



International Journal Of
**Recent Scientific
Research**

ISSN: 0976-3031
Volume: 7(2) February -2016

ONE YEAR FOLLOW-UP OF A CASE WITH PALATO-RADICULAR GROOVE

Disha Gupta., Swati Agarwal., Abhinav., KK
Chaubey., Manvi Chandra
Agarwal and Ellora Madan



THE OFFICIAL PUBLICATION OF
INTERNATIONAL JOURNAL OF RECENT SCIENTIFIC RESEARCH (IJRSR)
<http://www.recentscientific.com/> recentscientific@gmail.com



CASE REPORT

ONE YEAR FOLLOW-UP OF A CASE WITH PALATO-RADICULAR GROOVE

Disha Gupta¹, *Swati Agarwal², Abhinav³, KK Chaubey⁴, Manvi Chandra Agarwal⁵ and Ellora Madan⁶

^{1,2,3,4,5,6}Department of Periodontics, Kothiwal Dental College and Research Centre, Moradabad

ARTICLE INFO

Article History:

Received 06th November, 2015
Received in revised form 14th
December, 2015
Accepted 23rd January, 2016
Published online 28th
February, 2016

Keywords:

Palatoradicular Groove,
Developmental Anomaly, Pulp
Necrosis.

ABSTRACT

Palatoradicular groove is a developmental anomaly of the maxillary incisors. It is related to periodontitis with or without pulpal pathosis, depending on the depth, extent and complexity of groove. If associated with localized periodontitis and pulp necrosis, termed as combined periodontal endodontic lesion. It is a linear depression, present on the palatal aspect of root. This linear depression provides habitat for plaque and calculus, which is a major contributing factor in the progression of periodontal disease. Present case report, highlights the role of periodontal intervention in the treatment of case complicated with the presence of palato-radicular groove.

Copyright © Disha Gupta *et al.*, 2016, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The major etiological factor in the development of periodontal disease is dental plaque. However, there are various factors that may contribute to plaque accumulation. These include: any form of marginal ridge deficiencies, food impaction, open contacts, cervical enamel projections, tooth surface developmental anomalies and others.¹

The palatoradicular groove (PRG) is one such developmental anomaly which is also known as radicular groove in common terms. It is defined as a developmental, anomalous groove found on the palatal aspect of maxillary central and lateral incisors, extending from the cingulum apically on to the root surface and is formed by the infolding of enamel organ and the Hertwig's epithelial root sheath during odontogenesis.² The specificity in location accelerates the accumulation of plaque and calculus along the groove. Generally, extent of the grooves starts coronal to the cingulum that may traverse varying distances and directions along the root. Depending on the severity, the mild groove ceases at the cemento-enamel junction, while the moderate grooves continue apically along the root surface.^{1,2} PRG is of significance because if left unnoticed it may create periodontal and pulpal pathology. In cases of deep

PRG, retrograde pulpitis may develop as a consequence of the so-called endodontic-periodontic lesion.³

The present case report reveals that PRG is a local contributing factor in the exacerbation of periodontal disease. The groove accelerates plaque accumulation, resulting in formation of deep periodontal pocket, extending upto involving the apex, simultaneously and ultimately the development of perio-endo lesion.

Case Report

A 45-year old male patient reported to the department with the chief complaint of discolored tooth # 11 and bleeding gums while brushing. Clinical examination revealed generalized moderate pockets and deep pocket of 10 mm in mesio-palatal aspect of tooth #11 (Figure 1). On careful examination, PRG on the mesio-palatal aspect of #11 could be seen (Figure 2). Radiographic examination revealed an angular defect extending almost upto the apex (Figure 3). To confirm the pulpal involvement, pulp vitality test was done, upon which the tooth was found to be non-vital. This confirmed the pulpal involvement. Based on the clinical and radiographic examinations, a diagnosis of perio-endo lesion was made.

*Corresponding author: Swati Agarwal

Department of Periodontics, Kothiwal Dental College and Research Centre, Moradabad



Figure 1



Figure 2



Figure 3

Management

An endo-perio interdisciplinary approach was planned. Initial treatment comprised of phase I therapy i.e. oral hygiene instructions, scaling and root planing, occlusal corrections; followed by endodontic treatment, and surgical periodontal therapy. Since interdental space of more than two millimeter was present, surgical periodontal therapy included the raising of papilla preservation flap and thorough debridement of the defect area and sealing the PRG with glass ionomer cement (GIC) along with the placement of osseous graft in the infra-bony defect.

Surgical Procedure

After endodontic management, a full thickness papilla preservation flap was raised from the palatal aspect in between teeth # 11 and 21 (Figure 4). Flap was reflected and the defect was debrided thoroughly. After thorough debridement an angular defect could be appreciated (Figure 5,6).



Figure 4



Figure 5



Figures 6

After debridement, odontoplasty was done to eliminate the basic offender that is, in the present case, the palatoradicular groove (Figure 7). The remaining groove was sealed with a layer of glass ionomer cement (GIC) under proper isolation. After sealing with GIC the defect was filled with synthetic bone graft, hydroxyl apatite and beta-tricalcium phosphate (RTR, Septodont, 94107 Saint-Maur-des-Fosses Cedex, France Septodont) and the flap was sutured with non-resorbable sutures (Ethicon 4-0; Johnson and Johnson, India), (Figure 8).



Figure 7



Figure 8

Periodontal dressing was given over the surgical site and the patient was discharged with postoperative instructions and medications (Amoxicillin 500 mg, three times a day for 5 days, paracetamol 625 mg twice or thrice per day for 3 days, if there was pain and chlorhexidine mouth-wash twice daily for 10 days). The patient was recalled after 10 days for suture removal and check-up. No postoperative complications were reported and healing was satisfactory. The healing was satisfactory even after 8 months follow-up which could be appreciated clinically as well as radiographically (Figure 9, 10).



Figure 9



Figure 10

DISCUSSION

The presence of the morphological defect in the form of palatoradicular groove is considered to be the most important contributory factor in the development and progression of periodontitis. This is because it favors or exaggerates the accumulation and proliferation of plaque somewhere deep into the periodontal pocket. The most common site of the development of this anomaly is the maxillary central incisors, most likely the lateral incisors.

If reported early, open flap debridement with management of PRG is sufficient. In many cases, this may even require endodontic treatment as well, in case there is pulpal involvement.^{4,5} The pulpal involvement depends on the extent of palatoradicular groove. Along with these grooves, focal loss of periodontal attachment is also associated, at times which may even extend till the apical third of the root, which may ultimately lead to hopeless prognosis.

Pecora et al co-related the incidence of such grooves, particularly in the maxillary incisors and concluded that they were present in 3.9% of patients, 3% of them were present in association with the palatal surface of maxillary lateral incisors, while on the maxillary central incisors the incidence turned to be 0.9%.⁶

The treatment of these grooves depends solely on the extent and depth of the grooves by odontoplasty and/or restoration with a biocompatible material. The stage of the disease when the patients have reported, extent of the periodontal involvement, extension and depth of PRG determine the

prognosis. With proper diagnosis and recent approaches for endo-perio lesions, the teeth are being salvaged, which were once extracted.⁷

References

1. Sivaranjani, Kashyp V, Babu SPK, Paul A. Palatoradicular Groove- The silent villain. *Annals of Dental Speciality* 2014;2(2): 70-72.
2. Rethman MP. Treatment of palatogingival groove using enamel matrix derivative. *Comped Contn Educ Dent* 2001; 22: 792-7.
3. Friedman S, Goultschin J. The radicular palatal groove. A therapeutic modality. *Endod Dent Traumatol* 1988; 4: 282-6.
4. Arnold. Bi-rooted incisor with a palatoradicular groove. *Endo* 2007; 1(3): 205-13.
5. Bacic M, Karakas Z, Kaic Z, Sutalo J. The association between palatal grooves in upper incisors and periodontal complication. *J Periodontal* 1990; 61: 197-9.
6. Nilesh J, PP Marawar, Jyoti D. Treatment of periodontal lesion associated with bilateral facial radicular groove in maxillary lateral incisors - A case report. *Journal of Indian Society of Periodontology* 2005; 8(1): 19-21.
7. Pecora JD, Sousa Neto MD, Santos TC, Saquy P C. In vitro study of the incidence of radicular grooves in maxillary incisors. *Braz Dent J* 1991; 2(1): 69-73.

How to cite this article:

Disha Gupta *et al.* 2016, One Year Follow-Up of A Case With Palato-Radicular Groove. *Int J Recent Sci Res.* 7(2), pp. 8912-8914.

T.SSN 0976-3031



9 770976 303009 >