Management of Trauma Using Patient's Natural Crown As A Pontic: A Case Report

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Introduction

Traumatic dental injuries are common in the pediatric and adolescent population, with a high prevalence in permanent dentition during childhood and teenage years. Maxillary anterior teeth, particularly incisors, are most frequently affected due to their prominent position and susceptibility to falls, sports-related injuries, and interpersonal trauma. These injuries can result in significant functional, esthetic, and psychosocial consequences, highlighting the importance of timely diagnosis and management (1).

Current evidence-based guidelines from the American Academy of Pediatric Dentistry (AAPD) and the International Association of Dental Traumatology (IADT) provide structured approaches for the evaluation and management of traumatic dental injuries. These guidelines emphasize prompt intervention, preservation of pulp vitality when feasible, and restoration of esthetics and function through treatment modalities tailored to the type and severity of injury (2).

Case Report

Patient Background
Chief Complaint: Pain in the maxillary anterior region following physical trauma (punched by classmate)
History of Trauma: Teeth #8 and #9 were previously avulsed, replanted, and treated with root canal therapy in 2022 following a similar traumatic event
Medical History: Non-contributory
Medications: None
Allergies: Seasonal

Clinical Examination (Figure 1)
#8: Previously replanted by patient; displaced coronally and distally
Soft tissue: Inflamed gingiva and swollen upper lip
Symptoms: Significant pain on palpation, percussion, and mastication (#8)
Mild discomfort on #9

Radiographic Findings (Figure 2)
#8: Complete root fracture (non-restorable)
#9: Internal root resorption

Treatment Performed
Extraction of #8:
Atraumatic elevation and removal of root fragments using elevator, root tip picks, and forceps. Irrigation with saline and confirmation of hemostasis

Pontic Preparation:
Clinical crown of #8 trimmed and polished

Repositioning and Splinting:
Crown repositioned as a pontic. Flexible splint placed using 0.014 stainless steel wire and composite. Splint extended from #5 to #11 (lingual surfaces). Lingual placement selected due to anterior open bite and Class III occlusion

Postoperative Care:
Occlusion verified for comfort during function. Postoperative radiographs obtained (Figure 5). Patient discharged with follow-up scheduled

Follow-Up and Multidisciplinary Planning

2-week follow-up:
Patient asymptomatic. Soft tissue healing completed. Splint stable and functioning appropriately

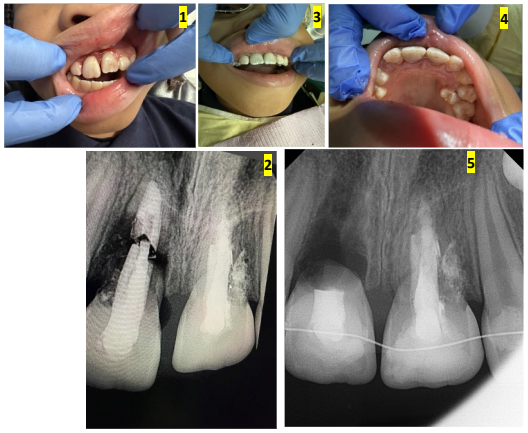
Further Evaluation:
CBCT ordered to assess internal resorption of #9. Referral to radiology, orthodontics, and oral surgery

Future Planning:
Timing of #9 extraction to be determined based on interdisciplinary evaluation. Interim esthetic management with pontic. Definitive treatment to be planned after growth completion

Discussion

Treatment Considerations
Option 1: Space Opening Approach
Extraction of #9
Orthodontic expansion and alignment
Possible surgical exposure and orthodontic traction of #6
Interim pontics for #8 and #9
Future implant placement after growth completion

Option 2: Space Closure Approach
Extraction of #9
Orthodontic space closure:
#7 and #10 → central incisor positions
#6 and #11 → lateral incisor positions
Premolars → canine positions
Prosthetic reshaping for optimal esthetics and function



Conclusion

Management of traumatic dental injuries in adolescents requires a multidisciplinary approach that balances esthetics, function, and long-term prognosis. Interim solutions, such as using the natural crown as a pontic, can provide immediate esthetic rehabilitation while allowing time for definitive treatment planning based on growth and development.

Referrence

1. American Academy of Pediatric Dentistry. Guideline on management of acute dental trauma. Pediatr Dent 2010;32(6):202-212.
2. Bourguignon C, Cohenca N, Lauridsen E, et al. International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations. Dent Traumatol 2020;36(4):314-330. https://doi.org/10.1111/ edt.12578.