A Study of Impacted Love: Kissing Molars

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Abstract

Introduction: "Kissing" or "rosetting" of molars refers to contacting occlusal surfaces of impacted permanent mandibular second, third, and, very rarely, fourth molars. It is a rare phenomenon.

Aim: The aim of this study was to assess the incidence, dental involvement type, associated pathologies and treatment outcomes of kissing molars in all patients who underwent lower third molar surgery between March 2008 and October 2011, at a military hospital in Turkey.

Methods: The panoramic radiographs of the patients who underwent extraction of lower third molars at Marmara University Faculty of Dentistry, Gulhane Military Medical Academy and Surgical Infirmary at Commando Troop No. 5 Gokceada between March 2008 and October 2011 were analysed retrospectively. The patients found to have kissing molars (KM), were classified according to the teeth involved and associated pathologies were evaluated.

Results: Among nine patients (five female, four male) with a mean age of 27.4 years who were found to have KM, one presented with rosetting of first and second lower molars (Class I), six with rosetting of second and third lower molars (Class II), and two with rosetting of lower third and fourth molars (Class III). Three of the KM presented with dentigerous cyst formation and two with granulamatous changes of the adjacent dental follicle. Following surgical removal, three patients presented with mild paraesthesia of the lower lip, which resolved 3 to 6 months after the operation.

Conclusions: KM is a rare phenomenon. Early surgical therapy is essential as this condition can cause serious complications, including formation of pathologies such as dentigerous cyst or destruction of the adjacent bone.

Key Words: Kissing Molars, Impacted, Mandibular Molars

Introduction

The term "kissing molars" (KM) or "rosette formation" refers to impacted mandibular second and third molars, which have occlusal surfaces contacting each other in a single follicular space and roots pointing in opposite directions [1]. However, this term has also been used to describe a similar appearance with other impacted molars [2,3]. Occurrence of this phenomenon is extremely rare with very limited cases in the dental literature and the aetiology remains unknown.

Aim

The aim of this study was to assess the incidence, dental involvement type, associated pathologies and treatment outcomes of kissing molars in all patients who underwent lower third molar surgery between March 2008 and October 2011, at a military hospital in Turkey.

Methods

The panoramic radiographs of the patients who underwent extraction of lower third molars at Marmara University Faculty of Dentistry, Gulhane Military Medical Academy and Surgical Infirmary at Commando Troop No. 5 Gokceada between March 2008 and October 2011 were analysed retrospectively. The study group consisted of both civilian and military patients. Among the 2381 panoramic radiographs, nine presented with molars that had occlusal surfaces contacting each other and roots pointing in opposite directions. They were selected for further analysis. These KMs were classified into the impaction of lower first to second molars (Class I) (*Figure 1a* and *1b*), of lower second to lower third molars (Class II) (*Figure 2*), and of lower third to lower fourth molars (Class III) (*Figure 3*). Data regarding the management, existence of an associated pathology and any complica-

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Figure 1. *Rosetting of mandibular first and second molars within a dentigerous cyst (Class I).*

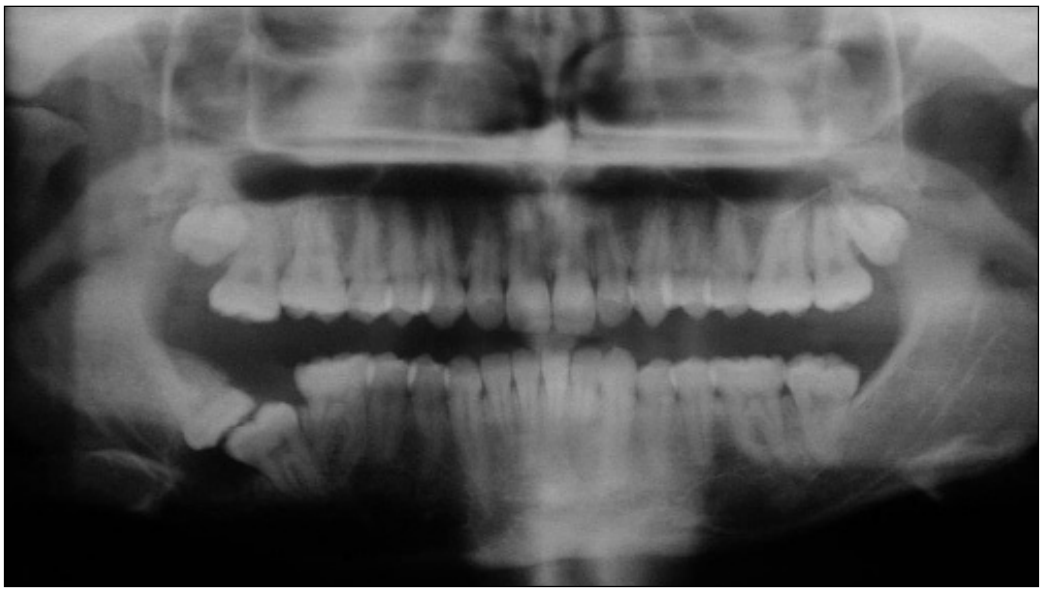

Figure 2. *Kissing mandibular second and third molars within a dentigerous cyst (Class II).*

tions and differences during the follow-up period were collected from the patients' records. Radiographs not showing contact of occlusal surfaces between two impacted molars were excluded.

As the study involved no clinical contact with patients and was purely a retrospective review of radiographs and records, it was deemed unnecessary to obtain ethical approval.

Results

Nine of the 2381 patients (five female and four male) were found to have KM. Their mean age was 27.4 years, ranging from 17 to 58 years. Among these, one presented with rosetting of the first and second lower molars, six with rosetting of second and third lower molars, and two with rosetting of third and fourth lower molars. Three of the KM presented with dentigerous cyst formation and two with granulamatous changes of the adjacent dental follicle. Following the surgical removal, three patients presented with mild paraesthesia of the lower lip, which resolved three to six months postoperatively (*Table 1*).

Discussion

The term "kissing molars" or "rosette formation", first described in 1973, refers to impacted mandibular second and third molars, which have occlusal surfaces contacting each other in a single follicular space and roots pointing in opposite directions [1].

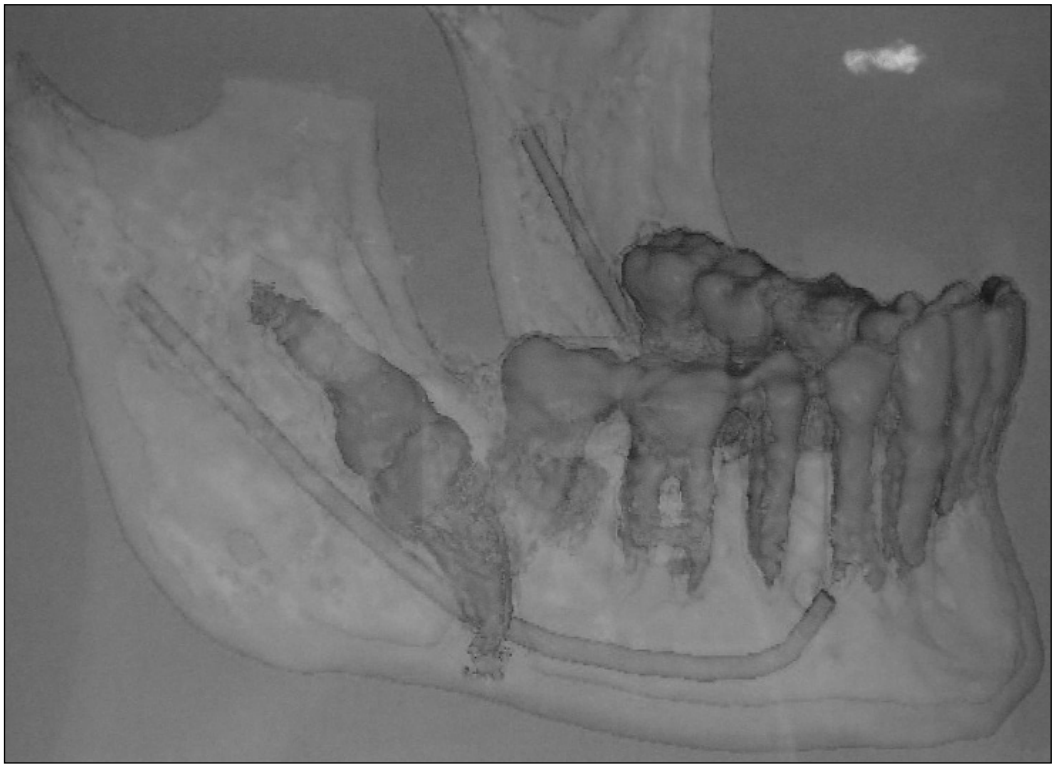

Figure 3. *Computerised tomography showing impacted third and fourth molars. Note the course of the inferior alveolar nerve (Class III).*

However, this term has also been used to describe a similar appearance with other impacted molars [2,3].

In the literature, there are controversies regarding the distinction between unusual impaction and rosetting of molars [4,5]. It has been suggested that the absence of a contact between the two impacted molars discounts them from being classified as KM [5]. A literature survey revealed six reports of patients with this condition [1-3,6-8]. To the best of our knowledge, the third case in this study is the first report of rosetting first and second molars.

The aetiology of KM is still unknown. However, considering the high incidence of an associated cystic formation around kissing molars, it can be hypothesised that the resorption of the bone by the expansion of a cystic formation might result in bone loss along the mesial root of the impacted third molar and cause movement and tip-

Table 1. *Distribution of age, gender, dental involvement type, associated pathology and post-operative complications of patients with kissing*

Patient	Age	Gender involvement	Dental pathology	Associated	Treatment	Post-operative complication
1	26	F	7-8	-	Surgical removal	-
2	32	F	7-8	Dentigerous cyst		-
3	44	M	8-9	-		-
4	23	M	7-8	Granulamatous changes of the follicle		Paraesthesia of the IDN* (4 months)
5	16	M	6-7	Dentigerous cyst		Paraesthesia of the IDN (6 months)
6	37	F	7-8	-		-
7	22	F	7-8	Granulamatous changes of the follicle		-
8	27	M	8-9	Dentigerous cyst		Paraesthesia of the IDN (3 months)
9	20	F	7-8	-		-

* inferior dental nerve

ping. In addition, the presence of a fourth molar might be a predisposing factor for the onset of condition. Bony resorption adjacent to a fourth molar can cause significant bone loss at the mesial surface and might assist mesial tipping.

Dentigerous cyst formation may inhibit the eruption of the first and second molars. However, considering the eruption process, this fact remains still unclear. In addition, it has been suggested that odontogenic cysts and tumours develop during or after the formation of teeth [9,10] and the problems still remain challenging. The question is, "Does the dentigerous cyst cause impaction of the adjacent teeth or does the impaction result from dentigerous cyst formation?"

Dentigerous cysts are the second most common type of odontogenic cysts, accounting for 49% of all cystic lesions. They are usually associated with the crowns of impacted or unerupted teeth. Dentigerous cyst could give rise to a variety of tumours, notably ameloblastoma, squamous cell carcinoma and muco-epidermoid carcinoma [11]. Therefore histopathological evaluation of the soft tissues surrounding the crowns of KM is essential.

Multiple rosetting of molars, commonly involving the first molars, could also been associated with mucopolysaccharidoses [6], which are a group of inherited metabolic disorders in which an enzyme abnormality leads to abnormal accumulation of mucopolysaccharides in the body tissues [12].

The mucopolysaccharides are primarily components of connective tissue and may be deposited in the skin, soft tissues of the airway, the cornea, central nervous system, heart, liver, spleen, bones, ligaments and other sites. Early treatment of these problems is advocated because the anaesthetic and clinical problems increase with age. Therefore, the presence of such an anomaly must prompt the dental surgeon to perform further investigation [4]. However, there is no reason to believe that the patients reported in this paper have mucopolysaccharidosis, as this was a solitary radiological finding.

Conclusion

Dentists often encounter various problems of impacted teeth. In the past, the incidence of the impacted permanent teeth, including third and fourth molars, has been widely reported. However, the phenomenon of kissing molars is not well described. This study briefly highlights the presentation of kissing molars or rosette formation, which can be signs of various medical conditions and which may require further investigation.

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Contributions of each author

- AG and AV conceived and designed the study.
- AG, AD and MS gathered the data, participated in its analysis and interpretation.
- AG wrote the paper and reviewed the manuscript.
- All authors read and approved the final manuscript.

Statement of conflict of interest

The authors are not aware of any conflict of interest.

References

1. Van Hoof RF. Four kissing molars. *Oral Surgery, Oral Medicine, Oral Pathology*.1973; **35**: 284.

2. Bakaeen G, Baqain ZH. Interesting case: Kissing molars. *British Journal of Oral and Maxillofacial Surgery.* 2005; **43**: 534.

3. Robinson AJ, Gaffrey W Jr, Soni NN. Bilateral kissing molars. *Oral Surgery, Oral Medicine, Oral Pathology.* 1991; **72**: 760.

4. Krishnan B. *British Dental Journal.* 2008; **204**: 281-282.

5. Juneja M. Not kissing. *British Dental Journal.* 2008; **204**: 597.

6. McIntyre G. Kissing molars: An unexpected finding. *Dental Update*. 1997; **24**: 373-374.

7. Manani A. Kissing molars: Unexpected finding. *Dental Update*. 1998; **25**: 219.

8. Boffano P, Gallesio C. Kissing molars. *Journal of Craniofacial Surgery*. 2009; **20**: 1269-1270.

9. Goaz PW, White SC. *Oral Radiology: Principles and Interpretation*. 3rd ed. St Louis, MO: Mosby Year Book; 1994.

10. Sands T, Tocchio C. Multiple dentigerous cysts in a child. Oral Health. 1998; **88**: 27-29.

11. Maxymiw WG, Wood RE. Carcinoma arising in a dentigerous cyst: a case report and review of the literature. *Journal of Oral and Maxillofacial Surgery.* 1991; **49**: 639-643.

12. Graupman P, Pan D, Konair B, Hartung S, McIvor S, Whitley C, *et al*. Craniofacial abnormalities in a murine knockout model of mucopolysaccharidosis I H: a computed tomography and anatomic study. *Journal of Craniofacial Surgery*. 2004; **15**: 392-398.