

FUSION OF A MAXILLARY CENTRAL INCISOR WITH A SUPERNUMERARY TOOTH: CASE REPORTS

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ABSTRACT

Developmental anomalies of dental hard tissues are characterized by morphologic changes and may result in variations in the number of teeth including fusion and germination. Fusion is known as “synodontia” and has been defined as the union of two or more originally individual teeth. Fusion may be partial or complete involving a normal or a supernumerary tooth with a higher frequency in primary dentition. Etiology is still unclear. Fusion cause esthetic and occlusal problems, caries, and periodontal disease where complex and multidisciplinary approach is required.

This paper describes two cases of fused maxillary central incisor with supernumerary teeth.

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INTRODUCTION

Development of human dentition is a very complex process; aberration in different stages of tooth development can result in unique manifestations in the primary or the permanent dentition.¹

Fusion and gemination are considered abnormalities in tooth development. It is often difficult to differentiate between gemination and fusion and it was common to refer to these anomalies as double teeth, double formations, fused teeth, or dental twinning.²

Gemination is defined as a single enlarged tooth formed by partial division of a single tooth bud but fusion results from conjoining of two teeth buds.³

Fusion is seen in both primary (0.5-2.5) and permanent dentition (0.1), more commonly seen in the mandibular anterior region. Its occurrence is generally unilateral involving the lateral incisor and canine. Twinning of a permanent and supernumerary tooth in the anterior maxillary area only shows a frequency of 0.1%.⁴

Sometimes fusion may also occur between a normal

tooth and a supernumerary tooth, the overall prevalence appears to be approximately (0.5-2.5%) in primary teeth and (0.1%) in the permanent dentition.

If this occurs between normal complement of teeth then it results in a decrease in the number of the teeth. But if the fusion occurs between a normal and a supernumerary tooth then the number of the teeth remains the same.⁵

Etiology of fusion is still uncertain and many different views have been put forward, some authors state that it is a result of physical forces leading developing teeth germs to come in contact and fuse. Many authors accept it as an autosomal dominant trait with reduced penetration.⁶

This paper presents two cases of fusion of maxillary central incisor with supernumerary tooth which is not a common practical finding.

Case reports 1

A 9 years old girl came to the Pediatric Dentistry Department in Prince Hashem Hospital complaining of a notched and wide upper left central incisor.

Past medical history was unremarkable and there was no family history of dental anomalies.

Upon intraoral examination, soft tissues were found normal and the patient was in her mixed dentition stage.

Morphologically the upper left central incisor showed macrodontia with a notch and a groove extend-

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ing to the gingival sulcus buccally and palatally, the tooth was vital and responsive to thermal test. Fig 1

This occlusal X-ray was suggestive of fusion with supernumerary tooth which was confirmed by an occlusal X-ray. Fig 2

The right central incisor was fused to a supernumerary tooth with a separate root and no communication between the dental pulp was detected.

A full thickness flap was raised and hemisectioning with a diamond bur was performed and the supernumerary tooth was extracted.

Follow up appointments were made and after a month, the condition was stable and no periodontal pocketing was present.

Case -2

A 9 years old boy was seen in the Pediatric Dentistry Department in Princess Aysha' Medical Complex in Marka complaining of incomplete eruption of the upper right central incisor.

Past medical history was irrelevant and no family history of dental anomalies was reported.

Upon intra oral examination, a highly inflamed gingiva around the upper right central incisor and several carious teeth were observed. Patient was in his mixed dentition stage.

The upper right central incisor was discolored and partially erupted, showing incomplete eruption in comparison with its contralateral one.

Clinical examination revealed a severely inflamed gingiva in the area of the right central incisor. Periapical X-ray showed the presence of a supernumerary tooth with a separate root. Fig 2



Fig 1: Shows macrodontia of upper left central incisor.

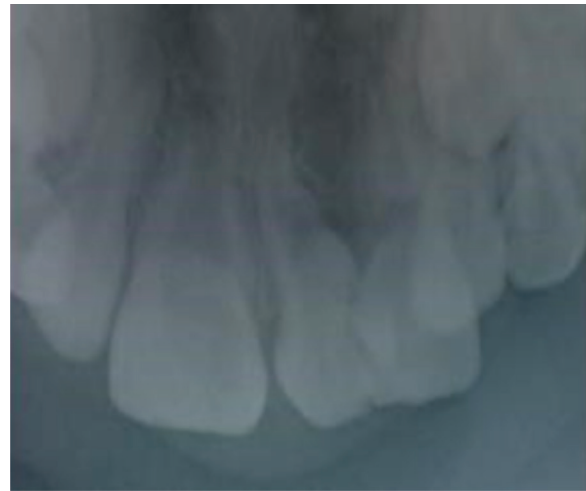


Fig 2: Shows fusion with super nummery tooth.



Fig 3: Partially erupted upper right central incisor

A full thickness flap was raised. Part of the supernumerary tooth was impeded in bone. After hemisectioning along the groove the supernumerary tooth was extracted. Osteoplasty was necessary to prevent any defect that may cause subsequent periodontal problems

Multiple follow up appointments showed promising results. Eruption was complete in 10 months. Orthodontic treatment to align the tooth after complete eruption will take place as well as esthetic restoration of tooth to resolve the discoloration problem.

DISCUSSION

Despite the considerable number of cases reported in literature, the differential diagnosis between these abnormalities is difficult.¹³ Clear and detailed history, clinical, and radiographic examination are required for the diagnosis.

Different treatment modalities have been suggested. Case reports have described the multidisciplinary treatment of fused permanent teeth comprising extraction, endodontic treatment, tooth size reduction followed by orthodontic treatment, tooth hemisectioning

and extraction of supernumerary teeth, and intentional replantation.²

In both cases supernumerary teeth were sectioned and extracted. Preservation of bone was taken into consideration to prevent periodontal disease. Observation and orthodontic treatment was needed in the second case.

Macrodonia in the first case caused an esthetic concern and a buccal and palatal grooves which may cause plaque accumulation and periodontal problems. In such cases if the large upper tooth is combined with small lower teeth ideal occlusion is difficult to achieve.³

Incomplete eruption in the second case was the main concern as the supernumerary tooth impeded the central incisor eruption due to increased mass on the root. Fusion of a regular tooth and supernumerary tooth may result in crowding, protrusion or impaction of an adjacent teeth.¹

Fused teeth may lead to functional, orthodontic, endodontic, and esthetic problems.⁷ Fusion is classified into two types depending on the stage of development of the teeth; complete and partial fusion.⁴ Around 0.1% cases of fusion are associated with a supernumerary tooth.¹¹

These reports presented two cases of incomplete fusion of a supernumerary tooth to a maxillary central incisor with separate roots and separate pulp canal systems.

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All authors contributed substantially