

# Report of a case of Marjolin's Ulcer in a patient with multiple burn scars during Plastic Surgical Treatment: surgical resolution aimed at maintaining functional knee

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**Abstract.** Marjolin's ulcer is an epithelial neoplasm of the skin that can appear in a multitude of slow-to-solve cutaneous lesions. It is a relatively rare condition, with an estimated 3-5% occurrence among all squamocellular carcinomas of the skin (1). We present the clinical case of a female patient with previous third-degree burn scars who had already undergone numerous surgical procedures and presented recurring ulcers, above all on the extensor surface of the lower limbs. She was placed under our care so that she could undergo procedures for the debridement of these lesions, histological examinations and skin autografting. The clinic case described here is designed to underline the importance of the early monitoring and treatment of skin lesions that are difficult to heal in order to prevent malignant neoplastic degeneration, or at least halt its progress. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** Marjolin's ulcer, scar burns, skin graft, squamocellular cancer, debridement, ulcer

## Introduction

Marjolin's ulcer is a rare clinical condition first described by Jean Nicholas Marjolin in 1828. It is a cutaneous carcinoma that develops following burns, skin wounds and slow-to-solve pathologies in particular. Cases have been described following snake bites, chronic osteomyelitis, decubitus ulcers and venous insufficiency, on lepromatous lesions, on the sites of vaccine inoculations, and on fistulas or pilonidal abscesses (2, 3).

The etiopathogenesis of these malignant neoplasms appears to be attributable to the localised release of toxins, carcinogenic substances and changes in the immune system following tissue damage (4).

Two clinical forms are described: an acute variant in which, on average, the neoplasm appears within a year of the damaging event and a more frequent chronic form in which onset of the tumour takes 20-30 years on average. It can present itself with different

histological variants and even though the most frequent forms diagnosed are of a squamocellular type, there are also basocellular forms and the most common areas for these are the scalp, the extremities and even the torso (5).

This type of carcinoma tends to be more aggressive than cutaneous carcinomas that do not appear on scars, presenting a high level of locoregional and distant metastases not infrequently leading to death and offer an average life expectancy of 7 years.

## Case report

We present the case of 41-year-old female patient who, at the age of 18, suffered a trauma related to a road accident and petrol flame burns over 95% of her body's total surface area, 87% of which were third-degree burns. In the six months that followed, she underwent fifteen surgical procedures using grafts of au-

tologous cultivated skin following the technique of the Boston Burns Centre.

Over the last eight years, the patient has experienced repeated ulcerative episodes to the lower limbs in the area of pre-articular mobility, because of the particular fragility of the grafted skin; for this reason the patient has undergone four surgical procedures for debridement of ulcers and cutaneous autografts between 2005 and the present.

The last procedure was carried out in April 2012 and consisted of surgical cleaning of the bloody base of two oval ulcers (one 2 x 1.5 cm and the other 6.5 x 3.5 cm in diameter) that had been unresolved for one



Figure 1.



Figure 2.

year. The first was situated on the upper left-hand side of the thigh and the larger of the two was located on the extensor surface of the knee.

A radical surgical removal of the ulcerative lesions was performed, followed by bacteriological and histological examination of the removed tissue and application of a skin graft cover.

## Discussion

The histological report confirmed the clinical suspicion of squamocellular carcinoma on a burn scar, confirming the suspected diagnosis of Marjolin's ulcer. The total removal of the tumour was carried out with safety margins. The surgical procedure exposed the tendons of the frontal cruciate ligament and as a result an emergency covering became necessary, which proved particularly complex.

Our goals for this patient were: to avoid wet gangrene; eliminate pain; protect the tendon and bone; reduce exudates; and control wound odor.

Adhesion of the skin graft was guaranteed by the application of negative pressure medication at -80 mmHg for 5 days, a period of time that was sufficient to induce microcirculation of the bleeding base which (6), from the outset, ensured successful engraftment and therefore the functionality and covering of the kneecap region. The grafts were carried out by taking 12 x 5 cm of tissue from the thigh, after fenestration with scalpels to allow drainage of serohematic material, and were protected with vaselined gauzes and elastic compressive dressing for at least three to four days.

In the period immediately following the result of the histological tests, the patient underwent the process of oncological screening for the abovementioned pathology.

## Conclusions

This exceptional clinical case, which has been receiving treatment for 22 years, deserves the utmost attention because of the suspicion of possible future lesions, above all in anatomical areas subject to stretching and microtraumas.

The timely use of skin graft to repair wounds could avoid the recurrence of malignancies over time; where a neoplasm is already apparent, the recommended therapy is radical excision, while there is no general consensus on lymph node dissection.

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