



MASSERANN TECHNIQUE ENHANCES THE QUALITY OF TREATMENT-A CASE REPORT

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ABSTRACT The incidence of fractured posts confronts the endodontically treated tooth a hopeless prognosis. Removal of such posts can likely to cause damage since the roots are brittle. Masserann developed and designed an instrument for extracting posts or rigid instruments that are broken deeply within the roots with minimum damage. The case report presented here is about the successful retrieval of separated post wedged in root canal dentin of upper central incisor along with its post endodontic management.

KEYWORDS : Obturation, Masserann Technique, Fiber Post

INTRODUCTION

Despite the highest success rate of endodontic treatment, failures do occur in large number of cases and most of the times can be attributing to the poor Obturation.⁽¹⁾ Common causes of failure are inadequate control of aseptic condition, inadequate access leading to missed canal, improper instrumentation of root canal, inadequate obturation and procedural errors in the form of perforation, separated instrument. According to study conducted by Hoen et al the assessed teeth with endodontic failure was found to be 65%, due to poor quality of obturation.⁽²⁾ The ideal obturation should be 0.5 - 1mm short of radiographic apex. Thus, our aim should be debridement and cleaning of root canal system, removal of infected pulp tissue, proper irrigation and shaping, preparation of root canals and to be filled by inert material thus preventing or minimizing any cause of reinfections.

CASE REPORT

A 30 year old male patient reported to the Department of Conservative Dentistry & Endodontics, SRM College of Dental College with the chief complaint of pain and swelling in the upper front teeth region. On relieving the previous history, patient had history of trauma 1 year. Post trauma, he had pain in relation to upper front tooth which subsided after 1 week on its own. He gave a history of previously completed root canal treatment followed by crown in upper anterior.

On clinical examination, 11 were found to be metal ceramic crown with tender on percussion and Ellis II fracture in 12. Vitality test gave a negative response in relation to 11 and positive response in relation to 12, 21 and 22. An Intra Oral Periapical Radiograph (IOPA) in relation to 11 revealed improper obturation of root canal and post placement (Fig. 1A) & (Fig. 2A).

On the basis of clinical, vitality and radiological examination, a diagnosis of previously initiated root canal treatment. A treatment plan was made for re endodontic root canal treatment with post retrieval was planned with respect to 11 and esthetic restoration in 12. Patient is not willing for esthetic restoration in 12.

Metal ceramic crown is removed carefully; metal post is retrieved using Masserann post retrieval kit. Obturation material was removed completely, working length determined follow by cleaning and shaping of the canal till size 60 K-file followed by step back till size 80 K-file. (Fig. 1B-C). Repeated calcium hydroxide dressings were given at an interval of 5 days for 1 month. Obturation was done using cold lateral compaction technique. After 1 week of post obturation, post preparation was done and fiber reinforced post was placed followed by composite core build up (Fig. 1D, E, F). (Fig. 2B).

Crown preparation was done using tapered fissure bur followed by putty impression was taken. VITA shade guide was used to evaluate the proper shade guide. Crown luting was done using Type II luting glass ionomer cement. (Fig. 2C).



Fig. 1.

A-Preoperative Rvg Shows Metal Post With Improper Obturation;
B-Working Length Determination;
C-Master Cone;
D-Obturation;
E- Before Fiber Reinforced Post Luting F- After Fiber Reinforced Post Luting.



Fig. 2.

A-Preoperative labial view;
B-Fiber reinforced post with dual cure composite resin;
C-post operative labial view after crown luting.

DISCUSSION

Ideally the extent of obturation should be 1-2mm short of apex;

otherwise it will result in periapical inflammation by allowing proliferation of microorganisms in unfilled canals.⁽³⁾ The inadequate obturation can occur due to insufficient canal taper resulting in adequate apical placement of compaction instrument. Also not coating sealer uniformly around the guttapercha, inability to place the accessory points to complete working length, using fine accessing gutta percha points that kink when positioned apically, incorrect choice of large compaction instruments, using undue amount of canal sealer or sealer that has set too quickly forming hard mass, dentine chips packing in apical root canal, inability of positioning master cone for the apical extent and lack of consistency in heating the core filler.⁽³⁾

Masserann kit is one device for orthograde removal of intracanal metallic obstructions. This clinical case demonstrates the usage of Masserann technique in removal of separated instruments in anterior teeth.⁽⁴⁾

Masserann kit is very useful in removing metal obstructions from anterior teeth having thick, straight roots. Moreover locking mechanism of extractor provides considerable retention in gripping and dislodging an obstruction which is highly wedged in the canal. Primarily circumferential freeing of the coronal end of the fragment is achieved with safe cutting of peripheral dentin so that retrieval of the post is promoted by tight gripping along the long axis of root.⁽⁴⁾ As the tooth was grossly destructed wedges were used instead of clamps to retain the rubber dam for isolation. Prevention of the instrument separation is the best strategy to avoid any stress and anxiety associated with it

Gates Glidden drill 1, 2, 3 sizes were used in this case to remove coronal gutta percha which intumescence facilitates apical access for the placement of chemical solvent. The xylene solvent was used to remove gutta percha filling from root canal. Since various studies demonstrated that xylene has better capacity of dissolving gutta percha.⁽⁵⁻⁷⁾

Cold Lateral Compaction was used for obturation. There are various reports to enhance the gutta percha adaptation and density in Cold Lateral Compaction technique.⁽⁸⁻¹²⁾

Since fibre reinforced post has modulus of elasticity close to dentin and it provides root reinforcement and retention to composite resin cores, fibre reinforced post followed by dual cured composite core build up was done for post endodontic management.⁽¹³⁾ According to study conducted by vyas *et al*, dual core resin have maximum resistance to fracture compared with other core buildup materials on teeth which were endodontically treated.⁽¹⁴⁾

PFM crowns are considered as gold standard for the repair of damaged tooth. It has good mechanical properties, satisfactory aesthetic results and acceptable biological quality need for the periodontal health. Due to their advantage and more literature support for PFM crowns, we have considered the choice of PFM for crown placement.

CONCLUSION

Through knowledge about diagnosis and usage of appropriate instruments for post retrieval (Masserann kit), will lead to the proper treatment procedures, thus enhance the quality of treatment.

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