

Keratoacanthoma Centrifugum Marginatum

You Chan Kim, M.D., Hwan Pyo Jeon, M.D., Kwang Hyun Cho, M.D., Yoo Shin Lee, M.D.

*Department of Dermatology, College of Medicine, Seoul National University,
Seoul, Korea*

We report a case of keratoacanthoma centrifugum marginatum. The patient was a 73-year-old man who had a large mass (5×7cm) on his right hand. The lesion was characterized by a raised, rolled border and flattened center. The histologic features were pseudo-epitheliomatous hyperplasia with eosinophilic ground-glass-like cytoplasm. He underwent cryotherapy. (Ann Dermatol 1:40–42, 1989)

Key Words: Keratoacanthoma centrifugum marginatum

Keratoacanthoma centrifugum marginatum is one of the interesting variants of keratoacanthoma, marked by progressive peripheral growth and central healing.¹ This lesion may reach a very large size and have no tendency toward spontaneous involution,² which gives rise to the necessity of more vigorous treatment rather than observation. Miedzinski and Kozakiewicz³ introduced three cases of keratoacanthoma centrifugum marginatum in 1962, thereafter, Belisario,⁴ Miedzinski et al,⁵ Weedon et al,⁶ Rossi et al,⁷ and Heid et al⁸ also reported several similar cases. In Korea, there was no report of keratoacanthoma centrifugum marginatum.

We recently observed a case of keratoacanthoma centrifugum marginatum on the dorsum of the hand of a man, which was treated with cryotherapy.

REPORT OF A CASE

A 73-year old man visited the Dermatology Department of Seoul National University Hospital in November 1987 with a large mass (5×7cm) on the dorsum of the right hand (Fig. 1). He first noticed a small keratotic nodule on the hand about five



Fig. 1. A mass on the dorsum of the right hand showing a raised, rolled border with central flattening.

months previously, and this grew and spread peripherally, leading to a raised, rolled border covered with a thick crust and atrophic center. He complained of no subjective symptoms. His general health was good.

A biopsy specimen was taken from the elevated border of the lesion. The histologic examination showed severe hyperkeratosis and acanthosis in the form of pseudoepitheliomatous hyperplasia. There were horn pearls and individual cell keratinization

Received July 2, 1988

Accepted for publication September 30, 1988

Reprint request to: You Chan Kim, M.D., Department of Dermatology, College of Medicine, Seoul National University, 28, Yunkun-Dong, Chongno-Ku, Seoul, 110-744, Korea

This case was presented at the 40th Annual Spring Meeting of the Korean Dermatological Association on April 22, 1988.

with an eosinophilic ground-glass-like appearance. The epithelial cells, however, showed no atypia or abnormal mitoses. In the dermis, a rather pronounced inflammatory cell infiltrate was present, almost entirely composed of mononuclear cells and neutrophils (Fig. 2).

We regarded this lesion as a keratoacanthoma centrifugum marginatum and performed cryotherapy with liquid nitrogen. The lesion was eliminated. As of August 1988, the patient had not revisited the hospital for the same lesion.

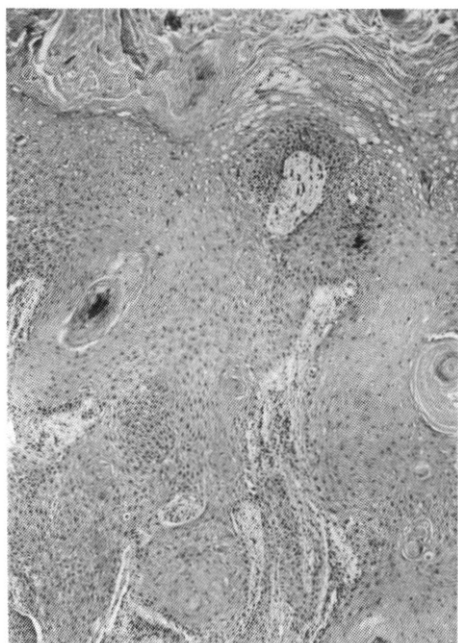


Fig. 2. With the pseudoepitheliomatous hyperplasia of the epidermis, there were many horn pearls and individual cell keratinization with an eosinophilic, glassy appearance. No cellular atypism was seen (H & E stain, $\times 100$).

DISCUSSION

Keratoacanthoma has been described under various titles since 1899, when Hutchinson named it "crateriform ulcer of the face".⁴ There are rare clinical variants of solitary keratoacanthoma e.g., keratoacanthoma centrifugum marginatum, giant keratoacanthoma and subungual keratoacanthoma.² Miedzinski et al³ and Belisario⁴ used the terms of keratoacanthoma centrifugum and keratoacanthoma centrifugum marginatum, respectively, as a distinct entity which differed from those usually described. Thereafter, several cases of keratoacanthoma cen-

trifugum marginatum have been reported.^{5,8}

Characteristically, keratoacanthoma centrifugum marginatum has the tendency to spread peripherally from a small nodule until over several centimeters in diameter with central healing. Thus, it has a distinctive, serpiginous outline with an elevated, rolled advancing edge and flattened center. In addition, keratoacanthoma centrifugum marginatum, which does not resolve spontaneously, is large and locally destructive.^{3,8}

The distinction between keratoacanthoma centrifugum marginatum and giant keratoacanthoma is unclear. The term of giant keratoacanthoma is currently used for the lesion of 2cm or more in diameter without central healing.¹ Nevertheless, spontaneous involution in giant keratoacanthoma takes place after several months as compared with keratoacanthoma centrifugum marginatum.²

In one of 5 observations of Miedzinski et al,^{3,5} the size of the lesion was 5×6cm; in the case of Belisario,⁴ 7cm; in the case of Weedon and Barnett,⁶ 14×20cm; in the case of Rossi et al,⁷ 20×15cm; in the case of Heid et al,⁸ 30cm; in our own case, 5×7cm. In addition to its size, the features of our case were those described on keratoacanthoma centrifugum marginatum, in which there was peripheral extension with a raised, rolled border and central healing. In general, the lesions of keratoacanthoma centrifugum marginatum evolve quickly at the first and then they slack up their progression.⁸ The most common locations are the face,³ the dorsa of the hands^{3,4} and the legs.^{6,8} In our case, the lesion was on the dorsum of the hand.

The histologic features of the tissue obtained from the advancing edge are not different from those in usual keratoacanthoma. There is prominent overlying hyperkeratosis with massive pseudoepitheliomatous hyperplasia, occasionally invaded by polymorphonuclear leukocytes. The proliferating cells show individual cell keratinization and some have abundant ground-glass-like eosinophilic cytoplasm. Many horn pearls, most of which show complete keratinization in their center, exist. The base of the epithelium is well demarcated, and a rather dense mixed inflammatory cell infiltrate is in the dermis.²

A remarkable feature of keratoacanthoma centrifugum marginatum is the tendency to undergo central involution. There may be shrunken, eosinophilic

cells similar to the 'round red cell degeneration', described by McNulty and Sommers,⁹ among the tumor cells. Weedon and Barnett⁶ suggested that cell degeneration followed by apoptosis contributed to the involution of the keratoacanthoma centrifugum marginatum.

Keratoacanthoma centrifugum marginatum is a tumor of progressive peripheral growth,¹ although Belisario's cases differ from other cases in that they show slow spontaneous resolution after reaching a size of 7cm or more.⁴ It is recommendable to treat lesions for cosmetic and practical reasons.¹⁰ X-ray therapy,^{3,4} topical cytotoxic ointment,⁴ total excision and skin graft,^{6,7} electrocoagulation,⁷ cryosurgery⁷ and curettage⁸ have been used for treatment. We performed cryotherapy with liquid nitrogen. The lesion was removed with success.

REFERENCES

1. Domonkos AN, Arnold HL, Odom RB: *Keratoacanthoma*.

- In Andrews' Diseases of the Skin, Igaku-Shoin/Saunders, Tokyo, 1982, pp 806-810.*
2. Lever WF, Schumburg-Lever G: *Keratoacanthoma. In Histopathology of the Skin. Lippincott, Philadelphia, 1983, pp 506-508.*
3. Miedzinski F, Kozakiewicz J: *Das Keratoakanthoma centrifugum-eine besondere Varietat des Keratoakanthomas. Hautarzt 13:348-352, 1962.*
4. Belisario JC: *Brief review of keratoacanthomas and description of keratoacanthoma centrifugum marginatum. Austr J Dermatol 8:65-72, 1965.*
5. Miedzinski F, Dratwinski Z, Brzozowski J, Sarankiewicz B: *Ein Beitrag zur nosologischen Stellung des Keratoakanthoma centrifugum. Hautarzt 24:120-123, 1973.*
6. Weedon D, Barnett L: *Keratoacanthoma centrifugum marginatum. Arch Dermatol 111:1024-1026, 1975.*
7. Rossi CD, Peserico A, Simonetto D: *Keratoacanthoma centrifugum marginatum. Arch Dermatol 113:110, 1977.*
8. Heid E, Grosshans E, Lazrak B, Yahia DB: *Keratoacanthoma centrifugum marginatum. Ann Dermatol Venereol (Paris) 106:367-370, 1979.*
9. McNulty JR, Sommers SC: *Keratoacanthoma as a surgical pathologic entity. Surg Gynecol Obstet 104:663-668, 1957.*
10. Ghadially FN: *Keratoacanthoma. In Fitzpatrick TB, Eisen AZ, Wolff K, Freedberg IM, Austen KF (eds): Dermatology in General Medicine. McGraw-Hill, New York, 1987, pp 766-772.*