

Marjolin's Ulcer: Report of 4 cases

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ABSTRACT

Background: Marjolin's ulcer is a rare and often aggressive cutaneous malignancy that arises in a previously traumatized or chronically inflamed skin particularly after burns. The aim of the study is to highlight the surgical importance of this ulcer and to emphasize the necessity of closely monitoring unstable scars of chronic wounds especially post burns wounds.

Method: A report of four cases of Marjolin's ulcer seen over a fifteen- year period at the University of Port Harcourt Teaching Hospital is presented with a review of the literature.

Results: Four cases were seen over a period of fifteen years. There were two females and two males aged 23,65,46,19 years respectively. They all sustained injuries over 20 years prior to being seen at the surgical clinic and presented with ulcers that had features of malignancy. The two females had their ulcers excised and grafted, and were discharged from the hospital tumour free. The two males presented to the hospital very late with malignant ulcers, which could not be resected and they took their own discharge from the hospital.

Conclusion: Marjolin's ulcer is uncommon in this environment but with the increasing incidence of petrochemical burns due to the oil industry in the environment, incidence of Marjolin's ulcer might increase.

KEY WORDS: Marjolin's Ulcer; Port Harcourt; Nigeria.

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INTRODUCTION

Historically, Jean-Nicholas Marjolin in 1828 was the first to describe skin cancers occurring in burn scars¹. Although most commonly seen in burn patients, Marjolin's ulcers also occur in previously traumatized and scarred tissue of various aetiology such as chronic osteomyelitis, chronic pressure ulcers and chronic sinuses². Other conditions

include venous ulcers, skin graft donor and recipient sites, gunshot wounds and scar tissue around colostomies^{3,4}.

As a rule, the typical time lag between the burn and the development of cancer is between 19 and 40 years (average of 30 years)^{1,5}. Also it is observed that the latent period is inversely proportional to the patient's age at that time of the burn⁵.

We present 4 cases of Marjolin's ulcer seen and treated at the University of Port Harcourt Teaching Hospital and with a brief review of the literature.

PATIENTS AND METHODS

The histopathological reports of all the chronic and non-healing ulcers seen between 1989 and 2004 at the University of Port Harcourt Teaching Hospital were reviewed. Those with the histopathological report of malignancy have been analyzed.

RESULTS

Four cases with histopathological reports of malignancy were seen during the fifteen- year period. There were two females and two males aged 23, 65, 46 and 19 years respectively (Table I). Case 1, a female, sustained a naked flame burns when she was 1 year old. The burns affected the face and the upper anterior chest wall. She received treatment in a local hospital and burns wound healed with scarring. The healed wound on the right cheek broke down after 22 years and an incision biopsy confirmed it to be a squamous cell carcinoma. She had a wide excision of the ulcer followed by a full thickness graft to the area. Case 2, a female, sustained a penetrating injury while cutting down branches of a tree. A branch with a sharp end pierced the left foot. The resulting ulcer was treated locally and it healed. She then presented 40 years later with an exuberant ulcer, which was confirmed to be a squamous cell carcinoma on incision biopsy. She also had a wide excision of the ulcer and the area was grafted with a split skin graft.

Case 3, a male, presented 24 years after sustaining a gunshot injury to the right thigh. He developed chronic osteomyelitis and the wound did not heal completely throughout the 24 years. An incision biopsy confirmed it to be an advanced squamous cell carcinoma involving the mid thigh. The patient declined to have an amputation of the limb. Case 4, a male, presented 19 years after sustaining a

flame burn in the neonatal period. The burn affected the anterior abdominal wall, which healed with extensive scarring. On presentation, it was an extensive fungating ulcer involving the anterior abdominal wall. Complete excision of the mass was not feasible and it, therefore, rapidly recurred. The histopathological report confirmed it to be a squamous cell carcinoma.

Table I. Clinical Feature of Cases

Case	Age in years	Sex	Site	Initial injury	Treatment of initial injury	Duration of scar	Treatment	Histology	Outcome & follow-up
1	23	F	Right cheek	Flame burn	Dressings	22yrs	Wide excision and full thickness graft	Squamous cell carcinoma	Well after 1 year
2	65	F	Left foot	Penetrating injury *	Dressings	40yrs	Wide excision and split skin graft	Squamous cell carcinoma	Well after 1 year
3	46	M	Right thigh	Gun-shot wound	Dressings	24yrs	Declined amputation	Squamous cell carcinoma	Lost to follow up
4	19	M	Abdominal wall	Flame burn	Dressings	19yrs	Wide excision and split skin graft	Squamous cell carcinoma	Recurred after 4 weeks

Key to Abbreviations: F=Female M=Male

*Penetrating injury - Caused by a felled branch of a tree that pierced through the left foot



Fig 1 [CASE 1]. Marjolin's Ulcer on the Cheek



Fig 2 [CASE 2]. Marjolin's Ulcer on the Dorsum of the Foot

DISCUSSION

The commonest cell type in Marjolin's ulcer is the squamous cell carcinoma. This is closely followed by basal cell carcinoma⁶. Other reported neoplasms are malignant melanoma⁷, osteogenic sarcoma⁸, fibrosarcoma and liposarcoma⁸. Old burns scars are reported as the leading cause, followed by chronic osteomyelitis. Two of the patients in this report had burns while the other two had chronic osteomyelitis and injury on the foot respectively. The male: female ratio in this report was 1:1 but the reported ratio in literature is 3:1⁹. Marjolin's ulcer involves the lower limbs in 40% of cases, the head and neck region 30%, the upper limbs 20% and the trunk 10%¹⁰.

It is believed that chronic irritation was a factor in the initiation of carcinoma. The literature is replete with evidence of this¹¹. Inflammation, ulceration and repeated trauma over many years may provide enough chronic irritation to promote malignant change. The transformation of the normal tissue to malignant tissue after trauma is said to pass through stages beginning with keratoacanthotic changes and progressing through basal cell hyperplasia, pseudo-epitheliomatous hyperplasia and basal cell atypia to eventual squamous cell carcinoma¹².

The pathophysiology of malignant degeneration is poorly understood and many theories have been proposed. One theory contends that the poorly nourished scar tissue poorly tolerates actinic damage so that mutated genes are not repaired¹³. Another theory suggested that the burn wound exudates may act as co-carcinogens¹⁴. Biopsy of the lesion both from the centre and margins are necessary to make a diagnosis. If the biopsy reveals any form of hyperplasia, it should be repeated at 3-monthly intervals until the wound heals, to exclude malignant degeneration. Close clinical examination of an old burn scar may show changes suggestive of malignancy. These changes include increase in size of ulcer, appearance of elevated and everted edges and offensive odour and pain. Also non-healing of a long-standing ulcer treated adequately is a warning sign for close surveillance.

Wide local excision with a margin of at least 2-4cm of healthy tissue is the treatment of choice in cases of Marjolin's ulcer¹⁴. Performing the excision with cautery is said to be safer as it can prevent metastasis by preventing tumour cells from seeding into the blood stream and lymphatics¹⁵. Amputation is only indicated when wide local excision is prevented by deep invasion and bone or joint space involvement¹⁶. Three of the reported cases had wide local excision followed by skin grafts. The fourth case had immediate recurrence because of deep invasion by the lesion. The patient who that had bony involvement declined to have an amputation. Regional lymph node dissection is recommended in cases with only clinically palpable lymphadenopathies¹⁷. Using the World Health Organization criteria, the tumour is graded into grades I, II and III which correspond to well-differentiated, moderately-differentiated and poorly-differentiated tumour respectively¹⁸. This histological grading is helpful in deciding which patients will benefit from nodal dissection.

Two of the patients in this report are still being followed after more than 12 months and there has been no recurrence. In most series the incidence of recurrence is in the range of 20% to 50% and most of these recurrences are regional⁵. Metastases to the brain, liver, lung, kidney and distant lymph nodes have been reported¹⁹. The overall 3-year survival rate was 66% and others reported a 5-year survival rate of 60% for wide excision and 69% for amputation¹⁹. If regional lymph nodes are involved the 3-year survival rate decreases to 35%⁵.

CONCLUSION

Marjolin's ulcer is a condition with a high prevalence following burns trauma and other causes of chronic inflammation. The condition could be misdiagnosed for a mere infection and managed as such. Clinicians should therefore be diligent in the long-term surveillance of significant scars or areas of chronic inflammation, especially if there is change in nature of an ulcer.

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