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Silver Point Retreatment : Two Different Approaches – A Case Series

KEYWORDS: Silver point, Selective root retreatment, nonsurgical retreatment.

* Archit Kedia	Vidya Saraswathi	Tina P Purayil
BDS, Post Graduate, Department of Conservative Dentistry and Endodontics, Manipal College Of Dental Sciences, Manipal University, Manipal. * Corresponding Author	MDS,Professor, Department of Conservative Dentistry and EndodonticsManipal College Of Dental Sciences,ManipalUniversity, Manipal.	MDS, Assoc.Professor, Department of Conservative Dentistry and EndodonticsManipal College Of Dental Sciences,Manipal University, Manipal.

Sree theja Upadhyay	Reaba R Thomas
BDS, Post Graduate, Department of Conservative Dentistry and EndodonticsManipal College Of Dental Sciences,Manipal University, Manipal.	BDS, Post Graduate, Department of Conservative Dentistry and EndodonticsManipal College Of Dental Sciences,Manipal University, Manipal.

ABSTRACT *Clinicians infrequently encounter endodontically treated teeth with silver points that are often associated with a high degree of endodontic failure. These silver points corrode over time and do not produce an acceptable three dimensional seal of the root canal system. Hence, there is frequently a need to retreat these cases in order to facilitate a successful outcome.*

Despite the shortcomings of silver points, prophylactic revision of silver point obturation is not recommended, unless there is clear evidence of endodontic pathosis or if they complicate proper restoration of the tooth. "Selective root retreatment" is an alternative treatment where retreatment is limited to a single root showing periapical pathology without involving the other roots with no visible pathosis.

This case report presents two cases of successful management of nonsurgical retreatment of a maxillary and a mandibular molar previously obturated with silver points.

NTRODUCTION

The basic goal of endodontic treatment is the complete elimination of microorganisms and a three dimensional obturation of root canal space [1]. Previously silver points were advocated as a method of obturating root canals because of their ease of handling and placement, ductility, radio opacity and mild antibacterial property [2]. However, problems like poor adaptability to the root canal walls, improper sealing of the accessory canals, microleakage, corrosion and the potential adverse effects of the resultant toxic salts on the periapical tissues have resulted in a decline in their popularity [3] and are thus no longer regarded as the standard of care in today's endodontic practice [4].

Use of silver points in root canal therapy is often associated with high degree of endodontic failure which often necessitates the retreatment of affected tooth [5]. The "Selective Root Canal Retreatment" (SRCRT) concept is a viable and a conservative option in cases where failure is limited to a single root or roots without disturbing the roots with no visible or perceived pathosis [6].

This article shows two case reports of nonsurgical retreatment of a maxillary and a mandibular molar previously obturated with silver points.

CASE REPORT 1:

A 35 year old male patient reported to the department of Conservative Dentistry and Endodontics with the chief complaint of food lodgment in the right upper back tooth region. He gave a history of RCT for the same tooth 4 years back but the tooth, as of present, had a broken restoration which was associated with mild intermittent pain and discomfort.

On intraoral examination, tooth #16 had a dislodged restoration with secondary caries and metallic objects seen projecting from the pulpal floor. Radiographic examination revealed a poorly obturated mesiobuccal (MB) canal and the presence of thin opacities suggestive of silver points. Periapical changes were seen at the apex of the palatal and MB canal while the distobuccal (DB) canal appeared to be obturated till the apex with no periapical changes (Fig. 1). Hence, a diagnosis of chronic apical periodontitis secondary to incomplete root canal treatment was arrived at and a treatment plan of non-surgical selective retreatment was formulated.

Under rubber dam isolation, access opening of tooth #16 was modified to obtain straight line access to the silver points. Passive ultrasonic activation (Satelec, Merignac, France) using hand H files (Mani, Japan) in a troughing action facilitated the loosening of the cones which were then grabbed individually using curved artery forceps and unscrewed out of the canal in a counter clockwise direction (Fig. 1).

The silver point in the distobuccal (DB) canal was left undisturbed while they were successfully retrieved from palatal & MB1 canal. Unfortunately, separation of a small fragment occurred in the MB2 canal which was successfully bypassed. Cleaning and shaping of MB1 and palatal canal was accomplished using ProTaper Next rotary files (Dent-

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sply Maillefer, Ballaigues, Switzerland) up to X2 and X3 respectively while MB2 was prepared till 20 K file (Mani, Japan). Copious irrigation was performed with 2.5% sodium hypochlorite [NaOCl] (KMC pharmacy, Manipal, Karnataka, India) and two rounds of calcium hydroxide [$Ca(OH)_2$] (Neelkanth Medical Products, India) mixed with propylene glycol was placed. All canals were obturated after a final rinse with 2% Chlorhexidine [CHX] (KMC pharmacy, Manipal, Karnataka, India) using cold lateral compaction and resin sealer (AH Plus, Dentsply DeTrey GmbH, Konstanz, Germany).

The 8 month follow up radiograph (Fig. 1) revealed complete healing of the periapex with restoration of the periodontal apparatus.

CASE REPORT -2

A 45 years old male patient presented with mild pain and tenderness to percussion on tooth #37 with a history of root canal treatment 2 years back from a local dentist. The tooth was also associated with a dislodged restoration and a constant pain that aggravated on consumption of food. Radiographic examination shed light on the presence of a silver point in the mesiolingual (ML) canal with the possibility of a missed mesiobuccal (MB) canal. The distal canal was poorly obturated with gutta-percha (GP). A large periapical radiolucency was also observed in #37 and #36 (Fig. 2).

Using the technique described in case 1, silver point was removed from ML canal and GP was removed from the distal canal using combination of Xylene (KMC pharmac, Manipal, Karnataka, India) and M2 retreatment files (VDW, Munich, Germany). MB canal was also located and all canals were enlarged using M2 rotary files (VDW, Munich, Germany) following the irrigation and disinfection protocol previously mentioned. The canals were then obturated using cold lateral compaction technique. The six month follow up radiograph showed excellent healing with decrease in the size of the periapical radiolucency and evidence of formation of new bone trabecular pattern (Fig. 2).

DISCUSSION

Evidence from clinical outcome research is imperative in formulating strategies for retreatment, apical surgery or extraction in cases of unsuccessful endodontic therapy [7]. In a systematic review by Torabinejad et al., non-surgical retreatment (NSRT) was shown to have a success rate of 83% versus 71.8% for endodontic surgery after 4-6 years [8]. Endodontically treated teeth with persistent periapical lesion might be preserved with NSRT if the tooth is restorable and periodontally sound [9]. Traditional NSRT however, are associated with certain risks like weakening of the tooth structure through unwanted removal of dentin and increased potential for iatrogenic errors [10]. Thus "Selective root canal retreatment" (SRCRT) is a beacon of hope in such cases as it is more conservative and confined to single root or roots with periapical disease [6].

In the first case, selective retreatment was carried out by not disturbing the silver point in the distobuccal canal of #16. The long duration of silver points in canal make them highly brittle and easily prone to fracture and hence their removal should be attempted only when deemed absolutely essential [11].

In the second case, a conventional retreatment was performed, keeping in mind the quality of previous obturation and the periapical status of both the roots.

The need for minimal preparation of canals for placement of silver points often results in improper cleaning and shaping and this has been deemed as the chief reason for their failure. Inadequate cleaning and shaping of the canals, improper obturation and coronal microleakage due to dislodged restoration are suggestive of being the precipitating factors for the failure in the present cases [12].

Although no standardized procedure exists for removal of silver point [13], there are various techniques and devices available amongst which the most common methods include indirect ultrasonics, grasping pliers, braiding technique and Instrument Removal Systems (IRS) [14].

In the present cases discussed, an H file was activated using passive ultrasonics at the lowest power settings which facilitated the loosening of silver point from the canals.

Fig. 1 Pre op and post op

Fig. 2 Pre op and post op

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