Dentigerous Cyst in the Maxilaris Sinus

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Abstract

A dentigerous cyst or follicular cyst is a cyst attached to the enamel-cemento junction and adjacent to the unerupted part of the tooth. These cysts form an accumulation of fluid in the pressured area. Cysts in the sinus area can cause sinus wall distension, which can cause complications to the surrounding area, especially the eye area. A case involving a 14-year-old girl, with cysts in the maxilo-ethmoidal sinus area was reported at Dr. Wahidin Sudirohusodo Hospital, Makassar. She shows the following clinical symptoms: a lump in the right maxillary region, without diplopia and impaired eye movement or vision. The patient has other complaints such as nasal obstruction with rhinorrhea in the period of the last 3 months. The CT Scan examination showed a cyst in the right frontal-ethmoid sinus with the teeth appearance in the ethmoid sinus area. It is planned that a cyst removal procedure by extirpation using a sub-labial approach will be carried out with further examination to the anatomical pathology section to confirm the results of the extirpation (removal). Immediate surgical management of maxilloethmoid sinus cysts can improve complications such as proptosis with low morbidity.

Key Words: Cyst, Appearance Of Teeth, Maxilloethmoidal Sinus, Extirpation Surgery

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Introduction

A dentigerous cyst is a cyst that forms around the crown of an unerupted tooth, developing as a result of an impacted permanent tooth. These cysts begin to form when fluid accumulates within the layers of reduced enamel epithelium or between the epithelium and the crown of an unerupted tooth. These cysts are attached to the cement-enamel junction to the follicular tissue covering the crown of an unerupted tooth (Shawneen et al., 2011; Gondim et al., 2008).

Dentigerous cysts occur mainly during the second and third decades of life. Its origin can also be inflammatory, usually associated with immature teeth, as a result of an inflammatory reaction. Small dentigerous cysts are usually asymptomatic and are discovered by routine radiographic examination. Cysts of large proportions can cause painless expansion of the bone, resulting in facial asymmetry (Wray, 2003; Demiriz et al., 2015).

Clinicopathological study of jaw cysts in southest region of Turkey reported that dentigerous cysts were the second most common odontogenic cyst after radicular cysts, similar to the study of Jean-Paul M et al in 2006 with a total of 695 cases of patients with odontogenic cysts in Pitie-salpetriere University Hospital, Paris, France. In contrast to the results of a study conducted by Kuhuwael FG Pieter N, Nasrul on odontogenic cysts at Dr. Wahidin Sudirohusodo Hospital Makassar, it was reported that dentigerous cysts were the most common cases, namely 16 out of 18 cases of odontogenic cysts while radicular cysts were only 2 cases (Kuhuwael et al., 2009).Dentigerous cysts are not uncommon cases, but patients with this diagnosis rarely visit an ear nose and throat specialist as dentistry progresses. Some patients may visit because of complaints related to the nose and facial asymmetry (Ashraf et al., 2016).

Case Report

A case involving a 14-year-old girl referred to Dr. Wahidin Sudirohusodo Hospital, Makassar from Pangkep hospital with of a lump on the right upper

cheek that has been felt since 4 months ago, there is no pain, there is no history of pain in the lump area. History of right pre molar not growing. No ear, nose and throat complaints. The patient's condition was stable.

Figure 1. Appearance and physical examination of the patient

A CT Scan the Coronal Paranasal Sinus showed an isodens mass (23 HU) was predominantly cystic, well defined, regular edges, with deep calcifications, with a size of ± 5.1 x 5.1 x 5.5 cm in the right nasal cavity which constricted and forced the nasal cavity & left maxillary sinus.

Figure 2. CT Scan Sinus Paranasal Axial, Coronal & Sagittal view

The patient was diagnosed with dentigerous cyst. The patient was then treated enucleation with sublabial approach the procedure is Make an incision on the right sublabial, free the layers of periosteum, then identify the anterior wall of the right maxillary bone, open the right maxillary bone, a tumor mass filled with clear to brassy fluid appears in the right maxillary sinus and then sharply and bluntly free the tumor mass. The capsule comes out in toto, there is 1 pre molar in the capsule, send the capsule to anatomical pathology.

Figure 3. During Operation

The surgery was successful and the patient managed to be discharged after day 2 post-surgery. Day 5 follow-up post-surgery, the patient had no complaint and the stitches was removed, then she was referred back to Pangkep hospital.

Figure 4. Post surgery day 5 (17th-3-2020)

Discussion

A case of dentigerous cyst was reported based on anamnesis complaining of a lump on the lower right cheek, a history of impaired permanent tooth eruption, and impaired tooth growth. And on physical examination found a lump with firm boundaries measuring 5 x 3 x1 cm, no rubor, no calor, no tenderness. Based on this, a CT scan of the paranasal sinuses was carried out, the results showed a cyst in the right maxilla, a density resembling an unerupted tooth, and pressing the maxillary sinus. Treatment is in the form of cyst enucleation with a sublabial approach. This sublabial approach was chosen on the grounds of obtaining better visualization of reaching the wall of the cyst.

Conclusion

A dentigerous cyst or follicular cyst is a cyst attached to the enamel-cemento junction and adjacent to the unerupted portion of the tooth (Motamedi & Talesh, 2005). These cysts form an accumulation of fluid in the compressed area. Dentigerous cysts are usually found in the mandibular region of the upper third molars. The epithelium lining this cyst is stratified squamous epithelium (Demirkol et al., 2014). Dentigerous cysts are usually asymptomatic unless they become very large (10-15 cm). The majority of cysts are small and do not cause swelling of the tissue surface. If there is no infection, then clinically the enlargement is minimal and well-defined.

Enlargement of the cyst can cause facial asymmetry, shifting of teeth and changes in occlusion, loss of related or adjacent teeth, and displacement of dentures and can also cause jaw expansion (Suresh et al., 2011). There are two methods used to treat cysts are enucleation and marsupialization. Enucleation is removing the entire cyst layer. Enucleation is generally used if the cyst layer is easily separated from the bone attachment and the cavity contains blood clot. Enucleation can be performed on all cysts measuring small to medium (Huang et al., 2019).

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