RICHMOND
ENDODONTIC CENTRE

BROKEN PROMISES

DEC 2019

A 20/04 rotary file was separated in the MB canal of this mandibular molar. Which came first? Did the rotary file separate because a hand file fragment was blocking the canal, or did the hand file break in an attempt to by-pass the rotary remnant? The answer to that question is not nearly as important as, why did the initial file fracture? In this case, I suspect cyclic fatigue to be the culprit as separation of the rotary file was at the crux of a pronounced mid-root curve.

A healthy dose of low expectations and a low dose of blandishment are worthwhile when reviewing endodontic options for separation cases. I had to deliberately temper the naïve pre-op expectation the file or files would readily be removed because of a 'special' device only endodontists own. Instead, we embarked on this endeavour with the full expectation patency would not be achieved in the MB canal. A silver lining in the pre-op stress cloud was that the initial pulp status was vital. Thus, the necessity of endodontic microsurgery was not a foregone conclusion if patency remained elusive despite the 'special' device I was sure to use.

The likelihood of a broken file in a canal increases exponentially after the first fragment separates. Attempting to remove or by-pass a separated instrument is a high-risk endeavour. In this case, I suspect the rotary file broke first and the hand file 'became one' with the canal in an attempt to by-pass the bit of NiTi. Rather than add to the collection of base metals in this canal, I troughed a path from the chamber floor to the 'incident area' with a white Munce bur.

The operating microscope allowed visualisation of the two file fragments in the canal. A variety of high and slow speed burs with sharp, narrow tips, as well as a pink Munce bur were used to trough just lingual to the fragments. Small ultrasonic tips were then used to free the coronal portion of the instruments from contact with the canal walls. An anti-clockwise motion encourages unwinding of the files as occasional contact with the file fragment is inevitable. Fortunately, the hand file unwound quickly and bounced out of the canal. The point of contact for the coronal portion of the instrument fragments was too apical to warrant the use of any file removing system I have in my arsenal.

With the hand file removed further troughing with high and slow speed burs continued both buccal and lingual to the NiTi fragment. Eventually, a small ultrasonic tip was placed in these troughs and stroked towards the instrument with an anti-clockwise contact with the file as it was moved from lingual to buccal and vice versa. NiTi files are notoriously difficult to remove as they have a greater taper than hand files and hence are more prone to taper lock. Also, they fracture easily when activated with ultrasonics. It was a surprise that I was eventually able to slide a small hand file along its lingual surface and gain patency. As I worked sequentially up with the hand files the last fragment of the rotary file did eventually come out with active irrigation. With this done, I was able to complete the instrumentation of the MB canal and then address the other canals as well and finish the case in one appointment.

For fear of breaking a promise, I would never suggest that such a result can be expected in any separated file case. Next for this person is an in-depth evaluation of the resorptive defect on the mesial of the 37. Both the patient and I felt this new dental adventure is best left for 2020 and by that, I do not mean hindsight hopefully.

Regards,

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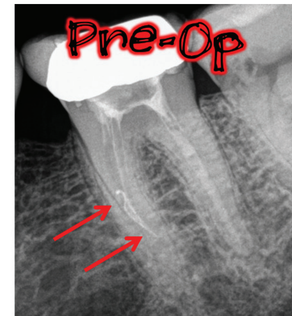

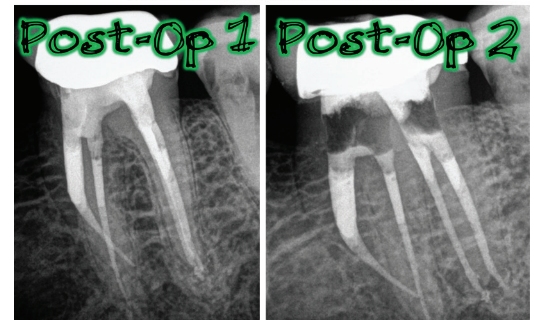

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Extended hours are also available

Let's take the fight against oral cancer to the mountains!

I am looking for a few Cancer Fighting Crazy Canucks or other Batty Speed Demons to join me in the 2020 Over The Hill Downhill on SilverStar Mountain. Let's ski as fast as a bat out of hell whilst taking a big bite out of oral cancer.