

A Case of Verrucous Carcinoma Occurring in Patient with Diabetes Mellitus and Chronic Renal Failure

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Verrucous carcinoma is a slow growing, low grade squamous cell carcinoma, which usually occurs on oropharynx, genitalia and soles. When it occurs on feet, it is known as epithelioma cuniculatum. Epithelioma cuniculatum is characterized by its histologic sinuses and cystic formations in a cuniculate (rabbit burrow-like) pattern.

A 59-year-old man was consulted to our department for a well circumscribed, 5 × 5 cm sized, round, hyperkeratotic, verrucous plaque on the right great toe. He suffered from diabetes mellitus for 16 years and was managed by peritoneal dialysis three times a week due to chronic renal failure for last two years. The plaque had gradually increased in size. The biopsy specimen taken from the tumor mass showed chronic ulcerative inflammation with atypical squamous cell proliferation.

We herein report a case of verrucous carcinoma occurring in a patient with diabetes mellitus and chronic renal failure. (*Ann Dermatol* 13(3) 190~192, 2001).

Key Words : Verrucous carcinoma

Verrucous carcinoma is a low-grade squamous cell carcinoma which shows various clinical manifestations, such as giant condyloma of Buschke-Lowenstein, oral florid papillomatosis or Ackerman's tumor, and epithelioma cuniculatum. Epithelioma cuniculatum, which occurs on feet, is also known as plantar verrucous carcinoma¹. It is locally aggressive and only rarely metastasizes. It may initially resemble a plantar wart. It tends to gradually evolve as a soft, bulky mass on weight bearing areas of the sole. Histopathologically, this tumor shows high-grade hyperkeratosis without cellular atypia, characteristics of well-differentiated squamous cell

carcinoma and the base of the neoplasm has a lobulated endophytic appearance that give the appearance of a pushing margin^{2,3}. We report a case of verrucous carcinoma developed in a patient with diabetes mellitus and chronic renal failure.

CASE REPORT

A 59-year-old man visited our department because of verrucous plaque on the right great toe of 5 years duration. He first noted a papule on the right great toe without any traumatic history. But, the papule gradually increased in size that progressed to painless, round, verrucous plaque over 5cm in diameter. On past history, he suffered from diabetes mellitus for 16 years and for last two years, he was managed by peritoneal dialysis three times a week due to chronic renal failure. He had no history of trauma on the foot previously. Examination revealed a well circumscribed, coin sized round, thick, hyperkeratotic, verrucous plaque on the right great toe (Fig 1). On the left sole, several hyperkeratotic patches that considered as a callus

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Fig. 1. Well circumscribed, hyperkeratotic, verrucous plaque on the right great toe.

were observed. Microscopic examination of the plaque showed marked hyperkeratosis, parakeratosis and pseudocarcinomatous hyperplasia with cells composed of clear or eosinophilic cytoplasm. In addition, the tumor mass showed well differentiated epithelial proliferation deep into stroma (Fig. 2). Tumor cells have large nucleus and prominent nucleoli and there is some vacuolated cells (Fig. 3). Because of his poor general condition, we managed him conservatively and he died three months later due to the complication of chronic renal failure.

DISCUSSION

Epithelioma cuniculatum is first described by Aird et al¹ in 1954. It at first shows a striking resemblance to an intractable wart and have a great tendency toward deep, penetrating growth, resulting in numerous deep crypts filled with horny material and pus. The pathogenesis of verrucous carcinoma is unknown. The leading choices are human papillomavirus infections for Buschke-Loewenstein tumors and epithelioma cuniculatum, tobacco for Ackerman's tumor, and schistosomiasis for bladder verrucous carcinoma^{4,5,6}. An important question is whether the development and proliferation of the Buschke-Loewenstein tumor and other verrucous

Fig. 2. Histologic view shows proliferation of well-differentiated epithelium deep into stroma. (H&E stain, ×10)

Fig. 3. Histologic view shows individual keratinocytes, some with a large nucleus and prominent nucleoli, and some vacuolated cells. (H&E stain, ×100).

carcinomas are related to the patient's immune status^{7,8}. Most reported cases appear to have preserved cell-mediated immunity, although some have immune defects, lymphoma, or aplastic anemia⁷. The basic approach to verrucous carcinoma is surgical, with microscopically controlled dissection probably optimal, because it allows total tumor removal with maximum preservation of normal tissue structure and function⁹. Epithelioma cuniculatum, usually of the foot, should be treated by either wide local excision, which may require toe amputation at times, or if possible, in most cases Mohs micrographic surgery.

In Korean dermatologic literature, there are 7 reported cases (Table 1)¹¹⁻¹⁷. Three cases are developed on sole, two cases are on lower lip, and others

Table 1. Reported cases of verrucous carcinoma in the Korean dermatologic literature

	Sex/age	Site	Treatment	Associated diseases	Year
Im, et al. ¹¹	M/49	retroauricular	excision	-	1982
Kim, et al. ¹²	M/19	right sole	excision, skin graft	-	1983
Chung, et al. ¹³	F/44	left sole	-	-	1984
Bang, et al. ¹⁴	M/23	right knee	excision, skin graft	burn scar	1985
Lew, et al. ¹⁵	F/32	right heel	excision	striate keratoderma	1992
Yun, et al. ¹⁶	M/31	lower lip	excision, flap	-	1999
Kang, et al. ¹⁷	M/57	lower lip and gum	excision	oral lichen planus	1999
Present case	M/59	right toe	-	DM*,CR*	2000

*DM; diabetes mellitus, *CRF; chronic renal failure

are on preauricular area and on burn scar. Some cases have developed in patients with traumatic history and relatively healthy patients, but there is no case occurring in patients with chronic renal failure or diabetes mellitus. The presence of a long standing wart on the soles, genitalia, or elsewhere on any mucocutaneous surface should arouse clinical suspicion and careful histopathologic study to document the presence of a verrucous carcinoma⁹. In this case, the cellular immunity of the patient had been depressed due to longstanding diabetes mellitus and chronic renal failure, so that inadequate responses for viral challenge such as human papilloma virus would have caused the development of verrucous carcinoma. Therefore when chronic disease with verruca like lesion has been combined, aggressive management in the early course of disease is considered to be essential.

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