

OBSERVATIONS

Squamous Cell Carcinoma in a Heel Ulcer in a Patient With Diabetes

A 73-year-old Caucasian man with type 2 diabetes was referred with a 7-month history of an ulcer on his left heel. His left heel had ulcerated on two previous occasions as a result of fissures and using his heel to prop himself up in bed. He had a prior right above-knee amputation due to trauma. He was known to have peripheral neuropathy but had good pedal pulses. The ulcer was superficial and initially showed signs of healing, but it subsequently became very painful and began to discharge pus. An X-ray showed no evidence of osteomyelitis. An attempt to aspirate pus from the wound was unsuccessful. A magnetic resonance imaging (MRI) scan showed no bone involvement and that the lesion was within superficial tissue. Because of our previous experience with malignant foot ulcers, an underlying malignancy was suspected. A biopsy from the surgical debridement showed moderately differentiated squamous cell carcinoma (SCC). A 9.6-mm lesion was completely excised, a split skin graft was performed, and the wound subsequently healed.

To our knowledge, this is the first reported case of SCC occurring in the diabetic foot. SCC is the second most

common form of skin cancer after basal cell carcinoma. Cutaneous SCC is usually localized, but it can metastasize. When confined to the skin, it is easily treated and cured. Chronic exposure to sunlight causes most cases of SCC, and tumors appear most frequently on sun-exposed parts of the body. SCC may also develop where skin has suffered certain kinds of injury: burns, scars, long-standing sores, sites previously exposed to X-rays or certain chemicals, and rare dermatological conditions (1). In addition, chronic skin inflammation or chronic immunosuppression, by medication or disease, may encourage development of SCC. Cases of SCC arising in long-standing necrobiosis lipoidica (2) and cases of SCC of the heel previously affected by frostbite (3) have been reported. Malignant changes to chronic wounds are thought to occur as a result of chronic irritation of the wound. Poor vascularization and repeated episodes of ulceration and infection are thought to be predisposing factors.

We have previously reported cases of malignant melanoma diagnosed in patients referred to our foot ulcer clinic (4,5); five of seven patients had diabetes, and their ulcers were initially thought to be diabetic foot ulcers, as was the case in this patient. This case reinforces the importance of doing a biopsy in any unusual-looking, recalcitrant foot ulcer. An early excisional biopsy should be considered if there is no apparent cause for delayed healing. Early diagnosis allows conservative treatment, such as excision and skin grafting, as in our patient. Delayed diagnosis could have led to amputation of the remaining leg.

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References

- Schwartz RA, Stoll HLJ: Squamous cell carcinoma. In *Fitzpatrick's Dermatology in General Medicine*. Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, Fitzpatrick TB, Eds. New York, McGraw-Hill, 1999, p. 840–856
- Imtiaz KE, Khaleeli AA: Squamous cell carcinoma developing in necrobiosis lipoidica. *Diabet Med* 18:325–328, 2001
- Rossis CG, Yiacomou AM, Elemenoglou J: Squamous cell carcinoma of the heel developing at site of previous frostbite. *R Soc Med* 75:715–718, 1982
- Kong M-F, Jogia R, Jackson S, Quinn M, McNally P, Davies M: Malignant melanoma presenting as a foot ulcer (Case report). *Lancet* 366:1750, 2005
- Kong M-F, Jogia R, Jackson S, Quinn M, McNally P, Davies M: When to biopsy a foot ulcer? Seven cases of malignant melanoma presenting as foot ulcers. *Practical Diabetes Int* 25:5–8, 2008