How calcifications guide the diagnosis : A case of Gorlin's cyst

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Abstract:

Calcified odontogenic epithelial cyst known as Gorlin's cyst is one of the benign odontogenic tumors of the maxillae. In imaging, the most revealing aspect is a well-limited osteolytic image with peripheral calcifications. The aim of study was to highlight these radiological features to establish correct diagnosis and appropriate treatment.

Keywords :

Maxilla; Radiography, Panoramic; Odontogenic Cyst, Calcifying; Tomography, X-Ray Computed; Osteolysis.

A 30-year-old patient in good general condition presented with a right maxillary deformity that had been progressing without symptoms over one year.

Exobuccal examination revealed a right genital swelling hard to palpation. Endobuccal examination revealed a right maxillary vestibule filling with local depressivity of the vestibular and lingual tables (ping pong ball sensation).

The panoramic view showed a well-limited osteolytic image in some areas, extending from the molar to the incisor region, with the presence of calcifications of a bony nature (Figure 1A).

The clinical and radiological findings point to the diagnosis of a slowly progressive, non-aggressive lesion, probably containing fluid. The presence of intra-lesional calcifications suggests two probable diagnoses : adenomatoid odontogenic tumour or Gorlin's cyst.

A CT scan revealed a well-limited osteolytic image occupying the entire right maxilla (Figure 1C) and extending into the homolateral nasal cavity, with compression and thinning of the external cortex (Figure 1D, E, F) and upward displacement of the orbital floor (Figure 1E, F). The CT also showed intra-lesional and peripheral calcifications (Figure 1C, D, E). Density measurements concluded that the lesion was fluid in nature (Figure 1G). Biopsy confirmed the diagnosis of Gorlin's cyst (Figure 1H).

Gorlin cyst which is also recognized by the terms calcifying epithelial odontogenic cyst and calcifying ghost cell odontogenic cyst is a rare developmental lesion that arises from the odontogenic epithelium. It occurs with an equal incidence in the maxilla and the mandible. Approximately most cases are discovered in the incisor and canine areas of the jaws and usually arises intraosseously, though, may occur extraosseously, too. It has a peak incidence during the second and third decades of life. It is clinically characterized as a painless, slow-growing cystic lesion. Radiographically, Calcification is an important radiographic feature for

the interpretation of Gorlin's cyst.[1] Analysis of the lesional content allows a better diagnostic orientation, essentially through the possibility of density measurement provided by the scanner. [2]

In the present case, the lesion was non-aggressive, slowly progressive and asymptomatic, leading to a delay in consultation and a consequent increase in the size of the image. CT scan is therefore essential for identifying the specific characteristics of the lesion and its extension, allowing accurate diagnosis and appropriate treatment.

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Figure's legend

Figure 1: (A) Panoramic radiography, lower limit of the right maxillary osteolytic image (white arrows) with the presence of intra-lesional calcifications (white arrowheads). **(B)** Blondeau incision, total filling of the right maxillary sinus (black star) with upward displacement of the orbital floor (black arrowheads).**(C-D)** Axial CT sections, osteolytic image with displacement and thinning of the outer cortex without rupture (white arrows), presence of peripheral calcifications (white arrowhead). **(E-F)** Coronal CT sections, osteolysis affecting the nasal cavities (white star) and displacement of the orbital floor (black arrowhead). **(G)** Coronal CT section, three levels of density measurement within the lesion (circles 1,2,3), density 1: 808 HU, density 2: 10.7 HU and density 3: 708 HU. **(H)** Microscopic observation at low magnification showing the epithelial lining of the cystic wall (black arrows). **(I)** At high magnification: presence of calcifications (dashed black arrows).

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