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Case Report

Clinical Management of Fused Supernumerary Tooth with Upper Central Incisor

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Abstract
The tooth fusion occurs in about 0.1% to 1% of permanent teeth. I aimed to report the fusion of a supernumerary tooth with the upper central incisor. A 37-year-old male was referred to me for management of a fused supernumerary tooth with the upper right central incisor. The tooth exhibited a positive vitality test. A periapical radiograph revealed the tooth with two fused roots with separated root canals. CBCT showed the bifid crown with two pulp chambers, and there was a connection between them. After surgical separation of the crown, we did a three-sided flap to complete separation of the roots. Then vital pulp therapy and direct composite restoration were done for the upper right central incisor. The limitation of this case report is the lack of clinical follow-up.

Keywords: Dental abnormalities; Fused tooth; Supernumerary tooth.

المعالجة السريرية للسن الزائد الملتحم مع القاطع العلوي المركزي

الخلاصة
يحدث دمج الأسنان في حوالي 0.1٪ إلى 1٪ من الأسنان الدائمة. تهدف الدراسة إلى الإبلاغ عن اندماج سن زائد مع القاطع المركزي العلوي. تم إحالة رجل يبلغ من العمر 37 عاما إلي لعلاج سن زائد ملتحم مع القاطع المركزي العلوي الأيمن. أظهر السن اختبار حيوية إيجابي. كشف تصوير شعاعي حول الرؤية عن السن الذي يحتوي على جذرين ملتصقين مع قنوات جذرية منفصلة. أظهر تحليل الدم الدماغي الصبغي وجود تاج ثنائي الألياف مع حجرتين لب، وكان هناك ارتباط بينهما. بعد الفصل الجراحي للتاج، قمنا بإجراء رفرفة ثلاثية الجوانب لفصل الجذور تماما. ثم تم إجراء علاج اللب الحيوي واستعادة مركبة مباشرة للقاطع المركزي العلوي الأيمن. القيود في تقرير الحالة هذه هي غياب المتابعة السريرية.

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INTRODUCTION

Among dental hard tissue anomalies, gemination, fusion, and concrescence are developmental anomalies. The union between the enamel and/or dentin of a couple of unconnected tooth germs is defined as tooth fusion [1]. When the two adjacent teeth are connected by the cementum, it is only named "concrescence" [2]. Dependent on the phase of development, the fusion between the two teeth may be partial or total and may happen between the normal dentition or with a supernumerary tooth. Twining, or gemination, is an attempt of a tooth bud to divide. This division results in a single root canal and partially or completely separated crowns [3]. In case of fusion between a supernumerary tooth and a normal one, it is problematic to distinguish the case between gemination and fusion. The proper identification simplified the numeration of the teeth in the jaw, and the abnormal crown was calculated as single. Fusion happened in the case of one tooth less than the normal [4]. For these anomalies, there was an unknown etiology with suggestions of some causes: Physical force or pressure led to close contact of two developmental teeth ending with teeth fusion [5]. Tooth fusion occurs in about 0.1% to 1% of permanent teeth [6]. The incidence of double teeth in Asian populations is higher than in Caucasians, with no difference in the incidence between the genders [7]. Teeth fusion mostly occurs in anterior teeth, in the mandible more than the maxilla [3]. I aimed to report the fusion of a supernumerary tooth with the upper central incisor.

Case Presentation

A thirty-seven-year-old male was referred to my clinic (Baghdad Smile Clinics, Baghdad) on 30 Oct. 2025 for the management of a fused supernumerary tooth with the upper right central incisor, and he was already wearing an orthodontic appliance. Considering the CARE guidelines (www.care-statement.org), the patient provided and signed an informed consent form for the publication of her images. There was no history of dental trauma, systemic diseases, or dental anomalies. Clinical examination shows the bifid crown of the permanent upper right central incisor, the normal shape of the permanent upper left central incisor, and the normal number of teeth (Figure 1).

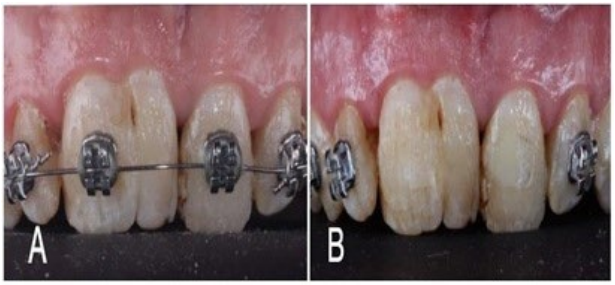

Figure 1: Intraoral view before (**A**) and after (**B**) partial removal of orthodontic appliance.

The central incisors exhibit a positive thermal vitality test with no tenderness to percussion and normal periodontal pockets in probing. A periapical radiograph revealed the right central incisor with two fused roots with separated root canals (Figure 2). The diagnosis of this case was the fusion of a supernumerary tooth with the upper right central incisor with the normal left one.

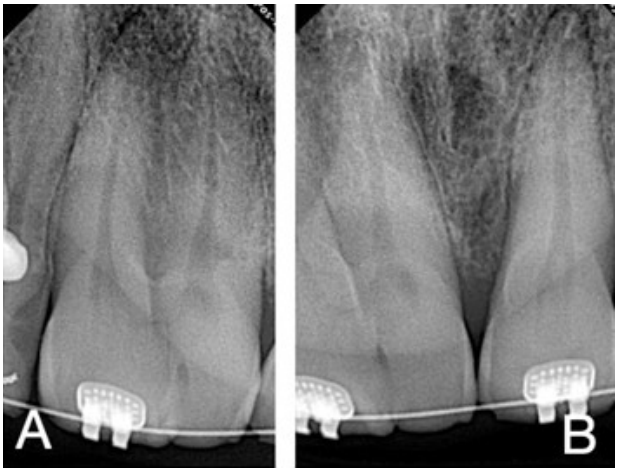

Figure 2: Periapical radiograph for right fused teeth (**A**), and for left central incisor (**B**).

Cone beam computed tomography (CBCT) showed the bifid crown of the upper right central incisor with two pulp chambers, and there was a connection between them at the middle third of the crown and two roots that fused along the roots with separated root canals (Figure 3). Under local anesthesia with lidocaine 20 mg/ml with adrenaline 0.0125 mg/ml (Normon, Madrid, Spain), surgical separation is done at the labial groove of the crown under rubber dam isolation to avoid the contamination of the pulpal tissue.

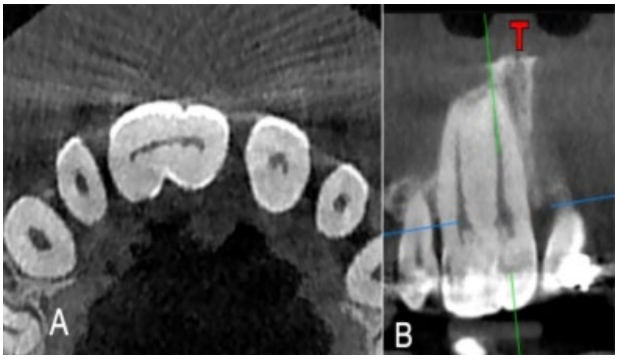

Figure 3: **A**) Axial section of CBCT shows the connection between the pulp chambers. **B**) Coronal section of CBCT shows the fusion of the roots and root canals separation.

We did flaps to separate the roots surgically as shown in Figure 4 by following the same groove that extended from the crown to the apical third of the root. After complete separation of the roots, the supernumerary tooth was extracted. After extraction of the supernumerary tooth, the rubber dam was replaced to complete the vital pulp therapy using bioceramic putty (CeraPutty, Meta Biomed Chungcheong, Korea). Then a direct composite restoration was done using a bonding agent (3M Single Bond Universal, St. Paul, USA) and composite material A2 body shade (3M Filtek Z350xt, St. Paul, USA). After achievement of vital pulp therapy, the rubber dam isolation was removed, then the flap sutured using nonabsorbable polyamide 5/0 and reverse cutting surgical suture (DAMALON, GMD, Istanbul, Turkey), and then a periapical radiograph was taken postoperatively (Figure 5).

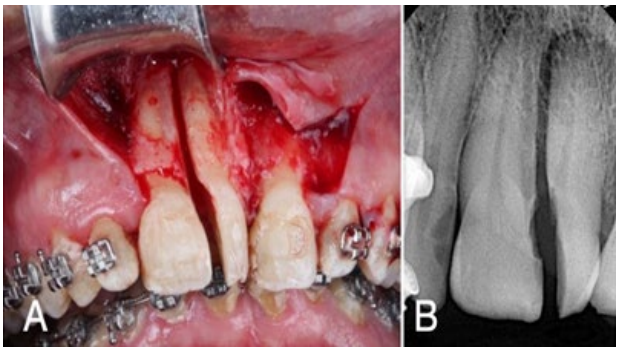

Figure 4: **A**) Three-sided flap and separation of supernumerary tooth. **B**) Periapical radiograph shows the complete separation of the supernumerary tooth.

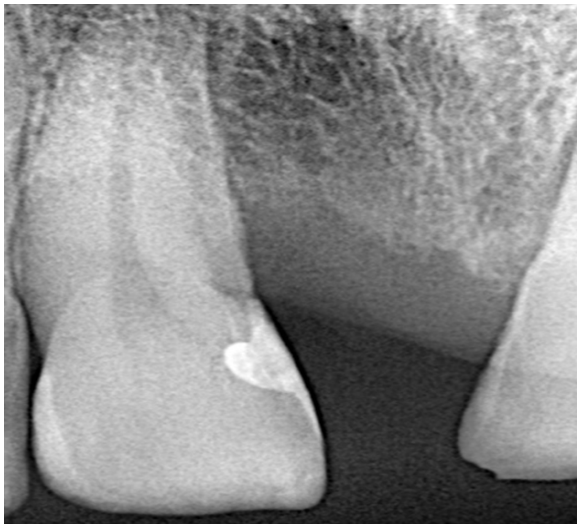

Figure 5: postoperative radiograph.

DISCUSSION

Several problems may result from the teeth fusion, like functional, endodontic, orthodontic, and aesthetic problems that need to be managed [8]. According to literature, different treatment modalities have been reported to manage these cases [9]. Selection of the treatment option for the case depends on many factors, like the location of the anomaly, type of anomaly, location of the connection area, age of the patient, and maturation of the root and root canal system anatomy. Reconstruction of the crown margin and the shape is one of the treatment options that are recommended in addition to hemisection [10]. The most common treatment option is hemisection, then extraction of the supernumerary tooth to manage the fusion between the supernumerary and adjacent tooth, and after that, reshaping of the remaining segment and orthodontic treatment to realign the entire arch. Another option is the extraction of both fused teeth, then making extraoral hemisection and replanting them inside the socket within less than 5 minutes [11]. Root canal treatment may be needed when the pulpal system is connected in the pulp chamber or in case there is a

communication between the root canal systems [3]. In this case, even with the presence of a small connection between the pulp chambers, we did vital pulp therapy to preserve the pulpal vitality. However, the limitation of this case report is the lack of clinical follow-up.

Conflict of interests

The authors declared no conflict of interest.

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Data sharing statement

N/A

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