

Case Report

## Marjolin Ulcer with Metastasis: Malignant neoplasm arising from Burn scar

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**Abstract:** Marjolin's ulcer is a malignant transformation of a long standing scar or burn tissue into squamous cell carcinoma that are aggressive if not dealt with early. We report a 29 year old patient who presented with Marjolin's ulcer an year back and now presented to us with metastasis to the femoral-inguinal lymph nodes.

**Keywords:** Marjolin's ulcer, squamous cell carcinoma

### INTRODUCTION

Chronic cutaneous ulcers are common in the developing countries like India, especially in rural areas with poor living conditions. These ulcers often result from trauma, vascular insufficiency, neuropathy, leprosy, diabetes or hemoglobinopathies. If poorly managed these lesions may undergo malignant transformation. The suspicion of malignancy is raised with increase in pain, size of the ulcer, crusting and bleeding.

### CASE REPORT

A 28 year old gentleman came to our hospital with a history of non healing ulcer in right heel since 5 months. He had a history of burns in childhood and the ulcer was very small but increased over a period to attain the present size. There was no history of diabetes, hypertension or tuberculosis. Local examination revealed a large, oval, ulcerative growth measuring 5 x 4 cm with elevated, irregular margin and necrotic floor. The inguinal lymph nodes were not palpable. On MRI right foot there was an altered area of signal intensity involving the right heel. Plantar surface skin/subcutaneous plane (1.75cm) with post contrast enhancement and central diffuse restriction with ADC value of  $(890 \times 10^{-6} \text{ mm}^2 / \text{s})$ . Features were highly suggestive of inflammatory/infective etiology-?residual/recurrent disease.

FNAC of the ulcer confirmed moderate to poorly differentiated squamous cell carcinoma for which he underwent excision and full thickness skin grafting. The histopathology of the specimen confirmed a moderate to poorly differentiated squamous cell carcinoma infiltrating the subcutaneous tissue with

extensive desmoplasia and chronic inflammation with free margins.

Patient now presented to us now after a year with enlarged femoral-inguinal lymph nodes measuring 3cm x 3cm since one month. FNAC of femoral lymph node revealed metastasis from a poorly differentiated carcinoma possibly squamous. Patient underwent right side inguino-iliac lymph node dissection.

### Pathological Findings

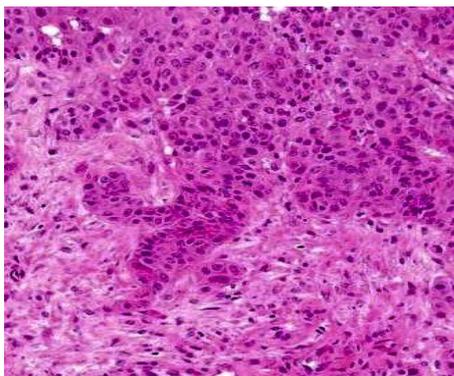
#### Specimen

- Rt inguinal lymph nodes dissection with skin island
- Rt iliac lymph nodes dissection

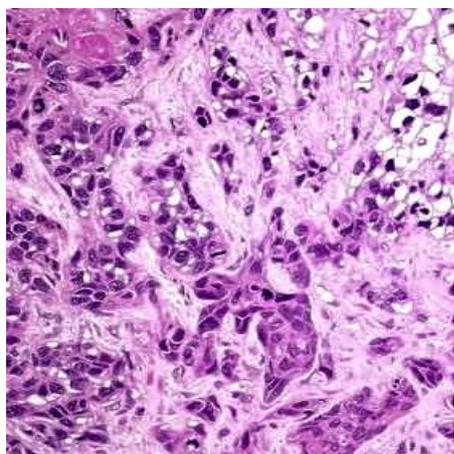
#### Gross examination

- Single irregular piece of soft tissue measuring 12cm X 8.5cm X 4.5cm with overlying skin ellipse measuring 5.5cm X 3cm. On cutting open there are multiple keratin filled and haemorrhagic cystic cavity largest measuring 4cm X 1.5cm and smallest measuring 0.5cm in diameter.
- Multiple partly fibrofatty tissues together measuring 5cm X 3.5cm. Multiple lymph nodes dissected.

Microscopic examination showed metastatic and soft tissue deposits of squamous cell carcinoma with involvement of 2/14 right iliac lymph nodes and extra nodal extension.



**Fig-1: Histopathology of foot ulcer showing a moderately differentiated squamous cell carcinoma.(H&E,40x)**



**Fig-2: Photomicrograph showing a soft tissue deposits from inguinal region of moderately differentiated squamous cell carcinoma**

## DISCUSSION

French surgeon Jean-Nicholas Marjolin described ulceration in a burn scar in 1828. Dupuytren first time noted malignancy in “Marjolin’s ulcer”. Da Costa described forming malignant tumors inside “Marjolin’s ulcer” [1]. The exact mechanism of malignant transformation of Marjolin’s ulcer remains unclear and controversial. Few theories consider that the toxin, chronic irritation and inflammation, ultra-violet rays and environmental factors may have a role in the malignant transformation [2]. Males are affected more than females with ratio of 3:1. Most lesions occur on the extremities (60%), with ulcers on the head and face occurring less frequently (30%) and lowest frequency in the trunk(10%) [3]. Most common malignancy arising in marjolin's ulcers 75%-96% are squamous cell carcinomas [4]. Other neoplasms have also been reported and these include basal cell carcinoma, melanoma, osteogenic sarcoma, fibrosarcoma and liposarcoma [5]. Marjolin’s ulcer present in two forms. An acute form in which malignant transformation is observed within 12 months from the time of the injury or the inflammation process. The

chronic form, which is more frequent, malignancy develops slowly with average latency period of 36 years [6]. In our case patient was 28 years and developed cancer after a period of 20 years (chronic form), due to childhood burns leading to chronic ulcer and chronic inflammation of the wound.

Macroscopically, Marjolin's ulcer has two forms- exophytic and infiltrative. The former is less likely to metastasize and leads a benign course while the later is more aggressive.

Marjolin’s ulcer presents as flat ulcer with indurated, elevated margins or as exophytic growth (less frequent). Malignant transformation in 75% to 96% of cases is squamous cell carcinoma. The microscopic grade of the tumor varies from well-differentiated (55%) to poorly differentiated (10%) [4]. The recognition of malignant transformation can be confused with infection, but changes such as appearance of flat non-healing ulcers enlarging in circumference with elevated and indurated borders, foul smelling, painful with exudates and bloody drainage suggest malignant transformation.

The treatment of Marjolin’s ulcers should be multidisciplinary and should be treated only in oncological centers. Treatment includes surgery, chemotherapy and radiotherapy [7]. Surgical treatment of Marjolin’s ulcers include wide local excision, block dissection of the regional lymph nodes and amputation in advanced tumors. Surgical margin in wide local excision should be taken care of and must be at least 20 mm [7, 8] as there is high risk of metastasis to the brain, liver, kidney and lungs, mainly with lesions of the lower extremities. The patient should be followed up regularly and there is no evidence of metastasis.

The prognosis in Marjolin’s ulcers depends on various factors. The most important factors are age, size, grade and stage of tumor, metastases and presence of local recurrence. Long-term follow-up is recommended in all cases. Most series indicate that the incidence of recurrence after surgery is in the range of 20% to 50% [5]. Prognosis for patients with Marjolin’s ulcer range from 65% to 75% for 3-year survival time. For patients with Marjolin’s ulcer with metastasis 3-year survival time is from 35% to 50% [9].

Prevention is better than cure and it is important that all chronic scars, wounds and ulcers should have multiple biopsies to avoid missing malignant ulcers. Recurrence and fatality rates are higher due to the aggressive nature of this tumour. This was evident in our patient who within a very short period after his presentation with Marjolin's ulcer presented with inguinal nodes metastasis.

## CONCLUSION

- Marjolin's ulcer is defined as a tumor, which is arising from a chronic wound, burn scars or chronic inflammation.
- Most common malignancy in Marjolin's ulcers is squamous cell carcinomas.
- Most of Marjolin's ulcers are mistaken for an infected wounds, scars or ulcerations.
- The treatment of Marjolin's ulcers should be multidisciplinary it means that it should be treated only in oncological centers.
- All chronic scars, wounds and ulcers should have multiple biopsies to avoid missing malignant ulcers.

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