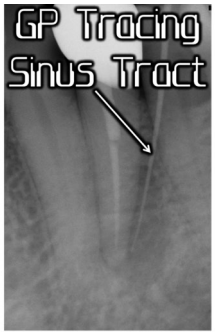
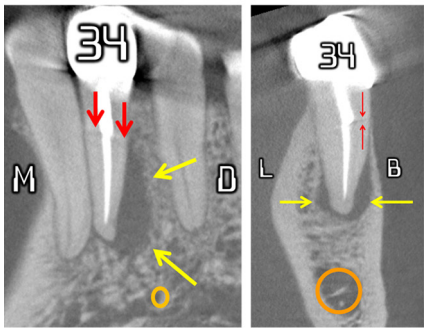
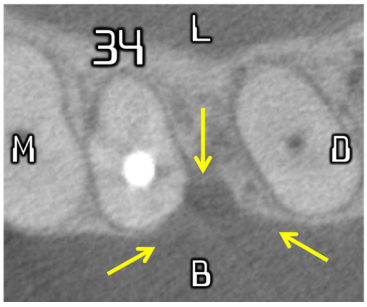
RICHMOND
ENDODONTIC CENTRE

CUI BONO CT

JUL
2020







This tooth is particularly interesting as there are no narrow probing defects or mobility. Is a lateral canal responsible for the atypical appearance of the radiolucency extending, from the apex, three quarters the length of the root? One hates to unnecessarily condemn a structurally-sound tooth to 'forceps and sunshine', yet it is wanton to flog a dead horse.

There is no shortage of hullabaloo regarding the use of cone beam computed tomography (CBCT) in endodontics. Assuredly, it is the gold standard for diagnostic imaging. Some purport a CBCT scan before endodontic treatment warrants a fixed Procrustean rule to that effect. Such dogma oversimplifies the diagnostic process. Instead, consider the CBCT acronym as standing for Cui Bono CT. The patient is the one exposed to radiation and ultimately must be the 'who' that benefits. A small field CBCT exposes a person to nearly 30 times the µSv of a digital periapical radiograph (G, Imaging Sci Dent, 2013). Thus, CBCT images are best limited to complex endodontic cases where its benefits counterbalance the higher cost and radiation exposure.

If a fracture is large enough, a man on a galloping horse could spot it from fifty yards. Yet catastrophic fractures, that condemn a tooth to a hopeless prognosis, may be so fine that they easily elude even the most advanced CBCT machines. Fortunately, this horizontal fracture was identifiable on the CBCT images. To avoid a false positive diagnosis the fracture should be visible in two orthogonal planes. Both the coronal and sagittal images capture the fracture (red arrows). I suspect, but cannot verify the presence of a vertical root fracture extending apically from the base of the post. Flashing from the metal post prevents reliable confirmation of the fracture in the axial slices. Below are some additional radiographic features that support the diagnosis of a fracture:

- Metal post angled towards the buccal wall apically and not coincident with the vertical axis of the root
- Minimal loss of bone proximal to the apex, yet considerable bone loss for most the of the length of the root along its DB aspect
- Coronal dehiscence of the cortical plate rather than an apical fenestration

Clinically, the gentleman has frank signs of wear on all of his teeth; he is an admitted nocturnal grinder who is a stranger to night guards. The canine is tilted both to the mesial and buccal; as such, it provides no relief for the 34 from lateral excursion movements. The excess occlusal load 34 has endured, for decades, could explain why it is more heavily restored than its neighbours. The position and stiffness of the metal post may indeed be red herrings. The goose may have already been cooked for this tooth prior to the selection and cementation of the post.

This gentleman is highly motivated to save his tooth; he is willing to undergo endodontic and restorative treatment even if the prognosis for success is low. Regardless of the skill of the practitioner, any endeavours to save this tooth have a slim to nil chance of long-term stability. Further investment of time and money in the 34 is not advisable when more predictable and reliable restorative treatment options abound. In conclusion, I suspect the occlusion is the causative agent for the fracture rather than the restorative treatment. If the occlusion is not addressed future restorative treatment will most likely fail prematurely.

Regards,

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