What Is Your Diagnosis?

This patient reported recent rapid growth in a long-standing lesion.

PLEASE TURN TO PAGE 173 FOR DISCUSSION

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The Diagnosis: Periungual Squamous Cell Carcinoma

Clinically, a fungating lesion on a digit is likely to represent squamous cell carcinoma (SCC). Biopsy results of the patient's lesion demonstrated a deeply invasive SCC. Osseous involvement was present. Nodal metastases were confirmed by biopsy. The patient was treated with digital amputation, lymphadenectomy, and radiation therapy.

The diagnosis of digital SCC often is delayed. A high index of suspicion is required, as the diagnosis is complicated by its resemblance to verruca vulgaris or a variety of benign inflammatory conditions.[1] The lesions are commonly hyperkeratotic. Underlying induration may not be prominent. Oftentimes, the patient has had periungual warts for many years. Carpal tunnel syndrome can be an unusual presentation resulting from perineural extension of cutaneous SCC.[2] Because periungual lesions are distally located, nerve involvement in these lesions is less likely to produce symptoms. Skin biopsy, with adequate depth to demonstrate the deeper aspects of the lesion, is critical to establish the diagnosis. Digital SCC can be well, moderately, or poorly differentiated. Well-differentiated verrucous carcinoma accounts for a large proportion of digital SCCs. The epithelium can appear fairly bland, and the superficial portions of the lesion can maintain a warty appearance. An adequate biopsy specimen is particularly critical when evaluating verrucous carcinoma.

Periungual Bowen disease can appear as periungual erythema with scaling and erosions, a hyperkeratotic or papillomatous plaque, fissure, or crusted ulcer. Soreness may be noted on palpation of the lesion.[3] Bowen disease should be considered in the differential diagnosis of any persistent scaly or crusted lesion of the finger.[4]

Increasing evidence supports the association of periungual SCC with human papilloma virus (HPV) infection. Periungual or nail bed SCC often retains its wartlike clinical appearance, and lesions are commonly misdiagnosed as refractory warts.[5] HPV type 16 DNA is commonly detected in such lesions by means of the polymerase chain reaction technique and Southern blotting.[6-8] HPV type 35 RNA has been detected in periungual SCC and in axillary nodal metastases.[9] The strongest association between skin cancer and HPV is noted in digital

and genital SCC. HPV seems to play only a minor role in the development of SCC at other cutaneous sites.[10] Refractory warts have been noted to evolve into SCC at multiple digital and anogenital sites in a single patient.[11] Multiple digits in a single patient may demonstrate lesions of Bowen disease and invasive carcinoma.[12]

In addition to HPV, exposure to radiation appears to predispose patients to digital SCC.[13] In many cases, exposure to radiation relates to one's occupation. At one time, some dentists held radiographic film in place with a digit while performing dental x-rays. Digital SCC also has occurred in the setting of radiation dermatitis from radioactive gold rings.[14,15] Radiation from a gold ring can amount to hundreds of cGy per week and several thousand Gy of radiation exposure over many years. Digital SCC also has been seen in the setting of hereditary ectodermal dysplasia.[16]

Surgical excision remains the treatment of choice for most digital SCCs. Mohs micrographic surgery has been successfully used to eradicate tumors while sparing tissue on the affected digit.[17] Mohs micrographic surgery is appropriate for periungual SCCs that lack osseous involvement.[18] A combined approach using surgical excision and 5-fluorouracil has been used to treat Bowen disease involving multiple nail beds.[19] Digital SCC with nodal involvement may require amputation of the digit, regional lymph node dissection, postoperative radiation therapy, and systemic chemotherapy.[20]

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