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Case Study

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# MARJOLINS ULCER - A CASE REPORT AND REVIEW OF LITERATURE

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**ABSTRACT**

Marjolin's ulcer is a malignant lesion which develops in a burn scar or other chronic inflammatory pathologies. Squamous cell carcinoma is the most frequent malignancy identified, although other cell types have been described (e.g basal cell carcinoma). Lesions are aggressive and carry a poor prognosis with a high rate of recurrence. Prevention with proper burn wound management and early recognition of malignant conversion followed by surgical resection, if possible, are of the utmost importance. Here we report a case of a long standing burn scar undergoing malignant transformation to form a Marjolin's ulcer.

**KEYWORDS:** Marjolins ulcer, Squamous cell carcinoma.

## INTRODUCTION

Marjolin's ulcer is a rare and often aggressive cutaneous malignancy that arises in previously traumatized or chronically inflamed skin, particularly after burns. In 1828 John Nicolas Marjolini characterized ulcer with malignant degeneration which developed in scars after burns, but it occurs under varying clinical conditions. Typical feature is the latent period (on average 30 years) post burn wounds. Burn scars are the most common inciting condition that leads to the development of Marjolin ulcers. Malignant degeneration occurs in 0.7% to 2.0% of burn scars that have been allowed to heal by secondary intention. Other chronic inflammatory etiologies that lead to Marjolin ulcers include traumatic wounds, venous stasis ulcers, osteomyelitis, pressure ulcers, radiation dermatitis, stings, bites, and hidradenitis suppurativa.[1] Individuals that are immunocompromised, either due to disease state or medication, are at increased risk for malignant conversion.

The pathophysiology has not been completely elucidated, but several mechanisms have been proposed, including chronic irritation, repeated re-epithelization, local damage to immune mechanisms of the skin, genetic predisposition, and toxins from local cell damage.[2] Obliteration of local lymphatic vessels, poor vascularization, and reduced Langerhans cell activity have been observed, allowing developing lesions to avoid immune detection. Overall, the pathogenesis is likely multifactorial, with chronic irritation and local toxins leading to neoplastic changes that are allowed to proliferate in the setting of altered immune mechanisms.[2,3]

## CASE REPORT

A 67 year old gentleman presented to the OPD with history of an ulcer over the left leg since past 5 years. He gives a history of a previous accidental burn wound over the same site when he was 20 years of age. This wound had healed with formation of a scar over the site . 5 years ago he noticed a small ulcer that had formed over the previous burn site that gradually increased in size. There was history of foul smelling discharge from the ulcer and it bleeds on touch. There is history of constant dull aching pain over the ulcer and restricted mobility of the left leg on walking.

On examination an ulcero-proliferative lesion of size 15x18 cm was present over the upper lateral aspect of the left leg with raised everted edges and pigmented margins which was foul smelling and bled on touch. There was necrotic slough at its floor and the base of the ulcer could be felt over the bony aspect of tibia and fibula. The ulcer had restricted mobility and appeared fixed to a deeper plane. There was restricted mobility over the left knee joint in the form of limted flexion and extension. There were multiple enlarged left inguinal nodes that were firm, non tender and non mobile.

Wedge biopsy of the lesion revealed moderately dfferentiated squamous cell carcinoma and inguinal lymphadenopathy subsided in 2 weeks after a course of antibiotics.

Wide local excision was done and wound was left open to heal by secondary intention but after 3 months there was local recurrence and in view of non salvageability of limb, an above knee amputation was done.

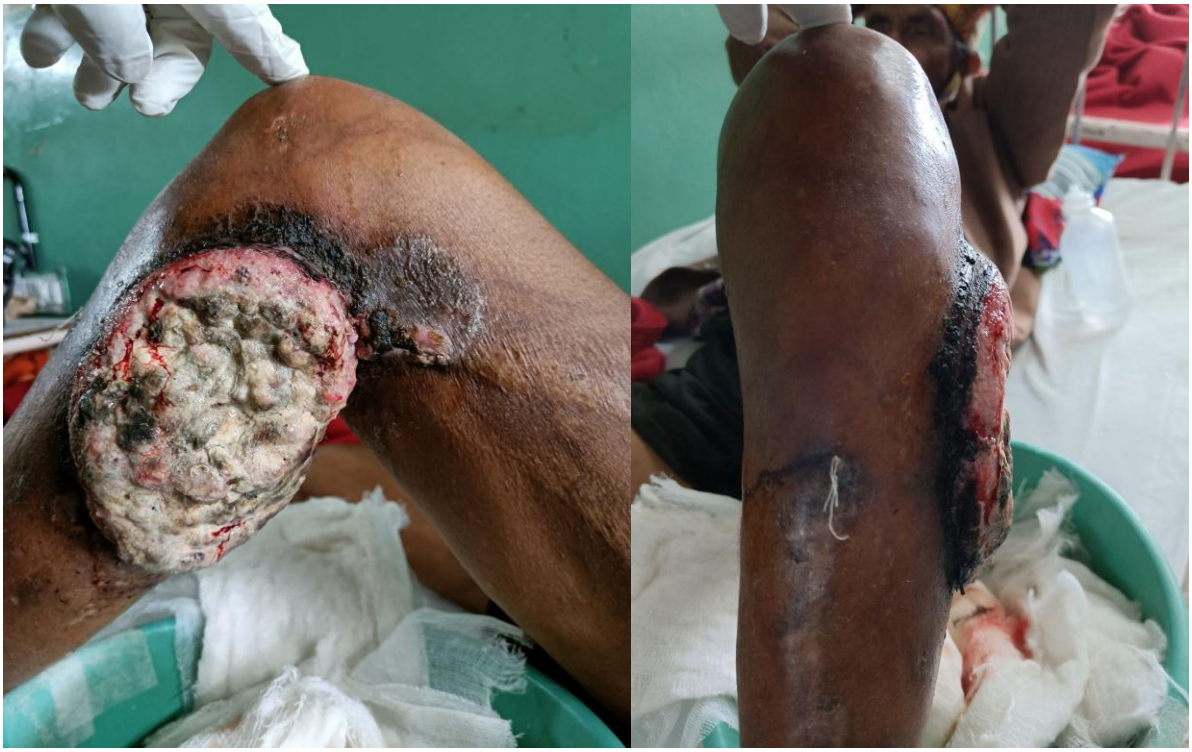

**Fig 1.2: Ulcero-proliferative lesion over left leg (front and side view).**

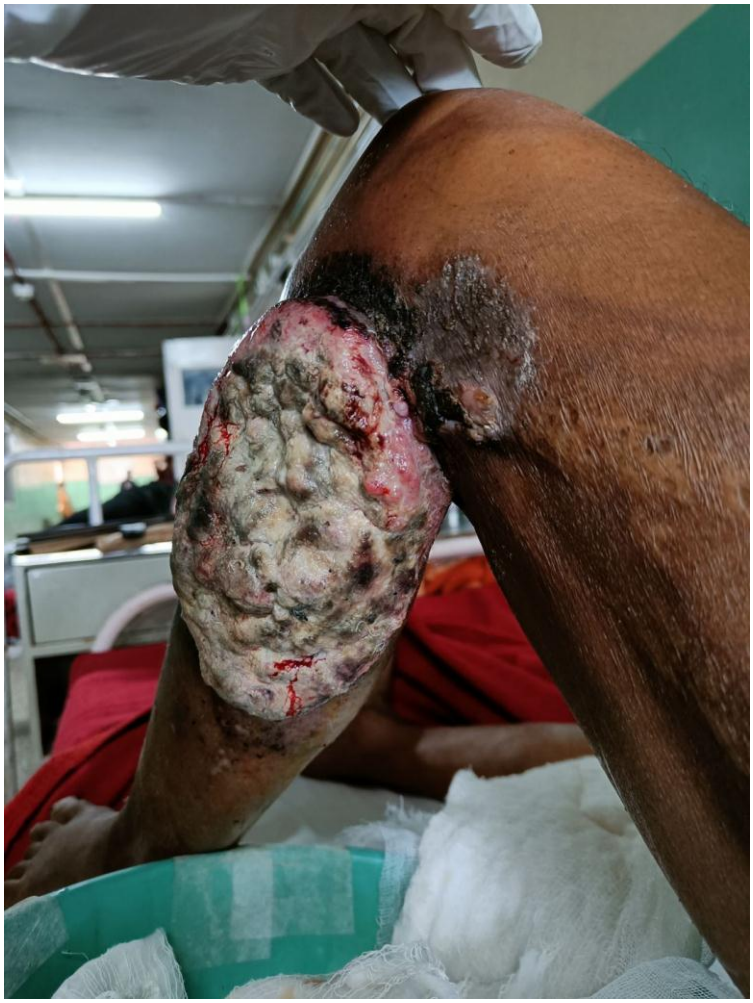

**Fig 3: Necrotic slough over the base of the Marjolin's ulcer with bleeding points on touch.**

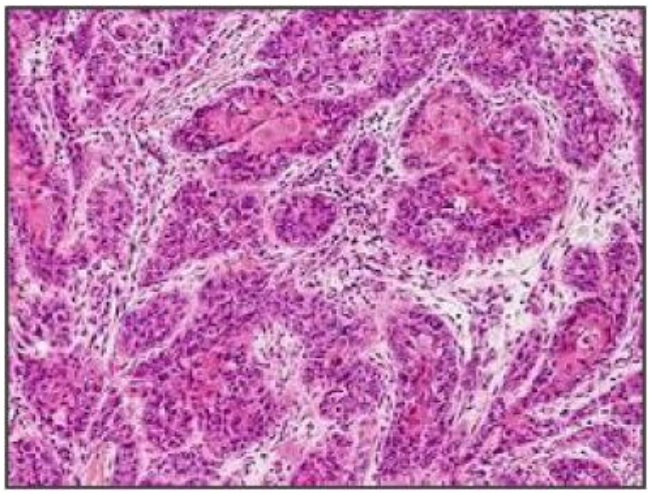

**Fig 4: Histopathology of wedge biopsy specimen from edge of ulcer.**

## DISCUSSION

Marjolin's ulcer is a rare, aggressive skin cancer developing in scar tissue, chronic ulcers and areas affected by inflammations. Its incidence is estimated to range from 1% to 2% of all burn scars.[1,2]

There is much variability in the location of Marjolin's ulcer with the majority occuring in the upper and lower extremities.

In most instances, biopsied lesions demonstrate well-differentiated squamous cell tumors, although other epidermoid lesions are occasionally encountered. Basal cell carcinoma and melanomatous lesions have been described in literature.[4] The lesions are rare and are most commonly found in the lower extremity, especially the heel and plantar foot. In light of the close association of these lesions with scarred tissues associated with various chronic lower-extremity wounds, those involved in health care delivery to these patients must be aware of Marjolin's ulcer, its manifestations and potential ramifications.[5]

Management should focus on prevention as unresected burn wounds that heal by secondary intention are at increased risk for malignant degeneration.[6] Once discovered, no definitive treatment protocol exists for the management of Marjolin ulcers. The most widely accepted treatment options include wide local excision with 1 to 2 cm margins, and amputation proximal to the lesion in case of non-salvageability.

Mohs surgery can be considered in lesions on the face, scalp, hands, feet, areolae, and other areas where improved cosmesis is desired.[7] Amputation is reserved for advanced-stage disease when wide local excision and Mohs surgery are not possible. Defect coverage with local flap, free flap, or avascular graft is often performed but remains controversial as some studies have shown an increased risk of recurrence with incomplete resection.[8] After resection, close follow-up is necessary due to the high risk of recurrence.

Therapeutic management of Marjolin's ulcer requires well-designed treatment plan to ensure optimal medical care and good quality of life for the patient. The high risk of metastases and damage to the structure of vitally important organs determines the need for early diagnosis and prompt surgical intervention with supplementary therapy.[9]

Increased oncological alertness should be displayed by nursing and medical personnel taking care of patients with chronic wounds.

## CONCLUSION

Prevention and management of Marjolin ulcers require an interprofessional team approach, including providers from surgery, primary care, oncology, and dermatology. Burn scars should be excised, and the surrounding skin should be reconstructed by a surgeon trained in reconstruction to prevent malignant conversion.[7,8] For burn scars that have been allowed to heal by secondary intention, primary care providers (physicians, nurse practitioners, and physician assistants) must be aware that burn scars are at risk for malignant conversion. All burn scars should be monitored on routine physical examination, and patients should be educated on symptoms to prompt earlier presentation.

Wound changes that are suspicious for Marjolin ulcers should be immediately biopsied. Once malignancy has been identified, a team approach to management should be initiated. Staging should involve an examination of the regional lymph nodes, either by physical or ultrasound examination.[9] Resection with wide margins or Mohs technique should be performed depending on the location and desired cosmesis. Radiation oncology and medical oncology should be consulted for adjuvant radiotherapy/chemotherapy for those with positive lymph nodes.[10]

After treatment, follow-up surveillance should occur regularly with a primary care provider or dermatologist to note any evidence of recurrence.

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