

Bilateral ‘kissing’ molars: a case report

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Abstract

‘Kissing molars’, were described by Van Hoof in 1973 as when the occlusal surfaces of impacted molars are united by the same follicular space and the roots point in the opposite direction^[1]. There are very few published cases in the literature, it is an extremely rare form of impaction.

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Bilateral ‘kissing’ molars: a case report

Abstract

‘Kissing molars’, were described by Van Hoof in 1973 as when the occlusal surfaces of impacted molars are united by the same follicular space and the roots point in the opposite direction^[1]. There are very few published cases in the literature, it is an extremely rare form of impaction.

This report describes a case of bilateral kissing molars in a 20 year old male presenting to a department of Oral & Maxillofacial surgery in Glasgow. There is limited guidance detailing the management of this clinical presentation. Surgical management options are discussed alongside the treatment carried out for the patient.

Clinical relevance statement

This manuscript concerns the diagnosis and management of a rare dentoalveolar clinical and radiographic presentation which may be encountered by and be of interest to dental practitioners in both primary and secondary care.

Objectives statement

After reading this case report, the reader should:

Be able to recognise bilateral kissing molars on radiographic imaging.

Be able to discuss potential treatment options available before its management or onward referral.

Introduction

Kissing molars are a rare example of impaction wherein the “occlusal surfaces of impacted molars are united by the same follicular space and the roots point in the opposite direction”^[1]. Most commonly they involve mandibular third (M3Ms) and second molars however other teeth have been known to be involved, for instance a third and fourth supernumerary mandibular molar^[2].

Impaction affects as many as 72.7 % of third permanent molars in 20-30 years olds^[3]. There are many known causes of failure of eruption of teeth. It is already known that certain medical conditions can predispose to failure of eruption of teeth such as Cleidocranial dysostosis^[4].

Very few bilateral cases have been published in the literature, so this case adds to this small cohort with the hope to increase awareness and ultimately optimise confidence for onward referral and management. We will also discuss possible treatment planning options for its management.

Case report

A 20-year-old male presented to Glasgow Dental Hospital in August 2011 following a referral from a general dental practice in London. He presented with a dull ache, present for the past 12 months arising from the left angle. The patient brought with him an Orthopantomograph (OPG) taken in Christmas 2010. Medically the patient was fit and well, with no known drug allergies and taking no regular medications. He had a 1 pack year smoking history (10 cigarettes on a daily basis for the past 2 years) and consumed approximately 14 units of alcohol per week.

Clinical examination did not reveal any facial asymmetry or significant extra-oral findings. Intra-orally, the soft tissues were normal. There were 7 unerupted teeth in total (UR7, UR8, UL8, LL7, LL8, LR7, LR8). The upper left second premolar was found to be missing.

The Orthopantomograph (*Figure 1*) shows presence of bilateral ‘kissing molars’ in the lower quadrants associated with cystic lesions encompassing the molar crowns. An ectopic UR8 was also noted with an associated mass in the right maxillary antrum.

(*Figure 1 - Orthopantomograph*)

The patient was advised to have a CBCT taken to determine the risks of surgical removal of these teeth. A report mentioned the following relevant features:

There is a 17 mm vertical x 18 mm medio lateral x 24 mm AP corticated soft tissue mass in the right maxillary sinus. This is intimately involved with a displaced UR8.

There is thinning of the lateral wall of the right maxillary sinus. The vertical dimension is actually in excess of 28 mm and this mass involves the crowns of both UR8 and UR7.

18 – the apices of this tooth are dilacerated and engage the lateral wall of the right maxillary sinus. They abut the pterygoid palatine fossa.

The roots of UR7 engage both the floor of the maxillary sinus and the floor of the right nasal cavity (palatal root),

The roots of UR7 lie between the roots of UR6. There is apical root resorption of the distobuccal root of UR6 by this arrangement - blunting of the palatal root of UR6 is also noted.

UR5 is two rooted.

UL8 has dilacerated roots and engages the floor of the left maxillary sinus.

UL4 is rotated and 25 is missing.

Both LR8 and LR7 show a ‘kissing molar’ arrangement with follicular expansion measuring up to 5 mm.

LR8 – the roots engage the lingual cortex and are dilacerated.

LR7 – the roots engage the inferior cortex. The roots of LR7 displace the right ID canal lingually.

Both LL7 and LL8 also show a ‘kissing molar’ arrangement, again with follicular expansion in a similar pattern to the contra lateral side

The right ID canal takes a lingual course through the ramus of mandible, it then runs lateral to and inferior to the expanded follicle before being displaced lingually by the crown and root structure of LR7. It is intimately involved with the apices of LR7, rounding its apex to emerge as the right mental foramen.

The left ID canal takes a lingual course through the ramus of mandible before being displaced inferior by the follicle of the kissing molar arrangement. It then swings lingually to be in direct contact with the roots of LL7 before rounding the apices to emerge as the left mental foramen.

The apices of both LL7 and LR7 project as far forward as the ‘mental foramina’.

The patient underwent a biopsy and marsupialisation under local anaesthetic of the cystic lesion in the lower left quadrant. This was confirmed as a dentigerous cyst and histopathology report can be found in *text box 1*. Surgical clinical photographs can be seen

Figure 2.

Fig. 2 - Clinical photographs taken during surgical removal of kissing molars

The definitive treatment options considered were as follows:

Surgical removal of the lower 7s and 8s +/- UR8 under General Anaesthetic

Surgical removal of lower left second and third molars

Coronectomies of involved molars (first suggested at initial visit, but an unlikely long-term solution)

Monitoring of conditions with no active surgical intervention.

After discussion with the patient, it was clear that he was keen to have surgical intervention due to the severity of the symptoms. A referral was made to the local Oral and Maxillofacial unit with a provisional plan to surgically extract the three pathologies and associated teeth.

On further discussion with the Oral and Maxillofacial consultant, the treatment plan was modified to extract only the upper right 7 +/- 8 if visible, and the lower left kissing molars only (which had an open oral communication following marsupialisation) due to the risk of damage to the Inferior alveolar nerves.

Surgical extractions of the teeth were arranged under a general anaesthetic. The lower left kissing molars were extracted using a three-sided mucoperiosteal flap. This involved careful bone removal followed by methodical sectioning of the crown and roots and finished with curettage and enucleation of the cyst, making sure the inferior alveolar nerve and bone were preserved to avoid paraesthesia and mandibular fracture respectively.

The upper right molars were removed via a two-sided mucoperiosteal flap and bone removed with caution to keep the maxillary antrum lining intact. The cyst lining was punctured, releasing a yellow fluid. The splayed roots of the upper right 7 proved difficult however were extracted successfully following sectioning and elevation. The resulting oro-antral communication from removal of the teeth was closed with tissue from the buccal fat pad, and a 2 layered closure technique employed. The patient was commenced on an antral regime following recovery to avoid an oroantral fistula formation.

An uneventful recovery followed postoperatively, with simple analgesics and chlorhexidine use. At a three month review complete soft tissue healing had occurred and the patient reported no problems. Histology reports confirmed the diagnoses of dentigerous cyst (*see table 1*). A one year review was arranged to ensure bony infill of the areas, and monitor the lower right quadrant which was left untouched

Discussion

Impaction of teeth is a common presentation that dentists and surgeons routinely diagnose. Most commonly this involves mandibular third permanent molars impacting against the adjacent second molar. When partially erupted, this can lead to recurrent infections involving the pericoronal space. Cyst development can also be a complication of impaction, sometimes causing displacement of the tooth and adjacent structures. Our case was particularly interesting, not only due to its kissing molar formation, but because it was bilateral in nature. Currently only nine other cases of bilateral kissing molars could be found in the literature.

This case highlighted how there is no set protocol or guidelines in place for the management of kissing molars. Some cases may present a high risk of pathological fracture and inferior alveolar nerve injury. In these cases, a cone beam CT can prove helpful to provide information regarding the buccolingual positioning of the IAN, width of remaining bone and therefore aid planning^[5]. For our patient, the risk of damage to bilateral inferior alveolar nerves was increased due to their close proximity to the second molars. Therefore, following discussion with the patient, it was decided that surgical intervention was only to be carried out in the lower left quadrant where the dentigerous cyst was more advanced and presented a higher risk of infection due to its oral communication.

For some patients, orthodontic alignment of the impacted molars may be possible so an orthodontic opinion should be sought where appropriate. Alternatively, kissing molars can be monitored, but a discussion with the patient regarding the risks of nearby root resorption and cyst formation should be balanced against the risks of surgical intervention.

Some clinicians routinely prescribe post operative steroids following surgical removal of kissing molars^[2]. Improved patient comfort, reduced swelling and trismus following third molar removal and post operative steroid use has also been reported^[6].

There remains no concrete evidence regarding the aetiology of kissing molars. It is theorised by some that an ectopic tooth bud is responsible and that early cystic development around a molar can cause their crowns to displace^[7]. Mucopolysaccharidosis^[8] and hyperplastic dental follicles^[9] has also been suggested.

Conclusion

Kissing molars present a challenging problem and must be treated on a case-by-case basis. Surgical extraction is one option, however great care must be taken due to the increased risk of inferior alveolar nerve paraesthesia. In some cases, regular monitoring of the teeth and associated follicles may be more appropriate.

Despite continuing research being needed to determine the aetiology of this phenomenon, it is hoped that this case report will raise awareness and improve understanding of kissing molars so that clinicians can correctly diagnose, manage or refer patients as appropriate.

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Written consent was gained from the patient for the use of his clinical information, radiographic imaging and photographs for publication.

Hosted file

Clinical Photos - Figure 2.docx available at <https://authorea.com/users/491599/articles/574546-bilateral-kissing-molars-a-case-report>

