

Limited To Endodontics Newsletter

LTE

Limited To
Endodontics

A Practice Of Endodontic Specialists

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Treatment Considerations In Endodontics, Part 1

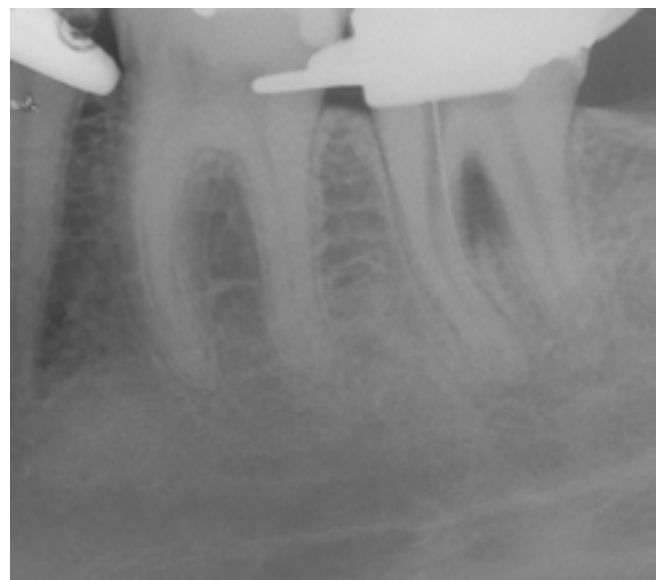
The success of endodontic treatment hinges on the prevention of the spread of microorganisms or their toxins from the root canal space into the periradicular tissues. Residual microorganisms are capable of existing within the root canal system for years after treatment in multispecies biofilms.¹ Despite nutrient deprivation, a hostile environment and the presence of a functioning host immune system, these organisms can result in the persistence of disease and the eventual loss of the tooth.

As practitioners, we must remain vigilant in our efforts to eliminate these irritants from the root canal space and prevent their egress into the surrounding bone. While some teeth seem easy to treat, they are often not because of complex anatomical spaces that are difficult to negotiate or are not thought of as even being present. Other teeth are simply challenging from initial inspection due to a variety of circumstances.

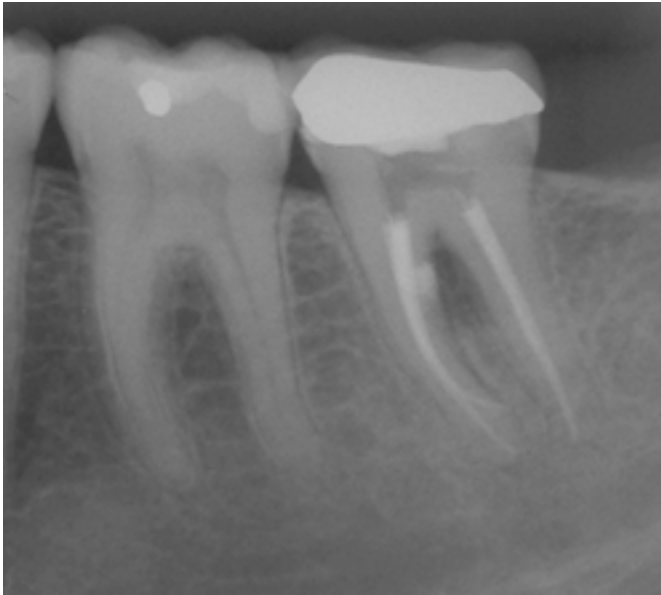
Many advertisements and technique oriented publications aggressively promote products that supposedly instrument or obturate the canal space better and/or faster than their competition with little or no evidence based research. Success in endodontics is usually not product dependent but relies on using proper irrigating techniques, locating and instrumenting canals to their proper apical and dimensional extent, creating a sufficient apical and lateral seal and placing the correct permanent restoration promptly.

That being said, we would like to share with you some of the challenging teeth we have treated at Limited To Endodontics.

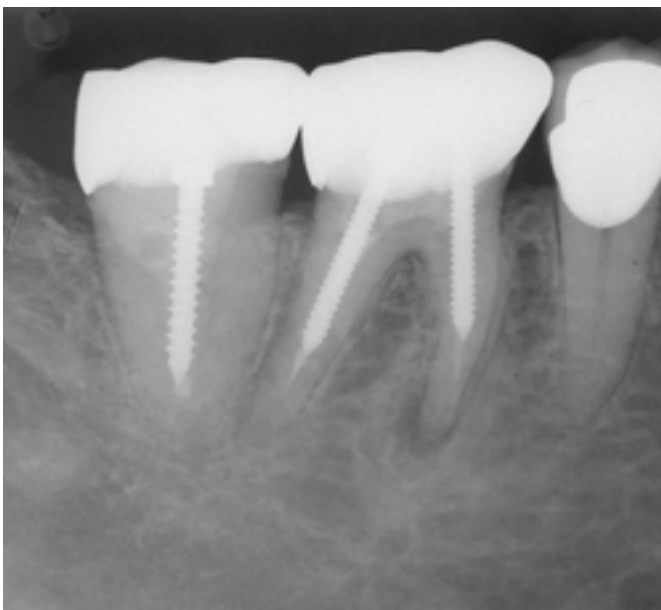
Case #1 involved a 35 year old female who presented with a sinus tract opposite tooth #18 and a history of previous swelling and pain. The initial radiograph indicated the presence of bone loss in the furcation. Periodontal probing was within normal limits. A file placed into the mesiolingual canal showed the instrument exiting into the furcation a few millimeters below the orifice as seen in the lower right radiograph.



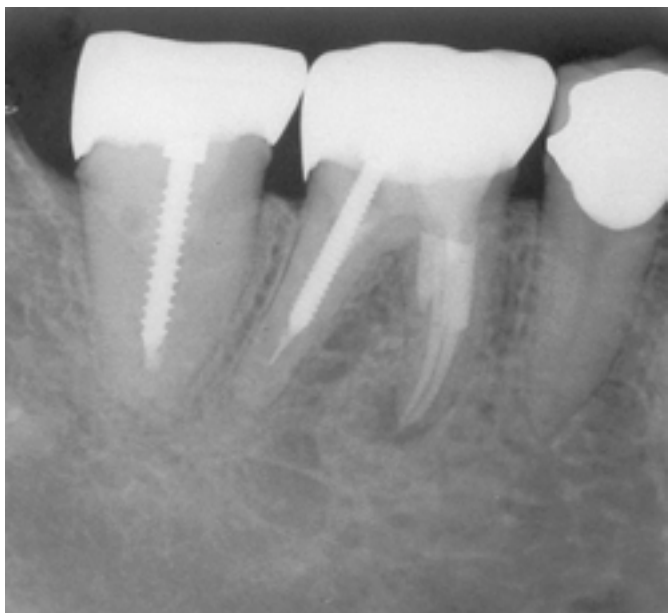
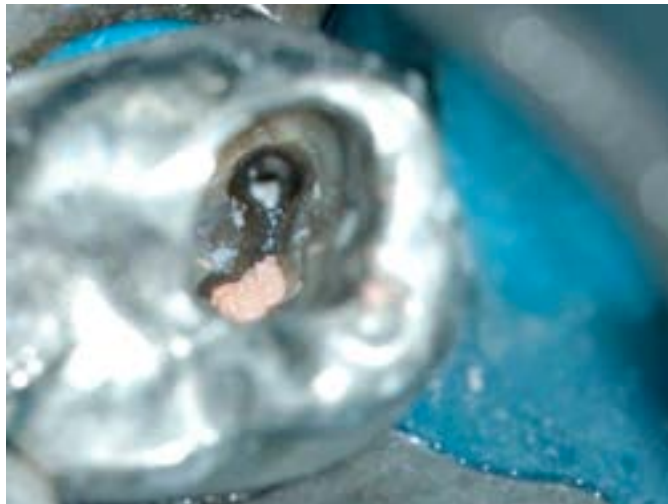
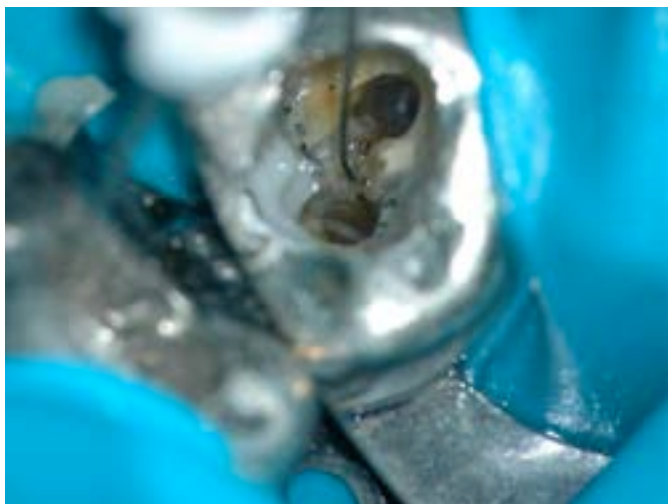
The instrument was redirected into the canal and bleeding was observed coming from an area of perforating resorption a few millimeters below the orifice. The canals were medicated with calcium hydroxide. At the subsequent appointment the sinus tract had resolved and no further hemorrhage was observed from within the ML canal. The canals were obturated with gutta percha under the surgical operating microscope with care being taken to not extrude the filling material through the resorption into the furcation. An alternative approach would be to have placed MTA before obturating the canals. The lower left radiograph shows the completed case and the lower right radiograph shows a sixteen month recall with resolution of the furcation bone.



Case #2 involved a 48 year old female who presented with tooth #30 that was previously treated in Japan. Symptoms involved pain and percussion sensitivity. Each root had a large post and a surgical approach was contemplated. Since the mesial root had an area, it was decided to see if that post could be removed and if so, surgery might be avoided. The photo below shows the post that was removed from the MB canal with the Ruddle post removing tap. The next challenge would be to negotiate the canals to the apical terminus. Unfortunately the ML canal was ledged and could be instrumented only one-third of the way down.



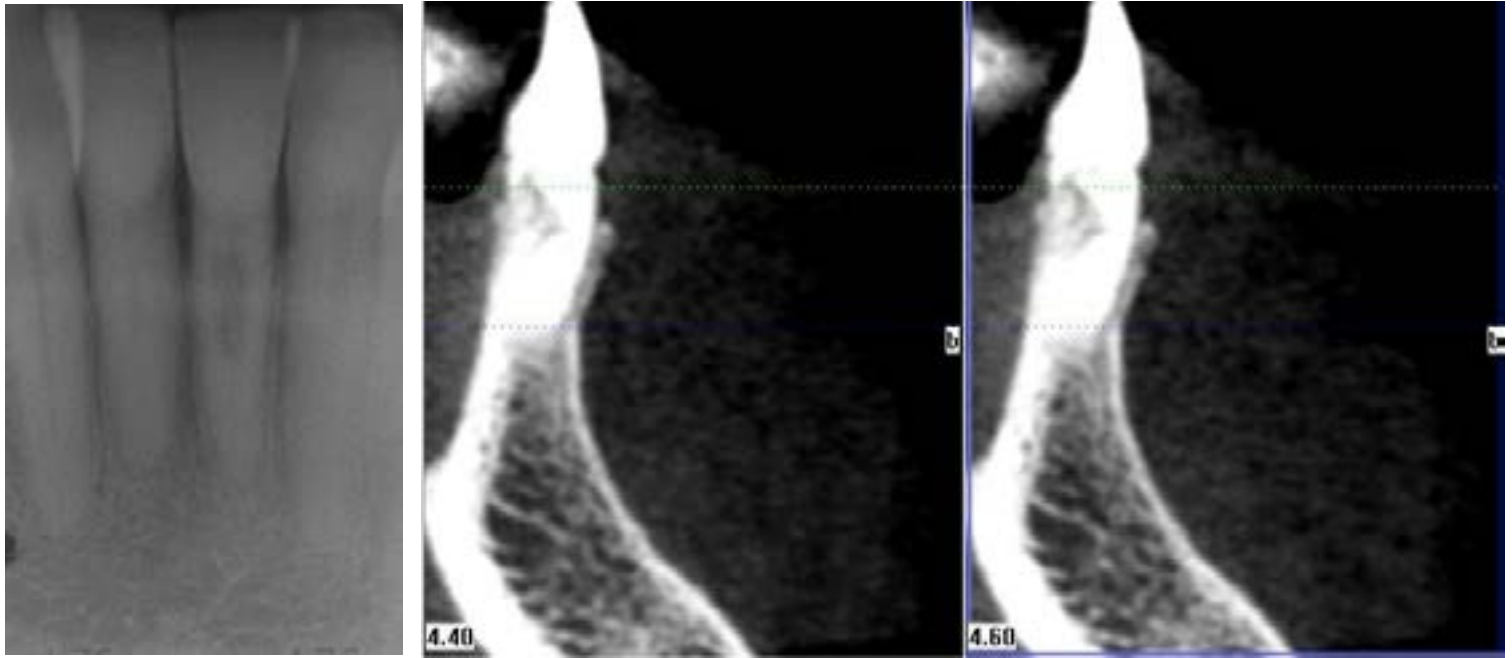
However, the isthmus that often exists between the mesial canals in lower molars was able to be located and negotiated to the apex. Rather than having a separate apical foramen, it most likely joined the ML before that point. Numerous articles have been published on locating the isthmus and instrumenting the mid-mesial canal in endodontic therapy. Not cleaning this space will result in a certain percentage of teeth that will ultimately fail and require extraction or apical surgery. The photograph on the lower left shows a file entering the isthmus and the lower right shows gutta percha filling the MB canal and sealer entering the mid-mesial through a lateral connection at mid-root. The lower left radiograph shows the completed procedure while the lower right is a two and one half year recall.



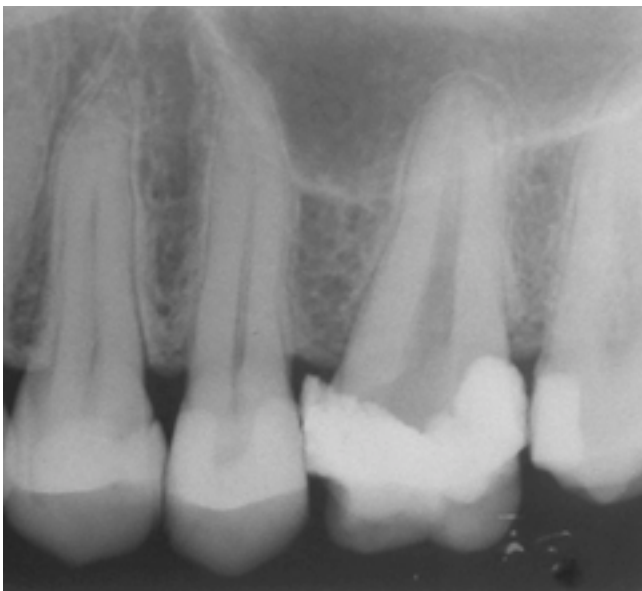
Case #3 involved a 58 year old female who had root resorption discovered during a routine full mouth series.

Although she was experiencing no symptoms, a watch and wait approach in these cases may be imprudent as continued expansion of the lesion could lead to tooth loss. However, there is no successful treatment for external resorption in this location. It was decided to take a cone beam scan to aid in the diagnosis. One study showed that 70% of cone-beam images provided additional clinically relevant information not found in conventional periapical radiographs.²

The lower left radiograph shows that it is difficult to determine whether the resorption is internal or external. The scan indicates that the resorption is external and it was decided that no treatment was indicated. Treatment would have required endodontics, crown lengthening and external repair of the defect.



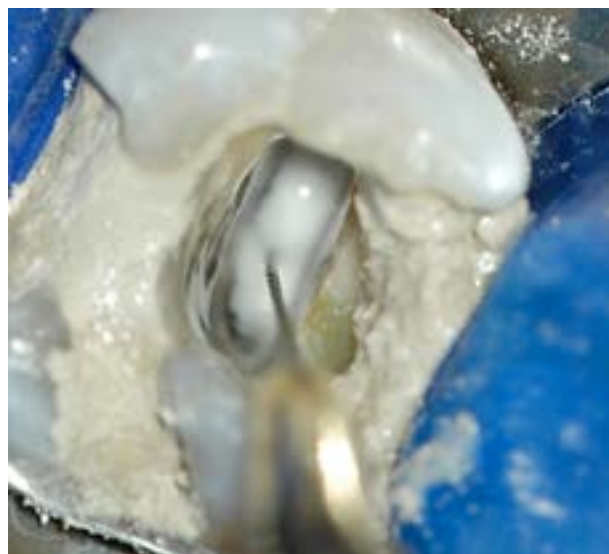
Case #4 involved a 37 year old female that had a root canal procedure started by their general dentist. Although the canal anatomy seemed simple upon initial radiographic inspection, the canal was large and filled with pulp and pulp stones that were not easily removed with conventional instrumentation. Without a microscope, it was difficult to determine if there was more than one canal present. The lower radiograph was the tooth as presented and the photograph shows the tissue still present. The tissue was removed with ultrasonic instrumentation along with a braiding and extracting technique with hedstrom files.



The lower left image shows the tissue that was removed while the lower right image shows the remaining debris still present. After the remaining gross tissue was removed, microscopic visualization still showed



debris packed at the apex, lower left photo. Using passive ultrasonic irrigation, lower right photo, the



remaining canal was now free of debris, lower left, and the tooth was obturated.



References

1. Carr GB, Schwartz RS, Schaudinn C, Gorur A, Costerton JW. Ultrastructural examination of failed molar retreatment with secondary apical periodontitis : An examination of endodontic biofilms in an endodontic retreatment failure. J Endod. 2009;35:1303-1309.
2. Lofthag-Hansen S, Huumonen S, Grondahl K, Grondahl HG. Limited cone-beam CT and intraoral radiography for the diagnosis of periapical pathology. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007;103:114-119.

The logo consists of the letters 'LTE' in a white, serif font, centered within a solid black square.

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