

Gingival Fenestration: A Multidisciplinary Approach

Dr. Ameena Pradhan,¹ Dr. Shreeya Aryal,¹ Dr. Neera Joshi,² Dr. Shilu Shrestha¹

¹Department of Periodontics and Oral Implantology, People's Dental College and Hospital, Kathmandu, Nepal;

²Department of Conservative and Endodontics, People's Dental College and Hospital, Kathmandu, Nepal.

ABSTRACT

Gingival fenestration is rarely encountered clinical situation causing problems like root sensitivity, root caries and aesthetic problem. Although rare, this situation can be difficult to manage and needs multidisciplinary approach. This case report describes management of gingival fenestration defect with root exposure and endodontic lesion in upper left lateral incisor using multidisciplinary approach. Endodontic treatment followed by double papilla flap technique as coverage of gingival fenestration and finally crown was prosthetically rehabilitated. The result of this case with double papilla graft technique demonstrated satisfactory healing of the gingival fenestration defect with excellent colour and texture match with the surrounding tissues.

Keywords: Double papilla flap; gingival fenestration; soft tissue graft.

INTRODUCTION

Gingival fenestration is the exposure of tooth surface due to loss of overlying bone and gingiva.¹ Though aetiology is not very clear, root prominence, malocclusion and buccally positioned teeth with thin cortical bone are considered predisposing factors.² It creates problems regarding plaque control, root hypersensitivity, root caries and aesthetic disharmony. There will be dilemma whether to extract or salvage the tooth. In this report, a fenestration defect with root exposure and endodontic lesion was treated with multidisciplinary approach. After endodontic treatment, double papilla flap technique was done for coverage of gingival fenestration and finally crown was prosthetically rehabilitated.

CASE REPORT

A 25 years female patient reported to People's Dental College and Hospital with a complaint of wound in gums with respect to upper left lateral incisor for last six months. She was advised for extraction of the same tooth in some other hospital. Patient came seeking second opinion as she wanted to save the tooth.

On examination, gingival fenestration exposing underlying root was present in relation to left lateral incisor. Marginal gingiva was intact with no periodontal pocket but fremitus test was positive and there was variation in crown morphology.

Going through investigation, intra oral periapical radiograph revealed periapical lesion with open apex. So, the planned treatment was non-surgical periodontal therapy followed by root canal treatment and apicectomy of the left lateral incisor. The gingival fenestration was to be closed by double papilla flap technique followed by veneer or crown placement.

At surgical appointment, two weeks after non-surgical therapy, the area was anaesthetised with 2% local anaesthesia, apical 1/3rd of root was resected, the area was curetted and debrided. Mineral trioxide aggregate was used to close the apex. Bone graft (Osteon II) was placed and double papilla flap technique was used to close the defect. For double papilla flap, horizontal incision followed by vertical incision beyond mucogingival junction was given. Then, partial thickness flap was raised and approximated



Figure 1: Pre-operative radiograph and photograph.

Correspondence:

Dr. Ameena Pradhan

Department of Periodontics and Oral Implantology, People's Dental College and Hospital, Kathmandu, Nepal.

email: docameenapradhan@gmail.com

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Figure 2: Bone graft after apicectomy



Figure 3: Post-operative at six month follow up



Figure 5: Two years post-operative follow up of photograph and radiograph.

over the exposed root and interrupted suture was placed to approximate the flap.

Suture was removed after two weeks. The healing was satisfactory and the patient was kept under regular follow up with interval of two weeks till three months. Then, patient was recalled every six months for reevaluation and oral hygiene reinforcement. Tooth morphology was corrected by composite built up after one month of surgery followed by metal crown after one year.

DISCUSSION

Gingival and mucosal fenestrations and dehiscence are rare entities but whenever present, will pose a challenge for the clinician. Various non-surgical and surgical procedures have been documented for the treatment. The present case report describes a rare situation where a gingival fenestration was noted in the maxillary right lateral incisor. It was successfully treated with combination of apicectomy, bone graft placement and double papilla flap technique as a soft tissue graft procedure to cover the fenestration defect.

Various factors have to be considered at recipient and donor site before performing the soft tissue graft technique. Width of attached gingiva, degree of defect in terms of width

and depth, amount and thickness of existing keratinised gingiva, relation between height of adjacent interdental papilla and gingival recession, position of the teeth are the factors to be considered at the recipient site.³ The factors to be considered at donor³ site are amount of attached gingiva, thickness of keratinised gingiva, size of adjacent interdental papilla and thickness of alveolar bone.

Depending upon the favourable factors at donor and recipient site, different soft tissue graft techniques like double papilla flap technique,⁴ laterally positioned flap technique,⁵ coronally advanced flap technique,⁶ connective tissue graft technique,⁷ and free gingival graft⁸ can be applied to manage the defect. In our case, double papilla flap technique was chosen to cover the gingival fenestration as there was adequate amount of attached gingiva in the either side of the defect. This technique offers advantage of dual blood supply, less tension to the pedicle flap, quicker healing at the donor site, most importantly more invasive two surgical site: that is an additional donor site is not required.

The result of our case with double papilla graft technique demonstrated satisfactory healing of the gingival fenestration defect with excellent colour and texture

match with the surrounding tissues. Similar result was also obtained in a case, reported by Deepa and Jain.⁹ They have used coronally positioned flap along with platelet rich fibrin to cover the defect.

Travassos¹⁰ et al. have reported multidisciplinary approach for the successful management of a case of fenestration type defect. They treated the defect using guided tissue regeneration (anorganic bovine matrix and resorbable membrane) and a connective tissue graft after apicectomy followed by second surgery to close the remaining fenestration defect with second connective tissue graft and double papilla flap.

In this case report, gingival fenestration with periapical lesion in left lateral incisor is successfully salvaged with multidisciplinary approach which is apicectomy followed by bone graft (Osteon II) and double papilla flap technique to cover the fenestration. To conclude, one must have knowledge of variety of soft tissue graft techniques, interaction between different areas of dentistry and should be able to choose correct technique to get healthy functional periodontium with pleasing aesthetic approach.

Conflict of Interest: None

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