

Squamous Cell Carcinoma of Plantar Trophic Ulcer in the Leprosy Patient: Two Case Reports and Review Literature

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Abstract

Trophic ulcers in leprosy are common, but neoplastic transformations are relatively rare. It probably occurs in long standing neglected cases. The best management of trophic ulcer is nursing care of the diseased foot, early detection of neoplastic changes and prompt treatment. We here reports two patients treated for leprosy long ago with a proliferative growth involving foot, which were diagnosed as squamous cell carcinoma on biopsy.

Keywords: Hansen's disease; Plantar trophic ulcer; Squamous cell carcinoma

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Introduction

Hansen's disease or leprosy is endemic in India, with decreasing incidence and prevalence with development of multi-drug therapy. Trophic ulcer in leprosy patient is a peculiar feature, which can turn to malignant lesion over a period of time. Atrophic changes in trophic ulcers followed by elastic degeneration are favouring the neoplastic transformation. Squamous cell carcinoma is the most common malignancy to arise in trophic ulcers and is called as Marjolin's ulcers. Here, we are presenting two cases of squamous cell carcinoma arising in post leprosy scar.

Case Report 1

A sixty-year old male presented with a non-healing ulcer over the planter surface of right foot. He was a known case of Tuberculoid Leprosy and received anti-leprosy treatment 16 years back. He was also a known case of ischemic heart disease for which he was on regular medications. Physical examination showed atrophied, discoloured fingers and toes, secondary deformities, muscle weakness and an ulcerative growth of size 9 X 8cms on plantar aspect of right forefoot (**Figure 1A**). There was no evidence of any skip lesion and regional or distant lymphadenopathy. It was suspected clinically as melanoma but the biopsy from the edges of ulcer showed the typical features of squamous cell carcinoma (**Figure 1B**). He was advised below knee amputation but patient refused and expired after two months of diagnosis.

Case Report 2

A 48 year old male presented with an ulceroproliferative lesion over the right forefoot since two months. He had history of leprosy 13 years back, for that he had completed multidrug therapy. After completion treatment, he developed some deformity in fingers and toes. On examination, there was an ulceroproliferative lesion with deformed toes of right foot with irregular and indurated borders (**Figure 2**) He had no history of diabetes and other comorbidities. A wedge biopsy was taken and reported as moderately differentiated squamous cell carcinoma. Metastatic workup was normal. He underwent below knee amputation and now patient is on follow up.

Discussion

Leprosy or Hansen's disease is a non-curable disease, which is caused by Mycobacterium. It initially damages the peripheral nervous system followed by involvement of the skin and other tissues. It is endemic in few tropical and subtropical countries but with the development of multidrug therapy, the prevalence has been decreased. This chronic disease leads to development of trophic ulcers in the neuropathic feet more common in the distal third of foot (64.67%) [1]. It is more common in developing

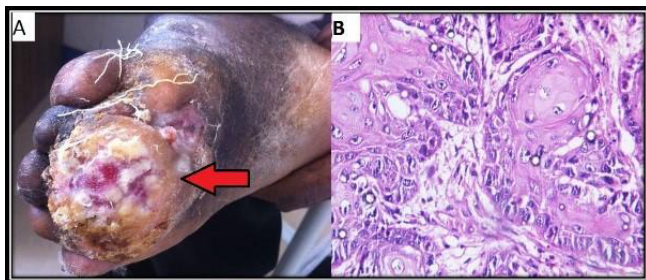


Figure 1 A. Ulcerative growth over plantar aspect of right forefoot (red arrow), B. Histopathology stained with HE stain showing features of squamous cell carcinoma. (H&E x40).



Figure 2 Ulceroproiferative lesion with deformed forefoot.

countries because of delayed active medical intervention done only after complications have set in.

The tissue in trophic ulcers has low adhesion between the cells due to secondary infection, partial healing and resistance to multi-drugs [2]. Over a long period these may turn malignant which is seen more often in proximal third of foot ulcers (64.29%) [1]. In present case, the ulcer was in distal part of the foot which turned to malignant. In a large series, malignancy mainly squamous cell carcinoma was observed in about 10% cases of trophic ulcers with leprosy which might be less than the actual due to unawareness of the clinicians regarding malignant transformation encountered in such cases [1].

The neoplastic transformation in neuropathic ulcers is more in older age and in neglected cases and average duration taking around 25 years with range of 15 to 40 years which is independent to type, duration, local extension as bone involvement and its treatment [3].

The malignant transformation in non-healing ulcers suggested by increasing circumference with elevated and indurated borders, foul-smelling exudate and bloody drainage is known as Marjolin's ulcer, atype of squamous cell carcinoma [4].

The atrophy and elastic degeneration of dermis in a Laparoma nodule creates a favourable field for the action of carcinogenic

agents. Also in atrophic ulcers, there is continuous mitotic activity to replace the damaged tissue [5]. As the cellular mutation due to persistent infection and inherent poor immunity responsible for malignant changes, vice versa also as the presence of tumor cells prevent the healing of ulcers [6]. Over the long term, this increased mitotic activity leading to cellular mutation combined with persistent infection and poor immunity results in neoplastic transformation [5].

The tumour in these patients has high grade [7]. However, the risk of local progression and metastases is high but is associated with destruction of nerve tissue and lymphatic channels which lead to slow and painless progression. The regional lymphadenopathy is usually due to local infection in the ulcers. The extent of this disease in the adjacent tissue and bone is determined by Magnetic Resonance Imaging (MRI) which is helps in surgical planning [8]. The most common differential diagnosis is malignant melanoma [3].

The core treatment of the Marjolin's ulcer is wide local excision with a margin of at least 1cm of normal tissue or amputation in infected ulcers with bone involvement. The Moh's micrographic surgery is the option only for small size ulcers near vital structures [4, 6].

The preventive measures includes skin care as soaking of the foot in warm water and oil application to keep the skin soft. Walking with the bare foot is not uncommon in developing countries, however it should be made a plea to aware the physician and patients with chronic neuropathic ulcers, in order to affect an early diagnosis of a potentially aggressive cancer by doing biopsy of any unusual lesion. Therefore, the health education is necessary in this population and early specialist referral is recommended to prevent the growth of aggressive cancer and saving the limbs.

Conclusion

The neuropathic ulcers in developing country like India are not uncommon but the malignant transformation is rare but very lethal. The preventive measures as softening and hygiene of foot and early treatment is the best management. However, the awareness of physician and patients regarding the neoplastic changes helps in early diagnosis of a potentially aggressive cancer and prompt treatment.

Author's Contribution

KD, JG and CS were collected all data and images and participated in literature search and drafted the manuscript. All authors read and approved the final manuscript.

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