

Apical Closure in a Necrotic Immature tooth by Revascularization therapy using Platelet-Rich Fibrin: a Case Report

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Abstract

Background and Aim: : Revascularization therapy by using Platelet-Rich Fibrin can be a suitable choice for revitalization of immature necrotic teeth as it improves root formation process, thickening of dentinal walls and apical closure.

Case Presentation: A 13-year-old girl with a history of trauma in tooth #21 and signs of pulp necrosis referred to the endodontics department of faculty of dentistry of Islamic Azad University. Intraoral radiograph showed immature root with open apex and periapical rarefaction. Access cavity was prepared and the root canal was irrigated with 20 ml of 1/25% sodium hypochlorite solution for 5 minutes and with normal saline. Equal proportions of Ciprofloxacin (tablet, 500mg), Metronidazole (tablet, 500mg) and Cefaclor (capsule, 500mg) were mixed and placed inside root canal for 4 weeks. Then, the canal was irrigated with 17% EDTA. 8 ml of patient's whole blood was centrifuged for preparation of PRF clot. PRF clot was placed inside the root canal up to CEJ level. MTA of 3mm thickness was placed directly over the PRF clot and tooth was temporarily restored. After 3 days, the tooth was double sealed with Glass Ionomer cement and composite resin. Clinical examinations at 1, 3 and 6 months after, revealed the resolution of periapical lesion, further root development and apical closure.

Conclusion: PRF clot is an ideal scaffold for regenerative endodontic therapy in necrotic immature teeth as it contains growth factors and can enhance cellular proliferation and differentiation of stem cells.

Keywords: *Immature necrotic teeth, Platelet-Rich Fibrin , Regenerative Endodontics*