Letter to the Editor: Starch artifacts in oral biopsy specimen

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Dear Editor,

Recently, during a histopathological routine, a case of maxillary fibro-osseous lesion in a 45 year-old female was evaluated and revealed a remarkable feature. In a hematoxylin-eosin stained slide, there were numerous blue small, spherical structures disseminated in the superficial layers of the bone specimen. These structures resembled small spherical calcifications although the aspect was not typical (Fig. 1A, B). Further evaluation under polarized light revealed the "Maltese cross" birefringence pattern suggestive of starch granules (Fig. 1C). These granules were PAS-positive and diastase-resistant, and stained weakly in blue and pink with Masson's trichrome and Von Kossa stains, respectively. With scanning electron microscopy, the structures appeared as spherical faceted balls varying from 0.01 to 0.02mm in diameter (Fig. 2). The origin of these structures might be the exposure to starch from surgical gloves during oral surgical procedures or during gross examination of oral biopsy.

Starch granules in tissue sections appear as small, spherical or spore-like bodies, are usually caused by previous surgical manipulation, and may act as iatrogenic cause of extra or intra-oral granulomatous lesions (1, 2). Severe foreign body reaction may be seen in starch granulomas and the granules may be found within the cytoplasm of histiocytes or multinucleated giant cells (3). On the other hand, accidental starch granule contamination of biopsy tissues may occur during surgical removal or during specimen processing in the laboratory (3-5). In these cases, there is no inflammatory reaction associated with the starch granules. This pattern was observed in our case, since the tissue did not present inflammatory reaction. The restriction of the granules to the superficial layers of the specimen, both bone trabeculae and connective fibrous tissue, suggest an artifact better than mineralized tissue formation. Still, it is noteworthy the likeness of these starch granules with spherical calcifications. Moreover, Lovas et al. cited that these bodies might resemble epithelial cells (2). The purpose of this letter is to call the attention for this artifact, which may be found during a histopathology routine, and needs to be kept in mind for an accurate diagnosis.

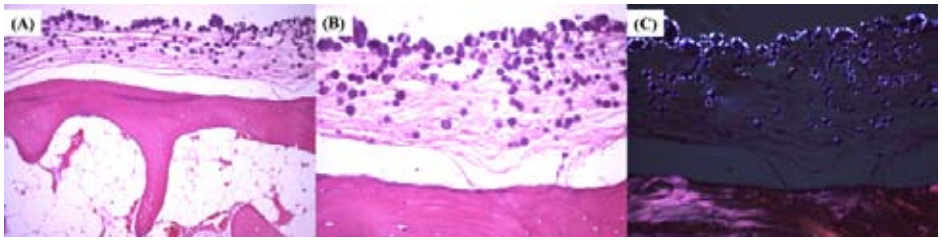

Fig. 1. The spherical granules observed in the periphery of a bone fragment tissue. (A) Hematoxylin-eosin stain, original magnification 10X. (B) 20X. (C) Photomicrograph with fully crossed polarizing filter. Note the "Maltese cross" pattern, 20X.

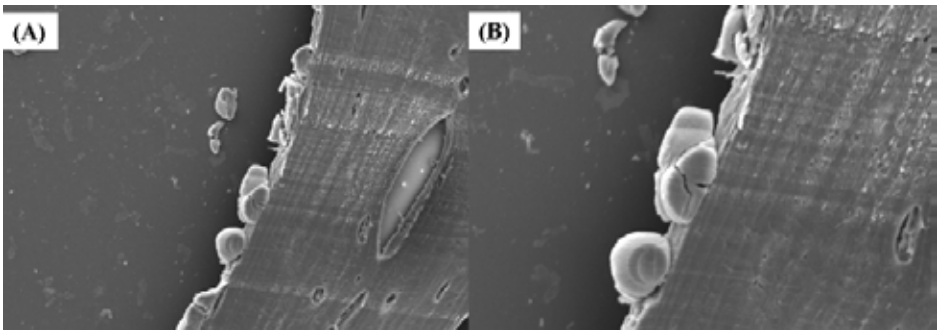

Fig. 2. Scanning Electronic Microscopy showing the granules within to bone tissue superficial layers. (A) 500X. (B) 1,000X.

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