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RESEARCH ARTICLE

CASE REPORT OF A RARE CASE OF MALIGNANT MELANOMA IN THE CONTEXT OF A MARJOLIN ULCER

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Marjolin ulcer, Melanoma, Chronic scar, Burns.

Abstract

Objective: To explore the rare association between Marjolin ulcer and melanoma, in order to better understand the risk factors and to encourage research on early diagnosis and management of atypical skin lesions.

Methods: Case study of a 69-year-old female patient with an ulcerative and budding lesion on an unstable scar resulting from a burn sustained at the age of 5, requiring histopathological evaluation to rule out malignancy.

Discussion: Marjolin ulcer is a malignant degenerative complication that occurs on an unstable scar, often caused by burns, appearing decades after the trauma. Most cases are squamous cell carcinomas, but melanoma can also develop on chronic unstable scars. Although less common, it carries a higher risk of metastasis. The patient presented with stage IV disease according to the TNM-AJCC 2017 system, which complicates the prognosis.

Conclusion: Marjolin ulcer, linked to chronic inflammation, promotes cellular mutations and an increased risk of melanoma, particularly on old burns. Management includes surgical excision and lymph node dissection, with treatment options such as immunotherapy for metastatic cases. Regular follow-up is essential to monitor recurrences and prevent malignant transformations.

Introduction:-

Marjolin ulcer is an entity whose rarity varies from one article to another, often correlated with the level of medical care and access to healthcare (1), but remains well-documented and corresponds to the malignant transformation of a chronic wound, often a healed burn or a persistent ulceration.Melanoma is a skin cancer developed from cells called melanocytes, which produce melanin, the pigment that colors the skin. In 80% of cases, melanoma arises spontaneously on healthy skin, and in 20% of cases, it develops from a pre-existing nevus (3).Classically, Marjolin ulcer evolves into squamous cell carcinoma in 71% to 94% of cases (2), but other forms of skin cancer may also develop. The association between Marjolin ulcer and melanoma is extremely rare, making it a subject of particular clinical interest.

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Case Report:-

This is a 69-year-old female patient of very low socio-economic and educational level, with a history of thermal flame burn caused by gasoline in a childhood accident at the age of 5.The patient presented with a large scarred area involving the lower third of the abdomen, both inguinal regions, and the pubic area, extending bilaterally to the anteromedial thigh regions. The scarred plaque was non-inflammatory, dyschromic, with a flexion contracture of the thigh on the trunk at about 110°, preventing complete extension to 180°. Notably, the retractile scar of the left inguinal region showed a 4 × 3 cm ulcerative-budding lesion with a necrotic component and a slightly pigmented keratotic excrescence distally.

Figure 1: Local condition of the lesion.

Due to the clinical condition of the skin, it was not possible to explore the ipsilateral lymph node area, so an ultrasound was performed, revealing heterogeneous hypoechoic inguinal lymphadenopathies on the left side, the largest measuring 15.6 × 33.8 mm.This clinical presentation justified a biopsy of the lesion.On the first histopathological examination, two fragments were studied, revealing a dermal malignant undifferentiated tumor proliferation arranged in sheets, composed of large, highly pleomorphic cells with prominent eosinophilic nucleoli; mitoses were numerous and atypical in places, with a vascular-looking stroma. Given the undifferentiated nature of the tumor, immunophenotyping was performed, revealing malignant melanoma.The patient was hospitalized in the reconstructive surgery department at CHU Marrakech for further diagnostic management, including operability and locoregional and distant extension assessments.For the locoregional extension assessment, a pelvic MRI was performed, showing the same findings as the ultrasound, without involvement of the genital organs or the rectal apparatus.

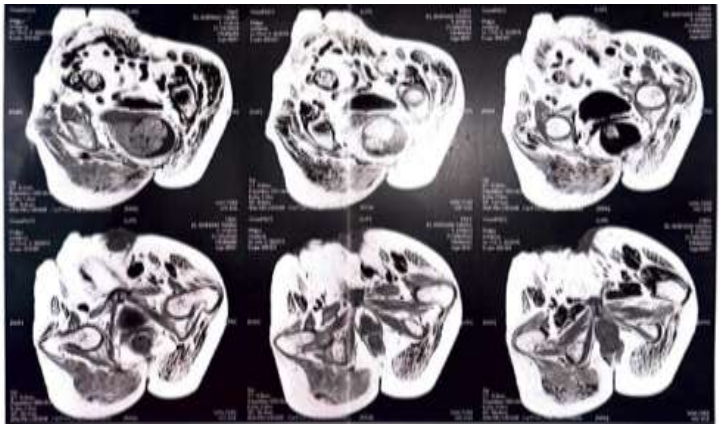

Figure 2: Pelvic MRI (T1 and T2 sequences, with and without Gadolinium injection): cutaneous-subcutaneous left inguinal neoplasm with ipsilateral inguinal lymphadenopathies.

For the distant extension work-up, a thoraco-abdomino-pelvic CT scan, with and without contrast injection, was performed, revealing secondary-looking lesions as follows:

• Two lingular superior nodules, one left Fowler nodule (the largest measuring 15 × 16 mm), and one nodule in the ventral segment of the right upper lobe.

• One subpleural micronodule, located in the lateral segment of the middle lobe, poorly dense, with blurred contours, measuring 4.5 mm in its largest axis.

• Mesenteric fat lymphadenopathy in the left iliac fossa measuring 9.5 × 8 mm.

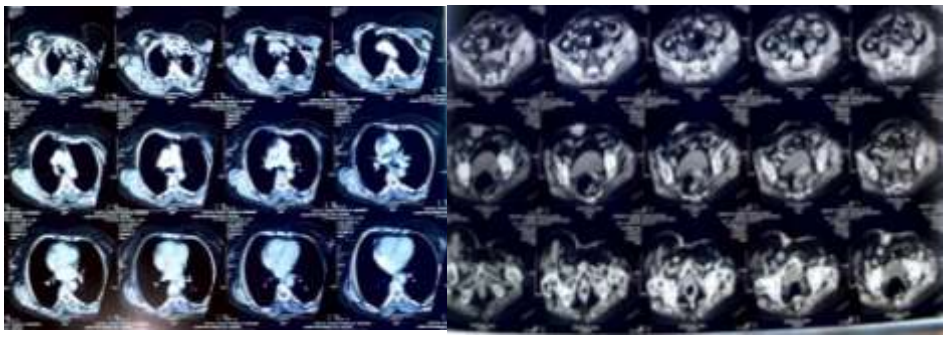

Figure 3: Thoraco-abdomino-pelvic CT scan (09/27/2024): Left inguinal budding lesion with left inguinal lymphadenopathy and mesenteric fat adenopathy in the left iliac fossa, and pulmonary nodules and micronodules suggestive of secondary lesions.

Given these results, a multidisciplinary team meeting was scheduled to plan the appropriate surgical and adjuvant oncologic treatment.The patient underwent surgical excision and lymph node dissection with coverage using a fascia lata flap, and was then referred to the oncology department for immunotherapy.

Discussion:-

Marjolin ulcer (MU) is a broad entity describing skin cancers resulting from the transformation of chronic wounds of heterogeneous nature. Burn scars are the lesions most at risk of malignant degeneration, notably due to strong skin tension. Atypical forms are not uncommon.Burns represented the most common cause of malignant degeneration (68%), followed by trauma (3). The lower limbs were most frequently affected (51%) (3), and squamous cell carcinoma (SCC) was found in 94% of cases, the majority being well differentiated (3). Basal cell carcinoma and melanoma cases constituted a minority.Malignant melanoma arising on burn scars is a rare phenomenon. The first mention in the literature dates back to 1965 by Giblin et al. (5). Since then, few other cases have been reported. One such case involved a 74-year-old woman who sustained a deep partial-thickness scald burn on the right hand; 14 years later, she developed an exophytic lesion in the thenar region, with histopathology revealing superficial spreading melanoma (6). Fewer than 50 cases of malignant melanoma arising on burn scars have been reported (7).Melanoma occurred more frequently in previously grafted wounds according to Kanth et al. (3), which was not the case in our patient, and showed a higher metastasis rate than SCC. Based on the TNM-AJCC 2017 classification, our patient was staged T4cN3M1b (Stage IV).

Conclusion:-

Marjolin ulcer often develops in tissues exposed to prolonged inflammation. In the case of an old burn or a non-healed wound, constant inflammatory stimuli may cause mutations in local cells, thereby increasing cancer risk. The chronic inflammatory process may lead to oxidative stress and genetic abnormalities conducive to the formation of skin cancers, including melanomas.Long-standing ulcers alter tissue repair mechanisms and interfere with immune surveillance. A deficit in local immune response may allow abnormal cells to proliferate into cancerous ones, notably melanoma, which is a highly immunogenic cancer.Patients of Moroccan origin, such as this 69-year-old woman, may be exposed to environmental or cultural factors (sun exposure, use of local products for wound treatment) that, combined with inefficient healing, could also play a role in melanoma development.The main therapeutic approach consists of wide surgical excision of the lesion with sufficient safety margins (generally between 2 and 3 cm, T4 class), associated with lymph node dissection. This ensures that all cancerous cells are removed, thereby reducing the risk of local recurrence.To address detected metastases, treatments such as immunotherapy (immune checkpoint inhibitors like anti–PD-1 or anti–CTLA-4) or targeted therapy (BRAF and

MEK inhibitors if a BRAF mutation is present) may be proposed. These treatments have shown significant improvement in overall survival for patients with advanced or metastatic melanoma.The patient should undergo close follow-up after surgery to detect potential local recurrences or distant metastases. Follow-up recommendations include regular dermatologic examinations and imaging (CT scan, MRI) when necessary.It is also essential to ensure that residual or new chronic wounds are treated aggressively to avoid further malignant transformations. This may include skin grafting, specialized dressings, or even advanced techniques such as negative pressure wound therapy.

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Conflict Of Interest:-
The authors declare no conflicts of interest.

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