Excision

INTRODUCTION

Bowen's disease, also described as squamous cell carcinoma (SCC) *in situ*, is one of precancerous non-melanocytic skin lesions. It has characteristics of scaly plagues, well-demarcated lesions and red or pink colour resembling psoriatic lesions.[1] Majority of these lesions are asymptomatic, sometimes they may bleed and are commonly distributed in sun-exposed areas, particularly head, neck and lower leg.[1,2] It can occur at any age, more commonly affects women and has 3–5% probability to progress into invasive SCC.[2,3] There are various forms of Bowen's disease and some skin lesions may look clinically similar to Bowen's Disease. On this occasion, we would like to report an unusual form of Bowen's disease located distinctly from its usual predilected sites.

CASE REPORT

A 26-year-old female patient came into our clinic with a history of painful mass on her left heel 2 weeks before. The patient felt sharp and excoriating pain when standing or walking, particularly when her left heel came in contact with her shoe. Pain was slowly increasing in intensity and accompanied by swelling on her left heel. At first, it looked like a reddish-inflamed skin and it continued to form a thin-walled lump, well-demarcated abscess-like lesion. The patient had no history of fever, any similar lesions on her body elsewhere or other systemic disorders. The patient was diagnosed with scoliosis and tended to rest on her left foot. On physical examination, we observed a round, thin-walled abscess from her left hindfoot, surrounded with red-inflamed skin and sized 4 cm in diameter. The lesion fluctuated and contained pus-like fluid [Figure 1]. Due to its peculiar appearance, we decided to perform excisional biopsy.

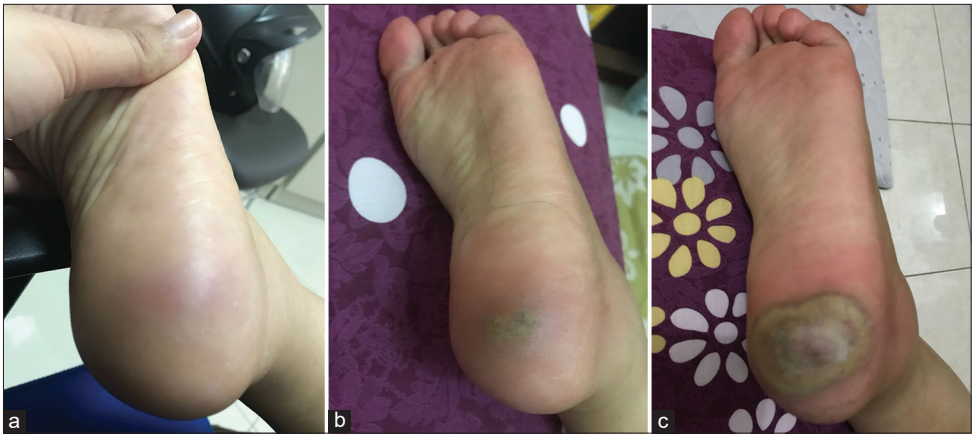

Figure 1: (a-c) Patient's tumour progression within 2 weeks. Inflamed and minimal oedema on her left heel progressed into a round, thin-walled abscess and contained pus-like fluid.

The patient, was scheduled for 1-day care operation. The patient underwent laboratory tests and radiology tests which were acquired for surgery. On the day of surgery, the patient was positioned with left foot elevated and sterilized. Excisional biopsy was performed; tumour and its surrounding tissue were removed. Pus-like fluid mixed with little blood was aspirated from tumour after it was excised. After it was removed, wound was debrided with normal saline solution, and removed remaining debris and necrotic tissue and closed with sterile gauze pads. Tumour specimen was conserved and sent for biopsy examination. The patient, was then, discharged home and scheduled for wound care and follow-up examination at our clinic.

After operation, the patient regularly came to evaluate her post-operative wound [Figure 2]. From biopsy results, the specimens showed layers of hyperplastic squamous epithelial cells, with parakeratosis and acanthosis features and some erosive parts. There was increased nucleus cytoplasm ratio with rugged chromatin and clear nucleolus. Dermal layer consists of fibro collagenous tissue with fibrous and necrotic areas, scattered with lymphocyte cells, plasma cells, histiocyte cells and polymorphonuclear cells [Figure 3]. It was concluded from histopathology results as Bowen's disease with chronic inflammation which formed an abscess clinical feature. Negative margins were achieved and patient was instructed to follow up every 3 months for 2 years, continued with annual follow-up for any local recurrences.

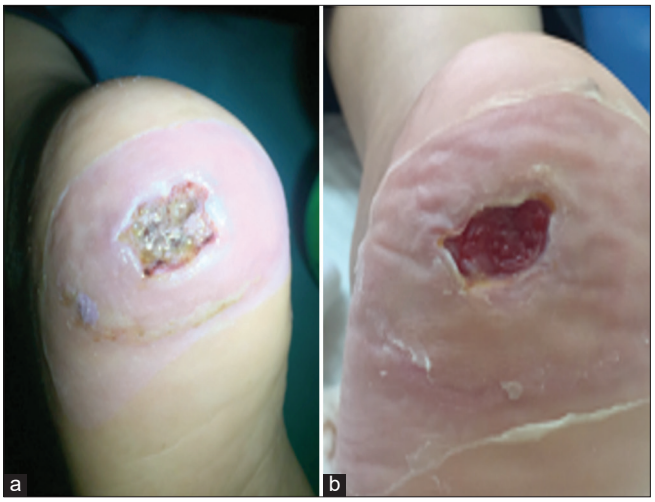

Figure 2: (a and b) Patient's wound status shortly after tumour removal and 1 week after.

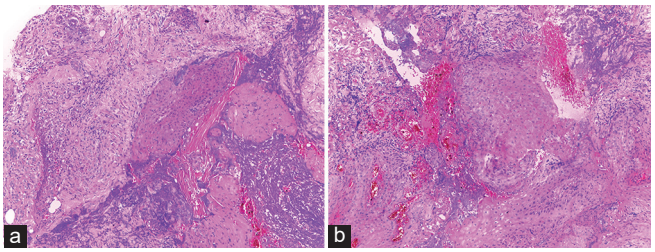

Figure 3: (a and b) Tumour specimen showed layers of hyperplastic squamous epithelial cells, with parakeratosis and acanthosis features. Dermal layer consists of fibrocollagenous tissue with fibrous and necrotic area, scattered with lymphocyte cells, plasma cells, histiocyte cells and polymorphonuclear cells, concluded as Bowen's disease with chronic inflammation which formed an abscess.

DISCUSSION

Bowen's disease or SCC *in situ* was first described in 1912 by John Templeton Bowen. It is an intraepidermal premalignant lesion, usually presents as dysplasia epidermal with well-demarcated, irregular border, slightly scaling surface, sometimes pink-reddish and can be crusted.[1,4] Bowen's disease can affect any age group mostly occurred in older population, between 60 and 90 years old. Risk factors regarding the development of Bowen's disease were

described in the previous studies, which consist of exposure to sunlight, radiotherapy, viral infection (especially HPV16) and immunosuppression drugs.[1,4] The risk of developing Bowen's disease or its progression into invasive cancer is linked with increasing age, especially due to long time subjected to ultraviolet radiation. Our patient had developed Bowen's disease at an exceptionally young age, just 26 years old and occurred in body area not subjected to sunlight.

Bowen's disease mostly occurs in body areas subjected to sun exposure, and 75% occurred on the lower legs.[5] It can also be encountered in body areas not exposed to sun, such as genital areas. One case study reported a rare finding of Bowen's disease encountered on patient's left palm and was surgically removed.[6] One published study from Korea reported a rare case of pigmented Bowen's disease on patient's right heel.[7] However, it has a completely different morphology compared to our study, which presented as abscess-like mass. Mansour *et al.,* in 2020, reported a case of large SCC of the heel, infiltrating calcaneus bone in 32-year-old male patient. In their discussion, Mansour *et al*. mentioned several possible risk factors regarding development of SCC in heel area, consisting of history of diabetic foot, any history of trauma or surgery, chronic osteomyelitis and frostbites.[8] Both patients in Mansour and our studies interestingly do not possess any risk factors previously mentioned.

There are several modalities for treating Bowen's disease. Decision-making in managing Bowen's disease is quite complicated, due to its variations, their morphology which sometimes mimics other skin lesions and various body sites which impacted their healing and recurrence rates.[4] Most favourable options for treatment are close observations, topical 5-fluorouracil (5-FU), cryosurgery, photodynamic therapy (PDT) and surgical excision. We decided not to observe any longer, considering significant pain reported and tumour's rapid progression. Due to limited resources, we could not perform cryosurgery in our clinic, and noticing tumour morphology, we do not think that cryosurgery can be performed for this lesion.

The treatment for Bowen's disease is grouped into two main categories: Non-invasive treatment, such as 5-FU cream and PDT and invasive treatment, one of which is surgical excision. One study by Jansen *et al*., in 2017, evaluated the efficacy between non-invasive therapy (5-FU and PDT) and surgical excision in treating Bowen's disease. Of 841 tumours, 296 tumours were treated with surgical excision, 241 with PDT and other 46 tumours with 5-FU. From this study's results, PDT and 5-FU possess a significantly higher failure probability than surgical excision (HR 2.71; 95% CI: 1.52–4.83). Eight tumours from non-invasive group had progressed into invasive SCC after treatment, seven of those were post-PDT and another one was after 5-FU treatment. Surgical excision group had the lowest probability of treatment failure with just 4.9% of treatment failure after 3–60 months of follow-up.[9] However, we chose surgical excision as the primary treatment is not solely based on previous mentioned data, as we felt that these non-invasive treatment options were not suitable for this kind of lesion.

Surgical excision remains a simple and effective choice in managing Bowen's disease. Healing process, cosmetic outcome and safety of surgical margins must be put into consideration. One study in 2014 analysed safety margins required for surgical excisions of Bowen's disease. A four to six mm margin is universally recommended margin for low-risk SCC, Bowen's disease included in the study. This study mentioned that reducing safety margin resulted in worsening complete excision rate.[5] Unfortunately, this study did not describe Bowen's disease recurrence rate after incomplete excision. We followed the 5 mm safety margin rule, and fortunately, no positive margin was recorded. Finally, for local disease observation after treatment, we referred to NCCN follow-up guidelines for squamous cell skin cancer in 2021.[10]

CONCLUSION

Bowen's disease can come in many variants and can be encountered away from their predilected sites, making it difficult to distinguish from any other skin disorders. Although considered a low-risk tumour (with 3–5% probability of progressing into invasive cancers), Bowen's disease should not be underestimated. With all available treatment options, surgical excision remains a simple, quick and effective choice. Safety margin, cosmetic results and wound healing must be taken into consideration.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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