



An Infected Ectopic Wisdom Tooth in the Ascending Ramus

Rajeevan Sritharan*, Zainab Sarwar Shaikh and Steven John Liggins

Department of Oral & Maxillofacial Surgery, Broomfield Hospital, Mid & South Essex Healthcare Trust, UK

Abstract

An ectopic wisdom tooth undergoing pathological migration is rare. Furthermore, it is highly unusual to see lower wisdom teeth in the ascending ramus of the mandible. This case report is about a 41-year-old male patient with right sided facial swelling. Presenting initially as suspected right sided parotitis, the source of the infection was quickly identified as an ectopic wisdom tooth located in the ramus of the mandible. This report describes the perioperative management including emergency treatment and discussion centers around the need for amendment of current UK guidelines in regard to removal of wisdom teeth. The current UK guidelines for wisdom teeth removal is published by NICE.

Keywords: Oral surgery; Wisdom teeth; 3rd molars

Introduction

The 3rd molar (wisdom tooth), in all four quadrants, is usually the last tooth to erupt. Space for the 3rd molar is made when there is forward movement of the erupting dentition and resorption of bone at the back of the dental arch. However, 3rd molars are not as straight forward and, in several cases, the 3rd molar often has lack of space and therefore becomes impacted. One study, carried out in Sweden, lists the incidence of at least one 3rd molar being impacted as 72% [1]. Impaction is varied in presentation ranging from vertical, mesio-angular, disto-angular and so on. Sometimes they are ectopic and remain unerupted for a significant period of time, rarely 3rd molars migrate. Time-to-time, pathology associated with the 3rd molars can result in a dental abscess owing to the immune response to a bacterial infection. Patients will often present with facial swelling and pain ranging from mild to severe. NICE (National Institute of Clinical Excellence) guidelines [2] remain in place in the UK in regard to removing 3rd molars and strict criteria must be met to determine whether or not their removal is required. The guidelines have come under scrutiny due to the inflexibility and nature of 'waiting for a problem to occur'. The case below highlights an unusual case of an ectopic molar located in the ascending ramus which became associated with a large facial/dental abscess and discussion focuses on whether NICE guidelines need adaptation to accommodate for these cases as well as emergency management of this case.

Case Presentation

This case details the presentation of a 41-year-old male patient with a 4-week history of intermittent swelling, a large facial swelling on the right hand-side and trismus. The patient reported that he had no known prior medical conditions and had no allergies. The patient admitted to smoking 20 cigarettes a day. The patient reported intermittent swelling in the months leading up to hospital admission. He initially presented to the ENT Department who suspected right parotitis. Subsequently, an ultrasound scan of the swelling was requested. He was commenced on IV Antibiotics (co-amoxiclav) and IV dexamethasone and admitted for surgery whilst the cause was being investigated. A further imaging of CT (Computer Tomography) neck (Figure 1) was requested. The CT neck revealed a multi-loculated collection within the right masseter, extending medial to the mandible involving the lateral pterygoid muscle, in close proximity to an impacted lower right wisdom tooth, diffuse thickening and hypodensity of the right masseteric space extending along ramus and extending superiorly up to the level of the zygomatic arch and infra-auricular region. The CT scan also showed that there was an associated cortical breach laterally. After this investigation, the patient was transferred to the Oral & Maxillofacial Department. Close inspection of the CT scan revealed migration of the lower 3rd molar to the ramus of the mandible. Clinical examination revealed a palpable right sided facial swelling in the buccal region. The swelling was warm to touch and firm. Intra-orally, no pus discharge could be elicited. The patient was afebrile on admission however, presented with raised inflammatory markers and neutrophilia. Subsequently, a DPT (Figure 2) was taken for dental assessment and confirmed the tooth located

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*Correspondence:

Rajeevan Sritharan, Department of Oral & Maxillofacial Surgery, Broomfield Hospital, Mid & South Essex Healthcare Trust, Court Rd, Broomfield, Chelmsford CM1 7ET, UK, E-mail: rajeevan309@gmail.com

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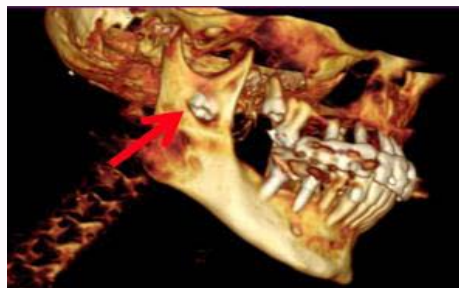


Figure 1: 3D volume reconstruction of CT mandible and Neck, Ectopic LR8 (denoted by Arrow).



Figure 2: DPT, Ectopic LR8 (denoted by arrow).

high up in the ramus with associated radiolucency. A diagnosis of dental abscess secondary to the lower right wisdom tooth was made. The patient was planned for emergency incision & drainage of the facial abscess the following morning. Under general anesthetic the patient underwent incision & drainage and exploration of the right buccal, sub masseteric, Para-pharyngeal and submandibular spaces, the incision were made to ramus where the tooth was directly visualized. Approximately 100 ml of purulent fluid was drained and copious irrigation was performed with 1 liter of saline and hydrogen peroxide. Extra-oral drains were placed for dependent drainage. The patient stayed in hospital for a further 2 days post-op and seen for a review 2 weeks post-op where clinically there was resolution of the swelling and no further collection. The patient was then placed on a waiting list for elective removal of the tooth with both intra-oral and sagittal split osteotomy options discussed.

Discussion

The case is uncommon and typically migration of the 3rd molar does not often present with severe symptoms and spreading infection. Ectopic migration of the 3rd molar to such an extent is a rare occurrence [3]. Cases to this extreme will require referral to secondary care for removal. To date, since 1976 there have been 13 reported cases in the literature where 3rd molars present high up in the ramus or condylar region [4]. Other regions of the mandible where ectopic wisdom teeth may present include the coronoid process, sigmoid notch and lower border of the mandible. The incidence of spreading infection with these teeth is uncommon; however there are some cases in the literature. Currently the aetiology of migration is poorly understood, available studies point to multiple factors with periodontal disease being one of them [5]. Ectopic wisdom teeth are associated with formation of enlarged dental follicle or a dentigerous cyst, developmental disturbances or iatrogenic activity [6]. In this case,

it is likely infection was associated with breach of the cortical bone. Severe infection requires exploration of the head & neck spaces under GA and copious amounts of irrigation. For facial swellings, aDPT should be considered as part of the diagnostic modalities as a large proportion of facial swellings may have an underlying odontogenic cause. This is true for this case as it was initially thought that the patient presented with right unilateral parotitis. Trismus and facial swellings should be indications for aDPT to rule out dental causes and should be routinely used as part of facial swelling assessment. For treatment planning it is vital that a CT scan is performed for AP positioning of the tooth as well as relation to adjacent structures when considering surgical removal. CT scans are useful as they allow multiplanar reformation with volume reconstructions. A CBCT (Cone Beam Computer Tomography) may be used instead as it has the advantage of a lower radiation dose. Currently, in the UK, NICE guidelines to remove wisdom teeth are constrained to symptomatic teeth. As the patient remained largely asymptomatic prior to his hospital admission, it may be likely that early intervention and prophylactic intervention at an early stage may have prevented the events that followed. An unintended consequence of the guidelines includes a large cohort of patients remaining asymptomatic with carious or pathology associated with wisdom teeth, presenting when the tooth or adjacent teeth become an acute problem. These patients are often older and may have multiple comorbidities and increase the risk of complications after surgery [7]. It can be advised that NICE guidelines fail to take in to account these patients.

Conclusion

This case presented several considerations for management of future cases. Presentation can often manifest as persistent facial swelling and may not directly present to a Dental Surgeon or Oral Surgeon initially. Although a rare occurrence, management requires careful planning and fundamental use of special investigations and systemic antimicrobials. It is important to not only understand the aetiology but also to appreciate national guidelines and how they have impacted on the care of this patient and how guidelines may need to be adapted to serve the needs of the patient population.

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