Clinical success in rediscovering vitality through regenerative endodontic therapy

Mridula Goswami
Maulana Azad Institute of Dental Sciences, India

Statement of the Problem: Pulpal necrosis in an immature tooth with an open apex can have devastating consequences for paediatric dental patients and presents a distinctive challenge for the dentists. Earlier clinicians relied on traditional apexification procedures or the use of apical barriers to treat immature teeth with pulpal necrosis. The latest treatment modalities consist of regeneration-based approaches of tissue engineering.

Theoretical Orientation & Method: Regenerative endodontics is a promising development in the field of tissue engineering involving the diseased or necrotic pulp to be removed and attempted to be replaced with healthy pulp in order to revitalize the teeth. The concept involved in the procedures based on regenerative endodontics is that the platelets in the blood play an important role in hemostasis and wound healing. Dental stem cells and the pulpal connective tissue play a major role in these techniques. Periapical tissues around immature teeth have a rich blood supply and contain stem cells that have relative potential to regenerate in response to tissue injury. This presentation describes two Regenerative Endodontic Techniques i.e. Revascularization procedure and technique using platelet-rich fibrin (PRF). Through clinical case results, it describes the current concepts, treatment approaches and recent developments in the field of 'Regenerative Endodontics'.

Results: Treatment aims to allow continuation of root development and to regenerate the pulp inside the damaged tooth, preventing the need for routine endodontic treatment. Series of clinical case outcomes show healing of apical periodontitis, promotion of continued root development and restoration of the functional competence of pulpal tissue.

Conclusion & Significance: Continued research, knowledge and understanding can aid in handling scientific challenges of regenerating dental tissues and validating the success of these procedures as an alternative to apexification. With focused research, regeneration of pulp/dentine is likely to be a predictable clinical procedure than a mere vision.

Biography
Mridula Goswami is Professor & Head, Dept. of Pedodontics & Preventive Dentistry, Maulana Azad Institute of Dental Sciences, New Delhi, India. She has her passion in being with children and expertise in Paediatric Dentistry practice since last 18 years. She is involved in teaching undergraduate and postgraduate courses. Her academic career has many medals & awards. She has to her credit the “Fellowship of International College of Dentists”. her current interest topics are regenerative endodontics, trauma in children, special need children and lasers in pediatric dentistry.

mm_goswami@yahoo.com