

## “Concrescence of Mandibular Second and Third Molar– A Rare Case Report.”

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**Abstract:** Concrescence represents a rare developmental anomaly of dental hard tissues. It is a condition showing union of adjacent teeth by cementum along the root surfaces. Maxillary molars are the teeth most frequently involved, especially 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 second and third molar in the mandible. This article highlights the presence of a concrescence between mandibular second molar and third molar with clinical and radiographic findings along with its management.

**Keywords:** Cementum, concrescence, developmental anomaly, double teeth, inadvertent extraction.

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### I. Introduction

Dental twinning anomalies are described as various terms. Terms such as gemination, syndontia, concrescence, double teeth and fusions suggest some form of abnormality in which one tooth has combined with another or enlarged to double or almost double of its original size.[1] Concrescence is a twinning anomaly involving the union of two teeth by cementum only. Concrescence has been reported in extraction cases with an incidence of 0.2 - 3.7% in the primary dentition and 0.8% in the permanent dentition.[2] Concrescence is most frequently noted in maxillary molars and most commonly between third molar and a supernumerary tooth.[3] It is rare in the mandible.[4] No reported cases of concrescence between the mandibular second and erupted third molar have been documented in the English literature as per our knowledge. We are hereby presenting a case of concrescence of mandibular second and third molar which was diagnosed on intraoral periapical radiograph.

### II. Case report

A 45-year-old male patient presented to our clinic complaining of pain in the lower right third molar area. There was no history of major health problems or trauma. There was no family history of supernumerary or fused teeth. The lower right third molar was grossly carious with destruction of crown structure. Tenderness on percussion was present with second and third molar. Extraction of third molar was planned under local anaesthesia as the post restorative prognosis of the third molar appeared poor. After getting the patient's consent, intraoral periapical radiograph was taken. It revealed fused lower right second and third molars at the root region with cementum. ( Fig.-1) There was no detectable intervening periodontal ligament space shadow. Another radiograph was taken at different angle to confirm the fusion of roots of second and third molar teeth. Based on clinical and radiographic examination of these teeth, diagnosis of concrescence between second and third molar was made.

With patient's consent, the extraction of both second and third molar was carried out en bloc under local anaesthesia which showed distal root of mandibular right second molar fused to third molar root. ( Fig.-2) Histological examination revealed fusion of cementum between second and third molar which is diagnostic for concrescence.

### III. Discussion

Abnormal events in tooth development can manifest as odontogenic anomalies of conjoining or twinning. According to the stage of tooth development, different degrees of union of cementum, dentine and enamel are possible. Fusion is a condition in which two separate tooth buds have a joined crown that resembles a bifid crown.[5] When counted, the number of teeth is reduced by one. Four types of these anomalous teeth

have been suggested: (i) concrescent teeth – two teeth fused by coalescence of their cementum; (ii) fused teeth – teeth fused by dentine in their developmental stage; (iii) geminated teeth – fusion of a tooth with a supernumerary one; and (iv) dens in dente.[6]

Concrescence is a form of cemental fusion only without confluence of the underlying dentine.[7,8] Concrescence may occur during root formation or after the radicular phase of development is complete. True concrescence occurs during development; while that occurring later is called acquired concrescence.[9] It is interesting that almost all presented cases of concrescence with third molars are seen in the maxilla. This case is an unusual concrescence as it is in between mandibular second and third molar.

For concrescence to take place, the roots of the involved teeth must be in close proximity to each other, and a layer of cementum must be formed in between to form the union between the roots. Any traumatic injury, crowding or chronic inflammation can cause resorption of interdental bone between two adjacent roots and result in deposition of cementum between them which may lead to concrescence. The degree of union may be a small site or sites along roots to entire extent of the root with cemental mass.[10]

It is impossible to be detected clinically, and may present difficulty in radiographic detection as it can present as simple radiographic overlap or super-imposition of adjacent teeth.[11] Clinical identification of concrescence is difficult mainly due to lack of enamel involvement, the crown of the affected teeth if erupted appears normal. Therefore, it is important to consider concrescence when the roots of adjacent teeth are radiographically not distinguishable as separate roots. Radiographs with different angulations and exposure parameters may aid in diagnosis. Various complications can occur with concrescent teeth such as an inadvertent extraction of an adjacent tooth, fracture of the maxillary tuberosity or floor of the maxillary sinus.[10] The diagnosis of the condition is important because of potential treatment complications involved during exodontia and endodontia.

If the cemental union is small, the teeth may separate during extraction and the condition may remain undiagnosed. However the union can be large or firm and in such cases inadvertent extraction of one tooth can occur in planned extraction of its mate. The diagnosis may occur after the surgical mishap. This brings us to reconsider the importance of the preoperative radiographs in all cases. Radiographs with multiple angulations must be taken. The possibility of concrescence must be considered when an unexpected difficulty in extraction is encountered.

#### IV. Conclusion

Diagnosis of teeth concrescence occurs after inadvertent extraction of adjacent tooth. Therefore, it is important for clinicians to be well aware of this odontogenic anomaly to minimize such surgical mishaps.

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#### Figures:



**Figure 1-** Arrow showing fusion of distal root of mandibular second molar and third molar root on intraoral periapical radiograph.



**Figure 2-** Specimen showing fusion of distal root of mandibular second molar and third molar root