

A Case Report On Management of Periodontally Involved Teeth by Hemisection

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ABSTRACT

Failure of conventional endodontic and periodontal therapy in stabilizing teeth affected with endo-perio lesion warrants alternate treatment options like resective and regenerative approaches. Resection techniques focus on eliminating the diseased roots or teeth. Hemisection is the surgical separation of a multirooted tooth, usually a mandibular molar with severe furcation involvement, through the furcation in such a way that a root and associated portion of the crown may be removed or retained. A fixed partial denture often is placed in the area to restore the lost portion of the occlusal table. This case report describes conservative management of periodontally compromised mandibular molar with Hemisection involving removal of distal root and preservation of mesial root.

Keywords: Endo-Perio lesion, hemisection, endodontic treatment

INTRODUCTION

Extensive damage to the posterior teeth in form of decay or periodontal lesion may require extraction and replacement with removable/fixed partial denture or implant (1). However in case where damage is limited to one root only hemisection can be done which is defined as the surgical severance of a multi-rooted tooth especially a mandibular molar through the furcation allowing removal of root and associated portion of crown (2). The treatment goal is preservation of remaining sound tooth structure and reestablishment of masticatory efficiency. This case report describes hemisection procedure which was chosen to retain the endodontically treated mesial root of mandibular left first molar and extraction of periodontally involved distal root.

CASE REPORT

A 45 years male reported to the Department of Conservative Dentistry and Endodontics reported with chief complaint of pain in left lower back region of mouth. On clinical examination there was deep periodontal pocket with respect to distal aspect of the left mandibular first molar. On radiographic examination, severe vertical bone loss was evident surrounding the distal root and involving the furcation area. The bony support of mesial root was completely intact. It was decided that the distal root should be hemisected after completion of endodontic therapy of the tooth.

Root canal treatment was first initiated. Access cavity was prepared under rubber dam isolation after administration of 2% lignocaine hydrochloride with epinephrine 1:80,000 (ICPA Health Products Ltd, Ankleshwar, India). Working length was determined using stainless steel k-files (Mani, Inc.) keeping 0.5 to 1.0 mm short of the apex using a RootZX apex locator (J. Morita, Irvine, CA) and confirmed radiographically. Canals were irrigated with 5 mL 2.5% NaOCl, obturation was done with gutta-percha (Meta Biomed Co. Ltd, Cheongwon-gun, Chungbuk, Korea) and zinc oxide eugenol sealer (Dental products of India Ltd, New Delhi, India) using cold lateral condensation technique completed. Under local anesthesia a conservative flap was then reflected. Granulation tissue was removed with curette, hemostasis was achieved with pressure pack of cotton rolls dampened with adrenaline. Hemisection of mandibular left first molar was performed using diamond cylindrical bur. Distal root was extracted and distal area of root was smoothed to remove any bony spicules (Fig 1).



Fig 1: Preoperative radiograph (A) ; Postoperative radiograph after Hemisection (B)

DISCUSSION

Replacement of decayed teeth may be done by removable/fixed partial dentures or implant. However none of the treatment option may match the masticatory efficiency and/or esthetics of natural dentition. Attempt should always be made to preserve the natural teeth. In this case we tried to preserve the teeth by removing extensively damaged root along with associated root. Hemisection is cost effective treatment option and provides reliable abutment as it allows physiological tooth movement (3). Hemisection also gives access for oral hygiene maintenance and enjoys good success rate. However increased susceptibility to caries and complications associated with any surgical procedure are some drawbacks of this procedure. Also because of anatomic consideration most of the report is limited to preservation of mesial root as compared to distal root of molar (4).

Preoperative oral hygiene status and medical history should be considered before planning this treatment option. In our case patient had satisfactory oral hygiene and medical history of patient was non contributory. Controversy exists regarding timing of performing endodontic treatment in resective procedure. Various studies have suggested root canal treatment as soon as possible after resective procedure or before it to avoid pulpal complications like internal resorption, pulpal inflammation and necrosis (5).

After resection therapy consideration should be given to post resection restorative technique. The present prosthetic guidelines suggest rehabilitation that include a confluence of the root and the prosthetic crown contours. In addition, the axial tooth contours of the restored teeth should have a physiologic contour, which means that the restoration emerges from the root with a zero degree emergence profile. The transgingival areas should have a flat prosthetic contour at the gingival margin, which imparts a more hygienic and less plaque retentive areas when compared to a tooth restored with a cervical bulge at the gingival portion of the prosthesis (6).

CONCLUSION

Concurring with previous report, Hemisection is a valid treatment option for preservation of molars. It gives clinician viable treatment alternative which can be considered before extraction of teeth.

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