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Squamous Cell Carcinoma of the Scalp: A Case Report

Ghita Filali Baba, MD[1]*, Mariame Meziane[1], Laila Benzekri[1]

[1]Department of Dermatology, Mohammed V University in Rabat, Ibn Sina University Hospital, Rabat, Morocco

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***Corresponding author:** Ghita Filali Baba
Department of Dermatology, Mohammed V University in Rabat, Ibn Sina University Hospital, Rabat, Morocco

Abstract | **Case Report**

Squamous cell carcinoma (SCC) of the scalp accounts for approximately 2% of all skin cancers, with an average age at diagnosis of 64.8 years. The main precancerous skin lesions include actinic keratoses, burn scars, and trauma. SCC can present as an ulcerative-proliferative or superficial lesion. It progresses either through local extension or hematogenous spread. Therapeutic management involves complete tumor excision with margins of at least 6 mm, and in some cases, lymph node dissection may be necessary. Radiotherapy is reserved for extensive forms of the disease. Prevention mainly relies on avoiding carcinogenic agents and treating precancerous lesions. We report the case of a 31-year-old female patient with no known medical or surgical history, who had a history of scalp burn at the age of four. She was referred to us for a scalp tumor that had been evolving for eight months. Clinical examination revealed an ulcerative-proliferative tumor on a burn scar located in the left parieto-temporal region. The lesion was painful, foul-smelling, and exhibited occasional bleeding. A biopsy of the tumor was performed, and histopathological analysis confirmed squamous cell carcinoma. We opted for surgical excision followed by guided wound healing. A follow-up plan was established. This rare case in the literature highlights the importance of protecting burn injuries from ultraviolet (UV) radiation and microtrauma to prevent further complications. Burned skin is more fragile and sensitive to UV rays, making it crucial to cover it or apply appropriate sunscreen. Annual dermatological follow-up is recommended to monitor scar evolution and prevent potential complications.

Keywords: Precancerous lesions, Squamous cell carcinoma, Scar, Burn, Scalp, Surgical excision.

INTRODUCTION

Squamous cell carcinomas (SCC) are the most common skin cancers after basal cell carcinomas, primarily affecting individuals aged 60 and older [1]. Squamous cell carcinoma of the scalp is of particular medical interest, accounting for up to 2% of all skin cancers, with an average age of diagnosis of 64.8 years [2].

CASE REPORT

A 31-year-old female patient, with no known medical or surgical history, but with a history of scalp and thigh burns at the age of four, was referred for a tumor that had been evolving for eight months. Clinical examination revealed an ulcerative-proliferative tumor on the scalp, painful, foul-smelling, and bleeding in places, located in the left parieto-temporal region. The lesion had irregular borders and measured approximately 9 cm × 5 cm. The lymphatic areas were free of involvement. A biopsy confirmed the presence of an infiltrating squamous cell carcinoma of the scalp. After an extension workup with no abnormalities found, the patient was referred to the plastic surgery department for tumor excision with guided wound healing. Regular follow-up was implemented.

Figure 1: Ulcerative-budding tumor of the scalp on a burn scar

Figure 2: Ten days post-complete excision with directed healing

DISCUSSION

Squamous cell carcinoma of the scalp (SCC) accounts for approximately 2% of all skin cancers and represents between 10 and 20% of tumors affecting the head and neck region [3]. The main precancerous skin lesions include actinic keratoses, as well as scars resulting from burns or trauma [1]. It primarily develops on sun-exposed areas of the skin, and nearly 55% of squamous cell carcinoma cases occur in the head and neck region [4]. Furthermore, patients who have suffered burns at an older age have a shorter interval before the development of squamous cell carcinoma [6]. In addition to age, several risk factors are associated with squamous cell carcinoma of the scalp, including chronic scarring, actinic keratoses, and a history of exposure to ionizing radiation [5]. The incidence of squamous cell carcinoma of the scalp (SCC) is particularly high in older individuals, especially among men, due to the chronic sun exposure in this region [7]. In his study, Assane Diop [8] observed that out of eight cases of squamous cell carcinoma, five patients had precancerous lesions, including two burn scars, two post-traumatic scars, and one case of actinic keratosis. In this clinical case, the patient, a 31-year-old woman living in a rural area, presented with a left temporo-parietal lesion on a burn scar resulting from a microtrauma. This lesion, initially characterized by a small wound with crusts, evolved over a period of eight months into an ulcerative-proliferative tumor of the scalp. The microtrauma, burn scar, and sun exposure appear to be contributing risk factors in the development of this carcinoma in the patient. The diagnosis of squamous cell carcinoma of the scalp is established by biopsy of a tissue sample. However, there is no correlation between the degree of histological differentiation and tumor aggressiveness [5]. In a retrospective study involving 39 patients, Conor T. Boylan [9] reported a high sensitivity of computed tomography (CT) at 76.9% and a specificity of 96.2%. In this clinical case, the CT scan revealed a lesion consistent with squamous cell carcinoma of the scalp in the left parieto-temporal region, with no signs of bony involvement or cervical lymphadenopathy.

CT scans and MRIs are valuable tools for diagnostic orientation and assessing the extent of squamous cell carcinoma of the scalp. However, histopathological examination remains the key step to confirm the diagnosis, as was the case here with the biopsy results. Early diagnosis is essential and requires public awareness, especially in areas with limited access to healthcare. Approximately 16.6% of squamous cell carcinoma of the scalp cases result in metastasis to regional cervical lymph nodes. In the case of Marjolin's ulcer, malignant transformation typically occurs an average of 32.5 years after the burn, with metastatic spread mainly through the lymphatic system [5]. Although squamous cell carcinoma is generally considered to have a low metastatic potential, lymph node or distant metastases can occur, especially in poorly differentiated or large tumors. The risk of metastases can also be heightened by delayed management.

Thus, early diagnosis and appropriate management are essential to prevent their occurrence. Prevention of squamous cell carcinoma relies on reducing risk factors and early management of precancerous lesions. Prolonged exposure to ultraviolet (UV) rays, the main cause of this cancer, can be limited by adopting sun protection measures such as wearing hats, covering clothing, and regularly applying broad-spectrum sunscreens. Raising awareness among populations, particularly those living in rural areas or professionally exposed to the sun, is crucial to encourage

these preventive behaviors. Additionally, precancerous lesions such as actinic keratoses, burn scars, and post-traumatic lesions must be detected early and treated appropriately to prevent malignant transformation. Regular dermatological follow-up would help prevent progression to invasive squamous cell carcinoma. Finally, educating patients on the importance of monitoring suspicious skin lesions and facilitating access to care in high-risk areas are key strategies to improve prevention and reduce the incidence of this cancer.

CONCLUSION

Squamous cell carcinomas of the scalp remain a relatively common condition that requires a multidisciplinary approach (dermatologists, plastic surgeons, neurosurgeons, ENT specialists, oncologists, etc.) to ensure better management. Raising awareness among general practitioners, specialists, and patients about risk factors and precancerous lesions is essential to detect early lesions and ensure appropriate conservative care.

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