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### Case Report

## ESTHETIC REHABILITATION OF A FUSED MAXILLARY PRIMARY INCISOR- A MULTIDISCIPLINARY APPROACH

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### ABSTRACT

This paper describes a case in which pulp therapy was performed in a fused maxillary primary central incisor and supernumerary tooth in a 4 year old child. The tooth involved was larger than expected, suggesting developmental anomaly. The diagnosis of fusion was confirmed on radiographic examination. The clinical management of the case is described and the diagnosis and treatment plan is discussed.

**Keywords:** Fused Primary Incisors, Pulp therapy, Supernumerary tooth

### INTRODUCTION

Development of the tooth is a continuous process with a number of physiologic growth processes and various morphologic stages interplay to achieve the tooth final form and structure<sup>1</sup>. Interference with the stage of initiation, a momentary event, may result in single or multiple missing teeth or supernumerary teeth<sup>2</sup>. In the primary dentition, the incidence of supernumerary teeth is said to be 0.3%-0.8% and in the permanent dentition 1.5%-3.5%<sup>3</sup>. There is no significant sex distribution in primary supernumerary teeth; however, males have been shown to be affected more in the permanent dentition than females<sup>2</sup>.

Fusion is a developmental dental anomaly in which two dental germs have developed separately and then become united. Fusion occurs during the morphodifferentiation of the dental germs and the outcome depends on the degree of development of the teeth involved<sup>3</sup>. Fusion may be complete or incomplete. When it occurs precociously it may be that the two developing teeth unite to form what appears clinically as a single tooth of normal size. However, if it occurs at a more advanced stage of development the outcome is a tooth of double size or a tooth with bifid crown<sup>4</sup>.

Fusion may occur between two normal teeth or between a normal tooth and a supernumerary tooth. Clinically, fused anterior teeth have a groove or notch on the incisal edge that goes buccolingually and radiographical findings reveal the

fused dentin in some region with separate pulp chambers and canals. This article reports a multidisciplinary approach of a supernumerary tooth fused with primary central incisor.

### CASE REPORT

A male child age 5-years, reported to the Department of Pediatric and Preventive Dentistry, Guru Nanak Dev Dental College and Hospital, Sunam accompanied by his father with a chief complaint of unesthetic appearance of child's upper front teeth. On clinical examination, the patient had a fully erupted primary dentition and the oral tissues were found to be normal. The involved tooth, maxillary right central was larger than expected, suggesting of fusion between maxillary right central and with a supernumerary tooth. (Fig-1) The periapical radiograph confirmed the presence and fusion of supernumerary tooth with central incisor. Radiographically, radiolucency was seen involving enamel, dentin and was approaching pulp suggesting of deep caries with fused teeth. (Fig-2) Thus, the treatment decided was pulpectomy of fused teeth. The rest of the dentition was normal clinically and radiographically.

After clinical examination, proper isolation of teeth was done with help of rubber dam. (Fig-3) Decayed tissue was removed with high speed round bur and the coronal opening was made into the chamber. The pulp tissue was extirpated from the chamber with the spoon excavator and from the canal with k-files (Fig-4). The chamber was irrigated with normal saline

and 1% NaOCl solution. An intra oral radiograph was taken for working length by inserting 15 no K file in distal and 15 no H file in mesial canal respectively. The length obtained was 9mm for both mesial and distal canal. As the tooth was immature and had wide anatomical canals, the canals were prepared upto size no. 40 k-file. Filing was accompanied by frequent irrigation with 1% NaOCl followed by aspiration. Once the canal preparation was complete, the canals were dried with absorbent paper points. The canal space that was then filled with zinc oxide eugenol cement with help of lenulo spirals. Once the cement overflowed the canals into the chamber, a check radiograph was taken. The chamber was cleaned with cotton balls.



Figure 1: Pre-operative view of fused primary maxillary central incisor

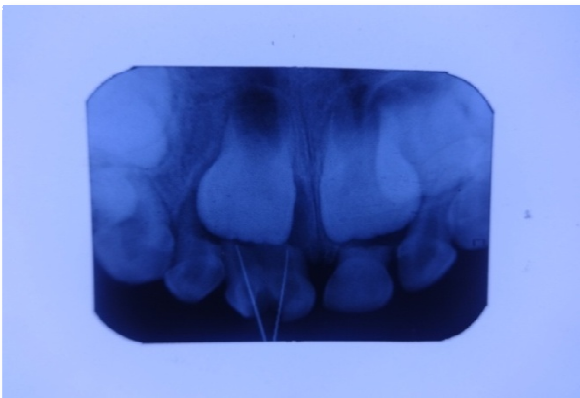


Figure 2: Radiographic appearance of fused primary maxillary central incisor

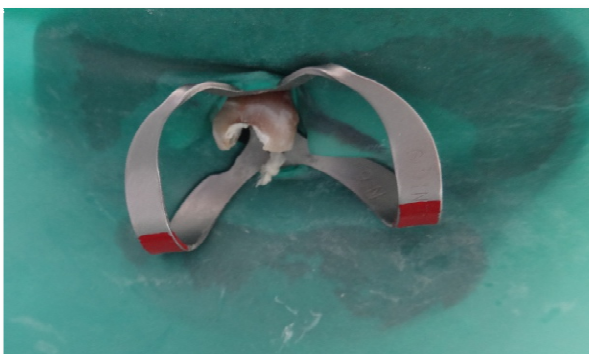


Figure 3: Isolation of fused primary maxillary central incisor under rubber dam

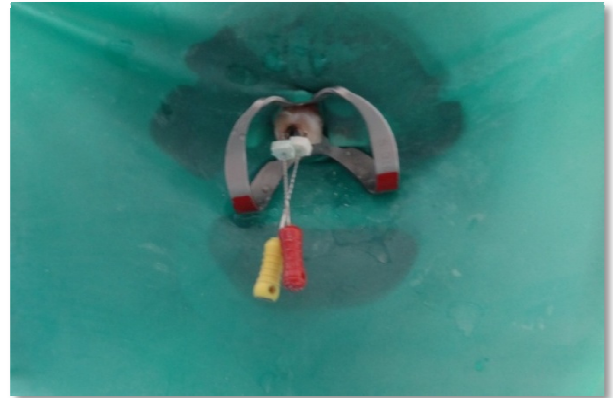


Figure 4: Working length determination of fused primary maxillary central incisor

Finally, a GIC (type II) was placed in close proximity to canal orifice to avoid contact between zinc oxide eugenol and composite. (Fig-5) After completing the treatment, esthetic rehabilitation of fused tooth was done with help of composite resin restoration. The parents were satisfied with the outcome of the result. (Fig-6)



Figure 5: Radiographic appearance after obturation



Figure 6: Post-operative view

## DISCUSSION

Supernumerary teeth in the maxillary anterior region is of great concern to both dentist and the patient because it can

lead to failure of eruption of adjacent teeth, crowding, diastema and rotation of teeth, dentigerous cyst formation, eruption into the nasal cavity and esthetic considerations. Sometimes, the supernumerary tooth may be fused to the normal tooth giving rise to a diagnostic dilemma.<sup>1</sup> Fused teeth are usually asymptomatic, but they can present clinical challenges like poor esthetics and periodontal conditions.

Numerous treatment options have been offered in the literature to resolve the clinical problems of fused teeth. These treatment plans include extraction, reduction of tooth size (mesiodistally), endodontic treatment, recontouring or hemisection of the fused tooth. The direction of the treatment plan depends primarily on the nature of the anomaly, its location and the morphology of the fused tooth.

O'Reilly<sup>5</sup> stated that the hemisection of two fused teeth is contraindicated because there would be exposure of the vascular canals, favoring contamination of the pulp organ and encouraging tissue necrosis. Extraction of the fused tooth would not solve the esthetics problem of the child and would be a traumatic experience for child.

The treatment carried out here for fused primary incisors was root canal preparation and restoring with composite resin to restore esthetics and function. The manipulation in primary teeth should be done with great care because the presence of root resorption may predispose to root perforation which may cause damage to permanent successor tooth during canal preparation. The instrumentation technique must take into account these aspects and allow preparation within canals. In order to avoid overfilling, the working length used for filling was 1mm less than the actual working length. Because of lack of proper endodontic instruments designed for primary teeth, it was necessary to cut the lentulo-spiral before the obturation of canals and calibrate it with working length for filling. It is important to check the lentulo spiral in each canal to avoid fracture.

In carrying out this type of treatment, maintenance of the primary teeth in the dental arch until their exfoliation is assumed to be an important goal in Pediatric Dentistry. Treatment is a part of efforts that should be made for the maintenance and recovery of patient's oral health. Follow up is fundamental to evaluations of the success or failure of a treatment.<sup>4,6</sup>

It is of special of special importance for pulp therapy in primary teeth and needs to include review of their resorption and eruption of permanent successor teeth to ensure that these are normal anatomic limits.

## CONCLUSION

Preservation of teeth during primary dentition period, even with uncertain prognosis, appears crucial for maintenance of the dental arch. The management of fused teeth should form part of a comprehensive treatment plan. This case report gives special importance to conservative treatment of primary fused teeth with combination of endodontic and restorative procedures.

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