

## Acne calcified scars: Case report

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### Abstract:

**Introduction:** The involvement of calcium regulatory factors in the epithelial tissue can result in calcification or cutaneous ossification. The secondary osteomas, wherein the calcification develops in a preexisting skin lesions such as acne, for example, are the most common. **Objective:** To report a case of calcification/ossification of soft tissues compatible with acne scarring. **Case report:** Panoramic panoramic radiographic examination revealed radiopaque, circular image in the alveolar ridge region in the air corresponding to tooth 36, with residual root characteristics. The alteration in the diagnostic hypothesis occurred after periapical radiography, which revealed a displacement of the radiopaque image to the upper region of the border, confirmed by another radiograph with a film placed in the position between the vestibular face of the alveolar border and the mucosa of the cheek. **Conclusion:** The radiographic findings associated with anamnesis and clinical examination suggested a diagnosis of calcification/ossification in soft tissue compatible with the healing of acne.

**Keywords:** Calcinosis; Ossification, Heterotopic; Acne Vulgaris

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## INTRODUCTION

Calcium plays a vital role in the fundamental physiological regulatory events of many tissues, including the skin, and when the factors regulating this tissue are compromised, whether by local or systemic events, the result may be calcification (calcinosis) or ossification (osteoma)<sup>1</sup>.

Pathologically and radiographically the two conditions differ by the type of substance deposited in the skin, while ossification is characterized by deposition of organized bone matrix, calcification is defined by the accumulation of calcium salts<sup>2,3</sup>. For some authors, calcinosis is considered a precursor or early manifestation of osteoma<sup>1</sup>.

Similar to calcification, the osteoma has a classification attributed to its etiology. Calcification is divided into the metastatic, idiopathic, iatrogenic and dystrophic subtypes<sup>4</sup>. The metastatic type refers to the deposition of calcium salts as a result of increased serum calcium and/or phosphate levels<sup>4,5</sup>. In idiopathic calcification occurs in the presence of tissue and metabolic alterations<sup>1,5</sup>. The iatrogenic type is related to therapy or medical examinations<sup>6</sup>, while the dystrophic is characterized by an abnormal deposition of calcium salts in affected tissue<sup>1,7</sup>.

Cutaneous ossification can be classified as primary or secondary. The first occurs when there is no previous skin injury, as in diseases like Albright's hereditary osteodystrophy<sup>8</sup>. The secondary type in turn refers to the ossification process as a result of prior injury, trauma, inflammatory processes, scars, acne and others<sup>9-13</sup>.

Sites of calcification or heterotopic ossification may not generate any significant signs or symptoms and are usually only detected incidentally on routine radiographic examinations and by their benign and asymptomatic these conditions are often ignored feature coffee walk rare descriptions in literature image of Jácome & Abdo<sup>4</sup>, and White & Pharoah<sup>14</sup>.

Based on these assumptions, the objective of the present study was to report a clinical case calcification /ossification of soft tissues compatible with the healing of acne.

## CASE REPORT

A 57-year-old man was referred to a Radiology Clinic for a routine panoramic radiograph. Radiographic examination revealed a radiopaque, circular image in the alveolar ridge region in the air corresponding to tooth 36, presenting characteristics similar to a residual root (Fig. 1).



**Figure 1.** Panoramic radiograph showing radiopaque, circular image in the alveolar ridge region in the air corresponding to tooth 36 (arrow).

For diagnostic confirmation a periapical radiography was performed using 70 kVp, 7 mA at a time of exposure of 0.41 seconds in the Gendex GX-770 device, which revealed a displacement of the radiopaque image to the upper region of the border, altering thus the residual root diagnosis hypothesis for soft tissue calcification/ossification (Fig. 2).

The extra-oral physical examination was possible to observe small marks suggestive of acne scarring on the face of the patient, confirmed in history by reporting acneic skin history during adolescence. Intraorally, a nodule approximately 0.5 cm in diameter was observed in the cheek region near the labial commissure. The jugal mucosa was intact, asymptomatic and similar in color to the normal mucosa.

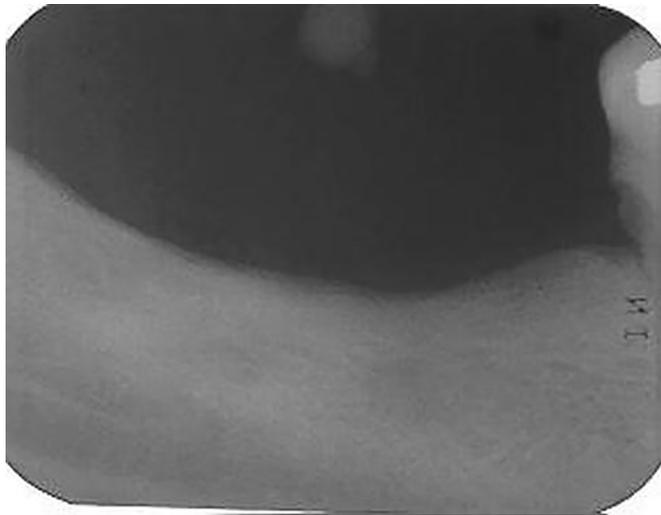
A new radiograph was taken by placing the periapical film in the position between the vestibular face of the alveolar border and the mucosa of the cheek and altering the exposure time to 0.10 seconds, which revealed a radiopaque, circumscribed and well defined (Fig. 3).

The association of the findings obtained in the clinical and radiographic examination led to the conclusion of diagnosis as calcification/ossification of soft tissues compatible with the healing of acne.

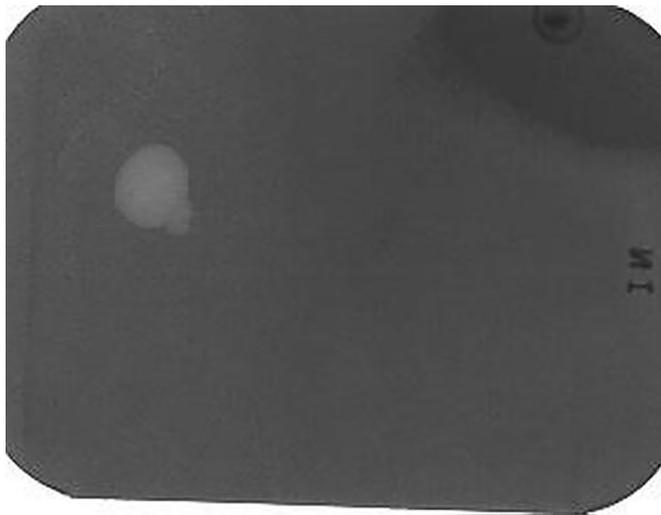
## DISCUSSION

Disorders of calcification or ossification of the skin are rare; however, when analyzed together, the findings of calcium deposits are common<sup>15</sup>. The pathogenesis of this process is still inconclusive. One of the most accepted theories is that chronic inflammation lead to the development of small calcifications and metaplastic ossification<sup>16,17</sup>.

Among the osteomas, the secondary ones are the most frequent<sup>18-21</sup> representing about 70 to 85% of cases,



**Figure 2.** Periapical radiography , showing displacement of the radiopaque image to the upper region of the alveolar region of the tooth 36. Exposure time of 0.41 seconds (arrow).



**Figure 3.** Periapical radiography performed with film positioned between the vestibular face of the alveolar border and the mucosa of the cheek. Exposure time: 0.10 seconds revealing radiopaque, circumscribed and well defined image (arrow).

and occurs when calcification develops in preexisting skin damage such as when there are secondary to the presence of a long term acne scar developed a chronic inflammatory dermatosis or<sup>9,22,23</sup>. Such findings corroborate with those of the case reported here, but the exact relationship between cutaneous osteoma and acne has not yet been clarified<sup>3</sup>.

Calcifications tend to occur generally at the same sites where acne lesions appear, and the face is the most common site of involvement<sup>20</sup>. Oral manifestations of the osteoma, with subcutaneous and mucosal calcifications, as in this report, are rare, and there is often confusion in the diagnosis of the lesions<sup>24</sup>.

There is a predominance of lesions in women, as evidenced in a previous study in which the files of a reference dermatopathology laboratory were investigated to identify cases of primary or secondary cutaneous ossification, and from the series of 74 cases analyzed the lesions were more commonly identified in female patients<sup>25</sup>. Fact that generates discussion on the role of estrogen in this process, however, this does not seem to be a crucial factor in the formation of osteoma, as women after menopause and men, as in the case presented in this study also develop lesions<sup>21</sup>.

The diagnosis of calcifications is usually performed by means of imaging tests, more commonly conventional and/or panoramic radiographs, often requested for other purposes<sup>25</sup>.

Soft tissue deposits usually present as radiopaque images of uniform contour and disc shape that can vary from 1 mm to a few centimeters in diameter, being single or multiple<sup>26</sup>.

When this calcification occurs in areas adjacent to the bone, usually the cheek and lips, it can be difficult to determine whether it is occurring within the bone or soft tissue itself, since in these locations the lesion image may overlap a dental root or alveolar process, giving an appearance of dense bone tissue area or a residual root<sup>14,23</sup>. And as reported here, a precise lesion location can be made by placing an intraoral film between the cheek and the alveolar process so that only the soft tissue is recorded. Another perpendicular radiographic incidence is also very useful in these cases.

To obtain a correct interpretation, it is important that points such as the anatomical location, number, distribution and shape of the calcifications are considered<sup>14</sup>. The importance of the differential diagnosis between calcifications is based on the different prognoses and treatments of each condition<sup>26</sup>.

For the secondary calcifications the acne scar, as in the case presented, no type of treatment is necessary, however there are cases and depending on the location the excision of the lesions can be performed for aesthetic reasons<sup>14,22</sup>.

## CONCLUSION

Conducting a detailed anamnesis combined with a comprehensive physical examination and the help of laboratory tests, were conducted as in this case, they are essential for making the diagnosis and definition of precise prognosis for each condition.

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