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Tripolar Mitosis in a Keratoacanthoma

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Abstract. This report demonstrates a case of keratoacanthoma presenting with classical clinical, gross and microscopic features. Histopathologically, however, one cell is seen undergoing tripolar mitosis, which is often not accepted as a feature in benign lesions.

Key words: Keratoacanthoma; Tripolar Mitosis; Actinic Changes; Squamous cell carcinoma

Keratoacanthoma is a well known entity, with many classically described gross and microscopic features. On occasion, the differential diagnosis between keratoacanthoma and squamous cell carcinoma

may be difficult, especially when only a portion of the lesion is submitted for histopathologic examination. Cellular atypia is an accepted feature in keratoacanthoma, but atypical mitosis often is not. Here we present a case of keratoacanthoma showing classic clinical, gross and microscopic features of the lesion. In addition, a tripolar mitosis is clearly demonstrated.

CASE REPORT

A healthy, asymptomatic 61-year-old white male developed a 2 cm painless, non-pruritic nodular lesion over the left pre-auricular area. The lesion grew rapidly over the next 2 months from apparently normal skin. There were no other significant dermatologic abnormalities and the patient's past medical history was essentially unremarkable.

Physical examination revealed a tan-colored, nodular lesion with a central crater filled with keratinaceous material.

The nodule was well defined and firm, but the margins were not indurated. There was no regional lymphadenopathy. An excisional biopsy was performed.

Microscopic examination revealed a craterform lesion filled with a plug of keratinaceous material surrounded by nests of proliferating squamous epithelium extending into the lower dermis. The borders of the lesions extend in a lip-like manner over the crater (Fig. 1). A granular layer is evident but associated actinic changes are not noted. The penetrating nests of squamous epithelium are surrounded by a dense chronic inflammatory cell infiltrate (Fig. 2). Some squamous epithelial cells show atypia. An isolated cell was observed, undergoing tripolar mitosis (Fig. 3).

Comment. Keratoacanthoma, first described in 1888 (3), is a well known entity arising from the upper portion

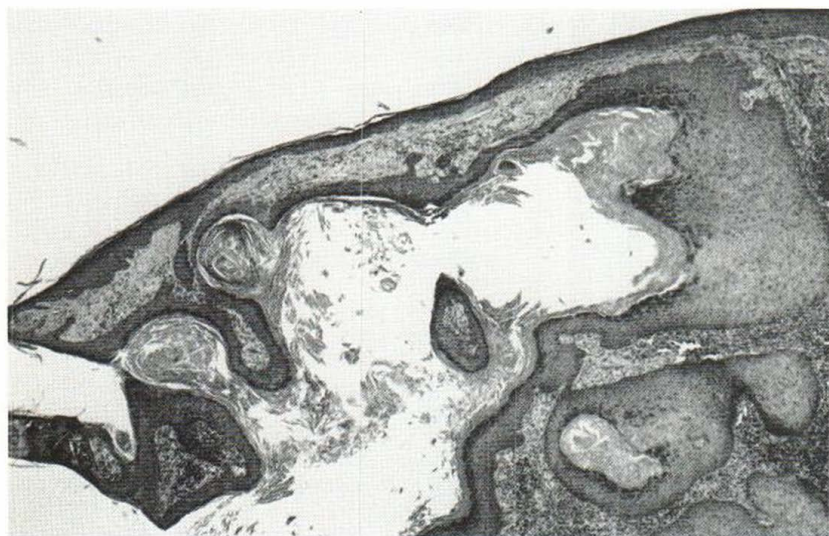


Fig. 1. Low-power photomicrograph showing characteristic "lipped" margin of keratoacanthoma. Also note the proliferating nests of squamous epithelium mixed with chronic inflammatory cells (lower right). Hematoxylin-eosin, $\times 40$.

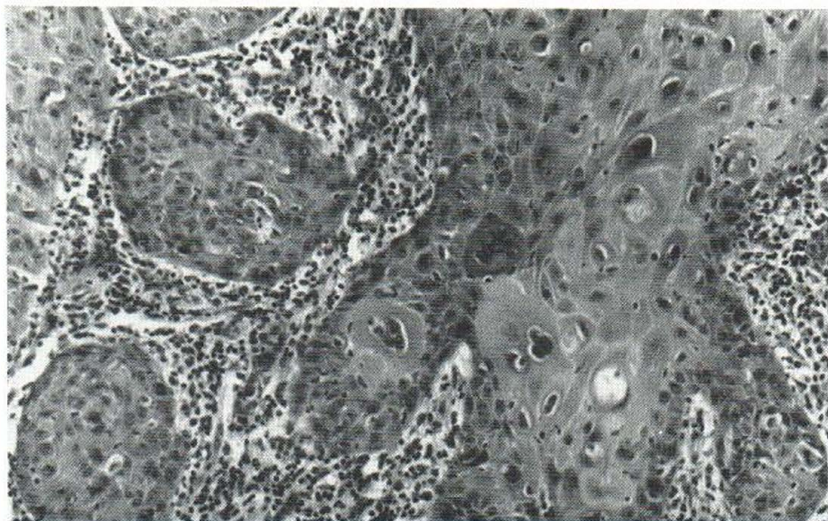


Fig. 2. High-power view of Fig. 1, demonstrating the nests of squamous epithelium and chronic inflammatory infiltrate. Note the bizarre cell in the center of the photomicrograph. Hematoxylin-eosin, $\times 100$.

of the hair follicle (1). Nowadays, excisional biopsy of such lesions cause the histopathologist little trouble in differentiating it from a squamous cell carcinoma. This is because of the many well established criteria: rapid growth, lack of actinic changes, lipped margins, central crater filled with keratinaceous material, and chronic inflammation at the base of the lesion—all support a diagnosis of keratoacanthoma.

What was unusual in this case was the presence of tripolar mitosis in one of the squamous epithelial cells. Although atypia is an accepted feature in keratoacanthoma, abnormal mitosis often is not (2). It is felt by the author that despite this abnormality, the lesion must still be considered benign, as all the other criteria were met.

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Fig. 3. High-power view of the tripolar mitotic figure. Hematoxylin-eosin, $\times 440$.