Management of Extrusive Luxated Central Incisor: A Case Report

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ABSTRACT

While dental trauma affects 11% of permanent teeth in children and young adults, one specific injury, extrusive luxation, stands out as being notably common. This type of injury occurs when a tooth is displaced axially and is held in place through gingival fibers. Central incisors, due to their position in the oral cavity, are prone to this type of injury. This presentation tackles this topic by delving into the experience of a 9-year-old female who suffered extrusive luxation on her central incisor.

EXTRUSIVE LUXATION

- Traumatic injury which causes tooth displacement in incisal direction
- Results in partial or complete separation of periodontal attachments
- Vascular and nerve supply rupture
- Palatal gingival fibers prevent tooth from being avulsed

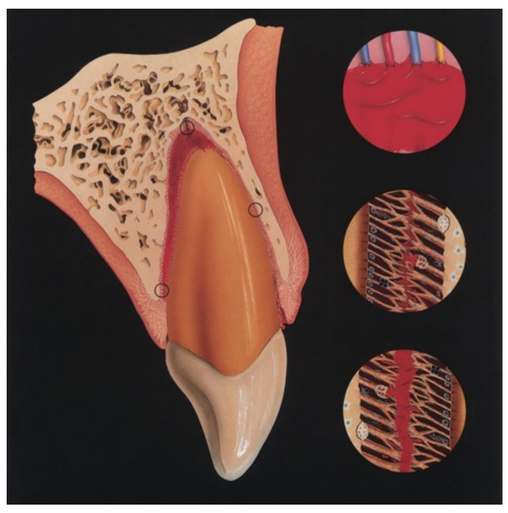

Figure 1

Figure 2

Radiographically, the extruded tooth will show increased apical periodontal space. Clinically, the tooth appears elongated in incisal direction

Figure 3

TREATMENT

According to the American Academy of Pediatric Dentistry (AAPD), after clinical and radiographic assessment the extruded avulsed tooth should be carefully repositioned through axial finger pressure. Local anesthetic is recommended as the repositioning process can cause discomfort for the patient. A flexible splint should be placed for two weeks to stabilize the tooth.

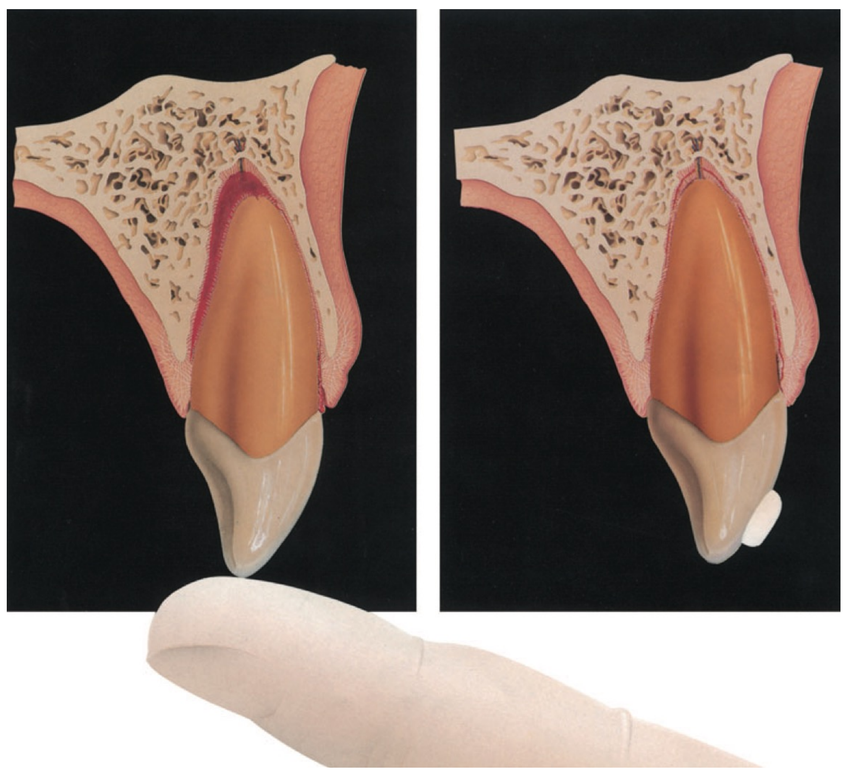

Figure 4

When fabricating a splint, studies show that rigid splints with wire and composite resin have a three times higher ankylosis rate compared to flexible splint [3]. The physiological movement provided by flexible splints is important for healing outcomes [2]. Fiber splints have been associated with highest frequency of favorable outcomes [3].

CASE REPORT

9-year-old female presents to emergency room on a Saturday night with the chief complaint of "I hit my head against my kitchen chair"

Medical history: Autism
Medications: None
Allergies: NKDA

Figure 5: Extraoral image taken night of incident

Frankl Scale: (- -)
Patient was uncooperative for extraoral and intraoral exam. Premedication with midazolam administered to patient by emergency department, however, it did not improve patient cooperation during exam and procedure.

Diagnosis:
- Tooth #7: Intruded
- Tooth #8: Extrusive luxated
- Tooth #9: Horizontal root fracture

Treatment:
- Clean site with saline
- Apply local anesthetic
- Gently re-insert tooth into socket
- Stabilize the tooth with flexible splint

Figure 6: Periapical radiograph taken in dental clinic, two days after the incident

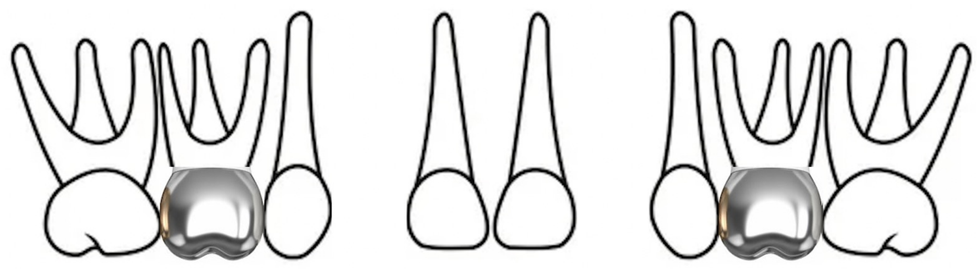

Figure 7: Above is a limited odontogram of the patient's maxillary arch. The flexible splint extended to second primary molar, as first primary molars had stainless steel crowns. Tooth #10 was partially erupted, so the splint was not attached to this tooth to avoid interference with eruption.

CONCLUSION

Early intervention is crucial for managing an extrusive luxated tooth. While prompt dental care can often salvage the tooth, achieving optimal outcomes can be significantly impacted by patient behavior. Anxiety or non-compliance with post-operative instructions can hinder the dentist's ability to effectively reposition the tooth and stabilize it with a splint, potentially compromising the treatment's success. In this instance, the patient's lack of compliance, evidenced by dislodging the splint with their tongue one day after the treatment, rendered splint retention unsuccessful. As healthcare providers, we strive to deliver optimal care; however, treatment efficacy is ultimately dependent on a patient's cooperation with the procedure itself along with compliance to post-operative instructions.

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