

Giant keratoacanthoma of the hand

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Abstract

Giant keratoacanthoma (KA) is a very rare tumor which benefits of surgical treatment. We present a case of 61-years-old man with a giant keratoacanthoma situated on the dorsum of the right hand. The diagnosis is established by routine histopathologic examination.

Keywords: keratoacanthoma, hand, surgical excision, histopathologic examination.

Introduction

Keratoacanthoma is a well known cutaneous tumor with a rapid growth rate, this rate of growth helps the clinician to make the difference between keratoacanthoma and malign tumors [1–3].

Two types of keratoacanthoma are solitary and multiple.

The solitary keratoacanthoma occurs in elderly persons, usually as a single rapidly growing tumor [4, 5].

The tumor is like a dome-shaped normal with a central crater of keratin. More often in males than in females, this kind of tumor appears to be a product of infundibulum of the hair follicle. After of a rapid growth of 3–4 weeks, when it reaches about 1–2 cm, the evolution is static for a period [3].

After a plateau stage, it will involutes spontaneously within six months, often healing with a depressed scar [6–8].

Various infections, sun exposure, UV-B therapy, mineral oils and trauma are implicated in developing keratoacanthoma [9–12].

Keratoacanthoma may serve as a marker in the Muir-Torre syndrome [13].

Keratoacanthoma develops frequently on the skin of the face and rarely on the dorsum of the hand.

Despite the keratoacanthoma is considered a self-healing tumor, the surgery is desired. Surgical excision and curettage are common treatment of keratoacanthoma [2, 14–20].

In complicated cases sometimes amputation must be performed [21].

Surgical excision, with free split skin graft in large keratoacanthomas is probably the treatment of choice.

Intra tumor injections with 5-fluorouracil and methotrexate (cytotoxic agents) can induce involution, so healing occurs like in spontaneous involution [22].

Material and methods

A 61-years-old man presented with a big keratoacanthoma on the dorsum of the right hand (Figure 1).

Anamnesis reveals a short clinic history of three month, after an infected trauma of the dorsum of the right hand, with the appearance of a little tumor which had a rapid growth until the presentation to the doctor when it has about 5.5 / 3 cm, having a dome-shape with a top of keratin. The surgical excision and free split skin graft was performed.

The tumor was fixed in 10% phosphate-buffered formalin for up to 24 hours, method used for routine histopathologic examination. Dehydration using graded alcohols cleared in xylol and embedded in paraffin wax. We performed Haematoxylin and Eosin (HE) and Goldner-Szeckelly (G-S) stain method on 3–5 µm thick sections.

The sections were mounted on silanized slides which were examined on optic microscopy using NIKON E 600 microscope.

Results

Macroscopic examination of the tissue sample removed by surgery showed a cutaneous tumor dome-shaped with a 5.5 cm diameter and a 3 cm high, with a crater on the top filled with keratin colored in brown-black and a red ring around the crater.

The tumor was removed with a ring of 2 cm normal skin situated at the base of the tumor.

The deepest portion of the tumor was situated on the dorsal aponeurosis of the right hand, which is why the tendons of the extensor *digitis communis* can be observed in the surgical lesion.

By section it presented a brown-black keratin top and a white-yellow content below.

The tumor was strictly placed on the skin of the dorsum of the right hand. No tumor extension to the deep anatomical structures (aponeurosis, tendons, muscles, bones, etc.) was found.

The clinical surveillance showed no tumoral relapse after four years. Soon after the patient was recovered, his hand had a good functionality and a good aesthetic aspect. Microscopic examination established the diagnosis of keratoacanthoma.

☞ Discussions

Keratoacanthoma is a benign skin tumor placed frequently on the skin of the face and rare on the hand, usually having little dimensions. The rapid growth is a fact that makes the difference between keratoacanthoma and skin cancer [23].

Despite the opinion of some physicians who treated keratoacanthoma by cytotoxic agents intratumoral (intralesional) or by curettage, we decided for surgery, a sure method that allowed to establish histopathological diagnosis and a rapid good healing.

Histopathology

The morphological changes involve the hair sebaceous infundibulum above of sebaceous duct entrance with limited extent at the sebaceous lobules level (Figures 2 and 3).

The epithelium is highly acanthotic (Figure 2) with some atypical cells characterized by enlarged and hiperchromatic nuclei and pale basophilic cytoplasm; similar features is known from literature for gigant keratoacanthomas [24, 25].

The keratinous corn has polycyclic appearance with orthokerathotic lamellae completely keratinized and with some pearls formation (Figures 2 and 4).

The deeply part of lesion contain some inflammatory infiltrate with lymphocytes and rare plasma cells, predominantly around of hair – sebaceous infundibulum but assent nearby of sweat glands. In the periphery of this lesion there are hyperplastic hair follicle adnexae and sweat ducts (Figure 5).

Some authors consider that the existence of these structures could explain the development of keratoacanthomas in hairless areas [26–28].

Differential diagnosis is done with squamous cell carcinoma, basal cell carcinoma, keloids, malignant cutaneous achrome melanoma and sometimes requires immunohistochemistry (IHC) and serologic investigations.

The early and correct diagnosis is important in order to do a best treatment.

☞ Conclusions

Macroscopic and microscopic examinations are very important to establish the correct diagnosis, a guide for the surgical treatment especially when the tumor is big, like in our case.

The possibility of keratoacanthoma to transform in a squamous cell carcinoma must be aware or, and treated due to avoid further complications.

The large keratoacanthoma had few chances to be

treated and healed by intralesional injections with cytotoxic agents, so it is recommended to be removed by surgery and the skin defect covered with free split skin graft.

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Figure 1 – Giant keratoacanthoma (KA) of the right hand

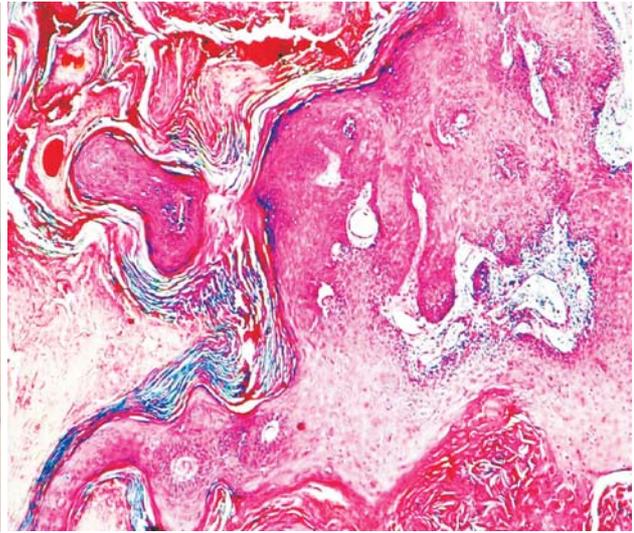


Figure 2 – Keratoacanthoma. Acanthotic epithelium with abundant keratinisation (HE staining, ob. $\times 4$)

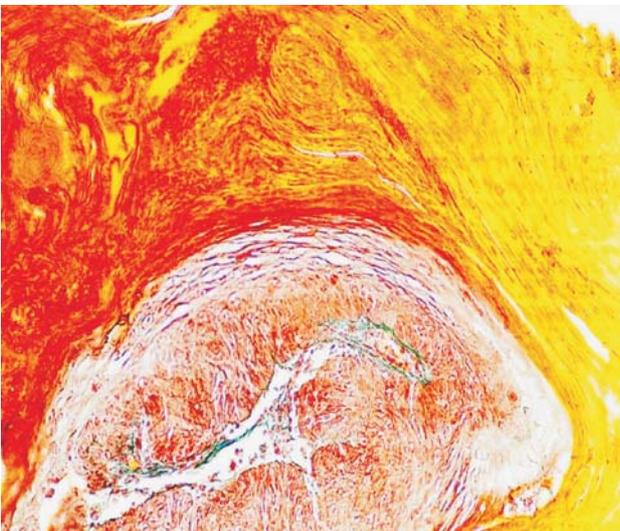


Figure 3 – Keratoacanthoma. Abundant keratinisation with lamellar configuration (G-S staining, ob. $\times 4$)

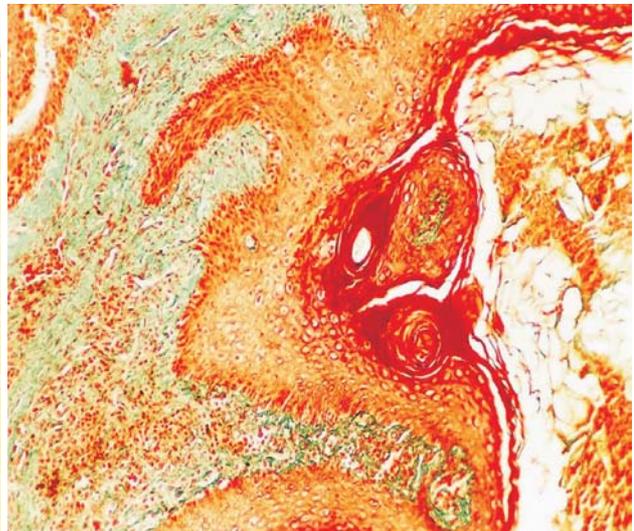


Figure 4 – Keratoacanthoma. Keratin pearl consists in stratified kerathotic lamellae (G-S staining, ob. $\times 10$)

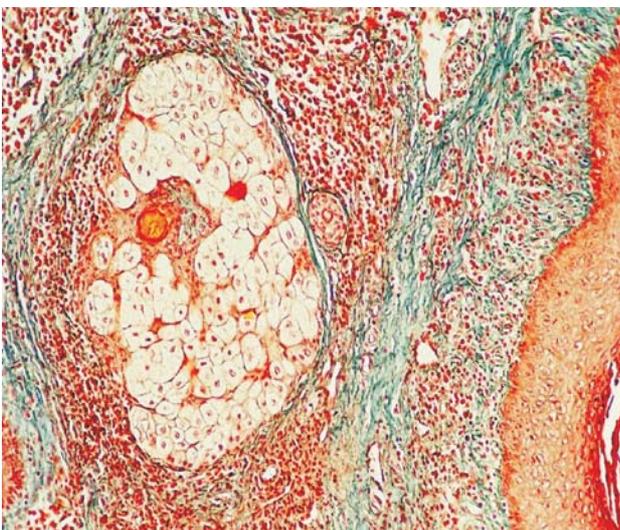


Figure 5 – Keratoacanthoma. Hair-sebaceous complex with inflammatory predominant lymphocyte infiltrate (G-S staining, ob. $\times 20$)

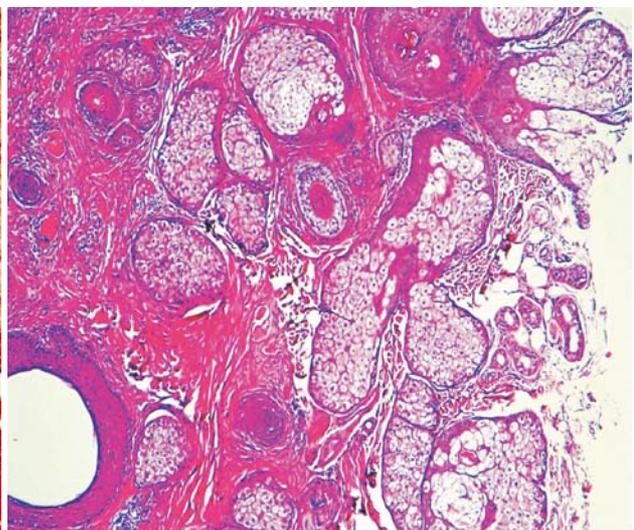


Figure 6 – Keratoacanthoma. Hyperplastic hair follicle adnexae. Eccrine sweat glands lack of inflammatory infiltrates (HE staining, ob. $\times 4$)