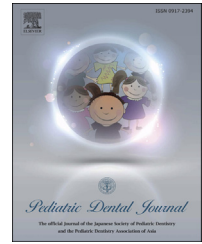


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Case Report

Hemisection of fused teeth involving a maxillary permanent incisor and a supernumerary tooth



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ABSTRACT

Purpose: Fusion is the union of adjacent teeth with or without pulp involvement. It can lead to serious esthetic problems and malocclusion. Here we report two rare cases of fusion of a permanent maxillary incisor with a supernumerary tooth that we successfully corrected using hemisection, which was performed after we confirmed that the roots had developed and separated.

Case reports: In the first case, the whole vital pulp was preserved. In the second case, partial pulpotomy was performed.

Conclusion: The differential diagnosis and appropriate management of permanent anterior fused teeth are essential to attain a favorable outcome and minimize the risk of any complications.

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1. Introduction

Fusion is defined as an embryonic union of normally separated tooth germs and represents a connection at the level of dentin between two independently developing primary or permanent teeth [1]. Fusion may be partial or total, depending on the stage of tooth development at the time of union [2,3]. Fusion is less prevalent in the permanent dentition than in the primary dentition [3]. The incidence of this anomaly is >0.1% in the permanent dentition [4]. Furthermore, fused teeth are

mainly found in the anterior region. Fusion can lead to serious esthetic problems and malocclusion, especially when supernumerary elements are involved [3,5]. Various treatment methods have been reported to solve these problems, such as sectioning and extraction of the supernumerary tooth, and restoration or prosthetic treatment of the crown with or without endodontic treatment [6–10].

In the two cases reported here, we describe the hemisection of maxillary central incisors fused with supernumerary teeth. The patients' guardians provided informed consent for this report.

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2. Case reports

2.1. Case 1

A 7-year-old girl was referred to the Department of Pediatric Dentistry at Osaka Dental University Hospital, Osaka, Japan, with a chief complaint of an esthetic problem in the maxillary permanent incisor region. Her medical history was not relevant and there was no family history of dental anomalies. Intraoral examination showed a labial erupted permanent maxillary left central incisor. Also, an erupted supernumerary tooth resembling a miniature incisor was present between the left and right central incisors, and fused to the left central incisor (Fig. 1A and B). The fused tooth had a

broad crown and a small groove was observed between the crown of the left incisor and the supernumerary tooth on the labial and palatal sides. The patient had mixed dentition and crowding in the anterior region due to lack of space. Radiographic examination revealed that the maxillary left central incisor had two root canals and two underdeveloped roots (Fig. 1C and D). There was no missing primary or permanent tooth. Computer tomography (CT) images showed that the root canals were not completely separated (Fig. 1E and F).

The initial treatment plan was as follows: (1) periodic follow up and checking for pulp separation and development; (2) if there was no connection between the root pulps of the supernumerary tooth and left central incisor, hemisection and extraction of the fused supernumerary tooth; (3)

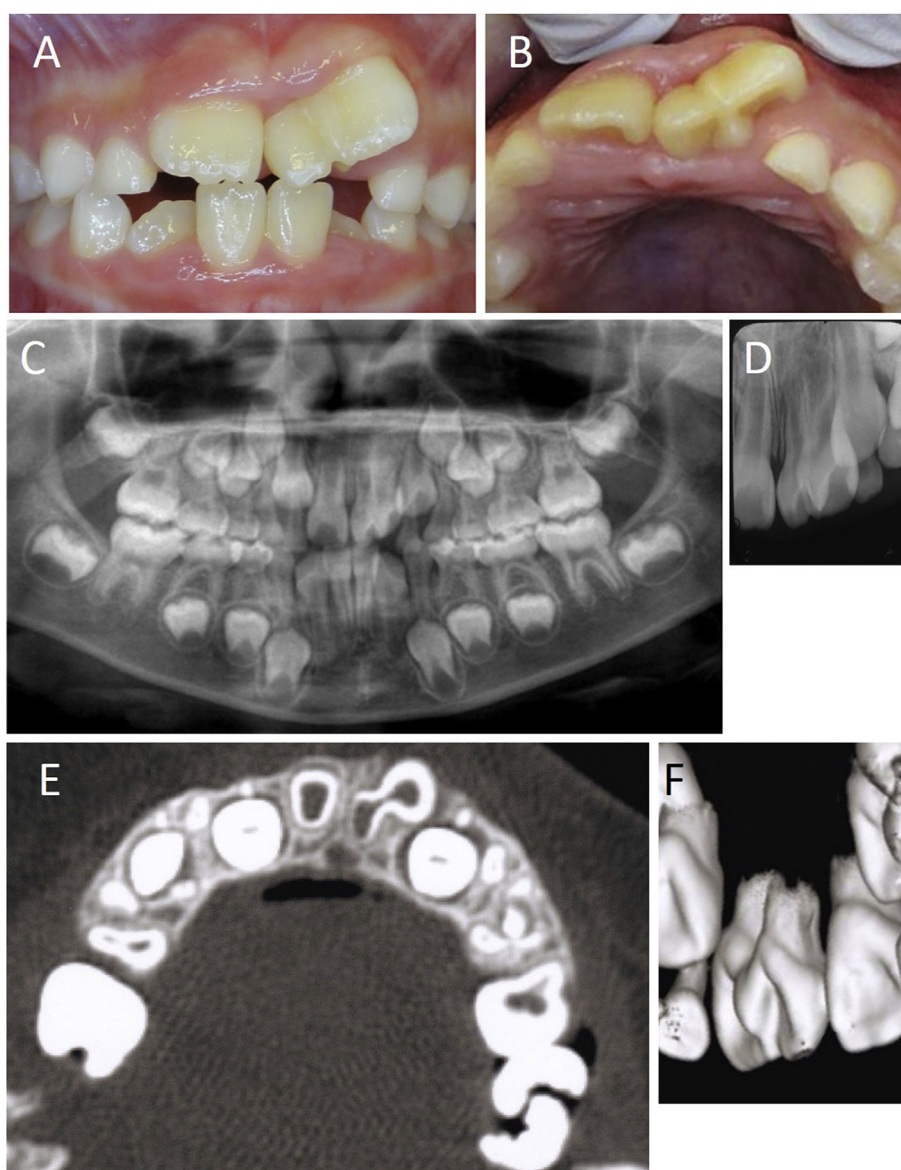


Fig. 1 – Case 1, first visit. An abnormally wide maxillary left central incisor as a result of fusion between the left central incisor and supernumerary tooth: (A) frontal; and (B) palatal views. The maxillary left central incisor had two root canals and two underdeveloped roots: (C) panoramic radiograph; (D) periapical radiograph. Computed tomography images: (E) horizontal cross-section of root apex; and (F) three-dimensional image of fused teeth.

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