

# Intra-sinusal third molar: Case report

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## ABSTRACT

Ectopic tooth eruption into an area other than the oral cavity is rare. Nasal septum, mandibular condyle, coronoid process and infratemporal fossa space have been reported as frequent locations for ectopic tooth eruption. Ectopic teeth located within the maxillary sinus may be asymptomatic, found only in routine examinations. Headache, sinusitis and nasal obstruction are some of the associated symptoms. The differential diagnosis includes foreign bodies (rhinolith), infections (syphilis and tuberculosis), benign lesions (hemangioma, osteoma, calcified polyp) and malign lesions (osteosarcoma). Upper third molars located within the maxillary sinus may be associated with the development of mucocele or dentigerous cyst. The aim of this paper was to describe the case of a 24-year old female patient with an ectopic right upper third molar in the maxillary sinus. A hyperdense area was observed with sinus obliteration, consistent with mucous material.

**Keywords:** Third molar, maxillary sinus, pathology.

## Terceiro molar intrassinusal: relato de caso

## RESUMO

Erupção ectópica dos dentes em outras regiões além da cavidade oral é rara. O desenvolvimento ectópico desses dentes tem sido relatado no septo nasal, côndilo mandibular, processo coronoide e no espaço da fossa infratemporal. Dentes ectópicos localizados no seio maxilar podem ser assintomáticos, descobertos em exames radiográficos de rotina. Dentre os sintomas associados estão cefaleia, sinusite e obstrução nasal. Corpos estranhos (rinólitos), processos infecciosos (sífilis ou tuberculose), lesões benignas (hemangioma, osteoma, pólipos calcificados) e malignas (osteossarcoma) podem ser considerados no diagnóstico diferencial de dentes ectópicos. Os terceiros molares superiores, quando localizados no seio maxilar, podem estar associados ao desenvolvimento de mucocele, assim como de cistos dentígeros. Dessa

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forma, o objetivo deste artigo foi relatar o caso de uma paciente do gênero feminino, com 24 anos de idade, em que se observou terceiro molar superior direito com localização intrassinusal associado a uma área de hiperdensidade média, causando parcial obliteração do seio maxilar, compatível com material mucoide.

**Palavras-chave:** Terceiro molar, seio maxilar, patologia.

## INTRODUCTION

Ectopic eruption of a tooth into an area other than the oral cavity is rare. The development of ectopic teeth has been reported in the nasal septum (1), mandibular condyle (2), coronoid process (3), and infratemporal fossa (4). Ectopic tooth eruption may be associated with one of the following factors: development disorders, pathologies, and iatrogenic procedures (5). The aim of this paper was to describe the radiographic and tomographic aspects of a rare intra-sinusal third molar.

## CASE REPORT

A 24-year old female patient was seen at the radiology clinic at the Piracicaba Dental School for preoperative radiographic evaluation of third molars. The patient reported no pain or any abnormality. No abnormality was observed during intraoral and extraoral examinations. Panoramic radiograph revealed superimposition of the right upper third molar and the maxillary sinus (Figure 1). The tooth presented a complete crown and incomplete root formation.



FIGURE 1. Panoramic radiograph.

Cone beam computed tomography scans (i-CAT, Imaging Sciences International, Inc, Hatfield, PA, USA) were taken for a better evaluation. The unit was set at 120 kVp, 8 mA, a voxel size of 0.25 mm, and a field of view of 8 cm. On the coronal (Figure 2) and sagittal (Figure 3) sections, the right upper third molar was observed within the maxillary

sinus in a distoangular position. A hyperdense area was observed, with partial sinus obliteration, consistent with mucous material. Radiographic follow-up was recommended due to the absence of symptoms.



FIGURE 2. Coronal slice of cone beam computed tomography showing intra-sinusal third molar.



FIGURE 3. Sagittal slice of cone beam computed tomography showing intra-sinusal third molar.

## **DISCUSSION**

Ectopic teeth located within the maxillary sinus may be asymptomatic. In such cases, they are only found in routine examinations. Headache, sinusitis and nasal obstruction are some of the associated symptoms (6). Teeth located in the mandible are usually asymptomatic (7), and may be associated with dentigerous cysts (6,8). When symptomatic, periauricular pain and swelling in the parotid area are described (9,10). This symptomatology is mostly related to infected cysts.

Computed tomography is the most appropriate method to visualize impacted teeth. It shows the relationship between teeth and adjacent structures with high-quality sectional images. Cone beam computed tomography has become a widespread imaging method in dentistry, since it provides clear images of highly contrasted structures using less radiation than traditional fan beam computed tomography systems (11). In the present study, tomographic images were of great importance for the diagnosis of the intra-sinusal third molar.

The differential diagnosis of ectopic teeth in the maxillary sinus includes foreign bodies (rhinolith), infections (syphilis and tuberculosis), benign lesions (hemangioma, osteoma, calcified polyp), and malign lesions (osteosarcoma) (12). In the evaluation of computed tomography images, similarity of tooth density and morphology is significant for the final diagnosis.

The location of an upper third molar within the maxillary sinus may be associated with the development of mucocele (13) or dentigerous cyst (6,8). In this study, the patient presented a hyperdense area associated with the tooth, compatible with mucous tissue.

Surgical removal should be considered when intra-sinusal third molars are symptomatic or associated with cysts. The traditional approach is the Caldwell-Luc procedure, in which an opening is made into the maxillary sinus (3,5). Alternatively, transnasal endoscopy, another approach with lower morbidity, can also be used (9,14).

The need for surgical intervention or removal of a non-erupted third molar should be analyzed for each individual patient. Removal is indicated when the tooth is associated with cysts or tumors, untreatable caries, periodontal disease, recurrent pericoronitis, abscess and osteomyelitis, or in cases of prophylactic extraction (15). In this study, radiographic follow-up was recommended due to the absence of symptoms or pathological processes.

## **FINAL CONSIDERATIONS**

Panoramic radiographs do not provide reliable information about the exact location of ectopic teeth in the maxillary sinus. Cone beam computed tomography should be the preferred method to help in establishing the diagnosis and planning treatment and follow-up.

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