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Case Report

HEMISECTION: A CASE REPORT

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ABSTRACT

Hemisection represents a form of conservative procedure, which aims at retaining as much of the original tooth structure as possible. Hemisection is the treatment choice for perio-endo lesions to preserve the remaining part of the molar having sound periodontium. It is a resection of periodontally involved root along with the associated crown portion. Prognosis and treatment of perio-endo lesions depend on the severity of bone loss, root trunk length, degree of root separation, curvature of root, ability to eradicate the osseous defect, and restorative and oral hygiene procedures. In the present case report, root canal treatment and hemisection were successfully performed to treat advanced perio-endo lesions.

Keywords: Hemisection, Endo-perio lesions,

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INTRODUCTION

Hemisection involves removing periodontally compromised root structure and associated coronal structure in a furcation involved tooth. The treatment goal is the conservation of remaining tooth structure and restoration of function.[1] Hemisection refers to sectioning of a mandibular molar into two halves followed by removal of the diseased root and its coronal portion.[2] The retained root is endodontically treated and the furcations area is made self-cleansable by removing the lip of root carefully. Since hemisected teeth fail by root fractures, it is important to restore them adequately by an extracoronal restoration.[3] It is indicated where one of the root of molar is unsalvageable due to caries, periodontitis, or iatrogenic mishaps.[4] It is thus a conservative option with acceptable prognosis.[5]

CASE REPORT

A 35-year-old woman reported to the department of Conservative Dentistry and Endodontics with the chief complaint of intermittent pain in the lower left region of jaw since 5 months. Pain was not associated with any fever. On clinical examination, the left mandibular first molar was sensitive to percussion and revealed Grade II mobility. On probing the tooth, there was a deep periodontal pocket in relation to the distal root of the tooth with a Class II furcation involvement. On radiographic examination; severe vertical bone loss was evident at the furcation area with 36 surrounding the distal root. It was planned to preserve the mesial root after endodontic therapy, resecting the distal part of crown with corresponding root portion. The treatment option of hemi section was discussed with the patient. The patient agreed to this treatment option. The following appointment included endodontic access. After working length determination chemomechanical preparation and obturation was completed. A surgical approach to gain access for adequate vision of the furcation in order to section the root was taken. The tooth was carefully sectioned and the damaged distal root was removed. Any defect on the sound mesial root was made smooth. The mesial root was temporized with IRM and the surgical site were then allowed to heal with no occlusal stress placed on the root for four weeks. Patient was recalled for surgical intervention. Flap was raised and Tooth was marked with a dye. Tooth was resected involving root as well as crown portion. Vertical cut method was used to separate the crown under local anaesthesia. A long shank tapered fissure carbide bur was used to make vertical cut towards the bifurcation area. The distal root was removed. Scaling and root planning of the root surfaces, which became accessible was done. The occlusal table was minimized to redirect the forces along the long axis of each root. The provisional restorations were maintained intraorally for 8 weeks before the final impressions were made, thus allowing sufficient time for evaluation.

DISCUSSION

Hemisectioning of well-rooted teeth has been shown to be a useful treatment to prevent shooting pain[6], and restoration of healthy teeth, especially furcated molars of the lower jaw, is known to influence chewing function[7]. The presence of furcation involvement in case of perio-endo lesion is a major challenge for treatment plan. Various treatment methods are there for the treatment of furcation involvement such as open flap debridement, osseous resection, regenerative procedure, and root resection.[8]

Hemisection has been used in cases of advanced bone loss in furcation involvements, which refers to bifurcation of a molar and removal of diseased root with crown portion.[9] The main advantage of such treatment is that the conversion of furcation involved multirooted tooth into non-furcated single-root tooth, which provides favorable environment for oral hygiene maintenance.[10]

Hemisection in cases of mandible tooth root canal makes later surgical processes easier because it is difficult to perform endodontic treatment during bleeding, as anatomical markers cannot be seen clearly[11]. Anatomical markers are very important for the lower first molar tooth during the hemisection phase. The bifurcation of the region representing the enameloma is important and may not be possible in every case. Some teeth also may require a crown lengthening procedure or extrusion if there is severe decay on the tooth crown[12,13]. Although treatment of the mesial root canal is more difficult than the distal root, this may determine which root will be

amputated, depending on the success of endodontic treatment[14].

CONCLUSION

Hemisection may be considered as an alternative, effective and conservative treatment modality over conventional procedure or extraction of periodontally and endodontically affected teeth.

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