

IN BRIEF

- Concrescence is mostly seen in the maxilla, but it can be observed in the mandible.
- Although it is a rare condition, concrescence may be seen between a third molar and supernumerary fourth molar.
- Histological examination is important for the diagnosis of concrescence.

Concrescence of a mandibular third molar and a supernumerary fourth molar: Report of a rare case

K. Gunduz,¹ M. Sumer,² A. P. Sumer³ and O. Gunhan⁴

Concrescence represents a rare developmental anomaly in which two fully formed teeth are joined along the root surfaces by cementum. Maxillary molars are the teeth most frequently involved, especially a third molar and a supernumerary tooth. Very few cases have been reported about the concrescence of a third molar and a supernumerary tooth. According to our current knowledge, this case report is the first in the literature in which concrescence is observed between a third molar and a supernumerary fourth molar in the mandible.

Various terms have been used to describe dental twinning anomalies. Gemination, fusion, concrescence, double teeth and syndontia all suggest some kind of abnormality in which one tooth has combined with another or enlarged itself to the point of doubling or nearly doubling its substance.¹

Concrescence is a twinning anomaly involving the union of two teeth by cementum only.² It may involve either primary or secondary teeth. Concrescence is most frequently noted in maxillary molars, especially a third molar and a supernumerary tooth.³ It is rarely seen in the mandible.

CASE REPORT

A 21-year-old male presented to our clinic complaining of repeated pain in the right third molar area. His medical history

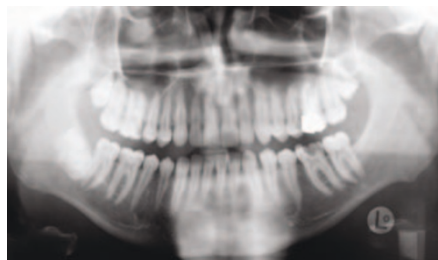


Fig. 1 Presurgical panoramic radiograph of the concrescent teeth

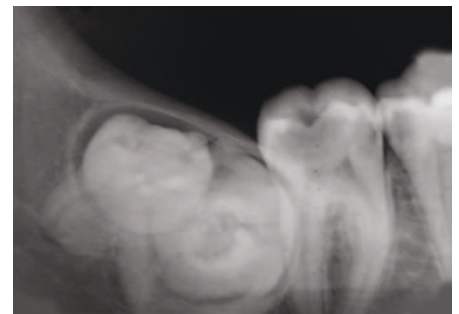


Fig. 2 Periapical radiograph of the concrescent teeth

revealed no important health problems or trauma. The family members accompanying the patient did not have any dental anomalies. Gingivitis and class I molar relationship was detected in intraoral examination. There were occlusal and approximal cavities in the permanent molar teeth. Panoramic radiograph revealed an impacted third molar and a supernumerary fourth molar in the right mandibular region (Fig. 1). Periapical radiograph showed a concrescence between an impacted third molar and a supernumerary fourth molar (Fig. 2).

The patient was enrolled for removal of the concrescent third molar. Under local anaesthesia, the concrescent tooth was split

using a tungsten fissure bur and was then carefully removed in two pieces. The wound was closed with a 3-0 silk suture. No complications appeared after the intervention. The teeth were kept for examination (Fig. 3). Serial sections were obtained and histologically examined to evaluate which odontogenic tissues were involved in the affected teeth. The histological examination revealed fusion of cementum between the mandibular third molar and supernumerary fourth molar which is diagnostic for concrescence (Fig. 4).

DISCUSSION

Specific nomenclature has been used to describe the results of abnormal events in tooth development which manifest as

^{1,3}Ondokuz Mayıs University, Faculty of Dentistry, Department of Oral Diagnosis and Radiology, Samsun, Turkey; ²Ondokuz Mayıs University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Samsun, Turkey; ⁴Department of Pathology, GATA, Ankara, Turkey
*Correspondence to: Dr Kaan Gunduz
Email: kgunduz@omu.edu.tr

Refereed Paper

Accepted 4 November 2005

doi: 10.1038/sj.bdj.4813191

© British Dental Journal 2006; 200: 141–142

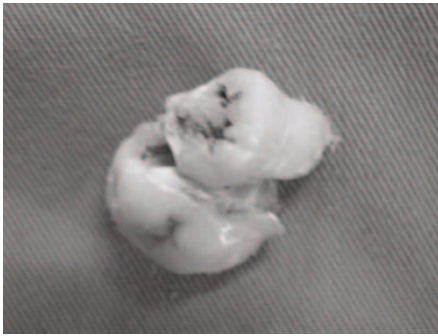


Fig. 3 Conrescent teeth post-extraction

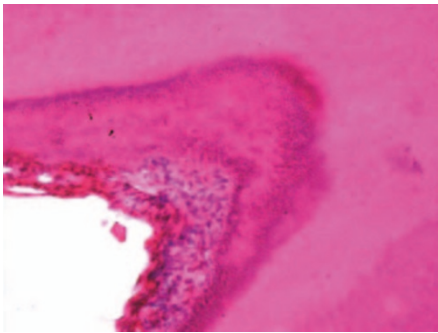


Fig. 4 Histologic section of conrescent mandibular third molar and a supernumerary fourth molar confirming the cemental union of the teeth (x100)

odontogenic anomalies of conjoining or twinning.⁴ According to the stage of tooth development, different degrees of union of cementum, dentine and enamel are possible. Levitas⁵ describes gemination as an attempt of the tooth bud to divide. This partial division is arrested before tooth development is completed. The end result is a single tooth with a bifid crown, and the total number of teeth is normal.

Fusion is a condition in which two separate tooth buds have a joined crown that resembles a bifid crown. When counted, the number of teeth is reduced by one. Four types of these anomalous teeth have been suggested:⁶ (i) conrescent teeth – two teeth

fused by coalescence of their cementum; (ii) fused teeth – teeth joined by dentine in their developmental stage; (iii) geminated teeth – fusion of a tooth with a supernumerary one; and (iv) dens in dente.

Conrescence is a form of fusion in which the union is in the cementum alone without confluence of the underlying dentine.^{1,3-6} Conrescence may occur during root formation or after the radicular phase of development is complete.⁷ If the condition occurs during development, it is called true conrescence; if it occurs later, it is acquired conrescence.⁷ The process is noted more frequently in the posterior and maxillary regions. The developmental pattern often involves a second molar tooth in which its roots closely approximate to the adjacent impacted third molar.⁷ There are very few cases about the conrescence of a third molar and a supernumerary tooth.⁴ It is interesting that all presented cases of conrescence with third molars are seen in the maxilla. This case is an uncommon conrescence due to its occurrence in the mandible.

Although the exact aetiology of conrescence has not yet been explained, many authorities suspect that space restriction during development, local trauma, excessive occlusal force, or local infection after development play an important role.³ The union may vary from one small site to a solid cemental mass along the entire extent of approximating root surfaces.¹ An age, gender or race predilection for conrescence has not yet been described.

It is very difficult to detect conrescence clinically. When the condition is suspected on clinical examination, a radiograph is necessary to detect the conrescence. Radiographic examination may not always distinguish between conrescence and teeth that are in close contact or are simply superimposed. Additional radiographic projec-

tions at different angles may be obtained to detect the condition more clearly. It is important to detect conrescence because the involved teeth may fail to erupt or may erupt incompletely.³

Several approaches are available for the treatment of conrescence and the treatment of choice is determined by the patient's needs. If the union does not affect aesthetics or cause eruption pathologies, no treatment is required.^{1,3-8} In this case repeated pain episodes lead to extraction of the teeth. In the literature there have been rare case reports of successful surgical division of conrescent teeth. Additionally, selected shaping with or without placement of full crowns has been used although some cases exhibit pulpal or coronal anatomic features that prevent reshaping and require surgical removal with prosthetic replacement.⁷

In conclusion, conrescence is rarely seen in the mandible and according to our current knowledge, this case report is the first in the literature, in which conrescence has been observed between a third molar and a supernumerary fourth molar in the mandible.

1. Killian M, Croll T. Dental twinning anomalies: the nomenclature enigma. *Quint Int* 1990; **21**: 571-576.
2. Anomalies of the developing dentition. Duminet CO. In Cassamasimo, Fields, McTigue, Nowak (Eds). *Pediatric dentistry*. 3rd edn. p 46. United States of America: WB Saunders, 1999.
3. Goaz W, White S. *Oral radiology*. 3rd ed. pp 348-349. Philadelphia: Mosby, 1994.
4. Romito L. Conrescence: Report of a rare case. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2004; **97**: 325-327.
5. Levitas T C. Gemination, fusion, twinning, and conrescence. *J Dent Child* 1965; **32**: 93-100.
6. Tadahiro O. *Human tooth and dental arch development*. pp 171-181. Tokyo, Osada, Japan: Ishiyaku Publishers, 1981.
7. Shafer W G, Hine M K, Levy B M. *Textbook of oral pathology*. 4th edn. pp 38-40. Philadelphia: Saunders, 1983.
8. Mader C L. Conrescence of teeth; a potential treatment hazard. *Gen Dent* 1984; **32**: 52-55.