ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)
IJDSIR : Dental Publication Service
Available Online at: www.ijdsir.com
Volume – 4, Issue – 2, March - 2021, Page No. : 233 - 237

Prosthodontic management of fused primary maxillary central and lateral incisor- A case report

[1]Dr Nidhi Agarwal, Professor and Head, Department of Pediatric Dentistry, Institute of Dental Studies and Technologies, Modinagar, Uttar Pradesh, India

[2]Dr Zohra Jabin, Professor, Department of Pediatric Dentistry, Institute of Dental Studies and Technologies, Modinagar, Uttar Pradesh, India

[3]Dr Ashish Anand, Reader, Department of Pediatric Dentistry, Institute of Dental Studies and Technologies, Modinagar, Uttar Pradesh, India

[4]Dr Nandita waikhom, Post Graduate student, Department of Pediatric Dentistry, Institute of Dental Studies and Technologies, Modinagar, Uttar Pradesh, India

Corresponding Author: Dr Nandita waikhom, Post Graduate student, Department of Pediatric Dentistry, Institute of Dental Studies and Technologies, Modinagar, Uttar Pradesh, India

Citation of this Article: Dr Nidhi Agarwal, Dr Zohra Jabin, Dr Ashish Anand, Dr Nandita Waikhom,"Prosthodontic management of fused primary maxillary central and lateral incisor- A case report", IJDSIR- March - 2021, Vol. – 4, Issue - 2, P. No. 233 – 237.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Fusion is a rare developmental dental anomaly showing union of two adjacent teeth. This paper reports the management of a case of a 5 year old child having fused and carious primary maxillary right central and lateral incisor.

Keywords: Fused teeth, Pediatric Dentistry, Tooth abnormalities

Introduction

Tooth fusion is defined as union between two or more separate developing teeth **[1].** The appearance of fused teeth is based upon the developmental stage of tooth bud. Full fusion occurs, if 2 tooth buds are in contact before the calcification phase. If the fusion takes place in the advanced stage of morph-differentiation, the fused teeth might have separate pulp chambers and root canals. **[2,3]**

The etiology of fusion is unclear. Shafer et al. **[4]** reported that pressure produced by some physical force that prolongs the contact of the developing teeth results in fusion. Lowell and Soloman stated that fused teeth result from some physical action that causes the young tooth germs to come into contact, thus allowing the enamel organ and dental papilla to fuse together **[5].** Many authors have also suggested hereditary involvement as a contributing factor **[6].**

Fusion has a higher incidence in deciduous dentition (0.5%–2.5%) than in permanent dentition (0.1%–1.0%)

[7,8,9]. They are found predominantly in the anterior region and may be bilateral or unilateral **[10,11].**

This is a case report of a child having fusion of right primary maxillary central and lateral incisor.

Case Report

A 5 - year-old boy reported to the Department of Pedodontic and Preventive Dentistry with a chief complaint of excessively large & decayed front teeth. The patient was healthy and medical history was nonsignificant. There was no family history of any dental anomaly. The parents did not report any history of trauma to the teeth or jaws.

On extraoral examination no abnormality was detected. Height and weight were within normal limits for age. On clinical examination, localized macrodontia was observed in relation to the upper anterior region. The right maxillary central and lateral incisors were found to be fused and showed grossly decayed coronal portion both labially and palatally. A large groove running from incisal edge to cervical margin was also observed which showed the origin of caries. **[Fig.1]**

Orthopantomogram radiographic examination revealed that primary right central incisor was fused completely with lateral incisor i.e union was seen in both crown and root portion with the presence of one pulp chamber. No other anomalies were found apart from multiple caries in many teeth. **[Fig.2]**

Management

Since the tooth was not in a restorable condition due to the excessive demineralization, it was decided that the fused tooth would be extracted and esthetic rehabilitation would be done since that was the chief concern of the parents. The treatment plan for complete rehabilitation of the patient was formed and explained to the parents. The child was very cooperative showing a frankl behavior with positive rating and the treatment of the patient was done in multiple visits.

In the first visit, restoration of carious teeth was done with Glass Ionomer Cement and impression of both maxillary and mandibular arch was taken with alginate. The dmf score was found to be 12 (decayed), Silness and Loe plaque index was 2.33 indicating poor oral hygiene. Assessment of caries risk concluded that the child belong into the high risk group. Parent counseling was done to maintain the diet and brushing twice a day with fluoridated toothpaste was also advised to the child.

In the second visit, extraction of the fused tooth and 65 **[Fig.3]** was done. Tropical anesthesia was given using lignocaine gel at the injection site to minimize the pain of needle insertion. Local infiltration was done bucally and palatally using 2% lignocaine hydrochloride solution. After anesthesia was obtained, the tooth was extracted without any complication. Post extraction instructions were given. In the subsequent visits, pulpectomy of 85 was done in single setting. Stainless steel crown for 85 and 75 was given and impression for crown and loop space maintainer followed by extraction of 84 **[Fig.4]**. In the end the removable partial denture was delivered. **[Fig.5,6]** As a preventive approach fluoride varnish application was also carried out.

Followup examinations revealed that the treatment had successfully restored both esthetics and function.**[Fig.7]** Proper instructions regarding the maintenance of oral hygiene were given to the patient.

Discussion

Terminologies that have been used to describe the anomaly of double teeth are fusion, gemination**[12].** Fusion is the union of two normal teeth with separate tooth buds leading to the formation of a joined tooth. Gemination is defined as an attempt of single tooth bud to

divide which result in formation of a tooth with a bifid crown and usually a common root and root canal.

Madder's two tooth rule may be a practical way of differentiating fusion and gemination. If joined tooth are counted as one and the number of teeth in the dental arch is less, then the term fusion is considered whereas if the number of teeth in dental arch is normal, then it is termed as germination **[13]** This case revealed complete fusion of two teeth i.e 51 and 52 involving the coronal and root surfaces with single roots and single large pulp chambers and canals.

Fused teeth are usually asymptomatic but can be associated with clinical problems like abnormal shape of the tooth leading to unaesthetic appearance, occlusal disturbances, space discrepancies and the presence of fissures or grooves at the union between fused teeth can lead to caries and periodontal disease.

Numerous treatment options have been described in the literature to manage fused teeth. A multidisciplinary approach involves orthodontic treatment, endodontic intervention, periodontal therapy, surgical and prosthodontic management. However a conservative treatment plan should be considered based on the requirement**. [14]**

Every case shows a unique presentation. There is no single or ideal way of management. Therefore the clinician has to be aware of all the factors to be considered for formulating the treatment plan. In the primary dentition, no treatment is recommended unless the fusion is hindering the eruption of the affected tooth**. [15]**

In this case, pulpectomy and rehabilitation of the fused tooth could not be done since it would have resulted in a very large crown. The pulp canal of the roots was very wide and single so post and core rehabilitation of the tooth would have resulted again in a very wide crown which was esthetically unacceptable for the parents. Hence the decision of extraction was taken. The patient had severe caries and poor oral hygiene. Therefore keeping all these factors in consideration a removable prosthesis was fabricated instead of a fixed appliance.

Figures

Fig.1: Clinical appearance of fused teeth

Fig. 2: Pretreatment panaromic radiograph showing fully fused 51 and 52

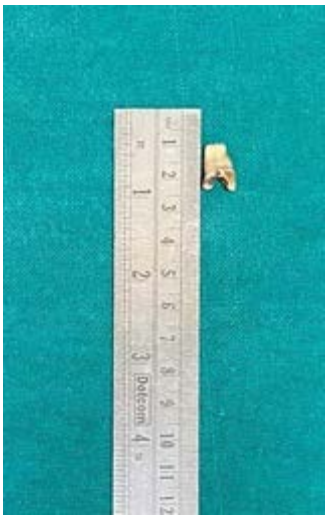

Fig. 3: Fused 51 and 52 showing single root

Fig. 4: Occlusal view of Crown and Loop and Stainless steel crown in mandibular arch.

Fig. 5: Frontal view of the Functional removable appliance

Fig. 6: Occlusal view of the Functional removable appliance

Fig. 7: Postoperative image of the child

Conclusion

Maintenance of primary teeth in the dental arch until their exfoliation is important as it guides the permanent teeth into occlusion. Appropriate treatment planning is important when encountered with dental anomalies like fusion in the primary dentition to improve esthetic and function and also to avoid malocclusion in permanent dentition.

References

1. Neville BW, Damm DD, Allen CM, Bouquet J. E. Abnormalities of teeth. Oral and Maxillofacial Pathology, pp. 74–75, WB Saunders, Philadelphia, Pa, USA, 2nd edition, 2002.
2. Clayyton JM. Congenital dental anomalies occurring in 3,557 children. J Dent Child. 1956;23:206–208.
3. Pereira AJA, Fidel RAS, Fidel RS. Maxillary lateral incisor with two root canals: fusion, gemination or dens invaginatus. Braz Dent J. 2000;11:141–146.
4. Shafer WG, Hine MK, Levy BM. A Textbook of Oral Pathology, WB Saunders, Philadelphia, Pa, USA, 3rd edition, 1974.

5. Lowell RJ, Soloman AL. Fused Teeth. The Journal of the American Dental Association. 1964;68:762–763.
6. Stewart R, Prescott GH. Genetic aspects of anomalous tooth development. Oral Facial Genetics, pp. 138–142, Mosby, St. Louis, Mo, USA, 1976.
7. Schuurs AHB, van Loveren C. Double teeth: review of the literature. Journal of Dentistry for Children. 2000;67(5):313–325.
8. Schulze C. Developmental abnormalities of the teeth and the jaws. Thoma's Oral Pathology, R. J. Gorlin and H. M. Goldman, Eds., pp. 96–183, Mosby, St. Louis, Mo, USA, 6th edition, 1970.
9. Blaney TD, Hartwell GR, Bellizzi R. Endodontic management of a fused tooth: a case report. Journal of Endodontics. 1982;8(5):227–230.
10. Delany GM, Goldblatt L I. Fused teeth: a multidisciplinary approach to treatment. The Journal of the American Dental Association. 1981;103(5):732–734.
11. Budd CS, Reid DE, Kulild JC, Weller RN. Endodontic treatment of an unusual case of fusion. Journal of Endodontics. 1992;18(3):133–137.
12. Veerakumar R, Pari MA, Prabhu MN. Caution! We are erupting as twins. Journal of Clinical and Diagnostic Research. 2011;**5**(5):1123–1124
13. Ramamurthy S, Ramaswamy S, Kalidass P. Surgical and Orthodontic Management of Fused Maxillary Central and Lateral Incisors in Early Mixed Dentition Stage. Case Reports in Dentistry. 2014(), 1–4.
14. Oelgiesser D, Zyc R, Evron D, Kaplansky G, Levin L. Treatment of a fused/ geminated tooth: a multidisciplinary conservative approach. Quintessence Int. 2013;44:531-3
15. Annibali S, Pippi R, Sfasciotti GL. Chirurgia Orale a Scopo Ortodontico. Issy-les-Moulineaux, France: Elsevier Masson; 2007