

Case study

High lingual split access osteotomy for ectopic third molar in mandibular ramus region – A case report and literature review

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ABSTRACT

Ectopic occurrence of mandibular third molar is a rare incidence. Usually found along with a cystic lesion or diagnosed incidentally during routine check-up. Owing to the rarity, only few cases were reported in the literature. The common site is the mandibular condyle followed by sigmoid notch, and often found in females. The frequent symptoms are obscure facial pain, trismus or the symptoms of the associated pathology like dentigerous cyst. The etiopathogenesis is uncertain and optimal management is still unclear. The symptomatic tooth should be removed either intraorally or extraorally. Here we report a case of ectopic mandibular third molar in ramus region surgically removed intra orally by high lingual split access osteotomy.

1. Introduction

Impacted third molars are normally encountered by a maxillofacial surgeon whereas ectopic positioned tooth is a rare occurrence. Ectopic presentation is when a tooth is grossly displaced far away from its usual site of presentation, for example upto the ramus, roof of maxillary sinus or infratemporal fossa.¹ Ectopic mandibular third molar is unusual and if occurs, is mostly associated with a pathologic lesion like cyst. The exact etiopathogenesis is unclear; however the potential etiology for ectopic position may be 1) any pathology displacing tooth into abnormal position 2) deviated position of tooth germ 3) lack of space for 3rd molar. These teeth are often incidentally diagnosed and require treatment only when symptomatic or associated with any pathology.^{1–5} Obscure facial pain and trismus are the most common symptoms. Owing to the rarity of this condition, few cases have been reported in the literature and the optimal management of ectopic, mandibular third molar is still uncertain.²

We report a case of ectopic third molar located in the ramus of mandible removed intraorally with high lingual split access osteotomy.

2. Case

A 35 years old female visited the department of oral and maxillofacial surgery with a chief complaint of intermittent pain on the left side of the face with difficulty in chewing and mouth opening for the past 6 to 8 months. No history of previous trauma or surgery. On clinical examination, the face was symmetrical with adequate mouth opening and unrestricted TMJ movements. No obvious clinical sign

related to the chief complaint except clinically missing mandibular left 3rd molar. The panoramic radiograph was taken which showed that the mandibular third molar was displaced high on left side of ramus with a well-defined radiolucency encompassing the crown (Fig. 1A). CBCT showed that the crown of tooth was positioned superolaterally abutting the lateral cortex and root directed inferomedially adjacent to the underlying neurovascular bundle (Fig. 1B). Surgical removal of ectopic tooth was planned and a written consent was obtained.

Under local anesthesia with conscious sedation, the patient was draped in a customized sterile fashion. Intraoral access was obtained with an incision on the anterior border of ramus along the external oblique ridge down to mesiobuccal cusp of last tooth. Full thickness mucoperiosteal flap was raised to expose the retromolar trigone internal oblique ridge, external oblique ridge, high up to coronoid process and was retracted to allow access for the osteotomy.

A slight posteriorly diverging horizontal cut was made on the lingual cortex at the level of occlusal plane followed by a 2nd cut approximately 15 mm superior and similar to the previous one. These two cuts were joined by an anterior vertical cut medial to the external oblique ridge. The segment was osteotomized with a fine osteotome and pushed back without separating the lingual periosteum in order to get access within the ramus (Fig. 2B). Exposed ectopic tooth was sectioned and removed with slight guttering (Fig. 2C) and the follicular tissue was curetted. Osteotomized segment was repositioned back to its anatomic position followed by primary closure with 3-0 vicryl. At one week follow-up, the patient complained of paresthesia over the labial mucosa on right side. Upon further follow up complete recovery was observed at 4 weeks post op.

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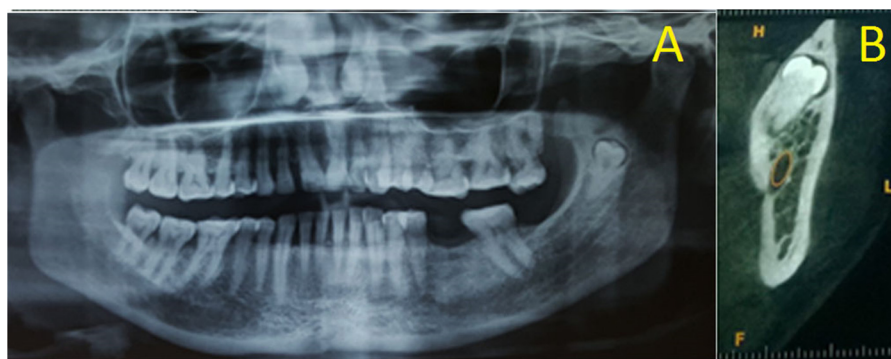


Fig. 1. A) Pre operative OPG and B) CBCT.

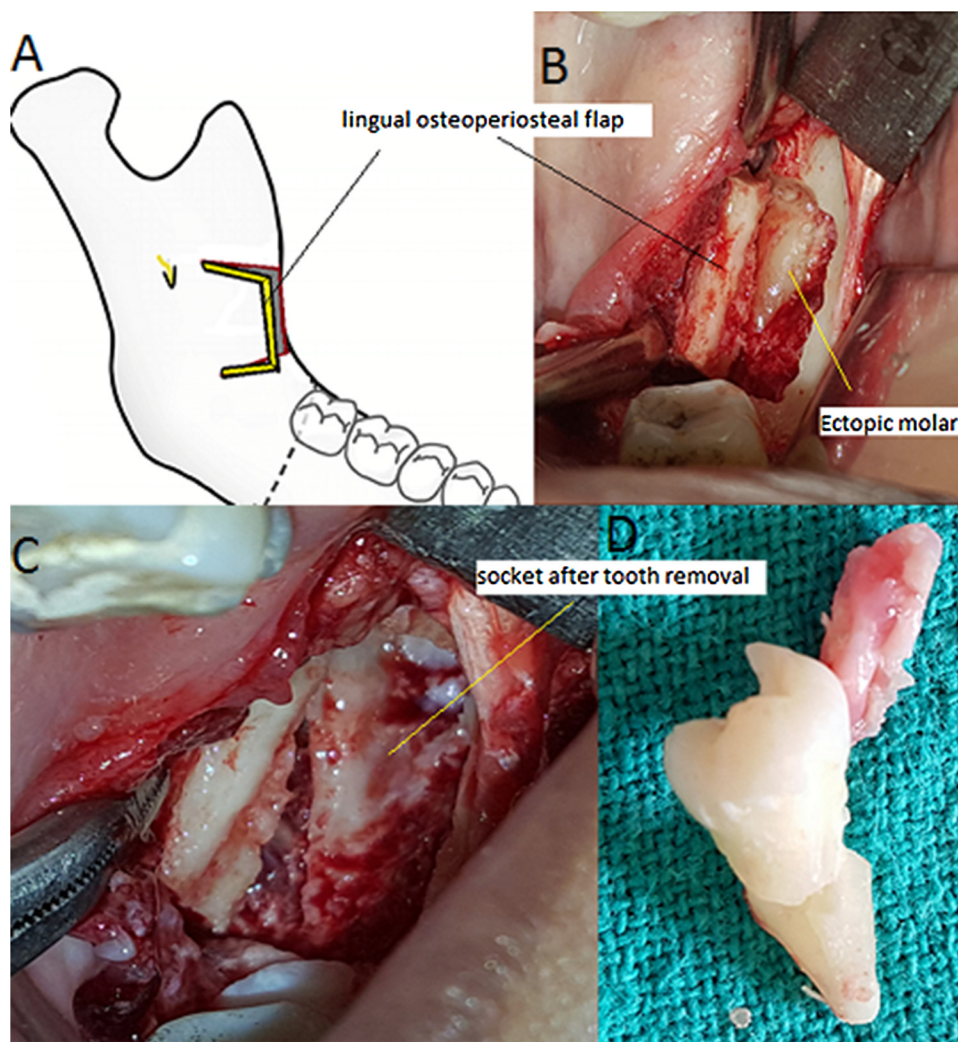


Fig. 2. A) Osteotomy line. B) Lingual cortex osteotomized and exposing the tooth C) Tooth extracted via the lingual split access. D) extracted ectopic third molar.

3. Discussion

Ectopic eruption of teeth in a non-dentate sites is rarely described and has been reported in the mandibular condyle, coronoid process, orbit, palate, nasal cavity nasal septum, inferior border and the maxillary antrum. Paucity of literature on etiopathogenesis and clinical features of ectopic third molar and there is very little emphasis on its management part. Findik and Baykul in 2015 in their literature review on 23 reported cases of ectopic mandibular 3rd molar observed that the ectopic mandibular 3rd molar was most commonly found in females

than males (2:1) and found frequently in the condyle followed by coronoid process, sigmoid notch and ramus (1 case). The common symptoms were pain, trismus, TMJ problems or no symptoms. Radiographically all the cases were reported with an enlarged radiolucency around the tooth crown which on histopathologic examination revealed a dentigerous cyst.⁹

The surgical removal of an ectopic mandibular third molar with acute inflammation or cystic lesions is recommended to prevent further complications such as diffuse osteolysis, condylar process deformity, or bone resorption.⁶ In case of symptom free highly aberrant wisdom tooth

or without urgent necessity, annual follow up visit is appropriate. However, infection secondary to impacted third molar and dentigerous cyst can cause serious consequences in certain patients.⁷

Surgical removal of these teeth can be done either extraorally or intraorally. The most common extraoral approaches are submandibular, retromandibular and preauricular approach with the advantage of very good surgical exposure but not devoid of shortcomings such as extraoral scar, stripping of masticatory muscles leading to post operative trismus and facial nerve injury^{1–4}

Intraoral approach avoids these shortcomings of extraoral approach but compromises the most important aspect of surgical approach i.e. providing very small access which may require coronoidectomy sometimes to improve the accessibility.^{1,2} In order to get better access Alling et al introduced two techniques; 1. Sagittal split osteotomy of mandibular posterior body and ramus to provide surgical access to ectopic tooth. 2. The removal of lateral cortical plate with bur and unibivel chisel to give access to cancellous portion of mandible.⁸ The surgical strategy should be based on the site, location, pathology associated with the ectopic tooth and the morbidity associated with the surgery; it should focus to choose the most conservative procedure with least possible complications. In this case, we just tried to simplify the split osteotomy with high split of lingual cortex which provides excellent access to the inner aspect of ramus as in sagittal split osteotomy without much compromise of the adjoining important anatomic structures such as external oblique ridge and coronoid process. The vitality of the osteotomised lingual cortex was well maintained as it was pedicled over the lingual periosteum, which aided in the uneventful healing. The whole surgical procedure was carried out intraorally as a result the tricky situations like unpleasant external scar, injury to the facial nerve, stripping of masticatory muscles were by-passed. The buttress regions like external oblique ridge which offer the mechanical strength to the mandible were preserved during the osteotomy procedure. Thus reducing the incidence of mandibular fracture peri-operatively and post-operatively. Though sagittal split yield access by completely mobilizing

the segments, the lingual split also provide relatively equal access to the inner aspect of ramus from the level of occlusal plane up to the level of mandibular foramen. The predictable complications of sagittal split like inferior alveolar nerve injury, condylar sagging were over-ruled in high lingual split technique. It also obviates the need for the removal of excessive bone around the tooth as in other conventional intraoral methods. In conclusion, high lingual split access osteotomy could be considered as valuable treatment option for the removal of ectopic tooth in mandibular ramus with less post-operative complication.

Conflict of interest

None.

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None.

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