HEMISECTION: AN ALTERNATIVE TREATMENT MODALITY- CASE REPORT

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ABSTRACT

Endo-perio lesions are common conditions that are often difficult to diagnose and persistent if not treated completely. This paper reports a case of an endo-perio lesion of left mandibular first molar managed by root canal treatment and hemisection with good prognosis.

Key Words: Endoperio lesion; Hemisection; Root resection; Bicuspidization

Introduction

Modern advances in all phases of dentistry have provided the opportunity for patients to maintain a functional dentition for lifetime. Therapeutic measures performed to ensure retention of teeth vary in complexity.1,2 The treatment may involve combining restorative dentistry, endodontics and periodontics so that the teeth are retained in whole or in part.1,2 Endo-perio lesions are common conditions that are often difficult to diagnose and persistent if not treated completely. There is a close ontogenetic relationship between endodontic and periodontal and lateral canals.3,13 These lesions often remain free of symptoms for long periods, as they are rarely diagnosed until the disease starts manifesting itself in the form of acute symptoms of inflammation and increased pain. Once symptoms occur, they tend to be so severe, that dentists tend to settle for strictly symptomatic periodontal therapy whilst overlooking the endodontic aspect.1,4 The term tooth resection denotes the removal of any segment of the tooth or a root with or without its accompanying crown portion. Various resection procedures described are root amputation, hemisection, resection and bisection.5,14 Root amputation refers to removal of one or more roots of multi rooted teeth while other roots are retained. Hemisection denotes removal or separation of root with its accompanying crown portion of mandibular molars. Radisection is a newer terminology for removal of roots of maxillary molars. Bisection / bicuspidization are the separation of mesial and distal roots of mandibular molars along with its crown portion, where both segments are then retained individually.1,3 This paper reports a case of an endo-perio lesion of left mandibular first molar managed by root canal treatment and hemisection with good prognosis.

Case Report

A 40 years old man reported with the complaint of pain and mobility of left mandibular first molar. On examination, the tooth was sensitive to percussion and revealed grade 1+ mobility. On probing there was a 10mm deep periodontal pocket at the furcation area to be properly contoured during surgical separation. Under local anesthesia, full thickness flap was reflected after giving a crevicular incision from distal side of second premolar to mesial side of first molar. During reflection of the mucoperiosteal flap, the bony defect along the mesial root became quite evident. All chronic inflammatory tissues were removed with curette to expose the bone. The vertical cut method was used to resect the crown. A long shank tapered fissure carbide bur was used to make vertical cut toward the bifurcation area. A fine probe was passed through the cut to ensure separation (Figure 3,4,5). The mesial root was extracted and the socket was irrigated adequately with sterile saline to remove bony chips and amalgam debris. The furcation area was trimmed to ensure that no spicules were present to cause further periodontal irritation. Scaling and root planning of the root surfaces, which became accessible on removal of mesial root was done. The extraction site was irrigated and debrid ed and the flap was then repositioned and sutured with 3/0 black silk sutures. The occlusal table was minimized to redirect the forces along the long axis of the mesial root. After healing of the tissues, fixed bridge involving retained mesial half and mandibular second molar was given (Figure 6).

Discussion

Success of root resection procedures depend on proper case selection. It is important to consider the following factors before deciding to undertake any of the resection procedures.5,15 Favourable factors include advanced bone loss around one root with acceptable level of bone around the remaining roots and divergences of the roots, teeth with divergent roots are easier to resect. The unfavourable factors are angulation and position of the tooth in the arch, a molar i.e., buccally/lingual ly/mesially/distally titled, cannot be resected and closely approximated or fused roots are poor candidates.16

Sectioning procedures are undertaken in teeth where endodontic therapy has been initiated or completed prior to periodontal surgical procedure. This is done to isolate the tooth and prevent leakage of saliva and subsequent contamination when the treatment sequence is followed. Hemisectioning is mostly indicated for Grade III mandibular furcation involvement cases where a through and through furcation defect exists. The goal of sectioning procedure is to split the tooth from the furcation region through the crown leaving the root with its contiguous crown portion isolated from the other root and acting as a separate tooth. The furcation region is recontoured so that the area can be accessible for the patient to maintain oral hygiene.
Hemisection: An Alternative Treatment Modality- Case Report

Conclusion
The prognosis for hemisection depends on a proper case selection. This paper concludes hemisection can be considered as an alternative treatment modality for the management of endoperio lesions.

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