

IMPACTED "REVERSED" FUSED TOOTH : A CASE REPORT

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A 41-year-old Chinese male was seen for routine dental examination at the dental clinic of Kaohsiung Medical College in February, 1986. An intraoral periapical radiography showed a radiopaque mass at the furcation area of the impacted mandibular left third molar. The impacted tooth was extracted under local anesthesia and the operative course was uneventful. The histopathological study revealed the final diagnosis of rare phenomenon of "reversed" fused tooth. We found that it was hard to make a definite diagnosis as to whether it is a fusion of the mandibular third molar with a reversed distomolar or an odontoma without histomorphological examination.

Key words: tooth anomalies, fused tooth

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It is not easy to diagnose gemination, fusion, and twinning between the molar and distomolar. These dental anomalies had been described by Tannenbaum and Alling⁽¹⁾ in 1983. According to their hypothesis, gemination is a formation of equivalent teeth from the same follicle. This is usually an abortive attempt for the tooth to be separated completely, as indicated clinically by a groove or depression which should delineate two teeth. The bifid tooth is usually counted as one entity and the total numbers of teeth in the dental arch are normal.

Fusion is defined as the union of two separated tooth buds at the same stage in their development. Depending upon the stage of the tooth at the time of union, fusion may either be complete or incomplete. Fusion can be differentiated from the gemination by the congenital absence of the adjacent tooth from dental arch. Twinning is a complete cleavage of the tooth-bud. This resulted in mirror images of the two teeth. Concurrence is the union of two completely separate teeth which are joined only by their cementum.

It is also hard to make a clinical dia-

gnosis of an impacted third molar with an extradental enamel pearl⁽²⁾. The extradental enamel pearls seen only on multirrooted teeth vary from pinhead size to a sizable cusp.

Gross and radiographic examinations, and patient's history will usually provide enough information to reach a definite diagnosis of one of the many tooth anomalies. However, in some cases a histologic examination may be necessary. In this paper, we reported a case of fusion between third molar and a reversed supernumerary tooth.

CASE PRESENTATION

A 41-year-old Chinese male was seen for routine dental examination at the dental clinic of Kaohsiung Medical College, in February, 1986. The periapical radiography of left mandibular third molar revealed a radiopaque mass at the furcation area of the left impacted third molar (Fig. 1). The radiopaque mass appeared to be a "reversed" tooth structure. A flap operation and extraction was done. A small bean-sized hard mass with thin fibrous capsule projected in the apical direction was seen (Fig. 2). The caudal view showed a C-shaped superior root which embraced the small bean-sized hard mass (Fig. 3). The radiography of this extracted impacted third molar demonstrated detailed

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Fig. 1. A radiopaque mass was noted at the furcation area of the left mandibular impacted third molar.

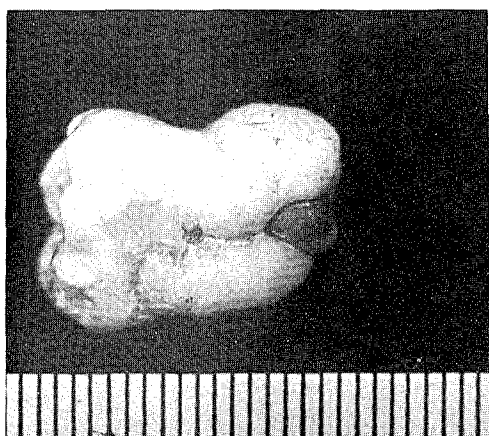


Fig. 2. A small bean-sized hard mass with thin fibrous capsule projected in the apical direction.

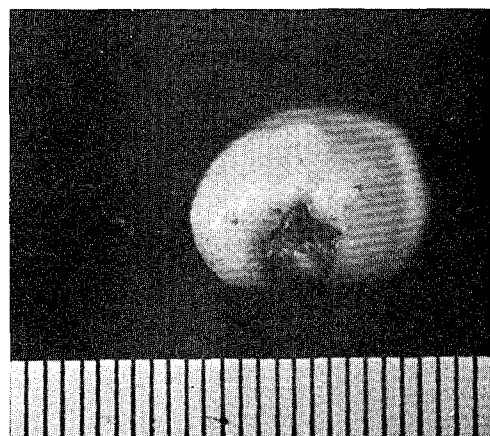


Fig. 3. The caudal view of the extracted tooth. A C-shaped superior root which embraced the small bean-sized hard mass was seen.

enamel, dentine and pulp architecture (Fig. 4). The pulp of this reversed bean-sized tooth was anastomosed with pulp chamber of impacted third molar. Upon cutting the surface, we found a well-formed tooth structure of a reversed bell-shaped supernumerary tooth erupted in the apical direction at the furca-

tion of the molar. The broad base of the reversed tooth connected with the intraradicular substance (Fig. 5).

The histopathologic findings of the demineralized surgical specimen showed parallel cementum along the peripheral root surface. The irregular and tortuous dentine

was noted at the connected area. This connected zone of dentine showed several basophilic incremental lines (Fig. 6 & 7).

DISCUSSION

Base on the findings of the clinical and

radiographic examinations, this could be a case of impacted third molar with an extra-dental radicular enamel pearl or with fused supernumerary tooth or an odontoma. Radiographs during tooth development or histologic examination of the surgical specimen could provide the definite diagnosis.

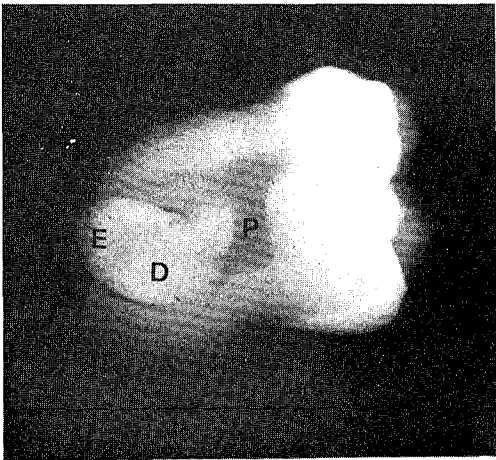


Fig. 4. Radiograph of the extracted impacted third molar showing enamel (E), dentine (D), and pulp (P) architecture.

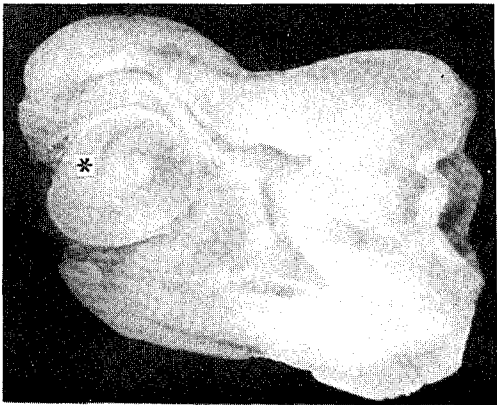


Fig. 5. A well-delineated tooth (*) structure of a reversed bell-shaped supernumerary tooth erupted in the apical direction. The broad base of the reversed tooth connected with the intra-radicular tooth substance.

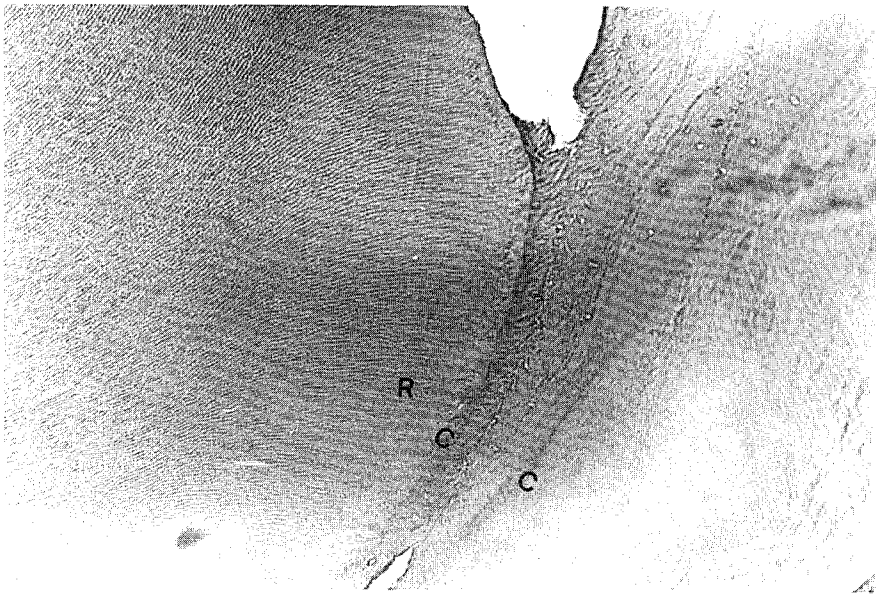


Fig. 6. The parallel cementum (C) deposited along the peripheral root surface (R). (HE stain, x 400)

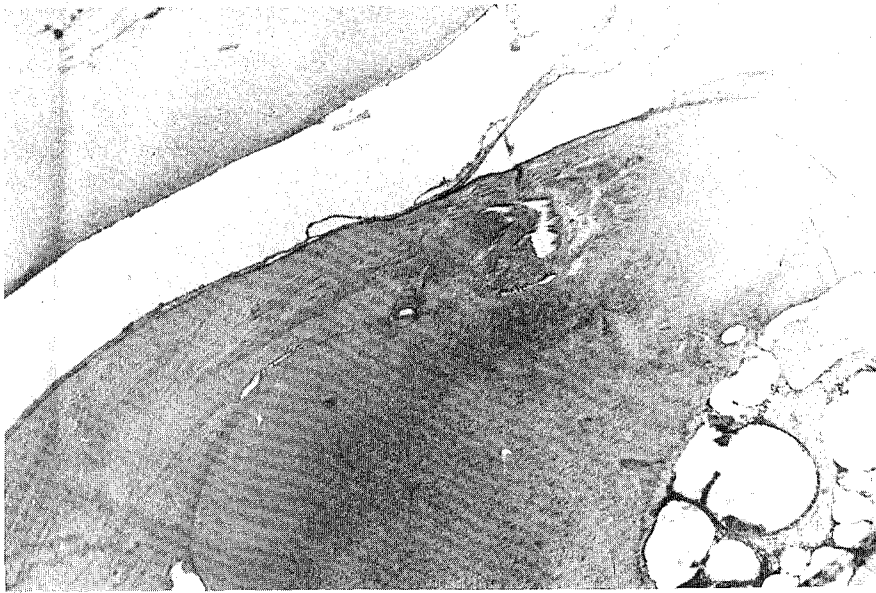


Fig. 7. The irregular and tortuous dentine, and basophilic incremental lines were noted at the connected zone. (HE stain, $\times 100$)

Normally, the arrangements of enamel and dentine are in regular distribution. In our case, the dentines of the connected area were irregular, tortuous, lack of wave striation, in different directions and with basophilic incremental lines. This might suggest that two different tooth buds interweaved together with dentine. Therefore, this case is a fusion between third molar and a reversed supernumerary distomolar.

Dental anomalies of fusion and gemination were seen in 1% or less of the population⁽³⁾. The primary dentition is affected more frequently than the permanent dentition. It is seen most often in the anterior teeth and equally effected both sexes⁽⁴⁾.

The etiology of fusion remains unknown. Shafer and others⁽⁵⁾ stated that some physical or pressure produces contact of the developing teeth and their subsequent fusion. If this contact occurs at least before the beginning of calcification, the two teeth may be completely united to form a single large tooth. If the contact of the teeth occurs at the time of a portion of the tooth crown has completed its formation, there may be union of the root only. In the cases of true fusion, the

dentine is always confluent. Lowell and Soloman⁽⁶⁾ believed that fused teeth result from some physical action that cause the young germs to come into contact, thus producing necrosis of their interweaving tissues. In addition, Levitas⁽⁷⁾ suggested that heredity is a factor.

This case demonstrates the necessity of clinical, radiographic, and histopathologic examinations to make a differential diagnosis of tooth anomalies. Thus now, we report the first case of the rare phenomenon of an impacted "reversed" fused tooth.

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“逆轉型”融合牙：病例報告

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四十歲、男性、中國人，於民國七十五年一月來高雄醫學院附設中和紀念醫院牙科門診，作例行口腔檢查。口內X光小片檢查，發現在下顎左側水平埋伏齒牙根分叉處，有一似牙齒構造之放射不透性質塊，經由瓣膜翻開術取出一完整的埋伏齒，臨床及X光檢查無法診斷

此異形齒是否為逆轉型融合齒或者為發生於牙根尖分叉處之牙釉珠。經由組織切片檢查，證實為一“逆轉型”融合牙。回顧文獻尚無此異形牙齒之病例報告，故提出此極其罕見的病例以供參考。

