MTA (mineral trioxide aggregate) pulpotomy for traumatic vital pulp exposures of permanent anterior teeth with immature roots

1. Assess patient and take a pre-operative radiograph.

2. Provide local anesthesia and use rubber dam isolation for teeth with exposed pulps.

3. Gently rinse the pulp exposure area and clean the dentin around the pulp exposure with Chlorhexidine solution (Peridex 0.12%) on a cotton pellet to remove surface biofilm or debris.

4. Enlarge the exposure and remove the superficial pulp tissue with a blunt ended sterile diamond bur in a high-speed handpiece with air/water coolant.

5. Suction and assess pulp health by observing the amount of bleeding from the amputation site. If the pulp still bleeds 5 min. following amputation, then re-enter the amputation site and extend the pulpotomy. Pulp tissue that is not inflamed will stop bleeding within 5 min and cessation of hemorrhage is the sign that the inflamed portion of the pulp has been excised. Do not use pressure to stop bleeding.

6. Once the pulp amputation site demonstrates no bleeding, use a ESPE mini-sponge soaked in Peridex solution to remove any blood clot from the pulp tissue. Alternatively use 3% NaOCl (Chlorox diluted 1:1 with sterile distilled water).

7. Suction off the excess Peridex solution or 3% NaOCl, leaving the residual 3% NaOCl, and place white MTA. Mix ProRoot MTA at a 3:1 powder/sterile distilled water ratio to the consistency of wet sand and gently apply to the surgical site and adjacent dentinal walls using an amalgam carrier and plugger.

8. Lightly condense the MTA into the preparation with an amalgam plugger or blunt end of a large paper point moistened with sterile distilled water. The MTA must be in intimate contact with the pulp with no blood clot remnants present.

9. Remove excess MTA from adjacent dentin with a mini-sponge or cotton pellet moistened with sterile distilled water; cover the MTA and surrounding dentin with resin-modified glass ionomer lining cement (Fuji I Liner LC) to prevent MTA displacement while sealing the surgical site.

10. Etch and bond a composite restoration to the fracture site.

11. Inform patient to call if there are symptoms (pain) or signs of infection (swelling, sinus tract or mobility).

12. Assess clinical and radiographic signs for pulp vitality and dentin bridge formation at 6 months, then as needed at routine recall.

This protocol is a collaboration of Drs. Kenny, Barrett, Haas, Casas and Ruby, (Univ of Alabama) summer 2009. Revised summer 2010.