

MARJOLINS ULCER DEVELOPING IN ELECTRIC BURNS: A rare case report

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ABSTRACT:

Marjolin's ulcer is defined as a malignant, ulcerating neoplasm occurring in cicatricial tissue, and is thought to be more aggressive than the other more common varieties of skin cancers. It has been reported in chronic scars of diverse origins. Here we describe a patient who suffered extensive electric burns 25 years ago and has now presented as squamous cell carcinoma of the trunk.

KEYWORDS: Burn-scars, Marjolin's ulcer, squamous cell carcinoma

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INTRODUCTION

Marjolin's ulcer is a rare and often aggressive cutaneous malignancy that arises in previously traumatized or chronically inflamed skin, particularly after burns.¹ The eponym Marjolin's ulcer is derived from Jean-Nicolas Marjolin whose 1828 essay first described cancer-like ulcers such as those occasionally seen in chronically irritated or scarred skin.² Although most cases of Marjolin's ulcer are associated with old burn scars, multiple sources have been reported, including venous stasis ulcer, frostbite, decubitus ulcer, osteomyelitis, pilonidal sinus, vaccination site, urinary fistula, hidradenitis suppurativa, skin graft donor site, and lupus rash.³

CASE REPORT

A 50 years old male presented with history

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of second and third degree electric burns 25 years back. The lesions healed with conservative treatment, there was no history of skin grafting at that time. The patient remained apparently well for 25 years, except for intermittent freshening of wounds when he used to participate in wrestling in village sports. Now the patient presented with non-healing ulcer in the posterolateral aspect of right flank for the past 6 months. There was no history of trauma.

On examination, extensive scarring was seen over anterior and posterolateral aspect of right side of chest, flank and lower abdomen. About 8x8 cm ulcerated area was present in the middle of these scars on the posterior side. The margins of this ulcerated region were everted and slightly indurated. The floor oozed sero-sanguineous fluid. Complete hemogram, blood biochemistry, Xray chest and USG abdomen were essentially normal. There was no palpable lymphnode.

The patient underwent excision of the ulcerated portion along with superficial skin grafting. Histopathology of the excised part showed poorly differentiated squamous cell carcinoma. The deep resection limits and surrounding areas were free of tumor infiltration. Following healing of the operative wound, the patient was started on external radiotherapy to the ulcer bearing region. The patient was advised cisplatin-based chemotherapy on the completion of external radiotherapy.

DISCUSSION

The incidence of burn scar carcinoma is stated to be "rare". Although the exact incidence of malignant degeneration of burn scars is not known, 1.2% of all skin cancer cases, 2% of squamous cell carcinomas and 0.5% of all basal cell carcinomas have been reported to originate in burn scars. Melanoma, adenocarcinoma, fibrosarcoma, liposarcoma, and osteogenic sarcoma have also been described in cases of Marjolin's ulcer.³ The interval from the time of injury to the appearance of the neoplasm is typically from 25 to 40 years, although intervals as long as 70 years have been reported. Lesions in the lower extremities account for about 40% of Marjolin's ulcers; in the upper extremities, 20%; in the head and face, 30%; and in the trunk, 10%.³

Inflammation, ulceration and repeated trauma, especially in flexion creases, over many years may provide enough chronic irritation to promote malignant change. The conversion of normal tissue to cancer after trauma, beginning with acanthotic changes and progressing through basal cell hyperplasia, pseudoepitheliomatous hyperplasia, and basal cell atypia to eventual squamous cell carcinoma. Immune system alterations may also play an important role in the pathogenesis of these malignancies.⁴

Signs and symptoms associated with the development of the carcinoma include a change in the scar with formation of a mass or ulcer, possibly with an increase in pain, increasing discharge, foul odour and bleeding.⁵ Biopsy is the definitive diagnostic tool and it should be performed on any suspicious lesion or any chronic wound, especially those with any recent change in appearance or considerable drainage. Simple punch biopsy usually provides adequate tissue for diagnosis and should include tissue specimens from both the center and margins of suggestive lesions.⁶

Preventive care is of greatest importance. In all wounds, infection should be treated early; adequate drainage should be provided when necessary; and culture results should be used to choose appropriate antibiotics. In general,

recurring ulcers should be excised even if they are not malignant, and skin grafts or flaps should be used for coverage to facilitate complete healing as quickly as possible.³ Treatment of biopsy-proven neoplasia begins with adequate wide local excision with at least a 2-cm margin, followed by skin coverage.⁷ Amputation is reserved for deep lesions that extend to bone or joint cavities, as well as for recurrent tumour and possibly for lymph node metastases.⁵ Prophylactic regional lymph node dissection is indicated in clinically positive palpable regional nodes, poorly differentiated tumors and high-risk tumours such as lower extremity lesions.³ Radiotherapy and chemotherapy is indicated in patients with poor prognostic factors or distant metastasis.⁴

Long-term follow-up is recommended in all cases of Marjolin's ulcer. Most series indicate that the incidence of recurrence is in the range of 20% to 50%. Most recurrences are regional, but metastases to the brain, liver, lung, kidney, and distant lymph nodes have been reported.³ The patient who survives three years without metastases has an excellent prognosis. Prognosis is primarily related to the local extent of the disease, its anatomical location and the presence or absence of lymph node metastasis.⁴

To conclude, clinicians should be diligent in the long-term surveillance of all significant scars or areas of chronic inflammation, it is important to evaluate any changes immediately with biopsies and further imaging studies if indicated in order to treat effectively.

REFERENCES

1. Sabin SR, Goldstein G, Rosenthal HG, Haynes KK. Aggressive squamous cell carcinoma originating as a Marjolin's ulcer. *Dermatol Surg* 2004;30:229-30
2. Marjolin JN. *Ulcère*. Dictionnaire de médecine. Adelon NP (ed). Paris, Bechet, Vol. 21, 1928, Paris. 31-50.
3. Hill BB, Sloan DA, Lee EY, McGrath PC, Kenady DE. Marjolin's ulcer of the foot caused by nonburn trauma. *South Med J* 1996; 89(7):707-10.
4. Arons MS, Rodin AE, Lynch JB, et al. Scar tissue carcinoma: II. An experimental study with special reference to burn scar carcinoma. *Ann Surg* 1966; 163:445-60.
5. Ames FC, Hickey RC. Squamous cell carcinoma of the skin of the extremities. *Int Adv Surg Oncol* 1980;3:179-99.
6. Berkwits L, Yarkony GM, Lewis V. Marjolin's ulcer complicating a pressure ulcer: case report and literature review. *Arch Phys Med Rehabil* 1986; 67:831-3.
7. Abbas JS, Beecham JE. Burn wound carcinoma: case report and review of the literature. *Burns Incl Therm Inj* 1988;14(3):222-4.