

# Problem-solving endodontics

**John Rhodes** presents an interactive practical and problem-solving solution in endodontics. This month, he looks at gutta percha retreatment in a mandibular molar

When carrying out gutta percha retreatment, it is important to remove the existing root filling material efficiently so that the canals can be renegotiated, tapered and disinfected. The earlier disinfection of the entire root canal system starts the better. Useful instruments include:

#### Gates Glidden burs

To keep dentine removal conservative and avoid strip perforation, use small sizes (two or three) and don't go too deep. The head of the Gates Glidden is brushed against the bulkiest wall of the root to create straight-line access.

#### Hedstroem files

These can be used to engage gutta percha cones and retrieve them from the root canal intact.

#### Rotary or reciprocating instrument

Once a glide path has been established through the existing root filling material and to the working length (zero reading on apex locator), rotary or reciprocating instruments can be used safely, efficiently and predictably to taper the root canal. In this case, Waveone Gold (Dentsply Sirona) primary and medium instruments were used to taper the root canals.

#### Micro-opener

Used for retrieving small tags of gutta percha from an isthmus or lateral groove in the canal and for scouting the pulp floor for canal orifices.

#### Solvent

A solvent such as chloroform is useful for removing gutta percha and sealer that remains in lateral anatomy after mechanical instrumentation. It should be used as a final stage and in small amounts to avoid creating a sludge of gutta percha that coats the prepared root canal wall. Once the solvent has dissolved, the gutta percha can be absorbed by paper points; a technique called 'wicking'.

### Step-by-step management

Figure 1 shows a mandibular molar in which root canal treatment has been attempted. The canals are all under-prepared, under-filled and short. Technical difficulties for retreatment in this case include:

- Removing the composite core material from the pulp floor without risking perforation
- Removing gutta percha root filling material conservatively to avoid strip perforation on the inner curve of the mesial roots
- Re-establishing working length and patency when the canals may have been blocked with debris during the previous attempt at root treatment.

Under local anaesthetic and after application of rubber dam,

an access cavity was cut through the composite restoration with a diamond bur, the lingual wall was retained to create a well for irrigant during preparation. Leaving a layer of composite over the pulp floor prevented any risk of perforation. This material was removed under the microscope with a Start-X 3 ultrasonic tip and LN bur (both Dentsply Sirona). Gutta percha was rapidly removed from the coronal part of the root canals using a Gates Glidden bur number two. The working length was estimated with a size 10 Ready Steel Flexofile (Dentsply Sirona) and apex locator. The mesiolingual canal was not patent and a diagnostic radiograph was therefore exposed using size 20 Flexofiles in the root canals.

The diagnostic radiograph in Figure 2 shows the file is slightly short in the mesiolingual canal. The gutta percha will be removed during tapering.

A reproducible glide path was established with the size 10 instrument to the full working length using three to four low amplitude filing actions. The canals could now be rapidly tapered with Waveone Gold nickel titanium instruments, before irrigating and obturating.

The root canal system could now be disinfected with a combination of 3% sodium hypochlorite and EDTA activated with ultrasonics and the Endoactivator (Dentsply Sirona). Finally, the case was obturated with vertically compacted gutta percha and the access completely sealed with composite. The referring dentist would restore the tooth with a full coverage restoration. ■



Figure 1: The canals of this mandibular molar are all under-prepared, under-filled and short

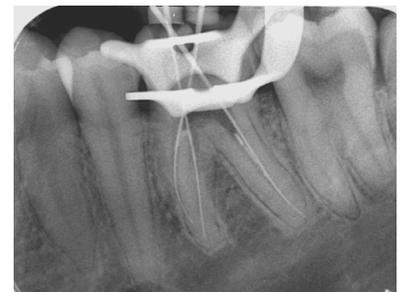


Figure 2: Diagnostic radiograph showing a file that is short in the mesiolingual canal



Figure 3: The completed case, ready for restoration by the referring dentist

### WATCH THE VIDEO

To see how these steps are applied, visit [www.youtube.com/watch?v=bdqOasgORKY](http://www.youtube.com/watch?v=bdqOasgORKY) or search Youtube for 'Endodontic Practice gutta percha retreatment'. The author is happy to answer questions directly via Youtube or Twitter @johnrhodesendo.

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