SCIENTIFIC LITERATURE

Short Communication

Calcifying Basal Cell Carcinoma. Another Example of Calcinosis Cutis in a Neoplasm?

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ABSTRACT

With basal cell carcinoma being the most common malignancy, we should not be surprised by the fact that there are numerous morphological variants. Many of them carry a prognostic significance and have treatment implications, while others can be considered findings, sometimes simple curiosities conditioned by factors as diverse as differentiation or tissue response to the aggression that the neoplasia entails. We present a case of basal cell carcinoma with a nodular phenotype with large calcification foci, a rare variant that opens the debate on the role of intraneoplastic dystrophic calcification.

INTRODUCTION

Basal cell carcinoma is the most common malignancy. It is also the most common of the skin neoplasms. There are numerous morphological variants, some with important clinical, therapeutic and prognostic repercussions. Many other phenotype variants have also been described without clinical significance.

As also occurs in many benign and malignant, cutaneous and extracutaneous lesions, the possibility of finding foci of dystrophic calcification is a simple finding that corresponds to different processes related to differentiation or tissue response to neoformation. Less common is the presence in basal cell carcinomas of extensive calcifications that even make it difficult to cut and process. These are cases in which calcification acquires a special role even without associated a different prognosis. They are, therefore, "infrequent morphological variants". We report a case of calcifying basal cell carcinoma and we ask ourselves different questions.

CASE REPORT

A 67-year-old male patient with a nodular lesion with anfractuous contours and 1.5 cm of maximum dimension, progressive growth, doubtful superficial telangiectasias and granules of heterogeneous distribution on dermoscopy, located in left frontotemporal situation. Supposed to be a basal cell carcinoma, complete excision with wide resection margins was decided. The lesion showed great tissue hardness when cutting, difficult, showing a crisp and crackling whitish granules. The histological study showed a focally thinned epidermis, without atypia, highlighting the presence, at the dermal level, of multiple geographic nodules made up of basaloid cells with moderate atypia, which form peripheral palisades surrounded by retraction artifact. Some of these nodules were in close contact with the epithelial basal layer. Simultaneously, multiple parenchymal and stromal calcification foci were observed, also present at the luminal level in the cystic spaces present within some neoplastic

plaques (Figure 1-4). With these findings, the diagnosis of basal cell carcinoma with a nodular pattern with numerous foci of dystrophic calcification (calcinosis cutis) was made. The resection margins were free of neoplastic infiltration. The excision was curative.

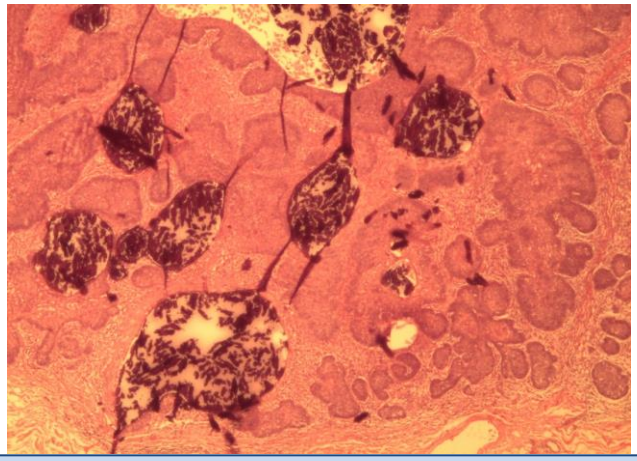

Figure 1: Calcifiying basal cell carcinoma. Low-power image showing the relationship between neoplastic nests and diffuse calcification foci. HE 40x.

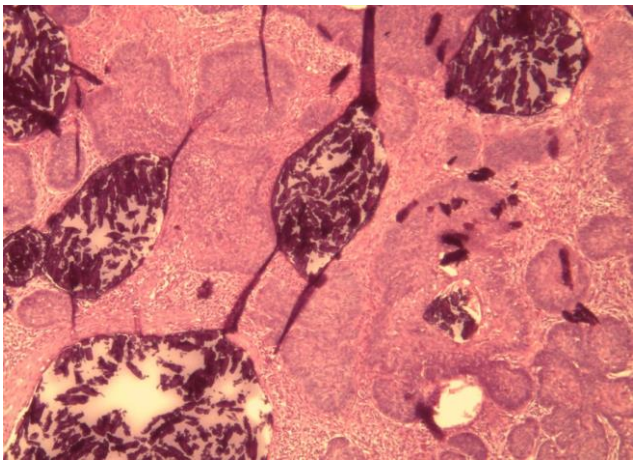

Figure 2: Calcifiying basal cell carcinoma. With greater magnification, it is observed how the calcification foci are found both at the level of the neoplastic nests and in the surrounding stroma. HE 100x.

DISCUSSION

In this study, we do not intend to carry out a detailed study of basal cell carcinoma and its different morphological subtypes [1]. However, it is of great interest to mention the work carried out by Slodkowska et al [2], who classified basal cell carcinomas exhibiting different degrees of calcification into five different groups. In group 1 they included the cases in which the calcification, generally discrete, was exclusively identified in the tumor nests. In group 2, they included the cases in which calcification was exclusively associated with keratinized cysts within the neoplasm. This was the largest group. Group 3 included cases in which calcification was directly associated with necrotic foci. Group 4 corresponded to the cases that showed calcification in the stroma or dermis without contact with the proliferating epithelial population and a last group, 5, in which calcification appeared exclusively associated with adnexal structures. Our case does not correspond to any of the groups described since the calcium foci, widely distributed in the neoplastic groups, in the stroma and in the lumen of cystic cavities could be definitive as a mixed phenotype or constitute an independent sixth group.

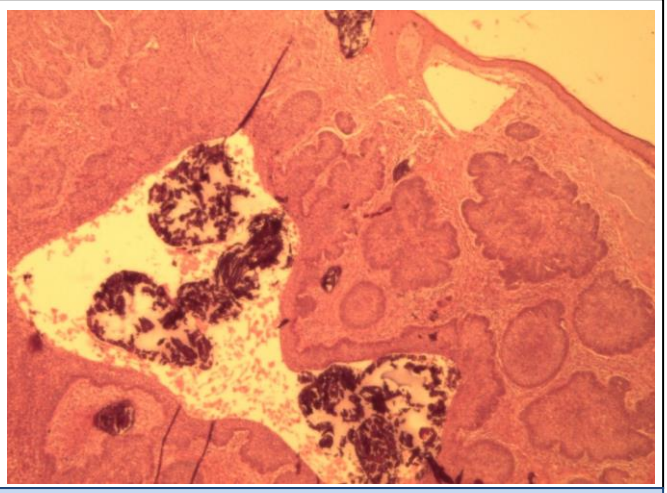

Figure 3: Calcifiying basal cell carcinoma. Presence of calcification foci in the lumens of the intratumoral cystic spaces. HE 100x.

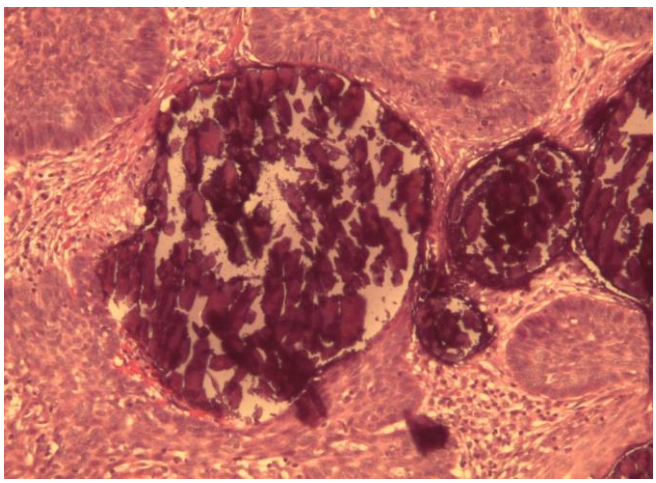

Figure 4: Calcifiying basal cell carcinoma. Detail of calcification foci in relation to the neoplastic nests. HE 200x.

The morphological type of our case corresponded to the nodular one although different examples associated with the different phenotypic varieties have been described. We think

that it is a peculiar type of calcinosis cutis associated with neoplasia or simply a phenomenon of dystrophic calcification. This is a type of pathological calcification characterized by the abnormal deposition of calcium salts, generally with the concurrence of the deposition of other minerals such as magnesium, zinc or iron [1].

Pathological calcification can be metastatic, associated with hypercalcemia (our patient had normal blood calcium values) or be dystrophic, characterized by the abnormal deposit of calcium on injured tissues, generally necrotic. The presence of foreign elements such as the neoplasm itself can lead to calcifications of this type even in the absence of tissue death and with normal blood calcium levels. This is due to the extracellular or intracellular deposition of calcium phosphate in injured cells. The successive deposit of crystals to the nucleus increased their size [1,3].

Different authors have related the presence of calcifications with the very nature or follicular derivation of basal cell carcinoma, arguing that calcium deposition could be related to keratin-binding proteins, although studies on more extensive series are needed to carry out such affectation since the expression of these keratins and their associated proteins has not always been associated with the presence of calcium deposits [3,4].

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