Practical Restoration of the Root Filled Tooth - Reciprocation / Obturation / Post Preparation / Cementation / Core build ups – SL 22nd April 2016
2) Practical Goals – Irrigation / Pumping

• We are going to irrigate
• We are going to ‘dynamically pump’
Irrigation and ‘bug killing’ – dynamic pumping
Keep the irrigation fluid within the access cavity at all times
3) Practical Goals - Apical Verification / Gauging followed by heated 3D Obturation

• We are going to apically ‘verify’ and ‘gauge’
• We are going to obturate and back fill
• We are going to remove GP root fillings
4) Practical Goals - Re-RCT

- We are going to remove our GP RCTs with Reciproc
Re-Endodontics has got easier and much quicker (reciprocation and MB2)
Retreatment or radiographic monitoring in endodontics

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Treatment usually means removing Gutta Percha - do not be scared of the stuff it will not bite! – You need to get to the end of the canal very early in your technique and achieve patency
Endodontic revision that we can predict to work?

- The poorer the quality of the primary root filling in situ the easier and more predictable will be your re-treatment. You can then expect a 80% positive outcome (NG et al 2011) if you can achieve your objectives.
- Ideally you want to revise a short poorly obturated root fillings!

The ‘Toronto’ study
Endodontic Warm Vertical Obturation

(two components: apical down-pack followed by warm backfill – goal is the creation of a ‘void less’ root-filling ending within 2mm of radiographic apex (Ng et al 2008))
Use the correct GP points for the correct system you are using
Practical & technical knowledge
Ensure that your tapered GP points fit well within the root canals and have been apically gauged – the process can only work predictably if you have...
What do we need to do prior to Obturation?

- We need to confirm the apical gauge
- This involves using a hand K file passively (without any rotation) and working out what apical size fits tightly at the apical stop
- It improves the apical fit of the point to optimise future seal and reduce the risk of creating overfill
- This can be done ‘Early’ or ‘Late’
Early apical gauge

• After use of Protaper S1, S2 & SXs use a suitable sized K file to find out which size fits at the ideal WL
• Gentle index finger push vertical pressure – no twisting / rotation
• Usual size to start: buccals of upper molars and mesials of lower molars start with #20. Pal and Distals: #30. Single rooted teeth #35
Late apical gauge

- After use of Protaper S1, S2 & SXs and 04 / 06 Profiles use a suitably sized K file to confirm whether the size of your chosen finishing file binds firmly at the apex
- Gentle index finger push vertical pressure – no twisting / rotation
Verification of GP point to gauge plastic Maillefer ruler
Verification with plastic Maillefer ruler – GP points vary massively – cut level with scalpel blade then you have a gauged point
Direct or Indirect Gauging of Final GP point
Master GP point try-in and radiograph

- Select master GP point that matches both your chosen apical gauge and taper
- Verify the apical size of the point using either an apical gauge ruler or a gutta-cutter
- Now the apical end of your chosen GP point matches that of your master K-File (gauging instrument)
Master GP point try-in and radiograph

• Seat GP point within the root canal and check length of seat matches with your chosen reference point

• In multi-rooted teeth consider cutting off the points level with the chosen reference points

• Posteriorly, I am happy to take off the rubber dam off quickly to record the LCPA radiograph – then straight back on with the RD
GP try-in
– digital sensor -
Problem with the plastic blocks and teeth

• They melt
• Use lots of glide
• Accept you will melt the blocks
• Accept that you will leave GP core behind- we will show you how to retrieve / remove it
Apical Obturation

• Confirm that heating tip and a Buchanan plugger can reach to within 5mm of WL
• Mark this length (WL minus 5mm) with a silicone stopper
• Coat the master cone apically with a thin layer of sealer and insert to WL
• Set heating tip to 200°C to burn off excess GP from orifice
• With heat ‘on’ push to stop in one slow movement, stop heat and maintain apical pressure for 10 seconds
Select a correct ‘sized’ and ‘tapered’ GP point
Work out which plugger can get down to within 4mm from apex
The Vertical Heated Down-pack
Apical Obturation – Continuous wave vertical condensation

• Confirm that chosen (normally size 8) heating tip and a Buchanan plugger can reach to within 5mm of WL
• Mark this length (WL minus 5mm) with a silicone stopper
• Coat the master cone apically with a thin layer of sealer and insert to WL
• Set heating tip to 200°C to burn off excess GP from orifice (horizontal)
• With heat ‘on’ push to stop in one slow movement, stop heat and maintain apical pressure for 10 seconds
Apical Obturation

- Activate heating tip to release plugger shearing off the apical portion
- Vertically condense the GP with Buchanan plugger to pack and condense the apical portion
- A radiograph can be taken to check density and position of apical GP
Apical Obturation – Schilder’s incremental vertical condensation

- Confirm that likely final heating tip (08) and a Buchanan plugger can reach to within 5mm of WL
- Mark this length (WL minus 5mm) with a silicone stopper
- Coat the master cone apically with a thin layer of sealer and insert to WL
- Start with tip of 12 and then move down sizes 10, 8 (&6) at 200°C until one tip gets to within 5mm of WL
- With last tip stop heat and maintain apical pressure for 10 seconds
Apical Obturation

• Activate heating tip to release plugger shearing off the apical portion
• Vertically condense the GP with Buchanan plugger to pack and condense the apical portion
• A radiograph can be taken to check density and position of apical GP
The Vertical Heated Down-pack and warm back-fill
Practical & technical knowledge
Coronal backfill obturation

- Set the GP extruder to 200°C.
- Insert the needle to length, hold for 3 seconds and then express molten GP into the canal in increments of 3mm.
- Condense the GP with the cold Buchanan pluggers.
- Repeat until 3mm short of canal orifice.
Coronal backfill obturation

- Set the GP backfill extruder to 200°C.
- Insert the needle to length, hold for 3 seconds and then express molten GP into the canal in increments of 3mm.
- Condense the GP with the cold Buchanan pluggers
- Repeat until 3mm short of canal orifice
Now please go and do it
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