ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4

Journal of Coastal Life Medicine

Management of Ectopically Positioned Maxillary Third Molar – A Rare Case Report

Received: 21 August 2022, **Revised:** 14 September 2022, **Accepted:** 13 October 2022

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Keywords
Cone beamed computed tomography (CBCT), buccal fat pad (BFP), Caldwell-Luc approach, Ectopic positioned, Maxillary third molar.

Abstract
Ectorphic eruption of teeth is not common phenomenon. Ectopic eruption of teeth have been reported in nasal septum, mandibular condyle and maxillary sinus. Ectopic tooth eruption in maxillary or mandibular jaw is not rare, although ectopic eruption of teeth in other places other than maxilla or mandible is very uncommon.. In non-dental region the maxillary sinus is one of the place for ectopic eruption of the third molar. Developmental disruption, a pathogenic condition, and iatrogenic activity can all lead to ectopic eruption. In addition to being asymptomatic, this impaction may also manifest as chronic or recurring sinusitis, sepsis, or facial numbness. Some other clinical features may present like facial pain, purulent rhinorrhea, epistaxis, headache, edema, and naso-lacrimal duct obstruction due to epiphora. We have here describe how manage ectopic position of maxillary third molar.

1. Intoduction

Tooth formation occurs by multi-step interaction between oral epithelium and mesenchymal tissue present beneath the epithelium. The development of mature teeth is the product of numerous intricate tissue interactions. Ectopic tooth development and eruption may be caused by abnormal tissue interactions during tooth formation. [1].In the dentate region ectopic eruptions of the teeth are very

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common but in non-dentate region like the maxillary sinus these types of ectopic eruptions are rare. [1]

Developmental disturbances of teeth or jaw, some pathologic process in jaw or iatrogenic process are three main reasons of ectopic eruption. The process of a tooth erupting is mostly passive, however it is possible for ectopic teeth to grow and erupt as a result of aberrant tissue contact during odontogenesis [3]. The pressure brought on by a cystic expansion may potentially be the reason of the tooth's displacement. Mostly ectopically positioned teeth are asymptomatic and accidently identified during clinical and radiological examinations. [2] Depending on their locations in oral environment and based on host response these malpositioned teeth may present with clinical signs of pain, epistaxis, headache, facial swelling, pus discharge or epiphora.. Ectopically malpositioned tooth into the maxillary sinus may show a sign of sinusitis.

With the help of CBCT, location of upper molar was reported near the maxillary sinus and above root apices of maxillary right second molar.

Surgical removal of ectopic erupted tooth in maxillary sinus through intraoral Caldwell-Luc operation allows direct access to the maxillary sinus. [8]

We have here describe how manage the case by removal of ectopically erupted maxillary third molars with debride the sinus lining through a Caldwell-Luc approach and by closure with buccal fat pad reconstruction.

2. Case Report

A 37 years old male patients came to the Department of OMFS (oral and maxillofacial surgery) with chief complaint of pus discharge from left upper back tooth region. This patient reported that he noticed the discharge of pus from upper left back tooth region, yellowish -white in colour, occasionally without association of pain. Then gradually, patient started noticing discharge of pus two to three times a day which was spontaneous and was stopped on its own.

On extraoral examination, there was no visible swelling on the upper left back tooth region, on intraoral examination, redness and tenderness present seen in 27 and 28 vestibular region, distal pocket and pus discharge seen in 27, no any sings of sinus tract formation, there were no carious teeth found in the affected quadrant. A vitality test performed in the left upper quadrant revealed that every tooth was healthy. The ectopically erupted left maxillary third molar was reported in the maxillary sinus, and a hyperdense lesion had obliterated the sinus cavity around its crown. determined the maxillary molar's precise position above the apices of 27 and near to the maxillary sinus line and spatial positioning 28 -horizontal roots , distance of 28 to 27 is 2 to 3mm apical,28 crown is buccally placed giving tooth button appearance with roots placed pal.(fig.1)

An intraoral Caldwell-Luc approach with general anesthesia induced by nasopharyngeal intubation was planned for the removal of the ectopic third molar surgically and sinus debridement after clinical and radiological examination. Crevicular incision was given from 25 to 28 region, full thickness mucoperisteal flap was raised and frank pus was discharged and bony window was done.(fig.2) tooth was identified and elevate the tooth.it get displaced into maxillary sinus due to its proximity of the floor of the sinus and debride the sinus lining than tooth was removed from the sinus(Fig.3) and reconstruct the defect with the buccal fat pad. closure done with using 3-0 vicryl.so it was double layer closure .post-operative instruction were given and postoperative antibiotic and analgesic were given to the patient for a five day .

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Figure 1 illustration showing preoperative CBCT

Figure 2 illustration showing intraoperative procedure

Figure 3 illustration showing extracted tooth

Figure 4 illustration showing postoperative followup

No postoperative complications were reported. Intraoral healing was completed. Neither tenderness nor pus discharge from operative site was present. (fig.4)

3. Discussion

Tooth formation occurs by multi-step interaction between oral epithelium and mesenchymal tissue present beneath the epithelium. First step is the formation of maxillary and mandibular dental lamina in the region of the future alveolar process. This occurs in the 6th week in utero which undergoes proliferation to form the permanent dentition. This occurs between the 5th and 10th months, with each mature tooth consisting of a crown and a root. [1] Developmental disturbances of teeth or jaw, some pathologic process in jaw or iatrogenic process are three main reasons of ectopic eruption. The process of a tooth erupting is mostly passive, however it is possible for ectopic teeth to grow and erupt as a result of aberrant tissue contact during odontogenesis. [3]

Ectopic teeth formation occurs either embryological, genetic factors or may be due to underdeveloped maxilla, loss of primary teeth prematurely, mouth breathing habits responsible for narrow maxilla.[5] factors that may favor the formation of ectopic teeth can be embryological, genetic and others, such as underdeveloped maxillary, premature loss of deciduous or primary teeth, and mouth breathers. Osteoporosis, rickets, Down syndrome can lead to developmental disturbances of teeth or ectopic teeth eruptions.[6,7] Maxillary sinus, condyle of mandible, nasal cavity, coronoid process of mandible and palate are common locations of ectopic eruption of teeth other than oral cavity. Very few people will have tooth pain, whether they have symptoms or not. The maxillary sinus, the infraorbital region, and the nose are just a few places where the tooth may move. [2]

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CBCT due to its higher resolution and less radiation exposure preferred over CT scan for accurate and highly diagnostic three-dimensional imaging [8,9]. We were able to correctly pinpoint the ectopic molar in our case thanks to the CBCT analysis, which also revealed the exact extent and impact of the related pericoronal lesion on the surrounding structures. Due to ability of CBCT of showing exact location, source of pus discharge could be identified and postoperative complications can be prevented in area near to orbital floor and pterygoid plates. [8, 11]

In this case CBCT determined the position of the maxillary molar can be accurately locate which was above the apices of 27 and near to the maxillary sinus line distance of 28 to 27 is 2 to 3mm apical,28 crown is buccally placed giving tooth button apperance with roots placed palataly.

The differential diagnosis of the ectopically erupted tooth are rhinoliths, calcified polyp, osteosarcoma, osteoma, chondrosarcoma, bacterial or fungal infection with calcification, antroliths and phleboliths.[10]

Surgical removal of ectopic erupted tooth in maxillary sinus through intraoral Caldwell-Luc operation allows direct access to the maxillary sinus. If ectopically erupted tooth not removed than it can lead to formation of cyst or tumor or perforation of either orbital floor or obliteration of nasal cavity. [8, 11]

Here we have report a case of ectopic eruption of maxillary third molar with purulent discharge form upper left back tooth region since1year and how manage the case by removal of ectopic maxillary third molars with debride the sinus lining through an Caldwell-Luc approach and by closure with buccal fat pad (BFP) reconstruction.

4. Conclusion

In conclusion, ectopic tooth eruption in in maxillary sinus is uncommon. Most common ectopically erupted teeth in maxillary sinus are maxillary third molar which may presented with or without symptoms. The precise placement of the maxillary molar was identified by CBCT, a reliable three-dimensional imaging technique. Surgical removal of ectopic teeth in maxillary sinus with Caldwell-Luc approach, with debridement of the sinus lining is the treatment of choice.

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