



AGGRESSIVE SQUAMOUS CELL CARCINOMA ARISING IN A CHRONIC LOWER EXTREMITY ULCER: A CASE OF RAPID PROGRESSION AND COMPLEX MANAGEMENT

General Surgery

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ABSTRACT

Squamous cell carcinoma (SCC) is a challenging clinical scenario when it is developing within chronic wounds. It is often characterized by late diagnosis and aggressive behaviour." This is the case report of a 60-year-old male with a rapidly enlarging ulceroproliferative growth on his right thigh. This case highlights the importance of timely recognition and aggressive management of SCC arising in chronic wounds. The article reports the diagnostic procedure, including patient history, clinical examination, radiological imaging, histopathology, and surgical management and the factors contributing to the rapid progression of this tumour.

KEYWORDS

Squamous Cell Carcinoma, Chronic Wound, Inguinal Lymphadenopathy, Wide Local Excision.

INTRODUCTION

Squamous cell carcinoma (SCC) can arise from chronic, non-healing wounds, presenting unique diagnostic and therapeutic challenges. SCC is a type of skin cancer that is second most prevalent after basal cell carcinoma. These tumours can exhibit aggressive behaviour and require prompt intervention to achieve optimal outcomes. This case report gives details of the history, clinical examination, diagnosis, and management of a rapidly progressive SCC arising in a chronic lower extremity ulcer. This highlights the significance of early diagnosis and aggressive surgical treatment.

Case Presentation

A 60-year-old male came with a history of an ulceroproliferative growth on the medial aspect of his right thigh for the past 6 months. The lesion was initially noticed by the patient as a small nodule, which had a sudden increase in size over the preceding two months. He had history of itching, foul-smelling discharge, and loss of appetite. There was no history of fever, trauma, or difficulty walking. Physical examination revealed a 9x5 cm irregular ulceroproliferative growth with everted, rolled edges, a necrotic slough-covered floor, and a serosanguinous discharge. The surrounding skin showed blackish discoloration and multiple satellite nodules. 1 × 0.5cm palpable, firm, mobile right inguinal lymph nodes were noted.



Investigations:

- Following Laboratory Investigations were taken: CBC, RFT, LFT, and Serum electrolytes and were found to be within normal limits.
- Chest X-ray and ECG signifies no abnormalities.
- 2D echocardiography was normal.
- MRI of the right thigh and pelvis showed evidence of ill-defined T2/ FLAIR hyperintense areas in the right inguinocrural region with surrounding fat stranding measures approximately 8.4 (anteroposterior) x 2.4 (transverse) x 4.9 (cranio caudal) cm showing diffusion restriction. The lesion is seen to extend posteriorly in the perineal region up to 1 cm anterior to the external anal sphincter and intergluteal cleft. Medially the lesion is seen to extend to the medial part of right thigh abutting the thigh muscles and fat plane seems to be lost including posteromedial thigh. The lesion is seen to invade right ischiocavernosus, right bul-

bospongiosus muscles. Scrotal wall appears thickened with T2/ FLAIR hyperintensity. revealed a large soft tissue mass consistent with malignancy and enlarged inguinal lymph nodes. Multiple enlarged bilateral inguinal lymph nodes noted largest measures 2.36 x 1.6 cm in the left inguinal region and showing patchy areas of diffusion restriction.

- Edge wedge biopsy of the ulcer section showed fragments of skin exhibiting dysplastic stratified epithelium with infiltrating malignant neoplasm, arranged in sheets, cords and nests. The cells have moderate to high eosinophilic cytoplasm, pleomorphic, vesicular nuclei with prominent nucleoli. Individual cell keratinisation, and occasional keratin pearls seen. Stroma shows desmoplasia. Also seen are perivascular lymphocytic and plasma cell infiltrate. The Final impression was Infiltrating squamous cell carcinoma – moderately differentiated grade.
- Ultrasound-guided fine needle aspiration cytology (FNAC) of the right inguinal lymph nodes showed REACTIVE LYMPHADENITIS WHO SYSTEM OF REPORTING - 2 – BENIGN.

Diagnosis:

Infiltrating Squamous Cell Carcinoma of Right Thigh.

Treatment:

The patient underwent wide local excision of the tumor with a 1 cm margin, followed by reconstruction. Post op surgical specimen confirmed the diagnosis of SCC.



Figure 1: Intra Operative Image After Resection



Figure 2: Image After Closure



Figure 3: Post Op Specimen

Post-op Histopathology Report:

Section studied shows skin with epidermis exhibiting verrucous hyperplasia with an infiltrating malignant neoplasm arranged in sheets, cords. The cells are polygonal with moderate eosinophilic cytoplasm, hyperchromatic to vesicular pleomorphic nuclei with prominent nucleoli. Mitotic figures and squamous eddy formation seen. Intervening stroma shows desmoplasia, dense sheets of lymphoplasmacytic infiltrate, areas of congestion and inflammatory granulation tissue. The tumour is extending into deeper part of dermis. Lymphovascular invasion and perineural invasion not identified in the section studied. The final impression was Infiltrating squamous cell carcinoma - moderately differentiated grade. Superior, lateral, medial, inferior and deep margins free from tumour infiltration. the post-operative histopathology report was consistent with T3N2bM0 staging. The post-operative histopathology report was consistent with T3N2bM0 staging.



Figure 4: Post Op Day 25

DISCUSSION

Cutaneous squamous cell carcinoma (cSCC) is a commonly seen skin malignancy, second to basal cell carcinoma^{2,4}. While localized cSCC is typically managed with surgical resection, advanced or metastatic cases present a significant clinical challenge^{2,3}. This case report details an instance of aggressive SCC arising in a chronic lower extremity ulcer, highlighting the complexities associated with such presentations.

The development of SCC in chronic non-healing wounds, often referred to as Marjolin ulcers when arising in burn scars, is a recognized phenomenon that poses unique diagnostic and therapeutic issues³. The aggressive behaviour noted in this case, including rapid progression and the presence of inguinal lymphadenopathy, aligns with the literature suggesting that SCCs arising from chronic wounds can indeed exhibit aggressive characteristics³.

Diagnosing cSCC definitively relies on biopsy and histopathological examination³. This case report underscores the importance of considering malignancy in chronic ulcers and the role of thorough clinical examination, imaging, and histopathology for early diagnosis and effective management, which is consistent with standard diagnostic approaches outlined in the sources^{1,3,4}. While imaging (radiography, MRI, CT) is not routinely used for uncomplicated cSCC, it plays a role in the workup of advanced or metastatic disease, and imaging detected subclinical disease in a notable percentage of cases in one study, altering management¹.

Management of cSCC in localized stages primarily involves surgical excision, which is considered the gold standard for SCC in situ in some contexts, though for invasive SCC, margins are critical and often require careful planning based on risk factors^{2,5}. In this specific case, aggressive surgical treatment with wide local excision was pursued, leading to tumor-free margins. For cSCC that cannot be managed curatively by surgery or radiotherapy due to extensive spread or metastasis, systemic therapy is indicated². However, for localized disease, surgical excision is generally the first line^{2,5}. Less invasive methods like cryotherapy or photodynamic therapy have been used for SCC in situ but show markedly higher recurrence rates compared to surgical excision¹. Radiotherapy is another treatment modality, used for non-resectable tumors, patients unsuitable for surgery, or in specific contexts like positive margins after excision or perineural invasion^{2,3}. Several factors are associated with an increased risk of morbidity including metastasis, and disease-specific mortality⁶. Depth of tumor invasion is associated with an increased relative risk (RR) for metastasis and local recurrence, with invasion beyond subcutaneous fat showing particularly high RRs⁶. Increased Relative Risk for Disease Specific Mortality is associated with tumour diameter more than 20mm⁶. Poor differentiation is a significant risk factor for metastasis, recurrence and Disease Specific Mortality⁶. The presence of perineural invasion (PNI) is strongly associated with increased risk of recurrence, metastasis, and Disease Specific Death (DSD)⁶. Certain anatomical locations like the ear and lip are consistently identified as high-risk sites for metastasis and DSD, and the temple is also suggested as a high-risk location⁶. While the lower extremity location in this case is different, the development within a chronic ulcer is a known high-risk context³.

Immunosuppression is also a risk factor for metastasis⁶. This case underscores that even with localized presentation initially, rapid progression and metastasis can occur, emphasizing the need for vigilant follow-up and appropriate staging and management based on recognized risk factors^{4,6}. The lack of thorough, consistent reporting of risk factors in previous research emphasizes the necessity of improved data collecting to improve comprehension and management protocols for the rising incidence of cSCC⁶.

In summary, this case of aggressive SCC in a chronic lower extremity ulcer aligns with the understanding from the literature that such lesions can be highly aggressive and require prompt, often extensive, surgical management along with evaluation and treatment of regional metastasis^{3,6}. It reinforces the critical role of early diagnosis, detailed histopathological assessment, and a multidisciplinary team approach in optimizing patient outcomes in complex cSCC presentations^{1,3}.

CONCLUSION

This case report underscores the significance of considering malignancy in chronic non-healing ulcers. Early diagnosis through thorough clinical examination, imaging, and histopathology is required for effective management. Optimizing patient outcomes

requires a multidisciplinary approach.

Declaration of Patient Consent

The authors attest that the patient gave the written informed consent for disclosing his case details and images in the article. The personal details of the patient will not be published.

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