

CONCRESCENCE : REPORT OF RARE CASE

Dr. Sunil Kumar Gupta

Reader, Dept. of Oral & Maxillofacial Surgery

Dr. A. S. Rana

Professor

Dr. Deepak Gupta

Sr. Lecturer

Dr. Gaurav Jain

Reader

Dr. Puneet Kalra

Sr. Lecturer

IDST Dental College, Kadrabad, Modinagar.

Abstract

Various odontogenic anomalies can occur that result in joining or tuning defects. These include fusion, germination and concrescence. This paper presents an unexpected case of concrescence with a review of the literature.

Case Report

A 45 yr old male presented to the IDST Dental College with pain in left upper tooth. The patient reported his past medical history negative. He denied taking any medications. A clinical and radiological examination was performed. The radiograph consisted of intra oral periapical radiograph (Fig.1). The examination identified maxillary second molar tooth of left side is tender on percussion. He had been referred to Dept. of endodontics for the needful, but there he denied treatment for the same. So, he had been referred to Dept. of Oral Surgery for extraction. No unusual pathology was noted. However, the radiograph revealed an impacted maxillary third molar that appeared to be positioned buccopalatally. Treatment plan was developed and subsequently proposed to the patient that the second molar tooth is to be extracted and impacted tooth which was not in communication with the oral cavity was planned for extraction only if encountered during the extraction of second molar tooth. Extraction of the maxillary tooth was proceeded routinely. However, while forceps extraction was carried on with slow luxation and bimanual palpation of the alveolar ridge, although the second molar was luxated, but it seems difficult to remove it as its palatal root still fused with the third molar. Both teeth were delivered through the site occupied by tooth without tearing of the alveolar mucosa distal to the second molar (Fig.2). The patient was apprised of the situation and was prescribed an antibiotic and analgesic. He returned one week later for suture removal and appeared to be healing normally.

The teeth were send to Dept. of Oral pathology for examination, where serial sections were obtained, stained and histologically examined to evaluate what odontogenic tissues were involved in affected teeth. The histologic examination is diagnostic of concrescence.

DISCUSSION

Specific nomenclature has been used to describe

the results of abnormal events in tooth development which manifest as odontogenic anomalies of conjoining or twinning. Fusion is the union of two contiguous tooth germs and can happen at level of enamel, dentin and cementum or pulp tissue^{1,2}. The extent of the fusion depends upon the developmental stage at which it occurs. If it occurs early in development, the two teeth combine to form a single tooth of normal size. If it occurs at later developmental stage, a single tooth with an enlarged crown or bifid crown results³. A single enlarge root or two roots may be observed. Often there is a hereditary pattern associated with fusion. Fusion tends to be reported more frequently in the deciduous dentition, especially in incisor region^{2,5}. Germination describes the union between germ of the normal tooth and that of a supernumerary tooth. As with the fusion, germination can takes place at various levels. It is more frequently seen in the anterior teeth & results in the formation of two totally separate or partially separate crowns^{1,2,6}. Concrescence is a form of fusion in which the union is only in the cementum of adjacent teeth^{1,2,5-8}. It is more frequently noted in maxillary molars. It can occur between the normal molars, a normal molar and supernumerary molar, and in both erupted and impacted teeth^{2,7}. Concrescence may occur during root formation or after the radicular phase of development is completed^{7,9}. Although the exact etiology is unknown, it is thought to the result from trauma or from crowding of adjacent teeth such that the interdental bone resorbs, allowing the adjacent tooth to become fused by the deposition of the cementum between them^{7,9,10}. It has also been postulated to result from an inflammatory response, for example, to a carious lesion, which causes cemental deposition and ultimately attachment to the root of adjacent tooth¹¹. The amount of union may vary from one small site to the solid cemental mass along the entire extent of approximating root surface. The literature has not described with age, gender, race predilection with concrescence^{2,9}.

Concrescent teeth are clinically nearly impossible to detect. Due to lack of enamel involvement, the crowns of the affected teeth, if erupted, appeared normal. The presence of an unerupted third molar in and of itself is not likely to arouse suspicious of concrescence. Concrescent teeth may defy radiographic detection as well. They may

be misdiagnosed as simple radiographic overlap or superimposition of teeth. Additionally a normal amount of cementum involved in the concrescence may also contribute to an inaccurate diagnosis. The detection of concrescence is important because of the potential treatment complications involved during exodontias and endodontics^{1-3,6,7,9,12}.

If the cemental union between affected teeth is slight the teeth may separate during extraction of one of the teeth and may never be noticed. If the union is large or firm the plan extraction of one of the teeth may inadvertently result in the removal of its mate. In addition, the maxillary tuberosity or the floor of maxillary sinus or both may fracture.

The diagnosis of concrescence may occur after a surgical mishap. Therefore it is important for clinicians to consider the possibility of concrescence when planning extraction in which roots of adjacent teeth are radiographically indistinguishable especially in posterior maxilla, where the anomaly is more likely to occur. Radiographs at multiple angulations may aid in diagnosis. The clinician may also consider the possibility of concrescence if unexpected difficulty is encountered with the extraction of tooth that has such a radiographic appearance. If a clinician suspects concrescence before a planned treatment, it is important patient be informed of the condition and potential complication of the procedure. The clinician should have a surgical plan to minimize the risk of adverse and unexpected outcomes. Sectioning of concrescent teeth should be considered. A clinician's awareness of characteristics of this odontogenic anomaly

may help to prevent adverse outcomes in the treatment of concrescent teeth.

Conclusion

We must investigate each and every case not only clinically but also radiographically to rule out any anomaly, so that prior information should be made to patient and thorough planning is made.

References

1. Hernandez-Guisado JM dental gemination: report of a case. *medoral* 2002;7:231-6
2. Eversole LR. Clinical outline of oral pathology, diagnosis and treatment. 2nd edition Philadelphia: Lea & Febiger; 1981 pg 318-319.
3. Kaffe I, Littner M, Begleiter A, Buchner A. Fusion of permanent molars. *Quintessence Int* 1982;11:237-9
4. Graubard SA fusion of lower second and third molar & macrodontia of lower 1st molar. *Oral Surg Oral Med Oral Path Oral Radio* 1977;44:817
5. Killan CM, Kroll TP. Dental twinning anomalies; nomenclature enigma. *Quintessence Int* 1990;21:571-6
6. McCoy-collins RA, Tatum RC, Marfatia-Regey A. Fused maxillary second and third molar: report of a rare case with literature review. *J Md State Dental Association*. 1988;31:102-5.
7. Shafer WG, Hine MK, Levy BM. Textbook of oral pathology. 4th edition. Philadelphia: Saunders; 1983. p.38-40
8. Peterkova R, Peterka M, Viriot Las, Lesot H. Dentition development and budding morphogenesis. *J Craniofacial Genet Dev Biol* 2000;20:158-72
9. Mardder CL. Concrescence of teeth: a potential treatment hazard. *Gen Dent* 1984;32:52-5
10. Linn EK. Concrescence a case report. *Gen Dent* 1998;46:338-339
11. Neville BW, Damm DD, Allen CA, Bouquot JE. Oral and Maxillofacial Pathology. 2nd ed. Philadelphia. Saunders; 2002 pg-76-7.
12. Law L, Fishelberg G, Skribner JE, Lin LM. Endodontic treatment of mandibular molars with concrescence. *J Endod* 1994;20:562-4



Fig. 1



Fig. 2