

A CASE OF EXTRAORDINARY RESILIENCE OF THE HUMAN BODY AFTER A DENTAL TRAUMA

Rafaël Michiels, DDS, MSc*, Roeland De Moor, DDS, MSc, PhD

Dept. Restorative Dentistry & Endodontology, Dental School, Ghent University, Ghent, Belgium.



rafaël.michiels@ugent.be



INTRODUCTION

Dental trauma is fairly common amongst young children. One fourth of all school children have suffered a trauma to the permanent dentition.(1) The trauma can have adverse effects on the growth, function and aesthetics of the tooth. However, timely and proper management and follow-up will result in favourable outcomes in most dental traumas. In cases of severe trauma, follow-up will enable the practitioner to foresee future problems and deal with them appropriately.

CASE REPORT

A 9-year-old girl was referred for a second opinion after traumatic injury of the upper right central incisor. The tooth showed a complicated crown-root fracture with pulp involvement. (Fig. 1 & 2) Extraction was advised, followed by a spoon denture, until an implant could be placed at appropriate age. The prospect of early tooth loss and the forthcoming problems associated with this tooth loss, resulted in an endodontic referral for a second opinion.

She first came to our office, i.e. 1 month after trauma, without clinical complaints. The tooth was temporarily restored with Fuji IX GP Extra A1 (GC Europe, Belgium) by the referring dentist. (Fig. 3) An open apex and a vague apical radiolucency was seen on the peri-apical radiograph.(Fig. 4) All sensibility and clinical tests indicated a vital pulp without acute/persisting peri-apical pathology.(Table 1) Given the good outcome of the tests, it was decided not to perform root canal treatment at that time, but to conduct a systematic follow-up. A first follow-up visit 10 weeks later (i.e. 3 months after the initial trauma) showed the persisting vague apical reaction. (Fig. 5) There were no clinical symptoms and all sensibility and clinical tests were still normal.(Table 1) Further follow-up was advised. Six months after the initial trauma the tooth remained free of clinical symptoms and responded normally to all sensibility and clinical tests. (Table 1) Furthermore the vague apical reaction seemed to have disappeared.(Fig. 6) During this visit, a permanent coronal restoration with Herculite XRV A2 enamel (Kerr, USA) was made.

Fourteen months after the initial trauma, the patient came in for a new follow-up visit. She had suffered from a second trauma on the tooth 1 month before, while she was camping. After the second trauma, the tooth remained sensitive. The tooth responded normal to percussion and palpation, but only responded vaguely to cold. EPT indicated a delayed response. (Table 1) Radiographically there appeared to be a translucent area at the apex, but also some apexogenesis had occurred. (Fig. 7 & 8) The tooth was diagnosed as having a partial necrosis, supposedly caused by the second trauma. A root canal treatment with apexification with MTA was scheduled.

DISCUSSION

Vertical crown-root fractures with pulp involvement generally result in tooth extraction. (2) However, there have been 2 reported cases in which bonding of the coronal part have led to consolidation of the intra-alveolar part of the fracture.(3,4) In cases of vertical fractures of immature teeth, Andreasen mentions that these teeth might be amenable to orthodontic extrusion, since the fractures are usually incomplete, stopping at or slightly apical to the level of the alveolar crest. (2) The presented case confirms all of the above mentioned. Taking into account the clinical and radiographic situation, choosing for 'only follow-up' was confirmed as being a correct option. If further apexogenesis had been successful without the additional traumatic injury, root canal treatment would not have been indicated. However, children remain children and it is impossible to exclude future trauma as shown in this case.

CONCLUSION

Non surgical root canal treatment or extraction may be avoided in certain cases of vertical crown-root fractures with pulp involvement. Proper case selection and good follow-up are key factors contributing to the success of these cases.

References

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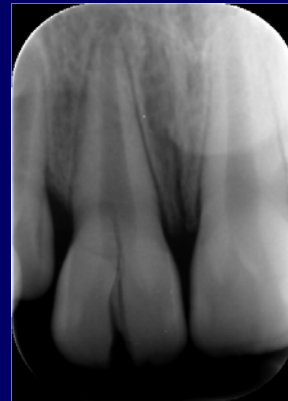


Fig. 1: Radiograph taken by the general dentist immediately after trauma

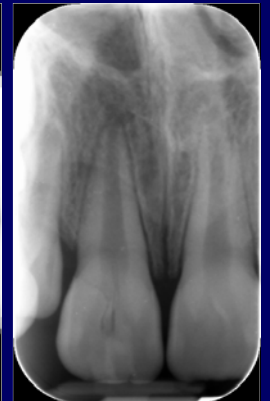


Fig. 2: Radiograph taken by the general dentist, 3 weeks after trauma



Fig. 3: Clinical image of the temporary restoration and the fracture line



Fig. 4: Radiograph 1 month after trauma at the first visit in our office

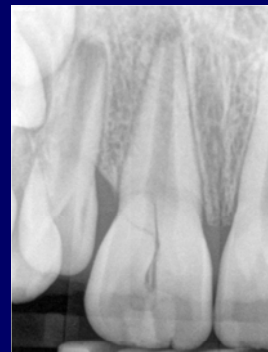


Fig. 5: Radiograph 3 months after trauma



Fig. 6: Radiograph 6 months after trauma

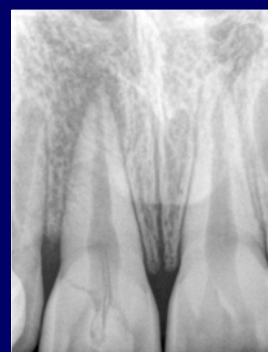


Fig. 7: Radiograph 14 months after trauma



Fig. 8: Radiograph 14 months after trauma

Tooth 1.1	1 month after trauma	3 months after trauma	6 months after trauma	14 months after trauma
Percussion	Negative	Negative	Negative	Negative
Palpation	Negative	Negative	Negative	Negative
Thermal (Cold)	++	+	+	+/-
Probing	Normal	Normal	Normal	Normal
EPT (0-32 scale)	3	7	6	27

Table 1.