Primary Squamous Cell Carcinoma of the Distal Hallux

Michael G. David, DPM*
Jennifer Stumph, MD†
Brianna M. David, BS‡

Squamous cell carcinoma is a common disease of cutaneous tissue with a great ability to form metastases. Squamous cell carcinoma is found most commonly on sun-damaged skin and has a rare occurrence on the toes and feet. The patient was a 68-year-old woman who was seen at a podiatric specialty office with a complaint of pain in her left great toe and toenail. Radiographs displayed erosion of the distal hallux, and magnetic resonance imaging revealed no further spread of disease in the proximal phalanx. An amputation was performed of the hallux interphalangeal joint, and pathology confirmed squamous cell carcinoma of the verrucous type. (J Am Podiatr Med Assoc 103(2): 149-151, 2013)

Squamous cell carcinoma (SCC) is very uncommon in the human foot. It is the second most common type of nonmelanoma skin cancer.1-3 Squamous cell carcinoma is always asymptomatic, is found on stratified squamous tissue, and can have many different levels of differentiation and aggressiveness. There are many possible causes for this type of carcinoma, with the most common being excessive sun exposure and ultraviolet radiation in white individuals.2 Squamous cell carcinoma has a very high potential to metastasize. There are two main types of SCC: in situ and invasive. A more uncommon third type is known as verrucous. The invasive type differs from in situ in that the atypical keratinocytes invade the layer of dermis tissue. Invasive SCC histologically displays high levels of differentiation. The verrucous type differs in that it is slow in growth and appears to look more like a fungus and can become invasive.2,3 This report illustrates evidence of invasive, verrucous SCC involving a hallux nail bed of a 68-year-old female patient.

Case Report

A 68-year-old woman presented to Foot and Ankle Specialists of West Michigan (Grand Rapids, Michigan), with a complaint of pain in her left great toe and toenail. Her chief complaint was pain and redness in the left great toe, and she did not recall any type of injury. She reported a duration of pain lasting 6 weeks prior to being evaluated, and no other systemic symptoms. She denied any other significant past medical history. On physical examination, the left great toenail was found to be incurvated, hypertrophic, and painful. Plain film radiographs showed a severe erosive change of the medial aspect of the distal phalanx (Figs. 1–2). A total nail plate avulsion was performed and white fibrotic soft tissue was present in the nail bed. The wound was debrided and tissue was sent to pathology (Figs. 3–4).

Pathology confirmed squamous cell carcinoma, verrucous type (Figs. 3–4). A bone scan revealed no primary neoplastic disease elsewhere. Magnetic resonance imaging demonstrated a soft-tissue mass that was limited within the distal phalanx of the left great toe, but no extension of this mass was found in the proximal phalanx. Interphalangeal hallux amputation was performed. Postoperative pathological exam revealed no residual SCC. No postoperative complications were encountered and no further oncology intervention was required.

Discussion

Squamous cell carcinoma is a malignant tumor of keratinocytes found in tissues of the epidermis, and is usually found in patients older than 50 years. Individuals who are fair-skinned and are exposed to
excessive sunlight or phototherapy are more vulnerable, as well as those who are diagnosed with human papillomavirus. Squamous cell carcinoma of the toe is uncommon and is often misdiagnosed. Patel et al reported that only 1 to 2% of SCC cases arise on the foot, and these very few cases appeared clinically as osteomyelitis but pathologically as SCC. Many malignancies within the toe may be a result of a prior benign lesion or ulceration. Once a malignancy of SCC is found within the toe, the treatment options are few; the most successful is amputation to prevent metastasis. Theodorou et al presented a case of a 44-year-old woman with a soft-tissue mass in her right fifth digit that she had for the previous 15 years. Amputation of the fifth toe was performed and the final pathologic diagnosis was that of well-differentiated primary SCC of the toe. Squamous cell carcinoma of the toe is of very low prevalence and often has a prior etiology. This case is reported to show the unusual nature of SCC in the toe and its radiologic and pathologic characteristics.

Figure 1. Anteroposterior radiograph of the left hallux.

Figure 2. Lateral oblique radiograph of the left hallux showing erosion of the distal phalanx.

Figure 3. Verrucoid squamous epithelium with mild cellular atypia at microscopic magnification of 100x.

Figure 4. Verrucoid squamous epithelium with mild cellular atypia at microscopic magnification of 400x.

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References

