SQUAMOUS CELL CARCINOMA OF THE SKIN ARISING FROM A LEPROMATOUS ULCER: A CASE REPORT

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ABSTRACT

Background: Non-melanoma skin cancers (NMSC) are among the most frequently diagnosed malignancies globally. While basal cell carcinoma predominates in fair-skinned populations, squamous cell carcinoma (SCC) is relatively more common among black populations. Chronic ulcers, including rare cases of lepromatous ulcers, may undergo malignant transformation into SCC.

Case presentation: We present a case of a 65-year-old man with a 20-year history of lepromatous leprosy who developed a chronic right groin ulcer. Initially painless, the lesion began to enlarge rapidly over a 10-month period, becoming painful and frequently bleeding, and leading to difficulty with ambulation. Six months prior to presentation, he underwent a below-knee amputation following a traumatic tibial fracture; histopathology of the amputated limb revealed well-differentiated squamous cell carcinoma (SCC) in a background of lepromatous changes. On referral, examination showed a large ulcerated, fungating mass (12 × 10 × 6 cm) on the right thigh, bilateral matted inguinal lymphadenopathy, and auto-amputation of multiple digits. Biopsies of the mass and nodes confirmed well-differentiated SCC. Metastatic work-up was negative. He received six cycles of combination chemotherapy with Paclitaxel and Cisplatin, resulting in significant tumour regression, followed by external beam radiotherapy to the groin (50 Gy in 25 fractions). He remained disease-free for 18 months before being lost to follow-up.

Conclusion: Squamous cell carcinoma arising from a lepromatous ulcer is rare and poses treatment challenges due to late presentation and comorbidities. High clinical suspicion, early biopsy of chronic ulcers, and a multidisciplinary approach are essential to improving outcomes. This case underscores the importance of long-term surveillance in patients with chronic infectious dermatoses.

Keywords: Leprosy, squamous cell carcinoma, Nigeria, skin cancer

INTRODUCTION

Skin cancers are very common malignancies worldwide, and are currently classified into keratinocytic, melanocytic, skin appendages, haematolymphopoietic and mesenchymal groups of cancer.[1,2] The keratinocytic tumours are a group of cancers originating from the keratinocytes in the epidermal layer of skin and adnexae.[2,3] They range from benign, pre-malignant and malignant lesions.[2] Squamous cell carcinoma and basal cell carcinoma are common types of cancer under the keratinocytic group of skin cancers. [1,3] The prevalent risk factors for these cancers include exposure to ultraviolet radiation from the sun, chronic burns and ulcers, carcinogenic chemicals,[4,5] immunosuppression and genetic mutation like deletion of 9p21 region which encodes for p16(INK4a).[4] Squamous cell carcinoma is the commonest type of keratinocytic skin cancer, especially in Sub-Saharan Africa, accounting for 20% of the incidence, with majority (80%) being basal cell carcinoma and prevalent among Caucasians.[4,6,7] Squamous cell carcinoma is mostly a slow-growing tumour characterised by an irregular, thickened, rough, darkish or red scaly patch that expands gradually and may ulcerate and bleed subsequently.[4,7] It may arise from a flat normal skin surface of a previous patchy mole, and frequently occurs in sun-exposed areas like the scalp, neck, arms and legs.[4] In Nigeria and other countries in sub-Saharan Africa, as well as in the black race world over, there is a relative preponderance of squamous cell carcinoma over other histological types of skin cancer, with the lower limbs as the commonest site of occurrence.[6,7] Lepromatous ulcers have been documented, although very rarely, as a risk factor for keratinocytic skin cancers.[5]

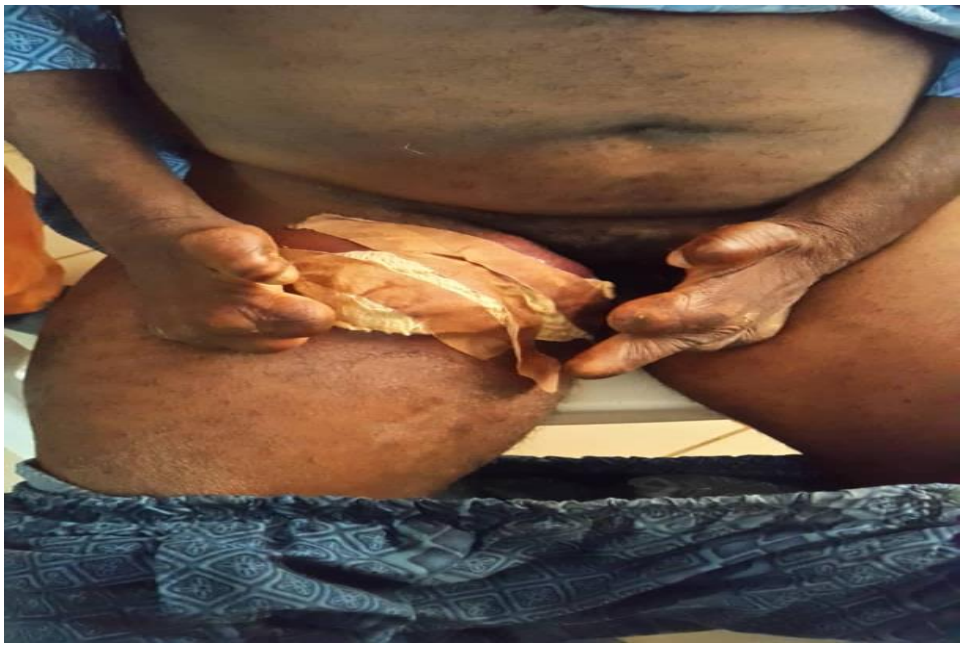
Leprosy is a chronic systemic infection caused by a bacillus known as Mycobacterium leprae that commonly presents with mucocutaneous hypopigmented nodules, chronic painless cutaneous ulcers and auto-amputation of digits.[8] It develops due to nerve damage and impaired wound healing with characteristics of immune suppression in afflicted patients. Though the chronic ulcer and background immunosuppression in leprosy may serve as risk factors through continuous tissue damage and inflammation.[9] Rarely do these ulcers undergo malignant transformation.[9] Treatment of leprosy is usually with the following goals: early detection of patients, appropriate treatment using proper chemotherapeutic agents/antibiotics and adequate rehabilitation.[10] Following malignant transformation of a lepromatous ulcer, treatment is as for other keratinocytic cancers, using wide local excision followed by radical radiotherapy, palliative radiotherapy for inoperable cases, or palliative cytotoxic chemotherapy in metastatic disease setting.[11]

CASE REPORT

DSK, a 65-year-old destitute referred from infectious disease hospital, where he initially presented with a 20-year-old history of painless right groin ulcer that rapidly increased in size over the preceding 10 months and became associated with excruciating pain, recurrent profuse bleeding and occasional sanguineous discharge. There was associated difficulty in walking with the affected limb, but no cough, jaundice, irrational behaviour or any other symptoms.

He was diagnosed with lepromatous leprosy about 20 years prior to presentation, for which he has been on symptomatic treatment. He had a traumatic fracture of the distal right tibia, following which he was offered a below-the-knee amputation about 6 months prior to presentation, and the histology of the amputated limb revealed well-differentiated squamous cell carcinoma with background lepromatous changes.

Physical examination at presentation revealed a chronically ill-looking, dishevelled, pale man with bilaterally enlarged and matted inguinal lymphadenopathy. He had auto-amputated 5 digits on each hand and a right leg amputation stump. There was an irregular, fungating ulcerated mass that measured 12 x 10 x 6cm at the superomedial aspect of the anterior right thigh. Other systemic examinations revealed normal findings, and metastatic work-up revealed no distant metastases. The ulcerated lesion and the inguinal lymph nodes were biopsied, and the histology also revealed well-differentiated SCC. He was optimised and subsequently commenced on cyclical chemotherapy using intravenous Paclitaxel 135mg/m^2 (200mg) and Cisplatin 50mg/m^2 (70mg), which was taken every 21 days to a total of 6 cycles. Chemotherapy was well tolerated. The tumour regressed to about 3 x 2 x 2cm after the 6^{th} cycle of chemotherapy, following which he received external beam radiotherapy (EBRT) to the right groin using 6mv photons from LINAC to a total dose of 50Gy in 25 fractions over 5 weeks. The EBRT was given to the residual mass and involved inguinal fields using parallel opposed anterior/posterior fields, with alternate daily use of bolus. He was followed up regularly with no clinical evidence of tumour recurrence, but lost to clinic follow-up after 18 months.



Pictures showing the auto amputated digits and the right anteromedial thigh lesion

DISCUSSION

Chronic lepromatous ulcer is a very rare predisposing factor to non-melanoma skin cancer, accounting for about 1.5-2 % of squamous cell carcinoma of the skin.[10] Cutaneous squamous cell cancer from chronic ulcers is usually classified as high risk lesions because the tumours are generally greater than 2cm in diameter, with a thickness of over 4mm, moderately to poorly differentiated, have perineural or lymphovascular invasion and nodal metastasis at presentation.[12]

Wide local excision consists of surgically removing a tumour mass with a small margin of normal tissue.[12] Contraindications to wide local excision include large unresectable lesions, lesions with spread to regional lymph nodes or perineural/lymphovascular space invasion, tumours with metastasis to distant organs, lesions located in unresectable sites like the eyelid and forehead, in which case the treatment of choice becomes neoadjuvant chemotherapy to downstage the tumour, followed possibly by the external beam radiation therapy or surgical excision.[13] The patient had positive inguinal lymph nodes bilaterally, hence was not suitable for wide local excision of the tumour. Neoadjuvant chemotherapy was administered based on the histology of SCC and the locally advanced nature of the disease at presentation.

According to several studies, radiation therapy has an overwhelming advantage over wide local excision in locally advanced keratinocytic cancers because it is able to achieve better local tumour control with fewer recurrence rates, improved cosmesis and less

morbidity.[14] Disease control is best achieved with radiation given to cover the gross tumour as well as wide margins of uninvolved skin up to 5cm in all directions, to a dose of about 50Gy using external beam radiation.[15] Areas of subclinical tumours spread, like regional lymph nodes, can be included in the radiation field. Negative prognostic factors that may result in increased rate of local tumour relapse include initial large tumour size, poorly differentiated histology, regional lymph node involvement, extracapsular spread, poor tumour response to induction/neoadjuvant cytotoxic chemotherapy, poor external beam radiotherapy planning and high load of bacterial leprosy.[15-17]

Non-melanoma skin cancer from chronic ulcers, especially lepromatous ulcers, is said to have a very poor prognosis with a median survival of 12 months, mostly due to the late stage of diagnosis.[18] However, in a few cases, median survival may reach 18-24 months with appropriate radiation treatment.[15]

CONCLUSION

Squamous cell carcinomas are known to arise from parts of the skin that have previously suffered from burns, traumas and chronic ulcers. Skin cancer from lepromatous ulcer is, however, relatively rare. Long term follow-up of leprosy patients with regular skin biopsy is necessary in order to diagnose these malignancies at very early stages when they are amenable to curative treatments.

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