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Case Report

# Ulcerated Hypertrophic Scar in A 21-Year-Old Female: A Case Report

Entela Shkodrani<sup>1\*</sup>, Valbona Duraj<sup>2</sup>, Alert Xhaja<sup>1</sup> and Barbara Shkodrani<sup>3</sup>

<sup>1</sup>Clinic of Dermatology, University Hospital Centre “Mother Theresa” Tirana, Albania

<sup>2</sup>Clinic of Rheumatology, University Hospital Centre, “Mother Theresa” Tirana, Albania

<sup>3</sup>Department of Medical Genetics, Preventive Biomedicine, University of Tor Vergata, Rome

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**\*Corresponding author:** Entela Shkodrani, Clinic of Dermatology, University Hospital Centre “Mother Theresa” Tirana, Albania

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### ABSTRACT

Hypertrophic scarring (HTS) is a cutaneous condition characterized by deposits of excessive amount of collagen that create a raised scar at the site of injury. HTS is a result of impaired mechanism of wound healing process. We report the case of a 21-years old female who developed two thick hypertrophic scar bands in both inguinal regions, secondary to burns resulting from the application of a depilatory cream. One year after the development of the HTS, a red nodule was noted in the right inguinal region, arising from an elevated soft border. According to the patient, this erythematous nodule developed as a result of recurrent pruritus and intermittent and pain originated from the scar. In the dermoscopic examination blood vessels of various shapes, including short, long, branched and interrupted forms, were observed. No other dermoscopic features were noted to suspect a Squamous Cell Carcinoma, Pyogenic Granuloma or even an Amelanotic Melanoma. The patient was referred for a surgical excision and the biopsy results confirmed only the presence of exuberant granulation tissue over the scar.

**Keywords:** Hypertrophic scar; Scar; Ulceration

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### Introduction

Hypertrophic scars (HTS) are defined as a pathological scar that have abnormal thickness which raises from a previous wound<sup>1</sup>. The best clinical predictor for the development of hypertrophic scars is a prolonged inflammatory wound healing phase. This result usually corresponds with a wound that has not epithelialized and continues to exudate for more than 3 weeks<sup>1,2</sup>. Hypertrophic scarring following surgical procedures, trauma and especially burns is a significant concern for patients and a challenging problem for clinicians because it can be painful, pruritic, erythematous, raised and cosmetically unacceptable.

Some of the risk factors for the development of pathologic scarring have been reported to include darker skin color, female sex, young age, allergy and bacterial colonization<sup>3,4</sup>. The differential and exclusive diagnosis of HTSs is important because various types of malignant tumors resemble these scars<sup>5,6</sup>. For example, malignant dermatofibrosarcoma protuberans (DFSP) tumors have been mistaken for HTSs<sup>7,8</sup>. Gonzalez-Vela, et al.<sup>9</sup> reported HTSs as differential diagnoses of sclerotic neurofibroma. Also, several other type of lesions can develop over a hypertrophic scar, including both benign and malignant conditions like Keloids, Epidermal Inclusion Cysts, Pyogenic

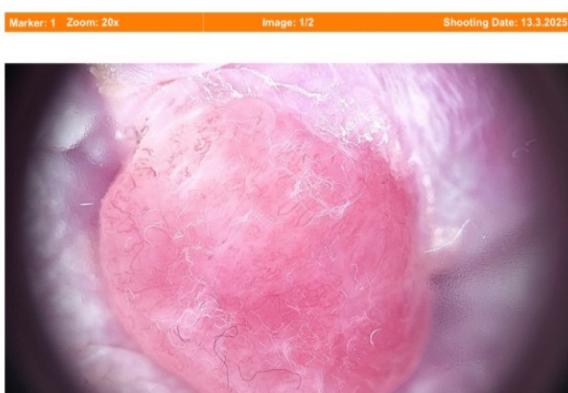
Granuloma, Squamous Cell Carcinoma (Marjolin's ulcer) and Dermatofibroma or Hypertrophic Nodules<sup>6,10</sup>.

## Case Report

We report the case of a 21-years Caucasian old female who developed two thick hypertrophic scar bands in both inguinal regions, secondary to burns resulting from the prolonged application of a depilatory cream. Even though the patient reports that she regularly and properly treated the burns caused by the depilatory cream, after two months the presence of HTS was noted. One year after the development of the HTS, a red nodus was developed in the right inguinal region, arising from an elevated soft border (Figure 1). A small haemorrhagic erosion was observed nearby. According to the patient, this erythematous nodule developed as a result of recurrent pruritus and intermittent pain originated from the scar. In the dermoscopic examination blood vessels of various shapes, including short, long, branched and interrupted forms, were observed (Figure 2). No other dermoscopic feature was present. The clinical diagnoses of this nodus were considered among a Pyogenic Granuloma, a Dermatofibroma or an Epidermal Inclusion Cyst. Squamous Cell Carcinoma and Amelanotic Melanoma were also suspected, although these lesions are rare and typically develop in HTSs that have been present for many years. The patient was referred for a surgical excision (Figure 3). The histopathologic report was: an exuberant granulomatous inflammation, eroded and ulcerated, with epidermal inclusions in the dermis associated with nonspecific chronic inflammation. No other significant elements were identified (Figure 4).



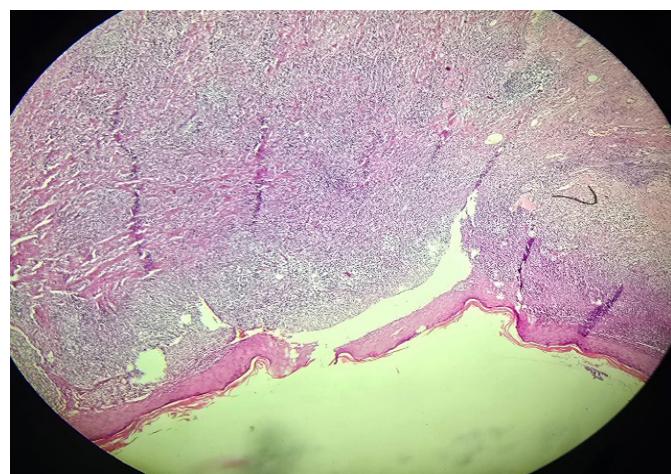
**Figure 1:** Red nodus over a thick hypertrophic scar on the right inguinal region.



**Figure 2:** Dermoscopic features of the nodus showing blood vessels of various shapes, including short, long, branched and interrupted forms.



**Figure 3:** Hypertrophic Scar and the red nodus before surgical intervention.



**Figure 4:** Exuberant granulomatous inflammation, eroded and ulcerated, with epidermal inclusions in the dermis associated with nonspecific chronic inflammation.

## Discussion

In front of a patient with pathological scars, many physicians have difficulty in differentiating HTS firstly from keloids. HTS are usually raised, although rarely elevated more than 4 mm above the skin; red or pink in colour; hard; and pruritic. Additionally, these scars do not extend beyond the general geographic margins of the wound and tend to regress over time<sup>11</sup>. In contrast, keloids continue to evolve over time and do infiltrate the surrounding tissue. Our patient presented red to purple raised thick bands at both inguinal regions which do not extend the original margin of the burns. Several types of lesions can develop over a hypertrophic scar, including both benign and malignant lesions<sup>6</sup>. Clinically it is very important to distinguish these lesions and to make the right differential diagnoses. Our patient presented a red nodule arising over an elevated soft border and the main differential diagnoses were Inclusion Epidermal Cist (which generally occurs within or under a scar), Pyogenic Granuloma (appears as small, red friable nodule which bleeds easily) and Dermatofibroma (generally are firm nodules). Based on the clinical appearance, but without the support from dermoscopic findings a suspicion was raised for Squamous Cell Carcinoma and Amelanotic Melanoma. Despite numerous case reports, epidemiologic evidence regarding true rate of skin cancer in scars of any aetiology is sparse<sup>12</sup>. One eligible cohort Danish study assessed skin cancers specifically

on past burn injury sites and found a burn-site-specific SIR of 1.2 (95% confidence interval (CI) = 0.4–2.7) for Squamous Cell Carcinoma (SCC), 0.7 (95% CI = 0.4–1.1) for Basal Cell Carcinoma and 0.3 (95% CI = 0.0–1.2) for Melanoma<sup>13</sup>. Moreover, these malignancies typically appear many years after burns and scar formation, whereas the patient has only a one-year history. Pathology reported exuberant granulomatous inflammation, eroded and ulcerated with epidermal inclusions in the dermis. Ongoing studies confirm that the possibility that a nodule over an HTS represents simply exuberant granulation tissue is relatively high, especially if there has been ongoing local irritation and mild infection or repeated trauma<sup>14,15</sup>. The patient reports persistent pain localized at the area of the scar, with pruritus providing the only perceived relief. Additionally, she has experienced ongoing psychological distress due to the aesthetic disfigurement, which has significantly impacted her quality of life, including difficulties in intimate relationship related to the presence of the HTS.

## Conclusion

The purpose of presenting this case lies in the fact, that even the possibility that a nodus over a HTS represent simply exuberant granulation which often appears red, raised and may bleed easily, it can be mistaken for more a serious lesion. Clinical, dermoscopic and histological evaluation is necessary to differentiate it from other benign and malignant lesions.

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