Comprehensive Management of Dental Trauma and Oral Health in a Young Bullying Victim: A Case Report

Charity No: 1155781

Scottish Charity Number: SC045190

ABSTRACT

A.M., a healthy 9-year-old boy, presented to the clinic three days after sustaining a traumatic injury to his anterior teeth during a bullying incident at school. His primary concerns were pain during biting and the aesthetic impact of his fractured front teeth.

Clinical examination revealed poor oral hygiene, generalized plaque-induced gingivitis, and multiple carious lesions affecting both primary and permanent teeth. Traumatic injuries included an intrusive injury with an uncomplicated crown fracture of tooth #11, subluxation with an uncomplicated crown fracture of tooth #21, and an uncomplicated crown fracture of tooth #31.

The patient exhibited signs of dental anxiety, and behavior management techniques were employed to alleviate his anxiety and ensure cooperation throughout the treatment process. Management involved comprehensive treatment of the traumatic dental injuries, multiple restorations, and extractions, all performed under local anesthesia. However, due to parental non-compliance with follow-up appointments, the luxated teeth developed infection-related root resorption and periapical periodontitis. These complications, which significantly impacted the long-term prognosis, could have been detected and managed earlier with timely review appointments.

This case highlights the critical importance of regular follow-ups and parental compliance with scheduled appointments to maximize long-term treatment outcomes in pediatric dental trauma cases.

Introduction

This report details the management of a traumatic dental injury in a 9-year-old boy with multiple injuries. It emphasizes the importance of regular follow-ups, parental compliance, and adherence to IADT guidelines to optimize long-term outcomes in paediatric dental trauma cases.

History

The patient presented three days after sustaining dental trauma, reporting pain during biting and concerns about the appearance of fractured teeth (#11 and #21). The injury occurred during a bullying incident at school, where the patient fell on his face. He is medically fit and well but exhibits dental anxiety. The patient is an irregular attendee at dental appointments and has undergone previous dental treatments under local anaesthesia without reported complications. The patient lives with his father following parental separation. He has three siblings, all with untreated dental caries. The parent has shown inconsistencies in attending scheduled dental appointments.

Clinical Examination:

- **Extra-oral:**
    - Facial symmetry within normal limits.
    - No temporomandibular joint (TMJ) pathology, deviation, or swelling.
- **Intra-oral:**
    - Poor oral hygiene with visible plaque accumulation.
    - Late mixed dentition with multiple carious lesions affecting both primary and permanent teeth.
    - Notable findings include:
        - Carious remaining root of #74.
        - Preformed metal crown on #84.
        - Defective temporary restoration on #46.
        - Enamel-dentine crown fractures on #11, #21, and #31.
    - Basic periodontal examination (BPE) within normal limits.

Special Investigations

- **Dental Injuries Assessment: (Fig 1., Fig 2., Fig 3.)**
    - Teeth #12, #22: Normal responses to sensibility tests, no abnormalities.
    - #11: Immobile, Tender to percussion with metallic sound, positive to EPT.
    - #21: Grade I mobility, Tender to percussion and on palpation, negative to sensibility tests.
    - #31: Tender to percussion and on palpation, positive to sensibility tests.

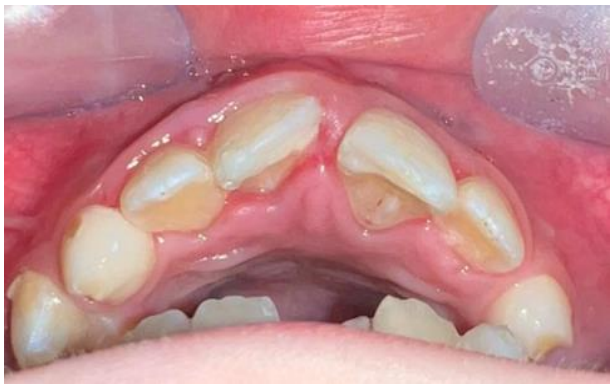

Fig 1. Intra-oral Photographs (upper occlusal)

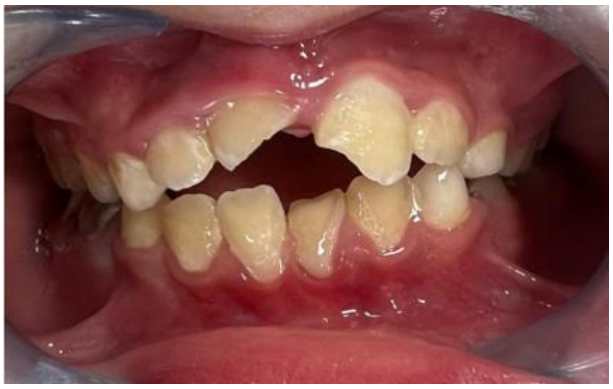

Fig 2. Intra-oral Photographs (frontal)

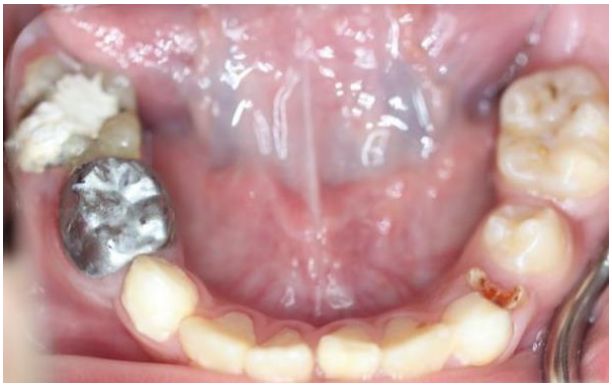

Fig 3. Intra-oral Photographs (upper occlusal)

- **Radiographic Examination:** Main Dental Injury Findings: (Fig. 4,5,6,7)

    - **General:** Normal bony outline, no alveolar/root fractures, no periapical pathology.
    - **#11, #21:** CEJ of #11 ~4 mm below #21; PDL space on distal of #11 not traceable. Incomplete root development with open apex, dentine fracture.
    - **#31:** Normal lamina dura, complete root development with closed apex, dentine farcture.

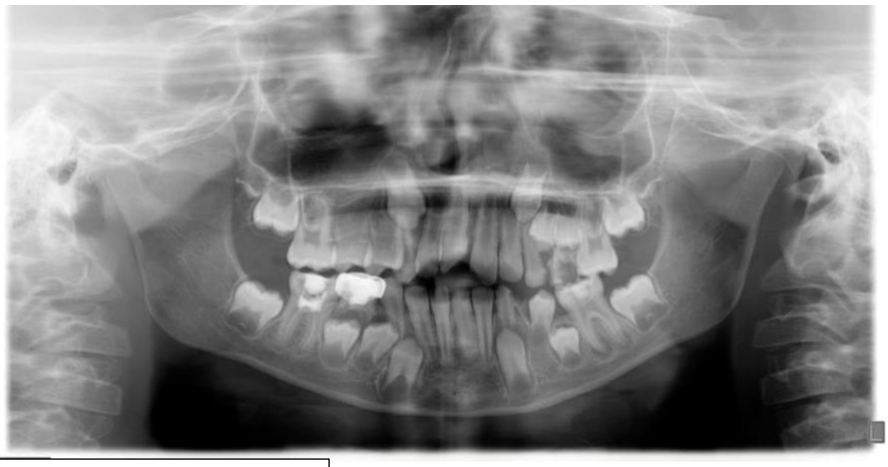

Fig 4. Orthopantomogram (Initial presentation)

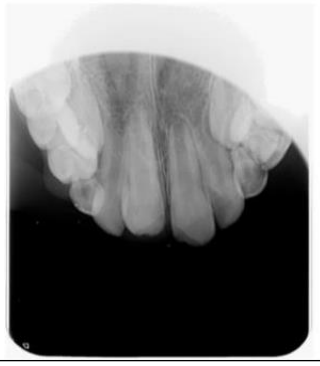

Fig 5. Upper standard occlusal radiograph

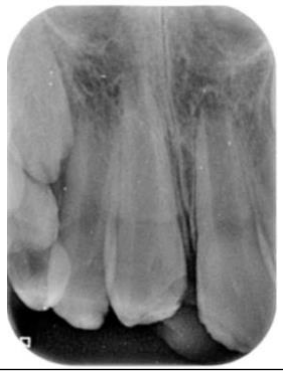

Fig 6. PA upper anterior

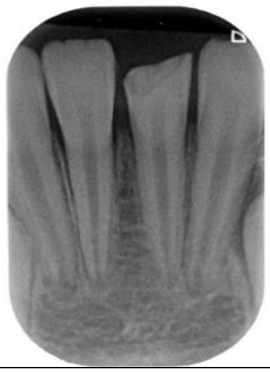

Fig 7. PA lower anterior

Diagnoses:

- Poor oral hygiene, generalized plaque-induced gingivitis, high caries risk with multiple carious lesions.
- **#36:** Necrotic pulp, asymptomatic apical periodontitis.
- **#46:** Cervical pulpotomy-treated.
- **#11:** Intrusion, uncomplicated crown fracture.
- **#21:** Subluxation, uncomplicated crown fracture.
- **#31:** uncomplicated crown fracture.

Management

- **Initial:** Composite bandage on #11, #21, #31; intensive prevention.
- **Restorative:** Fractured and carious teeth restored; unrestorable teeth extracted.
- **4-Month Follow-Up:**
  - #11 fully re-erupted (Fig 8., Fig 9.); CBCT revealed infection-related root resorption (#11) and periapical periodontitis (#21). (Fig 10.)
  - Both teeth treated with RCT and MTA apical plugs.
- **1-Year Follow-Up:** Teeth responded normally clinically and radiographically, with no signs of infection or pathology. Regular monitoring maintained.

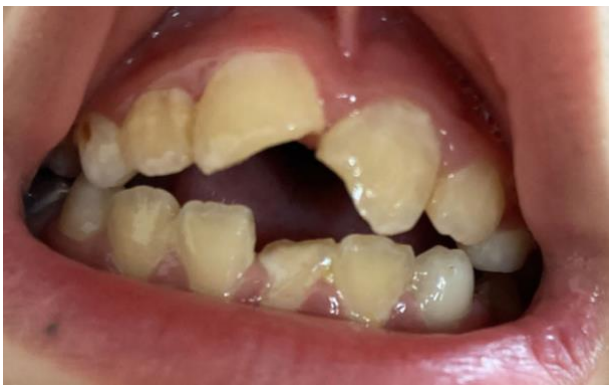

Fig 8. Frontal View (after spontaneous re-eruption)

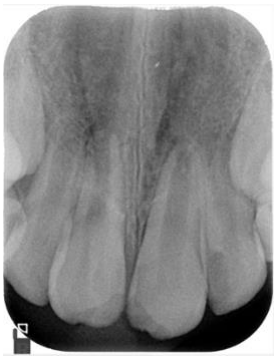

Fig 9. PA upper anterior

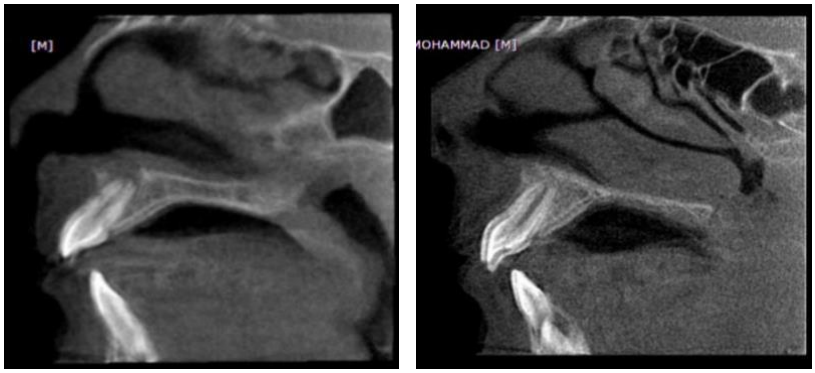

Fig 10. CBCT after 4-months of trauma

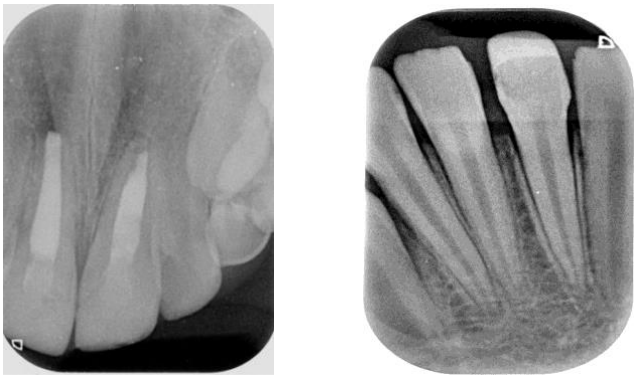

Fig 11. Post-Treatment Radiographs

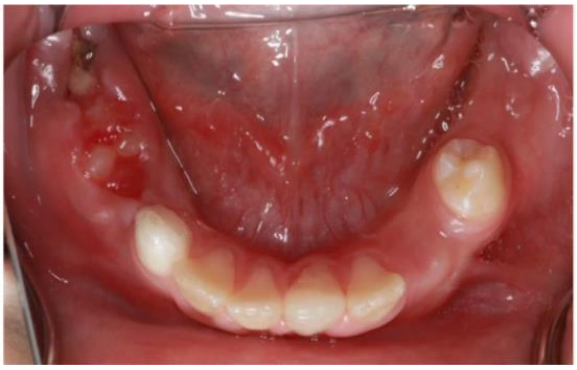

Fig 12.Post-treatment- Intra-oral Photographs (lower occlusal)

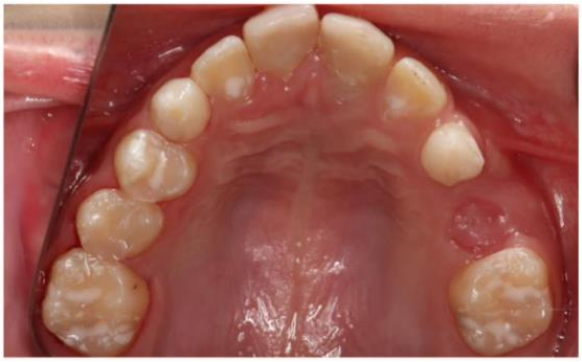

Fig 13.Post-treatment- Intra-oral Photographs (upper occlusal)

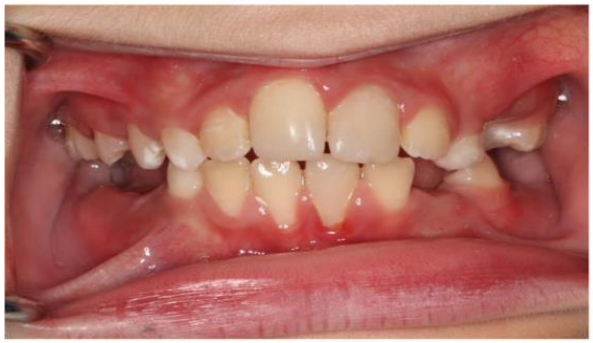

Fig 14.Post-treatment- Intra-oral Photographs (frontal view)

Discussion

Intrusive luxation is a severe injury where a tooth is displaced apically into the socket, accounting for 0.5–1.9% of dental trauma. Treatment depends on root development and trauma severity. IADT guidelines for teeth with incomplete root formation recommend:

- Allow spontaneous re-eruption.
- If no re-eruption within 4 weeks, initiate orthodontic repositioning.
- Regularly monitor pulp condition.

In this case, initial management for intruded tooth #11 (incomplete root formation) involved allowing spontaneous re-eruption. The patient missed follow-up appointments and returned after 4 months, at which point spontaneous re-eruption was observed.

Despite composite bandage placement, infection-related resorption developed, likely due to the combined injuries: intrusion (#11), subluxation (#21), and uncomplicated crown fractures. According to Lauridsen et al., such outcomes are common in combination injuries. Poor home care and irregular visits likely contributed to bacterial leakage.

During the 1-year follow-up, a gingival discrepancy was noted between #11 and #21, although no signs of ankylosis were observed. Despite the ongoing risk of complications such as ankylosis and replacement resorption, tooth #11 showed no metallic percussion sound and retained physiological mobility. Therefore, regular monitoring will continue to ensure stability and detect any potential complications.

Conclusion

Traumatic dental injuries are prevalent and can result in substantial long-term consequences. Effective management requires careful follow-up care and strong patient compliance to ensure optimal long-term outcomes.

References:

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