Hemisection: A conservative management of periodontally involved molar tooth in a young patient

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Abstract

Hemisection is sectioning of multi-rooted teeth with its crown portion, with the loss of periodontal attachment and is performed to retain the original tooth structure and attain the fixed prosthodontic prosthesis. We describe hemisection of a mandibular molar tooth followed by adequate restoration in a young patient.

Key words: Endodontic, hemisection, mandibular molar, prosthodontic periodontal, root resection

INTRODUCTION

Advances in dentistry has provided an opportunity to maintain a functional dentition for lifetime.[1] Loss of the posterior teeth is eventful and undesirable often leading to teeth drifting, loss of masticatory function and loss of arch length, which requires prevention and maintenance measures.[2] The oral cavity has the potential to harbor at least 600 different bacterial species, and in any given patient, more than 150 species may be present.[3,4] These bacteria’s are responsible for various dental health issues such as dental caries and periodontal problems. Management of periodontally involved molars with extensive decay is a challenging and is limited to dental extraction and replacement with implants.[5] Nevertheless, treatment strategy to retain such teeth involves periodontal, prosthodontic and endodontic assessment for appropriate selection to allow for stronger survival.[6] Hemisection is a conservative way of preserving tooth. The term “hemi section” or “root amputation” are synonyms for “root sectioning” or “bisection” and is a treatment modality, which allows the preservation of tooth structure, alveolar bone and cost savings over other treatment options.[6]

CASE REPORT

A 13-year-old girl reported to the Department of Pedodontics and Preventive Dentistry, with a chief complaint of pain in the lower right back tooth region since 10 days. Pain was mild and intermittent in nature, which aggravated on mastication. Clinical examination revealed deep caries with no other detectable abnormality.

On intraoral examination, tooth was tender on percussion and deep caries was present in relation to lower right first and second molar teeth with a deep periodontal pocket on the mesial surface of the first molar. Root stumps were present with lower left first molar [Figure 1a]. On radiographic examination, vertical bone loss was evident on mesial root of lower permanent right first molar with furcation involvement [Figure 1b]. Hemisection of mesial root was decided after the completion of endodontic treatment for the distal root. Post-endodontic restoration was performed with light cure Glass ionomer cement (GC Fuji, LC). Hemisection of mesial root was done [Figure 2a] followed by splinting of second premolar, first molar and second molar with composite resin [Figure 2b]. At 1 month recall visit, healing was uneventful with the absence of mobility. Tooth preparation of the distal portion of first permanent molar and second premolar was performed followed by ceramic bridge restoration [Figure 3a]. Radiographic success observed at 1, 3, and 6 months of recall visit indicated the absence of the periodontal ligament widening and bone formation at an extraction site [Figure 3b and c]. Healing of treated tooth was uneventful at recall visits.

DISCUSSION

The hemisection is a useful alternative treatment to extraction to save the multi-rooted teeth by endodontic
Figure 1: (a) Clinical image of cariously involved lower right molar and root stumps on left molar, (b) preoperative radiographic view of periodontally involved lower right molar with

Figure 2: (a) Radiographic view of lower right molar after endodontic treatment and hemisection of mesial port of root, (b) splinting of second premolar, first molar and second molar with composite resin

Figure 3: (a) Clinical image of molar tooth after ceramic bridge placement, (b) radiographic view of hemisectioned molar with bridge at 1 month recall visit, (c) radiographic view of hemisectioned molar at 3 months recall visit, showing absence of the periodontal ligament widening and bone formation at an extraction site

Hemisection is an alternative, effective, and conservative treatment modality over conventional procedure or extraction of periodontally and endodontic affected teeth.

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