

Bowen's disease of the palm: a cautionary tale

Introduction

Bowen's disease is a neoplastic intra-epidermal squamous cell carcinoma that usually affects older people and principally occurs on sun-exposed sites such as the face, neck, trunk and dorsum of the hand. Palmar skin is rarely involved, as shown in a series of 1001 cases of Bowen's disease, where the anatomical location of the palm was not found once (Kossard and Rosen, 1992). There is an array of conservative, destructive and surgical treatment options available for Bowen's disease.

This article presents the first reported case of Bowen's disease presenting on the palm where radiotherapy resulted in a functionally debilitating palmar wound requiring complex flap reconstruction.

Discussion

Bowen's disease is synonymous with squamous cell carcinoma in situ and 3–5% of cases advance to an invasive squamous cell carcinoma (Kossard and Rosen, 1992). It mainly occurs in areas exposed to sunlight and therefore Bowen's disease of the palm remains an extremely rare clinical entity with only a handful of cases published in the literature (de Oliveira Mantese et al, 1988; Kossard and Rosen, 1992; Harnalika et al, 2011;

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Case report

A 65-year-old right-handed man presented with a 10-year history of a 1.5x2 cm, sharply demarcated, erythematous, partly hyperkeratotic plaque to his right palm and first web space. The patient had no previous arsenic exposure or human papillomavirus infection. Skin biopsies revealed Bowen's disease of the palm that was initially managed with topical application of retinoid and later 5-fluorouracil cream. Although this conservative strategy provided some preliminary resolution, the lesion did not resolve. The full spectrum of treatment options was discussed with the patient, who initially wished to pursue non-surgical modalities. Therefore, radiotherapy was offered for the residual disease. Subsequently the patient developed a painful chronic radionecrotic wound (Figure 1).

The radionecrosis led to prolonged infection, pain and webspace contracture, causing the right index finger in particular to become stiff and debilitated. This left the patient with functional issues during feeding and self-care, which greatly impacted his quality of life. Despite treatment with antibiotics and repeated dressings, the wound progressively broke down. The patient underwent surgical excision of all unviable tissue, which was sent for histology evaluation. Although there was no evidence of any residual disease, the patient now had a large complex palmar defect with exposure of vital structures including the right index finger metacarpophalangeal joint, right flexor pollicis longus tendon and ulnar digital nerve of the thumb (Figure 2).

The aim of reconstruction was to provide durable vascularised coverage over vital structures such as the exposed tendon and nerve as well as skin over the remaining palmar defect. This required an intricate and multifaceted reconstruction using a full-thickness skin graft and first dorsal metacarpal artery-based flap to cover the exposed flexor pollicis longus tendon, digital nerve and proximal phalanx of the right thumb. Additionally, as the index finger was a source of extreme pain with limited range of movement, it was shortened to the level of the metacarpophalangeal joint and a 'spare parts' filleting approach was used to cover the palm.

Postoperatively, the patient had regular dressings alongside an extensive hand therapy regimen consisting of progressively increasing passive and then active motion to help regain function. Two months later the wounds had healed well with good range of movement and the patient returned to his daily activities (Figure 3). At 2 years, this patient has had no recurrence of Bowen's disease.

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Figure 1. Chronic radionecrotic wound of the right palm with first webspace contracture.



Figure 2. Clinical image following debridement of the radionecrotic wound of the right palm leading to exposed metacarpophalangeal joint of the right index finger, flexor pollicis longus and ulnar digital nerve of the right thumb.



Figure 3. Postoperative results 2 months after reconstruction of the right palm.

Nakayama et al, 2016). In most reported cases, the patient had risk factors such as human papillomavirus infection or arsenic exposure (Harnaliker et al, 2011). None of these risk factors were found in this case.

Modalities available to treat Bowen's disease including curettage and cryotherapy, topical 5-fluorouracil, radiation therapy and surgical excision.

A Cochrane review (Bath-Hextall et al, 2013) and guidelines from the British Association of Dermatologists (Morton et al, 2014) analysed the evidence level for treatments that are commonly used for Bowen's disease to identify the most effective management strategies. The quality of evidence is strongest for photodynamic therapy, topical therapies and cryotherapy (Bath-Hextall et al, 2013). While previous studies have reported low recurrence rate for surgery (5%) in comparison to cryosurgery (34%) or topical 5-fluorouracil (14%)

Learning points

- Bowen's disease of the palm is extremely rare with only a handful of cases previously reported in the literature.
- While there are a variety of treatment options, there remains limited quality data and comparative studies between radiotherapy and surgical excision of Bowen's disease.
- Bowen's disease in the palm is a therapeutic challenge and treatment choice should take into consideration anatomical site and potential functional impairment.
- This case highlights how treatment failure with radiotherapy resulted in a functionally debilitating palmar wound requiring complex flap reconstruction.
- Early involvement of hand surgeons in a multidisciplinary setting may be beneficial for this pathology.

(Thestrup-Pedersen et al, 1988), there remains a paucity of quality data and comparative studies between radiotherapy and surgical excision of Bowen's disease.

Unlike other anatomical sites, the loss of the complex abilities of the hand can drastically affect a patient's quality of life. Therefore, Bowen's disease in the palm can be a therapeutic challenge and treatment choice should not only take into consideration patient comorbidities but also anatomical site and potential functional impairment.

Bowen's disease of the palm is exceptionally rare; to the authors' knowledge, this is the first case report where conservative treatment resulted in a challenging palmar wound requiring complex flap reconstruction. This highlights that clinicians must proceed with caution while using radiotherapy to treat Bowen's disease of the palm. Treatment failure can have devastating sequelae and early involvement of hand surgeons in a multidisciplinary setting may be beneficial for this pathology.

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