Plantar Verrucous Carcinoma (Epithelioma Cuniculatum): Rare Form of the Common Wart

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The term verrucous carcinoma was first coined in 1948 by Ackerman, to determine a well-differentiated, slow-growing neoplasm with a tendency for local recurrence and that rarely metastasizes. It was first described in the oral cavity and later reported in other stratified squamous surfaces. The three major locations of verrucous carcinoma are the oral cavity (oral florid papillomatosis), the anogenital region (giant condyloma of Buschke and Lowenstein), and the plantar surface of the foot (epithelioma cuniculatum) [1].

Patient Description

A 66 year old healthy individual had been complaining of a verruca on the plantar aspect of the head of first metatarsus for 5 years. Two years prior to his admission a biopsy of the lesion showed an inflamed common wart and it was ablated with a CO_2 laser. Due to recurrence of the lesion accompained by pain and localized pruritus, a second biopsy was taken, this time demonstrating verrucous carcinoma. Histologically, the tumor invaded the dermis but not beyond. A wide excision with STSG (split thickness skin graft) under local anesthesia was performed.

Comments

In 1954 Aird et al. [2] were the first to describe in the English-language medical literature a rare form of verrucous carcinoma on the plantar surface of the foot – epithelioma cuniculatum. The incidence of epithelioma cuniculatum worldwide is unknown. It is known to commonly affect males (79–89% of the patients) in their fifties. The tumor occurs predominantly on the soles, but may also appear on the palms or other areas of the body. The cardinal manifestation of this disease is a fungating, exophytic mass with numerous keratin-filled sinuses [1]. These lesions usually occur on the anterior weight-bearing area of the sole of the foot. Typically, the history is one of a recalcitrant plantar wart or epidermal hyperplasia with recurrence after local excision, usually at sites of chronic irritation and inflammation [1].

As the tumor grows, it invades locally and has been shown to involve the plantar fascia or to advance toward the dorsal surface of the foot, with destruction of the metatarsal bones [3].

Histologic diagnosis can be difficult. A deep biopsy specimen of the lesion is necessary, as superficial portions may resemble a verruca vulgaris with hyperkeratosis, parakeratosis and acanthosis [3]. Verrucous carcinoma is histologically characterized by blunt papillary projections of well-differentiated epithelium, supported by edematous, typically non-reactive stroma. The epithelium shows little atypia and is characterized by well-differentiated, lightly staining, and benign-appearing keratinocytes. Human papillomavirus types 1 through 4, 6, 11, and 18 have been implicated in the pathogenesis of verrucous carcinoma; however, their role is controversial [4].

Epithelioma cuniculatum, a subtype of the condition, most often presents as a non-healing wart on the soles, palms, or other location that does not respond to treatment. Exophytic tumors with ulceration and sinuses draining foul-smelling discharge cause pain, bleeding, and difficulty in walking. Multiple biopsy specimens are often necessary to establish the diagnosis [1,3]. Epithelioma cuniculatum rarely metastasizes to regional lymph nodes and has a low mortality rate compared with other subtypes of verrucous carcinoma. The differential diagnosis is wide and includes verruca vulgaris, reactive epidermal hyperplasia, dermatofibroma, drug eruption (bromoderma and ioderma), infundibular cyst, benign adnexal tumor, giant seborrheic keratosis, giant or subungal keratoacanthoma, pyogenic granuloma, ecrine poroma, hyperkeratotic basal cell epithelioma, verruciform xanthoma within a squamous cell carcinoma *in situ*, and cutaneous squamous cell carcinoma with verrucoid clinical features [1,3].

The treatment is wide local excision. In more severe cases, amputation of a toe or even a foot has been described. Electrodesiccation, cryotherapy, and laser ablation often fail. Surgical curettage is sufficient in minor cases [5].

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