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RESEARCH ARTICLE

MANAGEMENT OF FUSED PRIMARY TEETH IN ESTHETIC ZONE; A CASE REPORT

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Abstract

Tooth fusion arises through union of two normally separated tooth germs. Depending upon the stage of development of the teeth at the time of union, it may be either complete or incomplete and is more often seen in deciduous dentition. This article discusses esthetic oriented endodontic management of fused maxillary anterior in a 4-year-old child.

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Introduction:-

Fusion, a developmental abnormality, maybe defined as the joining or fusion by the dentin of two or more adjacent teeth to produce an abnormal dental structure commonly referred to as a "fused tooth," maybe unilateral or bilateral and may affect either dentition, although the deciduous teeth are more commonly affected[1]

Fusion occurs during the morpho-differentiation stage of embryonic development of teeth. Fusion can be complete (total) or incomplete (partial) depending on the time when the force acting causes the narrowing of the space between the tooth germs The prevalence of fused teeth has been reported as 0.14% - 5% in primary dentition with no gender predilection and the order of 0.1% in permanent dentition, and more frequently in anterior region[2]

Treatment of fused tooth will depend on clinical situation. If the tooth is free from caries, it may require no specific treatment. General preventive advice should be given to parent and child and if caries already exist, then restoration should be performed in order to retain function and aesthetics. If there is pulpal involvement, endodontic treatment should be carried out in the same way for a multi-rooted tooth.[3,4]

Case Report

A 4-year-old female child was referred to Department of Pediatric and Preventive Dentistry, Government Dental College, Thiruvananthapuram with complaints decayed upper front teeth and associated pain.

After clinical and radiologic evaluation, the condition was diagnosed to be symptomatic irreversible pulpitis on fused 51, 52 and dentinal caries on 61, 62. All other primary teeth were spared of dental caries.

After informing parents regarding the condition and various treatment modalities, importance of permanent dentition was explained. Instructions regarding oral hygiene, oral hygiene maintenance aids and diet counseling was done.

Pulpectomy of fused 51, 52 was completed (root canal obturation done with Endoflas) followed by composite restoration on the same day. Composite restoration was esthetically contoured in such a way that the fused tooth appeared as two separate teeth. Post-operative instructions were given.

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GIC restoration was done on 61, 62 on the next week and periodic review was done on 3rd week and 6th week. The child remained asymptomatic with no history of pain or swelling.

Discussion:-

Fusion occurs during the morpho-differentiation stage of embryonic development of teeth. It is believed that it involves physical force or pressure from the follicles of adjacent teeth, hereditary conditions, and racial determinants.

Clinical appearance of the fusion depends on the developmental stage of the associated tooth buds. If contact between two teeth buds occur before the calcification phase, full fusion occurs, presenting clinically as a single large crown. If the fusion takes place in the advanced stage of morph-differentiation, it may be limited to the roots, meaning the fused teeth might have separate pulp chambers and root canals. Primary fused teeth (PFT) usually occur unilaterally and are more common in primary than in permanent dentition. They nearly always occur in the anterior region, and most often involve the mandibular lateral incisors and canines; occurrence in the posterior region is rare.[2,5]

The terminology regarding fused teeth is confusing. Teeth that are fused or joined together by the dentin have been referred to as fused teeth, fused tooth complex, joined teeth, double tooth, linkable teeth, geminated teeth, gemini-fusion, and synodontia. It may be difficult, if not impossible to differentiate fusion and gemination in the adult dentition when supernumerary tooth may be involved or when the history of extraction is uncertain.

Gemination isusually confused with fusion. Gemination can be differentiated from fusion with the help of Mader's two tooth rule i.e., if the fused teeth are counted as one and the number of teeth present in the arch are less than the normal, this is termed as fusion. It is termed as gemination or 'fusion with a supernumerary tooth if these are counted as one and the number of teeth present in the arch are normal.

In germination, the two halves of the joined crown are mirror images and there exists a buccolingual groove that extends up to the incisal edge, while if there is a fusion between a normal and a supernumerary tooth, there would be differences in the two halves of the joined crowns.[1] The majority of fused teeth are probably asymptomatic, however may cause clinical problems like space loss, dentinal caries, periodontal problems and esthetic issues.[1,5–7]

Thorough clinical examination and appropriate use of complementary diagnostic aids such as periapical, occlusal and panoramic radiographs allow the dentist to plan the time and modality of treatment. The clinical interest for the appearance of fused teeth in the primary dentition is the clinical problems associated with them, including caries, delayed exfoliation, and anomalies in the permanent dentition such as impaction of the successors, supernumerary teeth, permanent double teeth or aplasia of teeth. The anomalies of permanent dentition are strongly associated with anomalies in the primary dentition. Therefore, early diagnosis of the anomaly has a considerable importance and it should be followed by careful clinical and radiographic observations that will allow surgical intervention at appropriate time.

Fusion or gemination in primary dentition may influence tooth alignment and interdigitation, arch symmetry, appearance, and associated periodontal tissues. In this way, it is important to recognize the dental anomalies that will allow us to plan a careful treatment, including endodontic, conservative, prosthodontic, periodontal and orthodontic considerations, when it is required.[8]

Conclusion:-

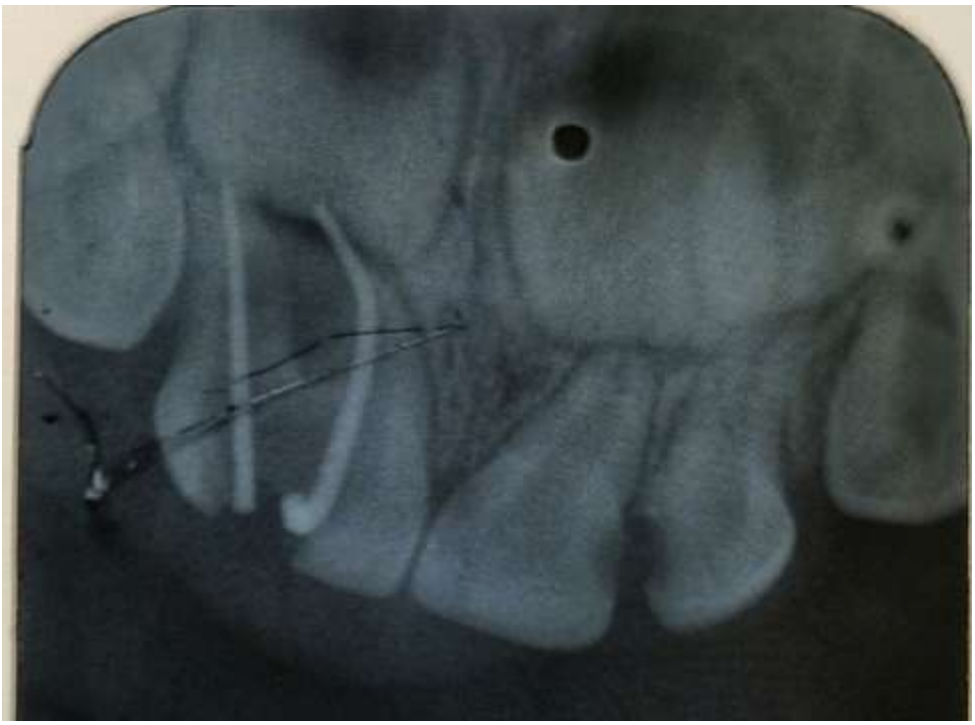
Fused teeth are prone to dental caries, especially at the junction of the unity. Fused teeth as such or when infected with dental caries is functionally and esthetically debilitating and may even impactthe psychological well-being of the patient. The current case report describes endodontic management of a fused deciduous maxillary incisor followed by composite restoration contoured resembling two separate teeth. Thus, maintaining function and esthetic harmony of the teeth.

Pre- op

Pre- op IOPAR

Gutta Percha cone placed on root canals of fused 51, 52 and IOPAR taken

Working length IOPAR



Post- op; IOPAR

Post- op; Composite Restoration done following pulpectomy

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