An Alternative Treatment Approach for a Supernumerary Tooth Fused to a Mandibular Second Molar: A Case Report

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Abstract: Since abnormal tooth morphology can predispose to caries and periodontal disease, careful management of fused teeth is essential. This paper reports a rare case of a fused molar and supernumerary tooth and describes its management. Caries was removed from the tooth under local anesthesia. The pulp chamber of the supernumerary tooth was exposed and the root canal of the supernumerary tooth was prepared using the step back technique and copious irrigation with $H_2O_2$. Obturation using the lateral condensation technique with gutta-percha and AH26 sealer was subsequently performed and final restoration was accomplished with composite resin.

Key Words: Supernumerary Tooth; Fusion; Endodontic Treatment, Tooth Anomalies.

Introduction: Tooth fusion is the result of the union of two distinct dental entities that occurs at any stage of dental organ development. This process involves epithelial and mesenchymal germ layers resulting in irregular tooth morphology (Rajendran, 2006). While the teeth are fused by dentine, the pulp chambers and canals may be fused or may remain separate. A genetic predisposition has been reported and racial differences in incidence are evident (Rajendran, 2006). Most fusions between a molar and a supernumerary tooth require surgical removal due to the abnormal morphology and excessive mesiodistal width that causes problems with crowding, alignment and occlusal function. These teeth are also predisposed to caries and periodontal disease. This paper reports a rare case of fusion between a mandibular second molar and a supernumerary tooth where endodontic treatment of the supernumerary tooth and restoration of this tooth is maintained by pulp vitality of the second molar.

Case Report: A 24-year old male without remarkable medical history was referred from the Oral Medicine & Radiology department to Conservative Dentistry & Endodontics department in People’s Dental Academy with the chief complaint of spontaneous and severe pain on the left side of the mandible that started one week earlier. Tooth count was normal, but clinical and radiographic examination revealed a fusion of tooth #37 (second molar) with a supernumerary tooth (Fig. I).

A occlusal radiograph confirmed the diagnosis. The fusion between the buccal aspect of tooth #37 and the supernumerary tooth resulted in a wide distinct crown and grooves on the complex. A deep occlusal carious lesion was detected both on the tooth #37 and it was diagnosed as a irreversible pulpitis, and on the distal surface of tooth #36 was associated with reversible pulpitis. The complex was isolated and all caries was removed under local anesthesia. The access cavity on the supernumerary tooth was prepared and one canal was located and instrumented. This pulp chamber was not in direct contact with that of the second molar (tooth #37). Under rubber dam isolation the working length was...
established using a K-file No.15 (Fig. II). The root canal was prepared using a step back technique up to K-file No. 60 and copious irrigation with 2.6% sodium hypochlorite and normal saline. Apical patency was ensured using a k-file No. 10. Cleaning and shaping were completed and obturation was performed using a lateral condensation technique with gutta-percha and AH26 sealer (Dentsply, Germany; Fig. III). A temporary restoration of the access cavity was done with Zinc Oxide Eugenol cement.

Final restoration of the tooth was accomplished with composite resin and the first molar crown was restored with amalgam. After 3 months of follow up, no clinical or radiographic concern was apparent, and tooth #37 remained vital (Fig. IV).

Discussion:
Diagnosis of fusion is based on the history of patient as well as on clinical and radiographic findings. Fusion of molar teeth with supernumerary teeth is particularly rare, but when it does occur, caries, periodontal disease and crowding are common. Since grooves created by the union between the teeth involved are deep and extend subgingivally and bacterial plaque accumulates readily in this area (Rajendran, 2006; Pereira et al 2002). While pulpal involvement of these teeth is common, endodontic treatment is usually problematic due to the complex anatomy, tooth positioning and difficulty in rubber dam isolation (Rajendran, 2006). Delany & Goldblatt, (1981) and Hulsmann et al, (1997) reported that most fusions necessitate surgical removal of the involved teeth because of their abnormal morphology and excessive mesiodistal width, causing crowding, tooth malalignment and occlusal dysfunction. Turell & Zmener (1999) and Nunes et al. (2002) have however, reported that some fused teeth can be saved.

In the present case, the caries had not extended into the second molar pulp chamber, and only the supernumerary tooth pulp was exposed. Thus, clinicians should consider the pulp vitality of the supernumerary tooth and the tooth to which it is fused independently.

Bibliography:

