



Managing sub-gingival fracture by multi-disciplinary approach: Endodontics, forced orthodontic extrusion and restoration

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Objective

Subgingivally fractured teeth pose a true therapeutic dilemma to the dental team and require interdisciplinary approach. Attempts to expose the fracture line by periodontal crown lengthening may compromise the functional root length and esthetics. Controlled orthodontic extrusion is an alternative way to expose the fracture line.

Clinical Case

A 20-year-old male was referred for extraction of subgingival fractured #15 and placement of an implant. The patient was assessed as high caries risk. The fracture line was 2 mm subgingival on its palatal surface. After clinical and radiographic examination and an analysis of factors, it was suggested that the tooth was not of poor prognosis and could be saved by means of endodontic treatment and orthodontic root extrusion to deliver adequate ferrule and safely construct a full coverage restoration.



Initial situation- occlusal view



Initial situation- palatal view



Initial x-ray



Endodontic treatment



Deep margin elevation (DME),
fiber post cementation and
core build up



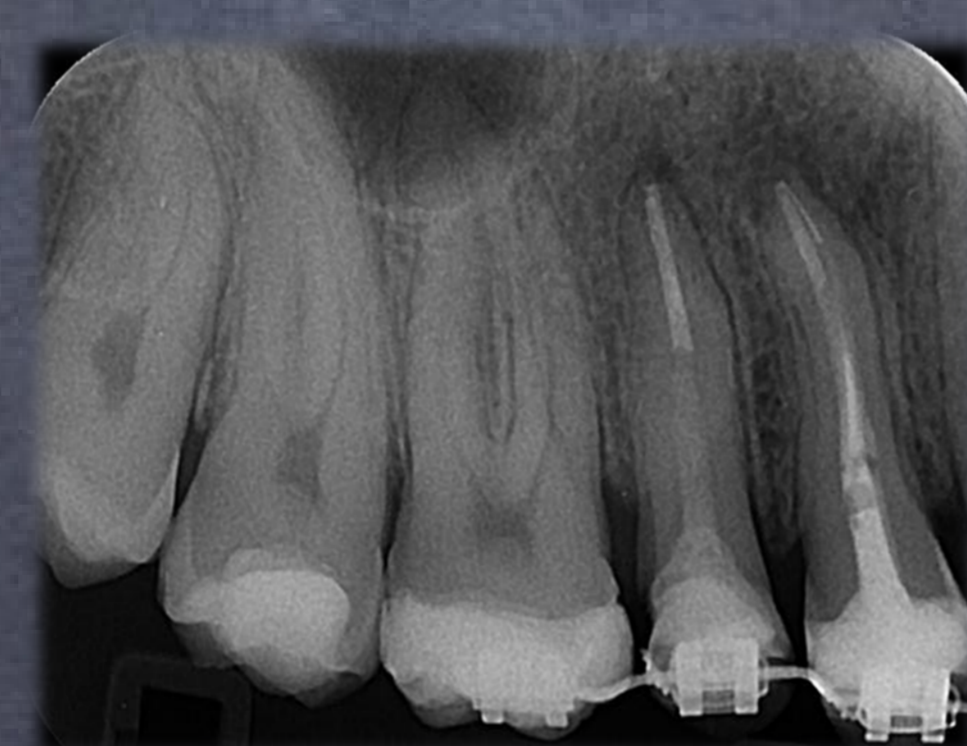
Final occlusal view before
orthodontic extrusion



Orthodontic brackets were bonded
to 3 adjacent anchoring teeth and on
the fractured tooth in a more
cervical position.



An extrusion of 4mm was
obtained in 2 months



Final x-ray after a
stabilization period
of 6 months



Buccal view of the preparation for
all ceramic crown- lithium
disilicate (Emax)



Palatal view of the preparation for
all ceramic crown



Buccal view of the final result



Palatal view of the final result



Occlusal view of the final result

Results

The patient was fully satisfied for saving his tooth and was motivated to change his oral hygiene and he moved to low caries risk with excellent oral hygiene.

Conclusions

Within the limits of the present clinical case, it can be concluded that orthodontic extrusion is a useful tool for the management of extensive subgingival fractures, especially in young patients.