Ectopic Tooth in the Maxillary Sinus Diagnosed with an Ophthalmic Complication

Nihat Demirtas, DDS, Hakki Oguz Kazancioglu, PhD, DDS, Seref Ezirganli, PhD, DDS

Abstract: Ectopic teeth erupt into regions other than the natural position or should be impacted in unusual location. Etiology of these teeth includes trauma, infection, and developmental diseases; however, in many cases, it is idiopathic. In addition, dentigerous cysts that are related with ectopic teeth may also affect adjacent anatomic regions. The occurrence of ophthalmic complications related with ectopic teeth is a rare situation. In this article, we aimed to present a patient who had a blurred vision thought that resulted from the dentigerous cyst associated with the ectopic third molar in the maxillary sinus roof.

Key Words: Ectopic teeth, dentigerous cyst, blurred vision, eye, dental

Ectopic teeth erupt into regions other than the natural position or should be impacted in unusual location. These teeth are mostly asymptomatic and may be recognized during routine radiologic examination. The etiology of ectopic eruption includes trauma, infection, and developmental disorders. In many cases, it may be idiopathic. Developmental disorders include cleft palate trauma, genetic factors, and high bone density. These teeth may occur in the mandibular condyle, coronoid process, nasal cavity, palate, or maxillary sinus. In addition, the most common ectopic eruption is seen in wisdom teeth.[1]

Dentigerous cysts are formed by accumulation of fluid between the unerupted tooth and the surrounding dental folicle.[2] Furthermore, dentigerous (follicular) cysts may be associated with impacted ectopic teeth. An ectopic tooth and dentigerous cyst can be seen together in the maxillary sinus. This condition is very rare, but it may result in several complications such as nasolacrimal obstruction, paranasal sinusitis, oronasal fistula, and facial pain.[3]

The aim of this article is to present an unusual occurrence of blurred vision that could be related with dentigerous cyst, which is around the ectopic third molar in the maxillary sinus.

CLINICAL REPORT

A 19-year-old male patient without systemic diseases was applied to the Department of Oral and Maxillofacial Surgery with complaint of pain, discomfort, and fullness in the right cheek. There was no significant disease in the patient's medical history. His clinical manifestations include blurred vision in the right eye. Radiographic examination revealed that the maxillary third molar was located on the floor of the orbit (Fig. 1). A radiolucent lesion, consistent with a dentigerous cyst, was noted around this ectopic tooth. The cystic lesion and adjacent areas were imaged with dental volumetric tomography (DVT) scan. The DVT scan confirmed that the cyst had well-defined sclerotic margins. However, destruction of buccal cortex was observed. Moreover, superior margin of the cyst cavity was in proximity to critical structures such as eye bow and ethmoid sinuses (Fig. 2). It was seemed that the expansive lesion has caused endosteal resorption at the floor of the orbit. In addition, distance from the floor of the orbit and cyst border was less than 1 mm. According to the DVT scan, the lesion was approximately 45 × 50 × 30 mm. First marsupialization, second enucleation, and curettage were planned. In the first month of postmarsupialization, the patient's blurred vision was improved. After 6 months of initial visit, the cyst was treated with enucleation and curettage under general anesthesia using the Caldwell-Luc approach. In addition, the third and second molars were extracted (Fig. 3). During cyst enucleation, the adjacent structures were unharmed. Furthermore, postoperative period was uneventful.

DICUSSION

The management of ectopic teeth usually warrants its removal, if necessary. However, anatomic location and clinical symptoms are obviously important for surgical extraction.[3] Several anatomic locations were reported in the literature. Nagarajappa and Manjunatha[4] reported an ectopic supernumerary tooth in the oropharyngeal region. Kirmeier et al[5] reported nasolacrimal obstruction mechanically by dentigerous cysts. Besides, an ectopic tooth was reported in the nasopharynx, which was due to trauma.[6] The nasal teeth may cause some complications associated with the nasal cavity and maxillary sinus. These complications include facial pain, epistaxis, nasal obstruction, paranasal sinusitis, nasal septal deviations, nasal septal abscess, and oronasal fistula.[7] Weber et al[8] reported 2 cases of sinus ethmoidalis,

FIGURE 1. A panoramic radiograph revealing the ectopic tooth (arrow).

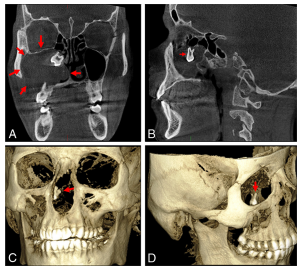

FIGURE 2. A, Coronal computed tomography scan showing the ectopic position of the tooth with the lesion and endosteal resorption at the floor of the orbit. It is in relation to the nasal cavity and nasal septum. B, Sagittal computed tomography scan showing the position of tooth in proximity to the ethmoid and sphenoid sinuses. C, Three-dimensional reconstructed image showing perforation of the buccal cortex and relation to the tooth and nasal cavity. D, Image showing that it is in relation to the floor of the orbit.

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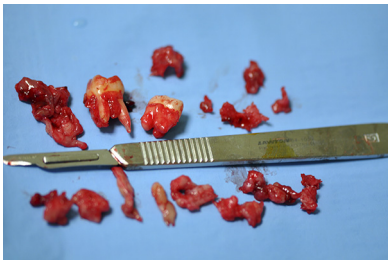

FIGURE 3. Specimen with ectopic tooth and dentigerous cyst.

which caused pseudopolyposis with consecutive nasal airway obstruction and severe headache. Goh[6] reported an ectopic tooth that is an unusual cause of recurrent sinusitis. Atlas et al[9] reported a large maxillary dentigerous cyst that caused epiphora.

Dentigerous cysts generally occur in the mandibular and maxillary third molar areas. Second, they occur in the canine region. These are the most common locations for impacted teeth. In addition, dentigerous cyst may develop associated with impacted ectopic teeth.[10] Actually, the occurrence of ectopic tooth in the maxillary sinus and the association of a dentigerous cyst may affect the adjacent structures.[1] Hence, most authors suggest that odontogenic cysts involving the whole maxillary sinus should be eliminated by surgical methods. In the present case, we suggest that the ectopic tooth that affected visual ability as a result of the optic nerves may be affected concerning bone resorption in the inferior border of the orbit. Blurred vision is thought to occur because of the pressure associated to the cystic enlargement.

CONCLUSIONS

As a result, early diagnosis and treatment of these lesions allow a reduced patient's morbidity. In the described case, we recognized that ectopic teeth in the maxillary sinus may affect the orbital region. Therefore, specialists should pay attention to ectopic teeth and large dentigerous cysts.

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Combination of Absorbable Mesh and Demineralized Bone Matrix in Orbital Wall Fracture for Preventing Herniation of Orbit

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Abstract: After restoration of orbit wall fracture, preventing sequelae is important. An absorbable mesh is commonly used in orbit wall fracture, yet it has limitation due to orbit sagging when bony defect is larger than the moderate size (1×1 cm^2). In this study, the authors present a satisfactory result in treating orbit wall fracture larger than the moderate size with a combination of absorbable mesh and demineralized bone matrix.

From 2009 to 2012, 63 patients with bony defect larger than the moderate size, who were treated with a combination of absorbable mesh and demineralized bone matrix, were reviewed retrospectively. The site of bony defect, size, and applied amount of demineralized bone matrix were reviewed, and a 2-year follow-up was done. Facial computed tomography scans were checked preoperative, immediate postoperative, and 2-year postoperative.

Among the 63 patients, there were 52 men and 11 women. Mean age was 33.3 years. The most common cause was blunt blow (35 cases); mean defect size was 13.36×12.82 mm^2 in inferior wall fracture and 20.69×14.41 mm^2 in medial wall fracture. There was no complication except for 3 cases of infraorbital nerve hypoesthesia. A 2-year follow-up computed tomography showed that the surgical site preserved bony formation without herniation. In treating moderate-sized bony defect in orbit wall fracture, absorbable mesh and demineralized bone matrix can maintain structural stability through good bony formation even after degradation of absorbable mesh.

Key Words: Orbital wall fracture, orbital wall reconstruction, absorbable mesh, demineralized bone matrix

Orbit is the second most common fracture site in facial bones. Symptoms may vary according to the size of fractures or the

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