A Case of Giant Keratoacanthoma

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A 63-year-old man had a huge verrucous protruding mass over the suprasternal area. The lesion enlarged rapidly over 3 months, and measured about 10 × 8 cm. The histologic finding of the biopsy specimen showed nests of squamous epithelium with central keratinization, infiltrating the dermis. The neoplasm was treated successfully with surgical excision.
(Ann Dermatol 8:(1)34~37, 1996).

Key Words : Giant keratoacanthoma

Keratoacanthoma(KA) is considered a benign cutaneous tumor, characterized by rapid growth and frequent spontaneous regression[1]. One variant is the giant keratoacanthoma, which typically grows to sizes larger than 5.0 cm^2. In addition to their large size, giant keratoacanthomas often exhibit significant local destruction of the surrounding tissue, leaving deforming scars after spontaneous involution. Therefore, treatment often cannot be deferred[3,4]. We present a case of giant keratoacanthoma, successfully treated with surgical excision.

REPORT OF A CASE

A 63-year-old man visited our dermatologic clinic because of a huge verrucous protruding mass over the suprasternal area. The patient had previously been in good health and had no pertinent medical history or concurrent symptoms. There was also nothing contributory from his family history. The patient initially discovered a verrucous papule over the suprasternal area in December 1992. The lesion enlarged rapidly to a 10 X 8cm sized, huge protruding mass with a rubbery hard consistency and nodular verrucous external surface three months later(Fig. 1a, 1b). Upon physical examination, there was no regional lymphadeno- pathy. The patient's chest X-ray was normal and laboratory tests showed a normal complete blood count and urinalysis. He also exhibited normal delayed-type hypersensitivity to the multitest CMI.

The biopsy specimen showed nests of squamous epithelium with central keratinization infiltrating the dermis. The squamous cells had abundant pale-staining cytoplasm. Keratinization of the cells was marked, producing an eosinophilic and glassy appearance. However the epidermal cells showed little atypia, mitoses, or dyskeratosis. All these pathologic findings were consistent with keratoacanthoma(KA). Horn pearls and dermal inflammatory infiltrates were also present (Fig. 2).

The neoplasm was treated successfully with surgical excision. The surgical specimen showed characteristic histologic features of the KA. There were a large central keratin- filled crater and the epidermis extended like a buttress over the side of the crater. Irregular epidermal proliferations extended upward into the crater and downward from the base of the crater into the dermis (Fig. 3a, 3b).

Postoperative follow-up examination of the patient after 3 months showed no evidence of recurrence.

Received April 24, 1995.
Accepted for publication September 21, 1995.
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This paper was presented at the 46th annual meeting of the Korean Dermatological association on April 16, 1994.

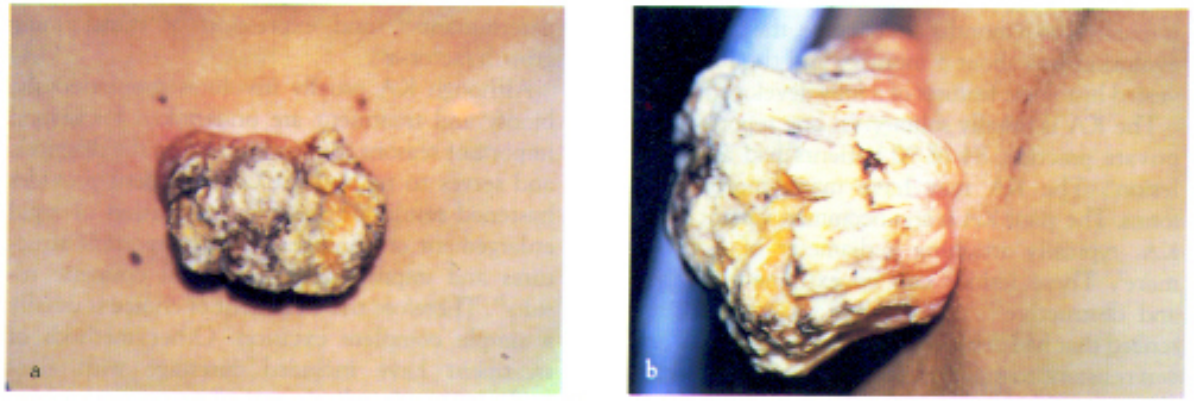

Fig. 1.(a,b) Showing the 10 × 8 cm sized huge protruding mass with nodulated verrucous external surface over the suprasternal area.

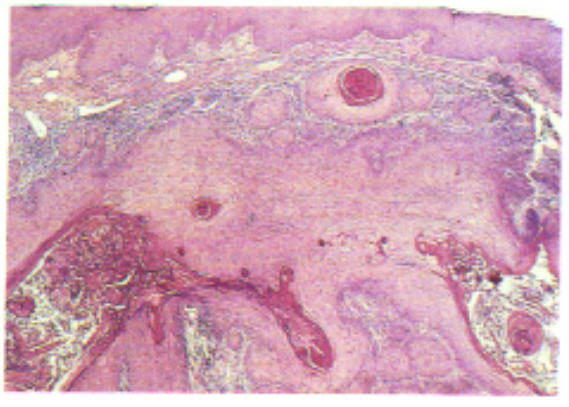

Fig. 2. Histologic finding of the biopsy specimen. Nests of squamous epithelium with central keratinization infiltrate the dermis. These squamous cells have abundant pale staining cytoplasms. (H & E stain, × 40).

DISCUSSION

Sir Jonathan Hutchinson in 1889[5] provided the first description of the keratoacanthoma, characterizing it as "the 'crateriform ulcer of the face,' a form of acute epithelial cancer".

KA occurs mainly on sun-exposed areas of the skin of elderly persons[6]. Its peak incidence is between the ages of 50 and 69 years. The majority occur on the face, the forearms, and hands[6]. However, a KA may develop anywhere. There are three clinical stages in the natural history of the KA; proliferative, full development, and involutional stage. It generally reaches its maximum size in 10 to 12 weeks, and the total duration of the lesion

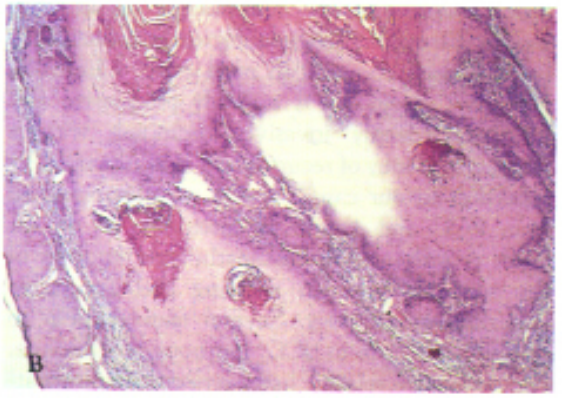

Fig. 3. Histologic finding of the surgical specimen.
a. Showing a large central keratin-filled crater and the epidermis like a buttress over the side of the crater. (H & E stain, × 1).
b. The epidermis extends like a buttress and irregular epidermal proliferation extend upward into the crater and downward from the base of the crater into the dermis. (H & E stain, × 40).

is usually 2 to 8 months[2]. In our case, the duration of evolution was about 3 months, and the tumor revealed histologic features of a fully developed lesion.

The KA is usually solitary. In one report from a private practice, 84 of 90 patients had a solitary lesion[6]. The KA may have many morphologic forms. The giant KA is an uncommon variant of the KA, typically attaining a diameter of 5 cm or more[2]. These lesions can be extremely invasive and destructive[7,8]; a giant KA was recently described that had destroyed a patient's entire nose and was resistant to multiple therapies until an eventual cure with intravenous and intralesional bleomycin[9]. Therefore, the treatment of choice for the giant KA is early complete excision and immediate reconstruction of the defect. The cause of such unusual growth is unknown, but since many cases have occured on patients with impaired cell-mediated immunity, it seems reasonable that defective immunologic defenses of the host may account for the persistent and aggressive growth of the tumor[9]. Our patient, however, exhibited normal delayed type hypersensitivity to multitest CMI, and revealed no abnormal laboratory findings. In Korea, 3 × 4 cm sized KA on the nasal vestibule[10], 1.5 cm sized KA on the mons pubis[11], and 1.3 cm sized KA on the left upper cheek[12], etc. have been reported. Kim et al.[13] reported a case of keratoacanthoma centrifugum marginatum with the size of the lesion being 5 × 7 cm.

The most frequent consideration in the clinical and histologic differential diagnosis of the KA is SCC. Fortunately, the morphologic features and growth pattern of a KA are sufficiently distinctive to be diagnosed correctly in most cases. Clinically, verrucous carcinoma is a slowly progressive and ultimately deeply invasive carcinoma with a marked tendency of recurrence if it is incompletely removed. In our case, the KA was distinguished from SCC and verrucous carcinoma by its far faster growth and by histopathologic findings of the surgical specimen showing the distinctive craterlike morphology. Several features help to distinguish KA from SCC, but none are absolute. For example, a relative homogeneous staining pattern for involucrin favors a KA[14]. Other aids in distinction include DNA cytometry and content[15-17], peanut agglutinin lectin staining[18], quantitation of Langerhans cells[19,20], nucleolar organizer region enumeration[21], analysis of electron microscopic determinants[22], and expression of transforming growth factor-α[23].

Although KA usually involutes spontaneously, biopsy and treatment are undertaken for several important reasons. Biopsy establishes the diagnosis and serves to rule out SCC. Treatment provides hastened resolution or cure, prevention of rapid enlargement or impingement on important structures and improvement in overall cosmetic results[24]. Therefore the treatment of choice is usually a simple complete excision. Other methods of treatment have included curettage with electrodesiccation[6], radiotherapy, cryosurgery, and intralesional 5-fluorouracil[25] or interferon alpha-2a injection[26], etc. In our case, the tumor was removed by surgical excision.

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