



Case report

SURGICAL APPROACH OF AN ECTOPIC THIRD MOLAR IN THE MAXILLARY SINUS

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ABSTRACT

Ectopia of third molars within the maxillary sinus is uncommon. Few cases have been reported in the literature. Generally, the diagnosis of upper third molar ectopia at the level of the maxillary sinus can be made following a routine diagnostic examination such as panoramic X-ray, or CBCT in which any lesions created by the element itself can additionally be detected. Our case presents a third molar included in the left upper maxilla of a 60-year-old male patient. The element was removed under general anesthesia, and after twelve months of follow-up, new panoramic X-ray and CBCT were requested to assess the healing of the compromised area.

KEYWORDS: *ectopia, molar, maxillary sinus*

INTRODUCTION

Dental eruption is a physiological process by which the tooth element in formation achieves its functional position within the oral cavity. Development of the element and proper intraoral positioning depend on complex cellular interactions and molecular processes that may be subject to variation determining the development of an ectopic tooth.

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Ectopic eruption of a tooth element is frequently encountered in clinical practice and the etiology is multifactorial: cleft palate, trauma, odontogenic or rhinogenic infections, genetic factors, cysts, and dental crowding can all contribute to the onset of the phenomenon (1).

This altered process is frequently seen in dental areas, but less common in non-toothed areas such as the mandibular condyle, coronary process, orbit, palate, and nasal cavity. Occasionally, a tooth may erupt within the maxillary sinus.

In the English literature, patients were observed with higher prevalence of ectopic teeth in third molars, 21 cases, followed by unspecified molars. The lowest prevalence of ectopic teeth was found in the first molar, second premolar, and first incisor (2-6).

Generally these elements remain asymptomatic for years and their diagnosis is made only after routine diagnostic exams are performed; sometimes they may cause recurrent sinusitis.

Case report

A male patient aged 60 years came to our observation, reporting pain in the left upper maxillary area, retronasal purulent discharge and halitosis for about three months.

On intraoral clinical examination, there was mild swelling in the left upper vestibule at the level of the molar apices. The area was painful on palpation with discharge of purulent material at the intrasulcular level of elements 26 and 27 and from the left nasal choana.

A panoramic X-ray was done and it showed a radiotransparent area involving the region of the left upper maxilla and the upper third molar within the maxillary sinus (Fig. 1).

A chronic purulent sinusitis associated with a maxillary odontogenic cyst from 28 in ectopic position was suspected. Then a CBCT scan has been prescribed, showing a hypodense and well-circumscribed lesion measuring 20 mm x 30 mm in the posterior region of the maxilla, surrounding the crown of the left third molar in an ectopic position. The right maxillary sinus showed mucosal thickening and filling of the alveolar recess, indicative of chronic maxillary sinusitis (Fig. 2).

The patient was admitted to the hospital for surgery under general anesthesia. Before surgery, informed consent was signed by the patient. Under general anesthesia, we proceeded to do Caldwell-Luc surgery with removal of the cyst and removal of the associated tooth and extracted the severely compromised elements 26 and 27. A thick purulent creamy material, due to the infectious process, was found within the cavity. The surgery was accompanied by a counter-opening performed in the medial sinus wall, introduction of PVC canula for drainage and endosinus lavage with physiologic saline. The canula was removed on day 5. Periodic nasal sinus lavages with physiologic were performed every 10 days for a period of 2 months.

The specimen was sent for histological examination, which confirmed the diagnosis of odontogenic cyst. In the postoperative course there were no severe complications. The final diagnosis of maxillary sinusitis caused by dentigerous cyst with ectopic third molar was confirmed. Severe and disabling symptomatology disappeared after surgery.



Fig. 1. Panoramic X-ray showing the presence of ectopic tooth element 2.8 at the level of the left maxillary sinus.

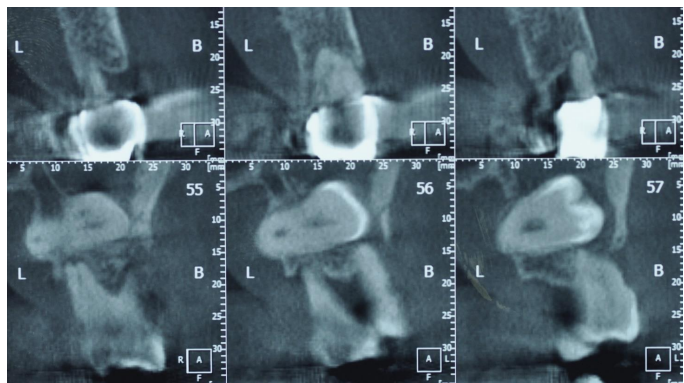


Fig. 2. From the CBCT, a hypodense and well-circumscribed lesion surrounds the crown of the third molar.

After 14 days, sutures have been removed. The healing was found to be good, and the mucosa appeared healthy and pink. On an objective examination performed 30 days after surgery, the patient was asymptomatic and optimal tissue healing was evident. Approximately 12 months after surgery, a panoramic X-ray and a CBCT were prescribed to the patient to assess the healing and bone regeneration of the cavity (Fig 3, 4).

DISCUSSION

Dental tissue development begins in the intrauterine phase, during the sixth week, through interaction between oral epithelium and mesenchymal tissue. Abnormal tissue interactions, embryological pathologies, such as fusion defects or cyst formations, during this stage, can generate dental ectopias. In addition, the same phenomenon could be caused by displacement of the dental gems, by expanding dentigerous cysts or displacement during eruption of the third molar, malpositioning related to trauma and supernumerary teeth (2).

Certainly, the ectopic condition in an area that physiologically does not involve the presence of dental elements, such as the maxillary sinus, is not frequently encountered in clinical practice. The elements most susceptible to ectopia seem to be the third molars and canines, which generally take a longer time to erupt.

The discovery of a tooth element in ectopic position may or may not be accompanied by the presence of symptoms such as sinusitis and purulent rhinorrhoea, that cannot be treated with antibiotic prophylaxis. In addition, patients often report swelling, pain, headache, and nasal obstruction. In some cases, symptoms like infraorbital nerve hypoesthesia, epiphora and hemoptysis have been described. Regarding possible infections, cases of oroantral fistulas and purulent discharge have been reported (6-9). Our patient reported pain in the left upper maxillary area, retronasal purulent discharge and halitosis for about three months.

The diagnosis of the lesion associated with ectopic element was made following a panoramic X-ray. Subsequently, the patient underwent a CBCT to better highlight the location of the tooth and the margins of the hypodense lesion identified in the previous X-ray. The CBCT gives a better representation of the sinuses; it also allows us to have more details regarding the position, in this case, of the ectopic element and the size and extension of the associated lesion (10). After viewing the CBCT we opted for enucleation of the cyst removing the associated element with Cadwell-Luc surgery, by which the operators ensured a direct view of the element during the surgical procedure.

CONCLUSIONS

In conclusion, dentigerous cysts associated with ectopic maxillary third molars are rare and poorly documented. They can involve the maxillary sinus and cause chronic maxillary sinusitis (11, 12). Treatment involves surgical removal of the tooth and of the associated lesion using the Cadwell-Luc procedure. If there is unilateral maxillary pain, or hemifacial headache, odontogenic sinusitis should be suspected. A careful oral and radiographic examination is essential as evidenced by the case reported in this article, in which a dentigerous cyst associated with an ectopic third molar caused a maxillary odontogenic sinusitis.

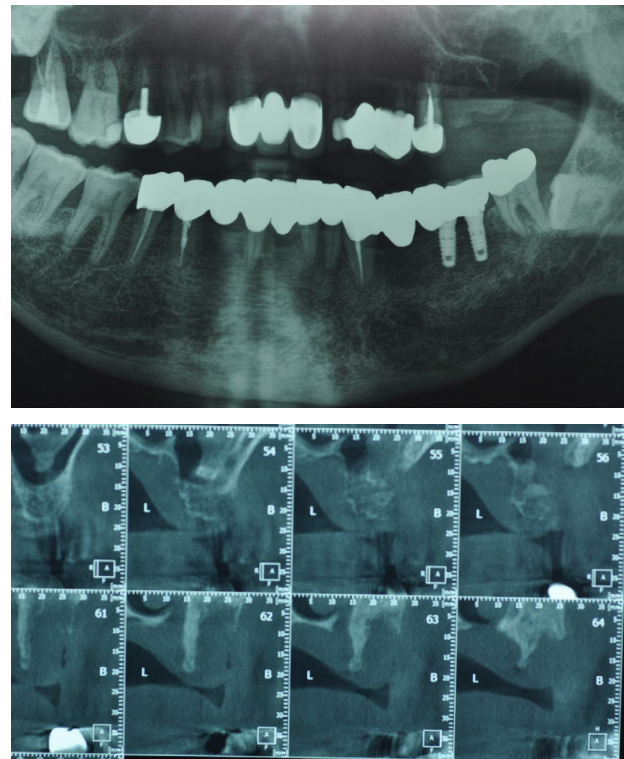


Fig. 3, 4. X-rays demonstrating successful bone healing.

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