ORIGINAL RESEARCH PAPER

Volume-8 | Issue-2 | February-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

DENTIGEROUS CYST WITH AN IMPACTED CANINE IN THE MAXILLARY SINUS: A RARE ENTITY!

ENT

Dr Kapil Soni — Assistant Professor, Department of Otorhinolaryngology, All India Institute of Medical Sciences, Jodhpur

Dr Neha Shakrawal* — Senior Resident, Department of Otorhinolaryngology, All India Institute of Medical Sciences, Jodhpur *Corresponding Author

Dr Darwin Kaushal — Assistant Professor, Department of Otorhinolaryngology, All India Institute of Medical Sciences, Jodhpur

Dr Shivani Jain — Junior Resident, Department of Otorhinolaryngology, All India Institute of Medical Sciences, Jodhpur

ABSTRACT

Dentigerous cysts are commonly found odontogenic lesions which arise from the crown of impacted, embedded, or unerupted tooth. It is primarily a permanent tooth's developmentalcyst and is second most common odontogenic cysts after radicular cysts. Dentigerous cysts in association with ectopic teeth within the maxillary sinus are fairly rare, and around 51 cases had been reported in the literature till 2016. In addition to that series, we report a case of dentigerous cyst associated with ectopic canine in the left maxillary sinus. Pathogenesis of ectopic tooth, role of imaging, differential diagnosis, and management will be described here.

KEYWORDS

Dentigerous cyst, impacted canine, maxillary sinus

INTRODUCTION:

The term “dentigerous cyst” was coined by Paget in 1853 which literally means 'tooth bearing' [1]. They usually present in the second or third decades of life and are rarely seen during childhood [2-5]. Dentigerous or follicular cysts are one of the most prevalent types of odontogenic cysts and are seen in association with the crown of an unerupted or developing tooth. [6, 7] They are two times common in males than in females. About 70% of dentigerous cysts occur in the mandible and 30% in the maxilla [1]. The teeth most often involved are mandibular third molars, maxillary canines, and mandibular premolars [8]. The formation of these cysts occurs by expansion of dental follicles which ultimately results in accumulation of fluid between the tooth crown and epithelial components. Dentigerous cysts surrounding impacted teeth often displaces them to ectopic locations. As a result of passage of inflammatory cells and desquamated epithelial cells into the cyst lumen, expansion of the cyst occurs owing to increase osmolality of the content of the cyst [1]. Most commonly the dislocation of tooth occurs into the maxillary sinus. The dentigerous cyst progresses slowly and may remain asymptomatic for several years without being noticed. If there is involvement of maxillary sinus, symptoms occur accordingly and gradually in the process. The sequelae of these cysts and ectopic teeth vary, from obstruction of the sinus to facial asymmetry, epiphora and can lead to blindness also [2-5].

CASE REPORT:

A 33 years old male presented with chief complaints of gradually progressive, painless left sided facial swelling since 5 years causing gross facial asymmetry and cosmetic deformity. On examination, an ill-defined 8 x 8 cm hard, non tender swelling was present over left cheek which was obliterating the left nasolabial groove. Broadening of dorsum of nose and asymmetry of ala of nose was noted. Left ala is elevated superiorly. Swelling from the left maxillary region was pushing the lateral wall of left nasal cavity medially causal unilateral nasal obstruction. Intraoral examination revealed that left upper canine was absent and loosening of teeth was seen. There was a swelling in the upper alveolus and gingivo- bucal- sulcus starting from midline upto left upper 2nd molar and there was bulge in the hard palate which was crossing midline [Figure 1].

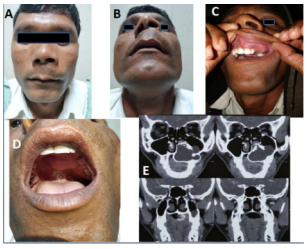

Fig. 1- A, B- Pre- op extra-oral photograph showing diffuse swelling over left maxillary sinus. C,D- Pre-op intra-oral photograph showing bulge of the alveolus and hard palate. E- Coronal CT image showing expansile cystic lesion And impacted canine in the left maxillary sinus. (Permission from the patient is taken)

Widening of the left upper alveolus seen. In order to determine the exact location of missing tooth, CT scan was performed which revealed a radiopaque image of canine tooth and a radiolucent image of a cystic expansile lesion in left maxillary sinus. The initial diagnosis of dentigerous cyst was made based on clinical and radiological findings. The surgery was done using the Caldwell–Luc approach. The cystic sac was identified and dissected from the walls of maxilla along with extraction of the impacted canine after exposing the anterolateral wall of left maxillary sinus. The cyst got ruptured during the removal; it was filled with straw-colour fluid which was sent for biochemical investigations, the finding of which was consistent with the diagnosis of a cystic lesion. The remaining anterior wall was downfractured which reduced the facial swelling. Middle meatus antrostomy done and conventional packing of the nasal cavity and maxillary sinus was done. The gross specimen consisted of an irregular, wrinkled soft grey piece of a cystic sac measuring approximately 4.5 × 5 × 0.5 cm, containing the developing canine tooth [Figures 2]. The microscopic study was consistent with the diagnosis of the dentigerous cyst. Post-operative healing was uneventful and pack was removed on third post- op day.

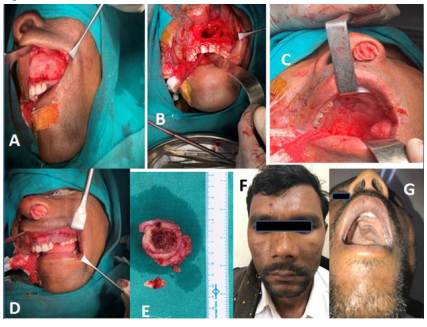

Fig. 2- A- D Intra opearative pictures showing the cyst and overlying thinned out anterior wall of maxilla, followed by fracturing the wall and removal of cyst, E- Tissue specimen showing the cyst and the impacted canine, F- Post-operative photograph, G- Postoperative intraoral view.

DISCUSSION

Dentigerous cyst is an uncommon cyst found in the maxillary sinus and

literature reports only few such cases involving maxillary sinus. In our case, the unerupted tooth was found in the posterior wall of maxilla which is a very rare position for maxillary canine to erupt. The etiology of ectopic eruption has not yet been completely clarified, but many theories have been suggested, including trauma, infection, developmental anomalies and pathologic conditions [9]. About 70% of dentigerous cysts occur in the mandible, and 30% in the maxilla [1]. They usually present in the second or third decade of life and are rarely seen in childhood [5]. They progresses slowly and may exist for several years without being noticed. When the maxillary sinus is invaded, symptoms usually occur late in the process [11]. Dentigerous cysts are usually single lesions but bilateral and multiple cysts have been reported and seen in association with syndromes like mucopolysaccharidosis and cleidocranial dysplasias. The differential diagnosis of a dentigerous cyst includes radicular cysts, odontogenic keratocysts, and odontogenic tumors, such as ameloblastoma, Pindborg tumor, odontoma, odontogenic fibroma, and cementomas [12-14]. However, mucoceles, retention cysts, and pseudocysts can also be considered in the differential diagnosis when maxillary sinus involvement is seen [12, 13]. Histopathologically, dentigerous cysts are lined by a layer of nonkeratinized stratified squamous epithelium, with a surrounding wall of thin connective tissue containing odontogenic epithelial rests [13]. Odontogenic tumors, such as ameloblastoma or epidermoid carcinomas, occasionally arise from the lining of the dentigerous cyst. The recurrence rate of dentigerous cyst is very low as when compared to the other jaw cysts. [15]

The management of such lesions depends on the age of patient, size of the lesion and its extent. But basic protocol includes excision of the cyst alongwith extraction of the associated impacted or unerupted tooth [16, 17]. Dentigerous cysts of the maxillary sinus, and the impacted tooth within, are often easily removed via a Caldwell-Luc procedure. Entire cyst with the impacted tooth has to be removed completely to prevent recurrence. Marsupialization can also be one of the treatment if we want to preserve the cyst-associated tooth and promote its eruption but it has its own risk of recurrences.

CONCLUSION-

Although development of dentigerous cyst in association with an unerupted permanent tooth is not uncommon. Usually dentigerous cysts of maxilla are associated with the maxillary third molar and not with a canine tooth. In the present case, the cyst was associated with canine and was involving the entire maxillary sinus which is an uncommon finding.

REFERENCES-

1. Browne RN, Smith AJ. (1990) Pathogenesis of odontogenic cyst. Investigative Pathology of the Odontogenic Cysts. Ed. CRC Press, pp 88-109
2. Buyukkurt, M. C., Omezli, M. M., & Miloglu, O. (2010). Dentigerous cyst associated with an ectopic tooth in the maxillary sinus: a report of 3 cases and review of the literature. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 109(1), 67–71.doi:10.1016/j.tripleo.2009.07.043
3. Weber AL. (1993) Imaging of the cysts and odontogenic tumors of the jaw. Definition and classification. Radiol Clin North Am 1993; 31; 1:101-20.
4. O'Neil DW, Mosby EL, Lowe JW. (1989) Bilateral mandibular dentigerous cysts in a five-year-old child: report of a case. ASDC J Dent Child, 56:382-4.
5. Kusukawa, J., Irie, K., Morimatsu, M., Koyanagi, S., & Kameyama, T. (1992). Dentigerous cyst associated with a deciduous tooth. Oral Surgery, Oral Medicine, Oral Pathology, 73(4), 415–418. Doi: 10.1016/0030-4220(92)90317-j
6. Main DM. (1970) Epithelial jaw cysts: a clinicopathological reappraisal. Brit J Oral Surg 8:114-25.
7. Soames JV, Southam JC. (1993) Cysts of the jaws and oral soft tissues. In: Oral Pathology, 2nd Ed. Soames JV, Southam JC, Eds. Oxford: Oxford University Press, pp 69-87.
8. Shear M. (1992) Dentigerous (follicular) cyst. In: Cysts of the Oral Regions, 3rd Ed. Shear M, Ed. Bristol: Wright PSG, pp 75-98.
9. Buyukkurt MC, Tozoglu S, Aras MH, Yolcu U. (2005) Ectopic eruption of a maxillary third molar tooth in the maxillary sinus: a case report. J Contemp Dent Pract; 6:104-10.
10. Srinivasa Prasad T, Sujatha G, Niazi TM, Rajesh P. (2007) Dentigerous cyst associated with an ectopic third molar in the maxillary sinus: a rare entity. Indian J Dent Res; 18:141-3.
11. Freedland ES, Henneman PL. (1987) An unusual cause of headache: a dentigerous cyst in the maxillary sinus. Ann Emerg Med; 16:1174-6.
12. Ustuner E, Fitoz S, Atasoy C, Erden I, Akyar S. (2003) Bilateral maxillary dentigerous cysts: a case report. Oral Surg Oral Med Oral Pathol Oral Radiol Endod; 95:632-5.
13. Tournas AS, Tewfik MA, Chauvin PJ, Manoukian JJ. (2006) Multiple unilateral maxillary dentigerous cysts in a nonsyndromic patient: a case report and review of the literature. Int J Pedi-atr Otorhinolaryngol Extra; 1:100-6.
14. Altas E, Karasen RM, Yilmaz AB, Aktan B, Kocer I, Erman Z. (1997) A case of a large den-tigerous cyst containing a canine tooth in the maxillary antrum leading to epiphora. J Laryngol Otol; 111:641-3.
15. Norris L, Piccoli P, Papageorge MB. (1987) Multiple dentigerous cysts of maxilla and mandi-ble report of a case. J Oral Maxillofac Surg; 45:694-7.
16. Takagi S, Koyama S. (1999) Guided eruption of an impacted second premolar associated with a dentigerous cyst in the maxillary sinus of a 6 yr old child. J Oral Maxillofac Surg; 56:237-9.
17. Peterson LJ, Ellis E III, Hupp JR. (1998) Contemporary Oral and Maxillofacial Surgery. 3rd ed, St Louis, MO; Mosby; 1998.p. 540.