Open Journal of
Clinical & Medical
Case Reports

Volume 6 (2020)
Issue 12

ISSN: 2379-1039

# A case report of a cutaneous melanoma on a skin graft of the scalp

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## Abstract

We report a case of a patient who underwent a large resection of a spinocellular carcinoma of the scalp. The loss of substance was overlayed with a parietal transposition flap. The flap's donor site was then grafted with skin from his right thigh. At one year follow up the patient had a cutaneous malignant melanoma arising on the skin graft. This 92 year old patient, first presented with a small, ulcerated lesion on the scalp. Biopsy demonstrated a spinocellular carcinoma. The carcinoma was surgically removed, and the margins were satisfactory. A year and a half later the patient presented with a larger 3 cm ulcerated lesion of the same site. Biopsy was in favor of a recurrence of the spinocellular carcinoma. The resection of the carcinoma with an associated craniectomy was performed. The pathological examination showed satisfactory margins. The loss of substance was then overlaid with a parietal transposition flap. The flap's donor site was grafted with meshed skin taken from the right thigh. A year later, the patient presented with a 1,5 cm ulcerated lesion on the previously well healed skin graft. A resection/biopsy was in favor of a cutaneous malignant melanoma. By this time, the patient was 94 year old with a WHO score (performance status) of 2, and presented first stages of chronic renal failure. We opted for a palliative treatment. Including this report, there are now seven instances in which a malignant melanoma was transplanted from a skin donor site to another site of the body. These cases demonstrate the importance of taking a thorough cancer history, with particular emphasis on the documentation of any prior skin cancers, along with careful inspection of the graft donor site for any atypical naevi, lesions, or scars before grafting.

## Keywords

Fusocellular; Melanoma; skin graft; reactivation.

## Introduction

The genesis of cutaneous malignant melanoma implies genetically predisposed cells. The change of

environment and specifically to an inflammatory one may reactivate sleeping mutations. We report a case of a patient who underwent a large resection of a spinocellular carcinoma of the scalp. The loss of substance (skin and bone) was overlaid with a parietal transposition flap. The flap's donor site was then grafted with skin from his right thigh. 1 year follow up the patient had a cutaneous malignant melanoma arising on the skin graft.

## Case Report

This 92 year old patient, first presented with a small, well defined, ulcerated lesion on the scalp. Biopsy demonstrated a spinocellular carcinoma. A CT scan was then performed showing no sign of bone or lymphatic nodes involvement. The carcinoma was surgically removed, and the margins were satisfactory. A year and a half later the patient presented with a larger 3 cm ulcerated lesion of the same site. Biopsy was in favor of a recurrence of the spinocellular carcinoma. A new CT scan showed bone lysis with no lymphatic nodes involvement. The resection of the carcinoma with an associated craniectomy was performed. The pathological examination showed satisfactory margins. The loss of substance was then overlaid with a parietal transposition flap. The flap's donor site was grafted with meshed skin taken from the right thigh.

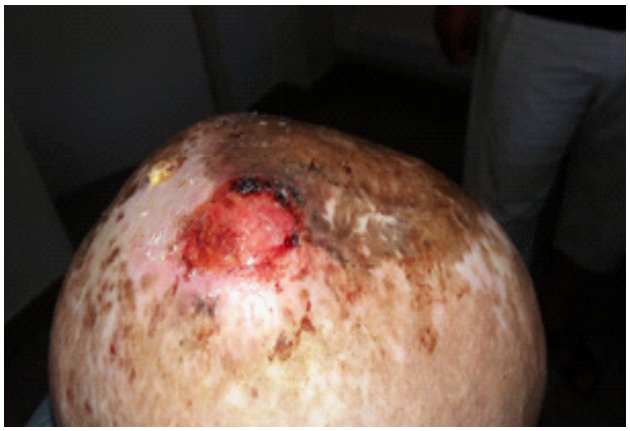

**Figure 1:** Image of the recurrent spinocellular carcinoma a year and a half after the primary treatment.

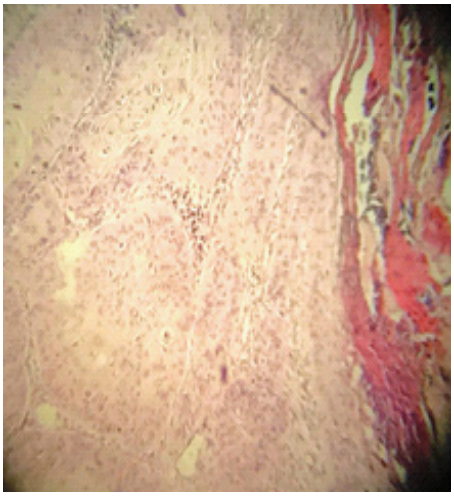

**Figure 2:** Spinocellular carcinoma (hematoxylin-eosin stain [H&E]; ×100); Hammas N; Laboratoire d'anatomopathologie et de cytologie moléculaire, CHU HASSAN II.

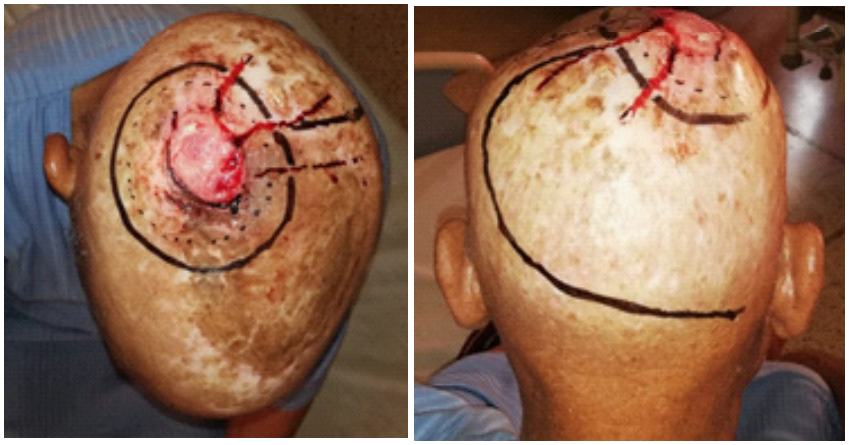

**Figure 3:** Drawing and planing of the resection and the transposition flap.

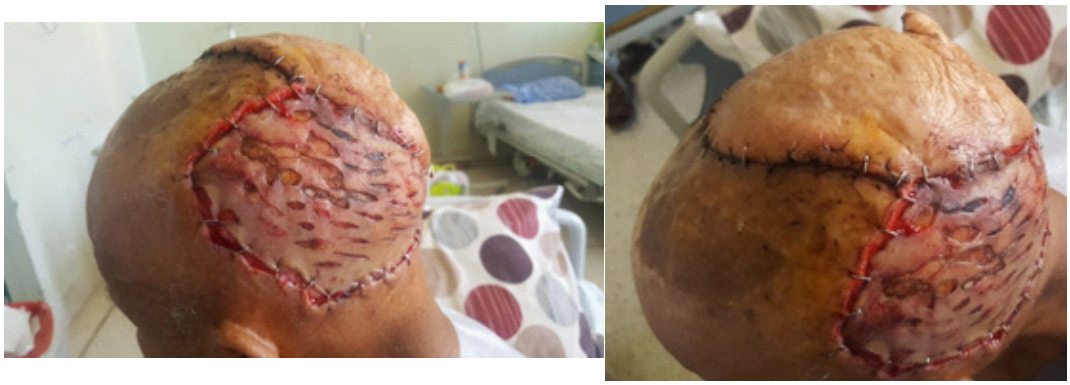

**Figure 4:** Post-operative images showing the transposition flap along with the thigh harvested skin graft, which was used to overlay the flap's donor site.

A year later, the patient presented with a 1,5 cm ulcerated lesion on the previously well healed skin graft. A resection/biopsy was in favor of a cutaneous malignant melanoma. By this time, the patient was 94 year old with a WHO score (performance status) of 2, and presented first stages of chronic renal failure. We couldn't perform any contrast CT scans, and neither was he suited for chemotherapy nor radiotherapy. We opted for a palliative treatment.

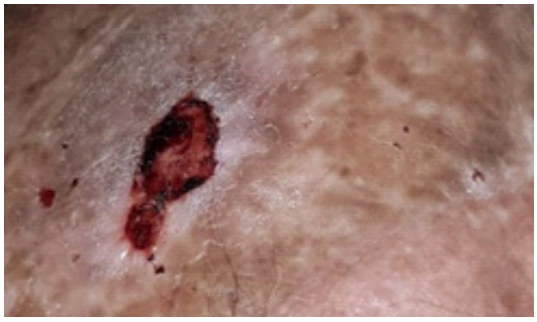

**Figure 5:** The macroscopic aspect of the melanoma arising on the skin graft.

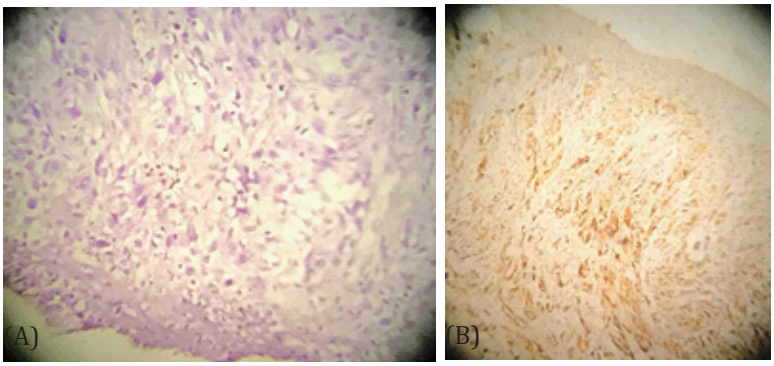


**Figure 6:** Fusocellular melanoma, A: hematoxylin-eosin stain [H&E]; ×100, B: Immuno-histochemical confirmation PS100 (+) Hammas N; Pathology and molecular cytology laboratory, university hospital HASSAN II.

## Discussion

The majority of melanomas arising in skin graft recipient sites are thought to represent either metastases from or recurrence of a primary lesion, or a second primary melanoma, which develop in approximately 10% of melanoma patients. Melanomas arising solely in skin graft donor sites most likely signify metastases and are thought to reach the donor site by 1 of 3 mechanisms: by lymphatic transit, by hematogenous spread, or by intraoperative seeding caused by poor surgical technique [1–3].

In their report published in 1962 describing the pathogenesis of malignant melanoma, Peterson et al [4]. explained that the higher rate of cutaneous metastases to skin graft donor sites compared with other areas of the body is due to increased lymphatic flow containing tumor emboli which are deposited at the site of trauma. Additionally, tumor emboli may travel hematogenously, penetrating the walls of blood vessels and invading surrounding stroma. This likely occurs more frequently in skin graft donor sites due to the increased neovascularization that takes place during healing and scar formation [3]. The enhanced neovascularization, stimulated by members of the vascular endothelial growth factor family and

the angiopoietin family and additional associated growth factors and cytokines abundant in healing skin grafts, including platelet-derived growth factors, transforming growth factor-, IL-8, and MCP-1, may explain why an invasive lesion developed in the skin graft of our patient [5].

## Conclusion

Including this report, there are now seven instances in which a malignant melanoma was transplanted from a skin donor site to another site of the body. These cases demonstrate the importance of taking a thorough cancer history, with particular emphasis on the documentation of any prior skin cancers, along with careful inspection of the graft donor site for any atypical naevi, lesions, or scars before grafting [5,6,7].

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**Manuscript Information:** Received: June 28, 2020; Accepted: July 24, 2020; Published: July 31, 2020

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**Citation:** Fadel R, Afellah M, Kamal D, Oufkir A, Elalami MN, Hammas N. A case report of a cutaneous melanoma on a skin graft of the scalp. Open J Clin Med Case Rep. 2020; 1683.