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Case Report

Management of a Tooth with a Large Radiolucency - Case Report

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Abstract

Presentation of this treatment shows what is possible with endodontic treatment/retreatment as far as osseous healing of large per-radicular lucencies. This case also shows the benefit of multi-visit endodontic retreatment. The case is made to have a titrated treatment and its usefulness when dealing with teeth exhibiting radio-lucencies that are beyond those that are routinely seen in the dental/endodontic practice. It allows for re-evaluation of the results (or lack thereof) during the course of treatment.

Keywords: Tooth; Radiolucency; Lucencies

Introduction

A healthy 30 year old female presented to our office on December 13, 2012 after her mother, a previous patient, insisted that she obtains a second opinion prior to having her tooth in the left mandibular molar area extracted as she was advised by her general dentist. She was referred to an oral surgeon for an extraction, bone graft and implant, with an implant supported crown as the final restoration.

Clinical and Radiographic Examination

Clinical Findings and Dental History

The patient had a crown on tooth #19 which according to the patient was placed five years prior. She had composite and amalgam restorations on her remaining maxillary and mandibular premolar and molar teeth in the quadrant the patient did not have any intra-oral swelling but had been experiencing dull pain on the tooth for some time but has been too busy to have it evaluated earlier. Both teeth #18 and #20 responded normally to cold sensitivity testing. Probing depths were within normal limits measuring 2-3mm as probed at 8 different sites around the tooth, using the "walking the probe technique".

Radiographic Findings

Peri-apical, and bitewing radiographs pointed to a large "unilocular" radiolucency in the furcation area of tooth #19. The radiolucency extended almost the entire length of the roots from the furcal aspect. Tooth #19 had previous root canal treatment (approximately 10 years prior, according to the patient). The tooth had a screw type post in the distal root, a core, and a PFM crown, with the apical resorption apparent in the mesial apex, and mesial aspect of the distal root.

Medical History

Non-contributory.

Diagnosis [1]

- Pulpal: Pulpless—Previously treated root canal
- Periapical: Symptomatic peri-radicular periodontitis

Differential Diagnosis

- Lesion of Endodontic Origin
- PA Cyst
- PA Granuloma
- Other

Treatment Plan Options

- Initiate retreatment, and based on short term response, determine proximate course of action: i.e. continue retreatment protocol or send for extraction/implant.
- Refer for extraction

Treatment

Patient wanted to think about her treatment options and advise us of her decision. Six weeks after the initial consultation, the patient finally decided that she would give retreatment a try.

Re-treatment was initiated by isolating with a rubber dam [2], and accessing the crown, removing the core and the screw post from the distal canal, as well as the removal of gutta percha from all canals. It could be seen that there was a viscous material resembling pus in close contact to the apical gutta percha. The canals and pulp chamber were flushed with copious amounts of full- strength sodium hypochlorite [3]. During drying of the canals, dark material adhered to the paper points (see photo below)! The canals were then irrigated, dried and dressed in calcium hydroxide [4]. The tooth was temporized with temporary material. The patient was seen again the two following weeks to continue cleaning the canals of its contents, and again re-medicated with calcium hydroxide for a period of 10 weeks, initially, and again for six weeks.

Patient presented for her next appointment, almost four months after initiation of retreatment. There was a slight improvement of the furcal radiolucency, however; it was less than what was expected. At this appointment, after further cleaning, a perforation was noted in the mesial aspect of the distal root, which was repaired with MTA [5] internally. Patient was seen at six weeks and three months after to monitor the healing and osseous repair.

We were now able to notice clear ossous regeneration in the furcation area at the next visit, which was eight months after the initiation of the retreatment process. Calcium hydroxide was again placed in the mesial canals for three more months and completion of the treatment was planned for the next visit.

It was now one year since the initiation of the retreatment. The healing of the furcal bone was phenomenal. Both operator and the patient were very pleased with the results. The mesial roots were obturated with gutta percha, and an amalgam core build up were placed.

Follow Up

Follow ups continued at three months, six months, and then annually. At the two year follow up, one can see an almost complete resolution of the furcation radiolucency. This was accomplished without any surgery, nor grafts. Patient was and continues to be completely asymptomatic and is able to use the tooth in full function. Final Radiograph is a five year Follow up radiograph.

Discussion

This case presentation presents a tooth exhibiting a large peri-radicular radiolucency associated with failing root canal treatment. Treatment of teeth with large radiolucencies requires more than the garden variety retreatment or surgery. It requires a proper diagnosis, time, patience (from both clinician and patient), proper follow up, sound restorative treatment, readiness to abort treatment and seek alternative treatments if there is no response to the given treatment, and, when needed, involvement of other specialists.

In this instant case, the 30 year-old female patient was slated to go through an extraction, and extensive bone and soft tissue grafting surgery with the loss of her natural tooth. And, although neither the general dentist nor the oral surgeon can be faulted for the treatment that was about to be rendered, publication of these types of treatment results allow for the consideration of the possibility of retaining these teeth with long term endodontic treatment.

The titrated type treatment which was rendered, allowed us to "throw in the towel" if the signs and symptoms were not improved. At such time, the option of extraction, grafting and implant placement would be considered as the best option! By attempting to treat the radiolucency and save the tooth, the implant option is never taken "off the table".

This case also shows the capacity of the body to heal if and when the offending insults are removed. It shows the result of patience and taking the time to perform the most conservative dental treatment possible. It would have been easier (for the endodontist) to "just extract" and after surgery and grafting, to place an implant and implant supported crown. It was definitely more time consuming for this clinician, but also much more rewarding. The treatment rendered was much less invasive, much less expensive, and was associated with less morbidity for the patient. Also, are there any guarantees that the extraction, bone and soft tissue grafting, and the implants would not have their own complications? [6].

Figure 1

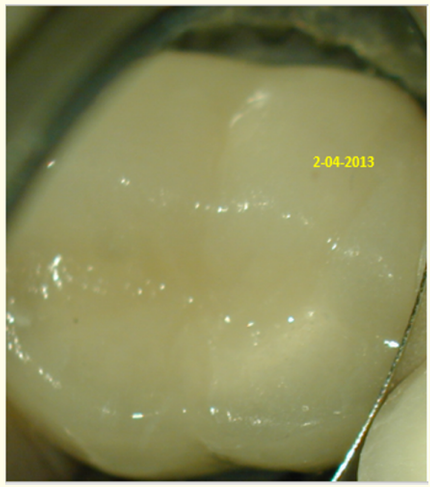

Figure 2

Figure 3

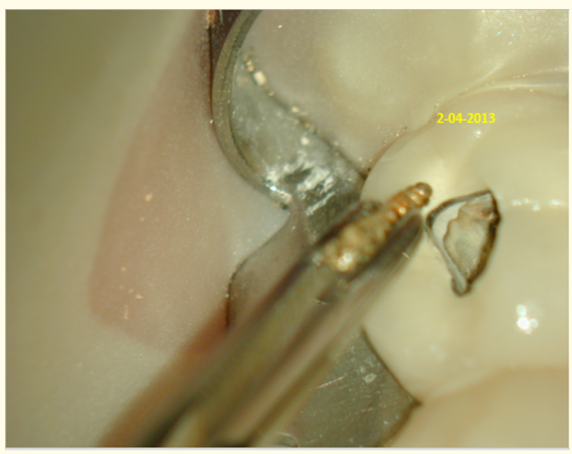

Figure 4

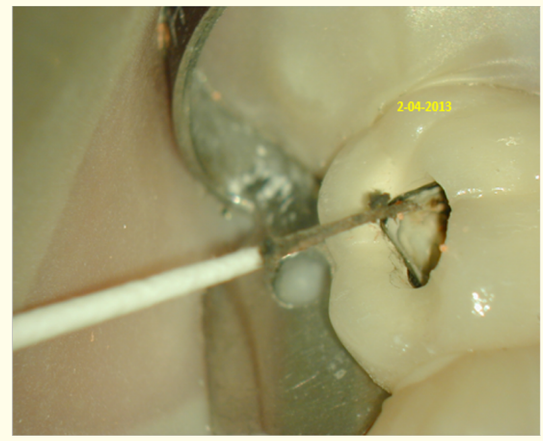

Figure 5

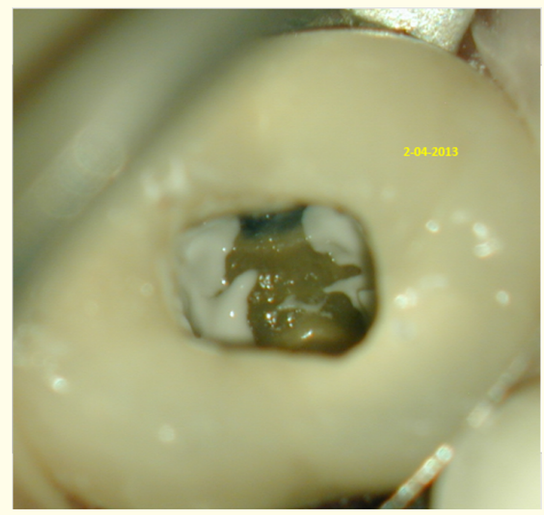

Figure 6

Figure 7

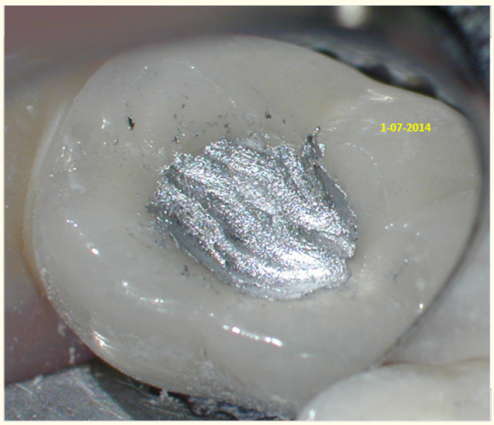

Figure 8

Figure 9

Figure 10

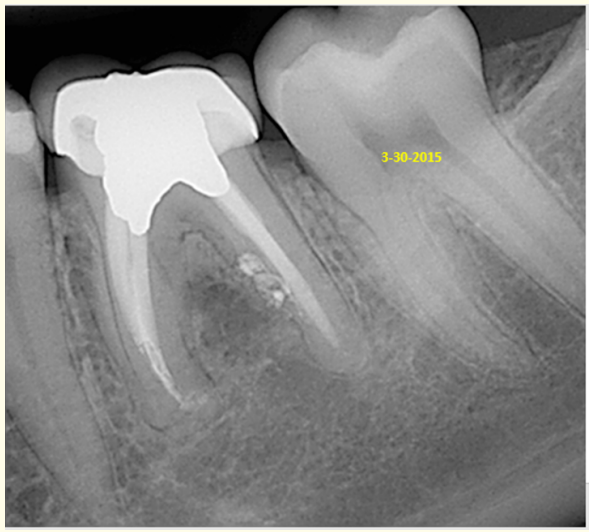

Figure 11

Figure 12

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