MEDICO RESEARCH CHRONICLES
ISSN NO. 2394-3971
DOI No. 10.26838/MEDRECH.2020.7.1.564
OPEN ACCESS
Contents available at: www.medrech.com

CONCRESCENCE OF ERUPTED SECOND MOLAR AND IMPACTED THIRD MOLAR: A REPORT OF TWO CASES AND LITERATURE REVIEW

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ARTICLE INFO

Article History
Received: February 2020
Accepted: March 2020
Key Words:
concrescence, maxilla, Cone Beam Computed Tomography

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ABSTRACT

CASE REPORTS

Concrescence, a rare dental developmental anomaly, is characterized by adherence of cementum of two adjacent teeth apical to the cementoenamel junction. The incidence of this anomaly in the maxilla is greater than that in mandible. Numerous factors such as insufficient space, localized trauma, chronic periapical/ periodontal inflammation and excessive occlusal forces play an imminent role. However, the exact etiology is not known. Diagnostic 2D imaging modalities offer certain disadvantages such as overlapping of the surrounding structures as well as distortion of the image which interferes with the diagnosis of the condition. This may be overcome by considering Cone beam computed tomography modality. The present article reports two cases of concrescence in the posterior maxilla and highlights the importance of CBCT as a diagnostic imaging tool in the evaluation and management of the same.

INTRODUCTION

Concrescence represents an unusual dental developmental anomaly, characterized by adherence of cementum of two juxtaposed teeth apical to the cementoenamel junction. The union is usually between two normal teeth or a tooth with a supernumerary tooth.[1] The maxilla is affected more than the mandible, molar region being the most affected site. It affects the deciduous as well as permanent dentition with an incidence of 0.2-3.7% and 0.8% respectively.[1,2,3]

Contributory factors can be enumerated as insufficient space, localized trauma, chronic periapical/ periodontal inflammation and excessive occlusal force. However, the exact pathophysiology is not known.[4]

Radiographic examination reveals close approximation of the concrescent teeth with the absence of PDL space.[3] Despite the routinely used diagnostic 2D imaging techniques like periapical, bitewing, occlusal and panoramic radiographs, formulation of diagnosis and treatment planning is quite challenging due to the superimposition of surrounding structures

as well as distortion of the images. With the advent of Cone Beam Computed Tomography (CBCT) in the 1990s, these shortcomings can be overcome. It is an excellent preoperative diagnostic tool with relatively low dose.[1,4]

The present article reports two cases of concrescence between maxillary second and third molar that was detected post-extraction and also highlights the importance of CBCT as a diagnostic tool for the same.

CASE REPORTS

CASE 1

A 42-year-old male patient reported with a chief complaint of pain in the maxillary left second molar for 1 week. Clinical examination revealed a grossly carious isolated 27 with poor endodontic prognosis. IOPA revealed an impacted third molar in close approximation to the second molar with moderate periodontitis.

Under local anesthesia extraction of the second molar was attempted. But the tooth was firm. Hence surgical extraction was carried out leading to the removal of the second molar along with impacted third molar in one piece.

Examination of the extracted specimen revealed the fusion of the roots of the second molar with the roots of the third molar confirming the diagnosis of concrescence.

No oroantral communication, excessive bleeding or fracture of maxillary tuberosity associated with extraction was noted. The surgical site was sutured with 3-0 silk. The postoperative course was uneventful.

CASE 2

A 25-year-old female patient presented to a private dental clinic with a chief complaint of pain in the left upper back teeth region for 2 weeks. Clinical examination showed carious 27 causing trauma to left cheek region. Endodontic consultation advised the extraction of 27 because of poor endodontic prognosis. IOPA revealed the presence of a third molar closely associated to the second molar.

Under local anesthesia extraction of the second molar was attempted. The tooth was patiently luxated and subsequently extracted resulting in simultaneous removal of the third molar. On examination of the extracted specimen, the root of the second molar was found to be fused with the third molar, which was extracted along with the second molar, suggestive of concrescence. No complications were detected. The surgical site was sutured with 3-0 silk. The post-operative period was uneventful.

CBCT was done on the specimen postoperatively revealing the union of two teeth at the root level by cementum alone confirming the diagnosis of concrescence.

DISCUSSION

Anomalies of the teeth are categorized based on shape into fusion, gemination and concrescence. Fusion is a union of two tooth germs that are normal and separate. Geminated tooth is a single tooth which undergoes division before calcification resulting in incompletely formed two teeth. Concrescence is the fusion of cementum alone of two adjacent teeth subgingivally. It usually occurs between two adjacent teeth or a tooth with a supernumerary tooth at the root level. However, literature does report a case between the root of one tooth and the crown of an impacted adjacent tooth.[4] The present case reports two cases of concrescence between adjacent molar teeth.

It affects the primary as well as secondary dentition in 0.2-3.7% and 0.8 % respectively. There is no age, gender or racial predilection. The maxilla is affected more than the mandible with greater affinity in the molar region. This is in unison with our cases which showed increased prevalence in maxillary posterior region.[1,5,6]

Concrescence is sub-classified as

1. Acquired/ post-inflammatory concrescence which causes deposition of secondary cementum following inflammation. This is seen in dentition with completion of development
2. True/ developmental concrescence which occurs due to close association of teeth during development. The exact

pathophysiology is still unknown. Yet, resorption of interdental bone following trauma and deposition of cementum between the roots may be considered as a contributory factor. [1,3,6, 7]

Based on clinical assessment, diagnosis of concrescence is difficult to make as there is a lack of enamel involvement and union occurs subgingivally. Radiographically it also poses a challenge to the clinician due to the superimposition of roots of adjacent teeth. Separation of the teeth may occur during the extraction if the amount of cementum deposited is minimal. Larger deposition of cementum may cause inadvertent extraction of the tooth along with the planned mate. Hence, differently angled preoperative radiographs or CBCT are mandatory to avoid these mishaps. In both the cases, preoperative periapical radiographs were available to aid in diagnosis and formulating a treatment plan with minimal or no complications.[3,5,7]

CBCT is a three dimensional, preoperative, diagnostic imaging tool that permits the practitioner to collect enough data to make a diagnosis and appropriate treatment plan along with the necessary modifications in the surgical technique to prevent any undesirable intra or post-operative complications. In the present article, the authors recommend mandatory use of CBCT to confirm the condition and also to modify the treatment plan to avoid any complications.[1]

To conclude**,** concrescence is a rare developmental entity of the tooth detected post-extraction making it mandatory for clinicians to be aware of this anomaly. CBCT 3D imaging technique should be an uttermost important preoperative diagnostic tool

Illustrations

Case 1

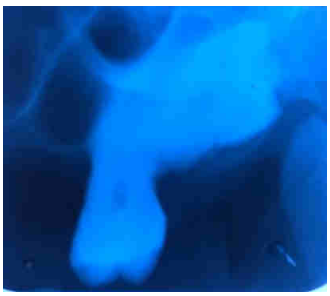

Fig 1: IOPA revealing carious 27 and impacted 28

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Fig 2: Photographs depicting concrescence between 27 & 28

Case 2:

Fig 3:IOPA revealing carious 27

Fig 4: Photographs depicting concrescence between 27 & 28

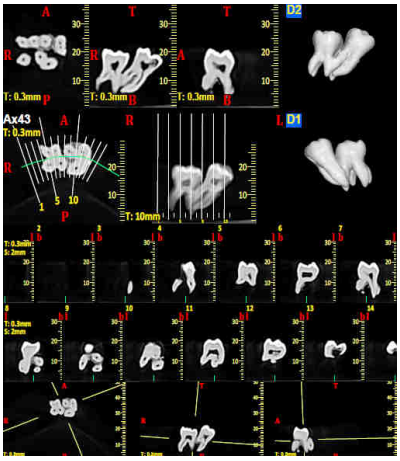

Fig 5: CBCT revealing concrescence between 27 &28