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Anil K Tomer
Professor and Head in the
Department of Conservative
Dentistry and Endodontics,
DJ College of Dental Sciences
and Research, Ghaziabad, India

Anjali Miglani
Reader in the Department of
Conservative Dentistry and
Endodontics, DJ College of
Dental Sciences and Research,
Ghaziabad, India

Priyali Chauhan
MDS 3rd Year Post Graduate
Student in the Department of
Conservative Dentistry and
Endodontics, DJ College of
Dental Sciences and Research,
Ghaziabad, India

Siddharth Dubey
MDS 3rd Year Post Graduate
Student in the Department of
Conservative Dentistry and
Endodontics, DJ College of
Dental Sciences and Research,
Ghaziabad, India

Correspondence
Priyali Chauhan
MDS 3rd Year Post Graduate
Student in the Department of
Conservative Dentistry and
Endodontics, DJ College of
Dental Sciences and Research,
Ghaziabad, India

Endodontic post and core retreatment –A case report

Anil K Tomer, Anjali Miglani, Priyali Chauhan and Siddharth Dubey

Abstract

Endodontic retreatment, when properly indicated, allows the maintenance of dental elements. The evolution of endodontic techniques and materials has reduced the indication of surgical procedures even for teeth with intracanal posts. Clinical Case-In the present report 28 year old patient reported with displaced post along with prosthesis. On radiographic examination there was extruded gutta percha in apical area. Treatment comprises of removal of gutta-percha followed by Post and Core.

Keywords: Post, core, ceramic, crown lengthening

1. Introduction

Reconstruction of endodontically treated teeth is a great challenge in restorative dentistry since the tooth crown is usually totally or partially lost by caries, erosion, abrasion, previous restorations, trauma or endodontic access. If more than half of the coronal structure has been lost, a root canal post is required to provide retention for the restoration [1].

When assessing an endodontically treated tooth for restorative treatment, it has to be assumed that good judgments have been made previously concerning the periodontal status of the tooth, the remaining tooth structure, and the prognosis of the endodontic treatment. The tooth to be restored should exhibit a good apical seal when evaluating the radiograph, and also exhibit no sensitivity to percussion or palpation, no exudates, no fistula, no apical sensitivity, and no active inflammation [2].

Generally, endodontic failure occurs due to technical and pathological factors or it is influenced by systemic factors. The prevention of further complications coming from the maintenance of unsatisfactory endodontic treatment in a tooth that will support an intraradicular post and core and a fixed crown, demands the immediate root canal opening and justifies the retreatment necessity [3].

The basis of success in teeth retreatment with failed primary endodontic treatment is the removal of various materials from the root canal – guttapercha, broken endodontic instruments, silver points. This frequently can be metal posts placed in root canals in teeth with large destruction of the clinical crown. Their removal is of essential importance for accessing endodontic space and total cleaning and disinfection of the root canal system [4].

Strictly, all tooth, with or without the pulp vitality, is important for the stomatognathic system. Often, the tooth is so valuable that its removal will develop certain conditions and solutions even more complicated [5, 6].

By this perspective, the aim of this case report was to report a clinical case of displaced intraradicular post and core followed by endodontic retreatment in the upper central incisors' area.

2. Case report

A 28 year old male patient reported in post graduate clinic of the Department of Conservative Dentistry and Endodontics of our institute with chief complaint of removal prosthesis in upper front tooth region.

On clinical examination maxillary central incisor found to be fractured with displaced prosthesis. (Fig 1)

Patient give the history of root canal treatment in upper front tooth region followed by post and core in private clinic three years back. On radiographic examination there was extruded guttapercha in relation to 11.



Fig 1: Fractured central incisor

2.1 Clinical procedure

The access cavity was re-entered using an endo access bur. (Dentsply) Coronal guttapercha was heat softened and engaged with the help of H-files (Dentsply, Maileffer). Entire contents of the canal were removed and confirmed radiographically. Canal was irrigated with saline to flush the GP and sealer remnants. (Fig 2)



Fig 2: Gutta percha removed from root canal

A size 45 H-file was inserted into the main root canal. Working length was determined at 19 mm for the apex. Bio Mechanical Preparation (BMP) was done using Glyde (Dentsply) as a chelating agent and irrigation was alternated using Sodium Hypochlorite (NaOCl 3%) and normal saline. Chlorhexidine (Dentachlor 2%) was used as a final rinse. Calcium hydroxide paste (RC cal) was used as an intracanal medicament and the cavity was closed with Zinc Oxide Eugenol (ZnOE) temporary cement. Antibiotics and analgesics were prescribed to manage the pain. Patient was recalled after ten days for further follow up. Patient was totally asymptomatic on the second visit. Master cone radiograph was taken to confirm the length and size. Canals were coated with AH plus sealer (Dentsply) and a size 30 master cone coated with sealer was inserted into the super root. Lateral condensation was done using a size 20 spreader and accessory cones added. Obturation was done and confirmed radio graphically. (Fig 3)

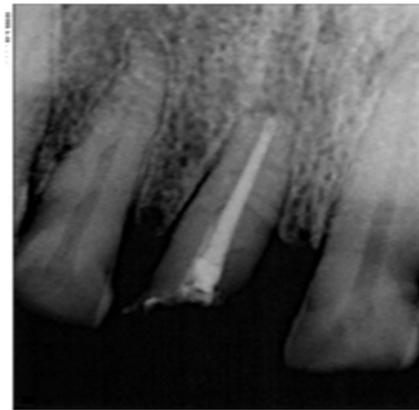


Fig 3: Obturation

After root canal obturation, their 2/3 was cleared with peso reamer to create post space in order to place post and core. Prior to placement of post crown lengthening procedure is performed using electro cautery. (Fig 4). Fibre post cementation was done with composite core buildup. (Fig 5)



Fig 4: Crown lengthening and post placement done



Fig 5- Core build up done



Fig 6: All ceramic crown

All ceramic crown is cemented and patient is recalled after one month for follow up. (Fig 6)

3. Discussion

In the present case report retreatment procedure was performed follow up by post and core.

Endodontics & Prosthodontics go hand in hand to retain pulpless, badly broken down teeth that would have been otherwise seemed fit for extraction & thereby reinstating them as a functional member of the masticatory system^[7].

When the remaining tooth structure cannot provide adequate support and retention for restoration, endodontically treated teeth are usually restored with posts. Restoring these teeth using materials with a similar elastic modulus to dentine appears advantageous due to the reduced risk of root fracture. The fracture resistance of endodontically treated teeth has been reported to be principally dependent on the amount of remaining tooth structure and adhesive surface, the quality of adhesion, and the type of post because posts increase the fracture resistance of the root, especially in the absence of a full crown.

The need for retreatment has been frequently analyzed by using different points of view. In different European countries, epidemiological studies have shown a large number of teeth to be retreated because of periapical radiolucencies resulting from poor root-canal therapies^[8].

In 2004, Friedman reported healing rates of nonsurgical retreatment range between 74% and 98%, but with apical surgery alone, only 59% heal completely. Apical surgery preceded by orthograde retreatment 80% healing reported. It should be kept in mind that certain endodontically failing teeth are not amenable to successful retreatment. In these instances, the various interdisciplinary treatment options should be carried out for the best management of the patient. Before commencing with any treatment, it is wise to fully consider all the various treatment options. When the choice is endodontic nonsurgical retreatment, then the goal should be to access the pulp. The practitioner's ability to accurately assess the restorative, endodontic and periodontal outcomes will result in successful retreatment plans^[9].

4. Conclusion

The reasons for treatment failure can be multivalent. Correct diagnosis of failure is very important for deciding the retreatment option. Nonsurgical retreatment should be the first treatment choice, except when a canal cannot be completely negotiated because of an apical or coronal obstruction or a re-treatment attempt has already failed. The correct treatment choice can be made with the correct equipment available and the proper skills, adequate knowledge about armamentarium and experience.

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