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Case Report

Management of Impacted Immature Central Incisor as Sequelae to Unattended Multiple Intruded Primary Teeth in Early Childhood

Shalini Garg[1], Abhishek Dhindsa[2]*, Neetu Jain[3], Ashish Loomba[3] and Prachi Gupta[4]

[1]*Ex-Professor, Department of Pediatric and Preventive Dentistry, Maharishi Markandeshwar College of Dental Sciences and Research, Mullana (Ambala), India*

[2]*Professor, Department of Pediatric and Preventive Dentistry, Maharishi Markandeshwar College of Dental Sciences and Research, Mullana (Ambala), India*

[3]*Lecturer, Department of Pediatric and Preventive Dentistry, Maharishi Markandeshwar College of Dental Sciences and Research, Mullana (Ambala), India*

[4]*Reader, Department of Pediatric and Preventive Dentistry, Maharishi Markandeshwar College of Dental Sciences and Research, Mullana (Ambala), India*

***Corresponding Author:** Abhishek Dhindsa, Professor, Department of Pediatric and Preventive Dentistry, Maharishi Markandeshwar College of Dental Sciences and Research, Mullana (District-Ambala); Haryana, India.

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Abstract

Traumatic dental injuries of primary teeth can affect the developing successors due to the close proximity of roots of primary teeth with developing permanent tooth. This report presents a case of intrusive luxation of multiple primary teeth at very early age and its consequences of being unattended for years. A 10-year-old boy reported with the chief complaint of non-eruption of upper right front tooth. He had history of dento- facial trauma at the age of 1.5 years with loss of multiple primary teeth. No dental treatment was undertaken at that time. Present radiographic examination revealed complete intrusion of 51, 53. Intruded primary teeth were removed followed by orthodontic management of mechanically impacted 11. A follow up of 3 years is hereby presented.

Keywords: Primary teeth; Trauma; Intrusion

Introduction

Intrusive luxation is one of the most common primary teeth injuries and upper anterior teeth are more prone to traumatize because of their position in the dental arch [1]. Traumatic intrusion of primary teeth can affect the developing permanent successors, due to the close proximity of primary teeth roots with underlying permanent tooth bud [2]. The consequences of such injuries can be discoloration of crown, crown/root dilaceration, hypoplastic enamel, partial/complete arrest of tooth development and alterations in eruption path/timing. The prevalence of developmental disorders in permanent teeth due to traumatic intrusion of the corresponding primary teeth ranges from 18% to 69% [1,3-5]. This case report presents the consequence of untreated injury to primary teeth at very early age and their management.

Case Report

A 10-year-old healthy boy reported to Paediatric Dentistry department with the chief complaint of non-eruption of upper right front tooth for 3 years. Medical history revealed that he had dento- facial trauma at the age of 1.5 years while playing at home and loss of multiple primary teeth. The child did not receive any dental treatment after trauma. Patient's parent didn't notice any problem till there was no eruption of 11 while the contra lateral tooth i.e. 21 was fully erupted. Intra oral inspection revealed missing 11 and 53. On palpation a bulge/hardened surface was felt Bucco apically in relation to 11 and 53. Long axis of 21 was deviated towards right side resulting in space loss in the region of 11. Space loss was also observed in the region of missing 53 as compared to contra lateral side. Malformed Incisal edge of 22 was also noticed (Figure 1a and 1b).

Radiographic examination showed complete intrusion of 51 with its position in relation to apical 1/3rd of 52. The crown of 51 was positioned labially in the close vicinity of incisal surface of 11 (Figure 2a and 2b).

53 was deeply positioned in distoapical relation to 52. Crown of 11 appeared to be malformed along with delayed development (F stage) as compared to contra lateral tooth (G stage in 21). Developmental status of 13 appeared to be comparable with 23. On the basis of these findings, a final diagnosis of crown - root malformation of 11 and traumatic intrusion resulting in ectopic retention of 51, 53 was made.

A treatment plan to surgically remove 51, 53 followed by orthodontic management to create space for spontaneous eruption of 11was made (Figure 1c and 1d). After 5 months of period 11 was surgically exposed and brought into the occlusion with the help of fixed orthodontics (Figure 2c and 2d). The crown of permanent

right maxillary central incisor was malformed along with hypoplastic enamel which was restored with a light cured composite resin (Figure 1e and 1f). 3 years of follow up with successful eruption of permanent maxillary right central incisor is hereby presented (Figure 2e and 2f).

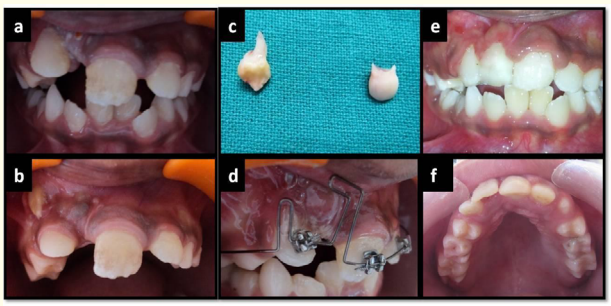

Figure 1: (a and b) Pre-operative missing 11, 53 and space loss for the same, (c) Extraction of intruded primary teeth 51 and 53, (d) Single arch fixed orthodontic therapy to facilitate eruption of impacted 11, and (e and f) Post-operative successful eruption of 11.

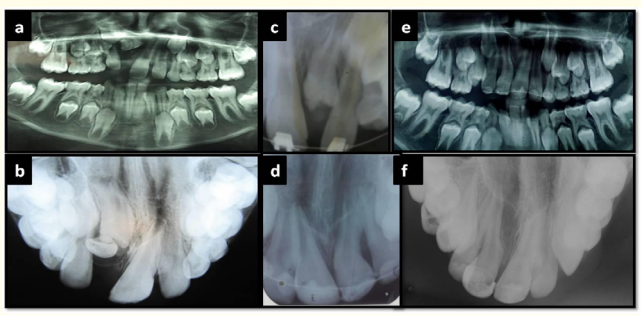

Figure 2: (a) Complete intrusion and healing around 51, 53, (b) Arrested root formation and crown-root malformation of 11, (c and d) Uneventful eruption of 11 and completion of its root formation, and (e and f) Post-operative complete eruption of 11.

Discussion

Children of age group 1 - 3 years with no gender predilection are more vulnerable to traumatic dental injuries due to poor motor coordination at this age and falls at home during play is reported to be the main cause of such injuries [1,6-8]. The luxation injuries are more frequent in primary teeth with the prevalence rate of 1.5% to 43% while the intrusive luxation is 4.4% - 22% of traumatic injuries of primary teeth [1,5,9-10]. Reason for more vulnerability of primary teeth to intrusive luxation can be developing alveolar bone (large trabecular spaces, more resilience of bone) surrounding primary teeth and the transmission of the traumatic forces along the primary tooth root which must be in the early stages of physiological root resorption at the very young age of 1 - 3 year [9,11-12].

The severity of its sequelae depends on the age of child, developmental phase of underlying permanent tooth bud, the direction/ impact of trauma and timely management of trauma to primary dentition [3,13]. As in present case delayed dental treatment was the reason for mechanical impaction of central incisor.

Parental negligence especially to primary teeth indicates the need for dental awareness among population. Post trauma thorough clinical examination followed by radiographic examination is needed to determine the degree of displacement of traumatized tooth and extent of development of underlying permanent tooth. In the present case age at which trauma took place coincides with the crown formation stage (C stage according to Demerijan's classification i.e. crown approaches at its half) of 11, that explains its severe crown - root malformation. Another finding observed in our case was the normal physiological root resorption of 51, 53 for that age which indicates that even after complete intrusion the deciduous teeth are capable of physiological root resorption.

Conclusion

This paper highlights the following points: 1. Physiologic tooth resorption of primary teeth seems to be independent of eruption of respective successors 2. Parents should be motivated to report to paediatric dentist immediately after trauma irrespective of age of child or dentition type.

Bibliography

1. Altun C., *et al.* "Traumatic Intrusion of Primary Teeth and Its Effects on the Permanent Successors: A Clinical Follow-up Study". *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 107.4 (2009): 493-498.

2. Bastone EB., *et al.* "Epidemiology of Dental Trauma: A Review of the Literature". *Australian Dental Journal* 45.1 (2000): 2-9.

3. Canoglu E., *et al.* "Unusual Ectopic Eruption of a Permanent Central Incisor Following an Intrusion Injury to the Primary

Tooth". *Journal of the California Dental Association* 74.8 (2008): 723-726.

4. Cunha RF., *et al.* "Oral Trauma in Brazilian Patients Aged 0-3 Years". *Dental Traumatology* 17.5 (2001): 210-2.

5. Diab M and HE elBadrawy. "Intrusion Injuries of Primary Incisors. Part I: Review and Management". *Quintessence International* 31.5 (2000): 327-334.

6. Diab M and HE elBadrawy. "Intrusion Injuries of Primary Incisors. Part Iii: Effects on the Permanent Successors". *Quintessence International* 31.6 (2000): 377-384.

7. Gomes AC., *et al.* "Developmental Disturbance of an Unerupted Permanent Incisor Due to Trauma to Its Predecessor". *Journal of the California Dental Association* 76 (2010): a57.

8. Holan G., *et al.* "The Diagnostic Value of Lateral Extraoral Radiography for Intruded Maxillary Primary Incisors". *Journal of Pediatric Dentistry* 24.1 (2002): 38-42.

9. Joho JP and SC Marechaux. "Trauma in the Primary Dentition: A Clinical Presentation". *ASDC journal of dentistry for children* 47.3 (1980): 167-174.

10. Kramer PF., *et al.* "Traumatic Dental Injuries in Brazilian Preschool Children". *Dental Traumatology* 19.6 (2003): 299-303.

11. Soares FC., *et al.* "Association between Trauma to Primary Incisors and Crown Alterations in Permanent Successors". *Brazilian Dental Journal* 25.4 (2014): 332-335.

12. Vuletic M., *et al.* "A Retrospective Study on Traumatic Dental and Soft-Tissue Injuries in Preschool Children in Zagreb, Croatia". *Bosnian Journal of Basic Medical Sciences* 14.1 (2014): 12-15.

13. Zilberman Y., *et al.* "Effect of Trauma to Primary Incisors on Root Development of Their Permanent Successors". *Journal of Pediatric Dentistry* 8.4 (1986): 289-923.

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