CASE REPORT

Sphenoidal and ethmoidal sinoliths

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INTRODUCTION

Sinoliths are rarely encountered calculi lodged in the paranasal sinuses1. They are also termed antroliths, rhinoliths, antral calculi, antral stones, or antral rhinoliths2. There were reported sinoliths of the maxillary sinus3, ethmoidal sinuses1,4-6, frontal sinuses7,8. The most rarely reported are the sphenoidal sinoliths. To our knowledge, only three cases of such rhinoliths were reported2,9, none of these occurring bilaterally. The sphenoidal sinoliths are not usually listed as isolated sphenoidal sinus lesions10,11. A possible reason should relate to the conventional radiographs, which do not allow a good view of the sphenoid sinus due to its location in the central skull base10. On other hand, CT, as well as Cone Beam CT, allows a good visualization of the sphenoidal sinus anatomy and pathology.

CASE REPORT

In a 52-year-old male patient who was evaluated in Cone Beam Computed Tomography (CBCT) for planning a dental treatment, minor dense bodies were found unilaterally in the right posterior ethmoid and bilaterally in the sphenoidal sinuses.

ABSTRACT

Sinoliths are rarely found calculi of paranasal sinuses. The most rarely they were found in the sphenoidal sinuses. At a routine Cone Beam CT exam of a 52-year-old male patient clinically silent small sinoliths were found bilaterally in the sphenoidal sinuses and a larger posterior ethmoidal sinolith was found on the right side. To our knowledge, such multiple sinuses involvement has not been previously reported.

KEYWORDS: rhinolith, rhinolithiasis, calculi, stones, nasal fossa.

The subject was explored using a Cone Beam Computer Tomography (CBCT) machine – iCat (Imaging Sciences International), and CT data was documented using the iCatVision software. Then, the DICOM files were exported and further evaluated with the Planmeca Romexis Viewer (v.3.2.7). The multiplanar reconstructions (MPRs) in sagittal, coronal and transversal planes, as well as the three-dimensional volume renderizations for which the „Soft Tissue“ filter was used, were documented.

On the left side (Figure 1), a sphenoidal calculus was found at 10.50 mm above the pterygopalatine fossa; its density, as evaluated digitally, was of 570 HU, thus it corresponded to an osseous structure. The height of this left sphenoidal sinolith was 2.02 mm, the width was 1.74 mm and the sagittal size was 1.0 mm.

On the right side (Figure 2), sphenoidal and posterior ethmoidal sinoliths were found. The sphenoidal calculus was at 6.25 mm above the roof of the pterygopalatine fossa and its density was 362 HU. The size of the sphenoidal calculus was 1.27/1.25/1.5 mm. The ethmoidal sinolith was larger and was placed in the posterior ethmoid, in front of the sphenoidal concha, at the level of the ostium of the sphenoidal sinus. The inner wall of the posterior ethmoid air cell was separating the ethmoidal sinolith and the sphenoidal sinus
ostium. The density of the ethmoidal sinolith was 713 HU in its periphery and negative in the core. Its maximal vertical size was 4.51 mm, the width was 3.0 mm, and the sagittal size was 3.24 mm.

**DISCUSSIONS**

The pathogenesis of sinoliths formation is not completely understood. Predisposing factors of these dystrophic calcifications or ossifications, such as foreign sinus body or fungus, long-standing infections or poor sinus drainage, were indicated. In our case, only the ethmoidal sinolith appearance would indicate a central nidus, which may be exogenous or endogenous in origin. However, on many occasions, such nidus is not evident.

**CONCLUSIONS**

Rhinoendoscopy and CT, or CBCT exams are suitable tools to identify sphenoidal and/or ethmoidal sinoliths. Removal of such paranasal sinuses calculi by an endoscopic approach is an adequate option.
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REFERENCES