

BARRIER USAGE WITH MTA

FEBRUARY 2006

IN ORDER TO PREVENT INCOMPLETE COMPACTION

Material presented is from the
ROOTS cybercommunity and
contribution from its membership.

www.rxroots.com

DISCUSSION GROUPS

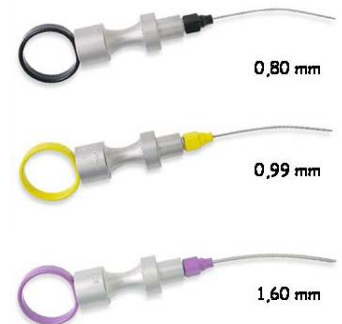
roots@ls.rxdentistry.com

of MTA in cases where there is a wide open apical aperture and extrusion is possible, it is advisable to place calcium sulphate hemi-hydrate 98% medical grade as an extra-radicular matrix, prior to the introduction of the MTA bolus. While this is not advocated by Dr. Torabinejad, it is an anecdotal finding of many users that the operator can obtain a closer adaptation of MTA to the canal walls, when an extra-radicular barrier is used. An open apex provides little if any resistance to the condensation of the MTA. As such, there is a tendency to condense it too cautiously. Moreover, it has been shown that the use of ultrasonics provides a radiographically denser MTA fill with fewer voids (Lawley et al. 2004). Again, experience with the use of barriers in ultra-sonics indicates a better adapted MTA plug than without the use of a barrier. Whether it is the creation of an exaggerated taper in the apical control zone or a wedged matrix in a gingival box, control of material displacement is the de facto desire of all dental procedures.

Calcium sulphate has a documented history of safe orthopaedic surgical use as a bone substitute for more than 100 years (Dreesman 1892). According to Sottosanti (1992) and Pecora et al. (1997), it has potential applications in dentistry in guided tissue regeneration and it is a bio-resorbable and bio-compatible barrier. It is resorbed within a range of 4-8 weeks (Pecora et al. 1997, Yoshikawa et al. 2002). Pecora et al. (2002) used it in through and through osseous defects and reported that it improved the clinical outcomes significantly. Mura-shima et al. (2002) found it to be effective in bone regeneration in both large osseous defects and through and through lesions. It has been reported to be osteoconductive and is applied easily and not expensive.

The calcium sulphate is introduced with a messing gun or the Dovgan carriers. Great care is taken to ensure that the calcium sulphate does not contaminate the walls of the canal as it can interfere with the close adaptation of MTA. Ideally, the tip of the delivery syringe should reach

beyond the apical aperture. Calcium sulphate is placed in small increments and the placement confirmed radiographically. It's radiopacity is similar to that of dentin and it sets within 1-2 minutes. The speed of the set of the calcium sulphate mandates that you clear the tip of residual material immediately as once set, it usually means you have to discard the tip.





CaSO4 Hemihydrate 98%

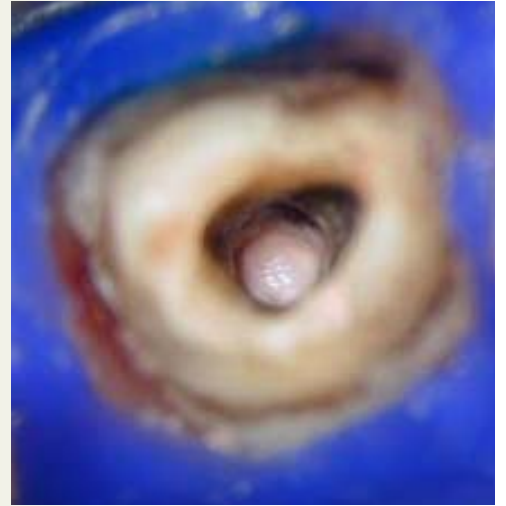


Placement demonstration

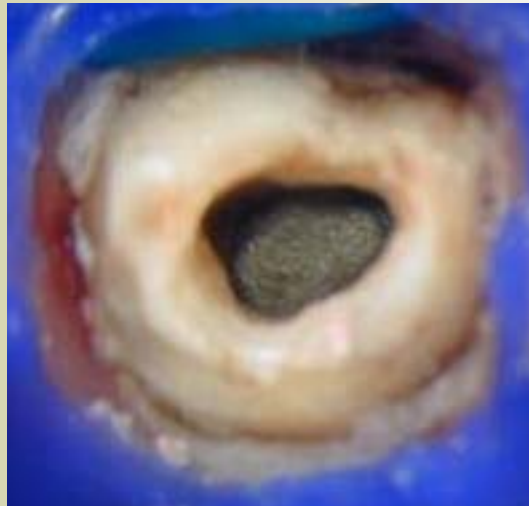




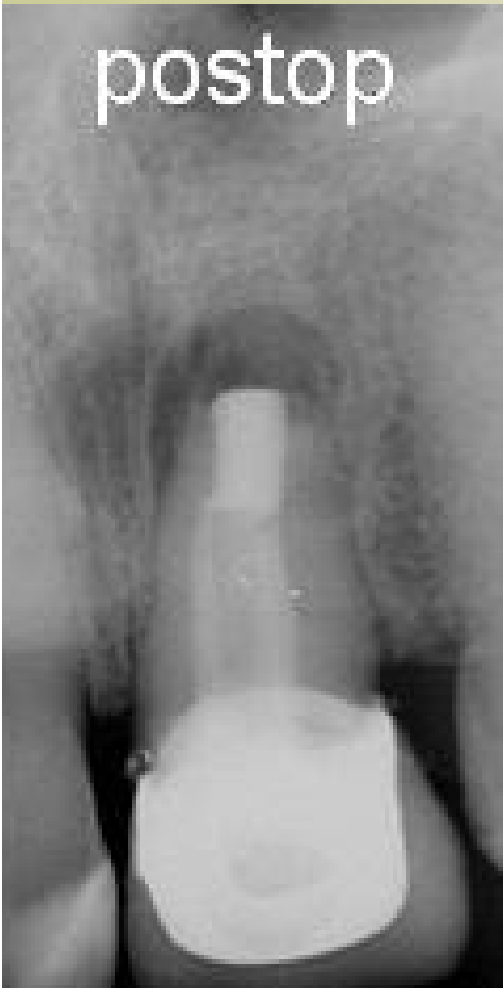
Apical Closure with $CaSO_4$



MTA



postop



1 year



One year followup after quartz fibre post and composite core buildup.. parulous has disappeared and healing of the chronic apical periodontitis is in evidence