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Case Report

Management of coronoradicular grooves in maxillary anterior teeth: A report of two cases



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ABSTRACT

This article presents two cases of coronaradicular grooves with maxillary anterior teeth. Both the teeth were successfully managed by endodontic and surgical periodontal therapy and thus retaining the teeth in a relatively healthy state.

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1. Introduction

Morphologic defects in dental structures like grooves (palatogingival or radicular), dens invaginatus, and talons cusp can be predisposing factors for inflammation of the pulp or the periodontal tissues. These predominantly affect maxillary incisors, a radicular groove is a rare developmental anomaly with important clinical implications.

Most of the literature states that a radicular groove develops on the lingual aspect of the tooth and extends apically along the root surface, whereas the palatal gingival groove is a developmental anomaly that starts near the cingulum of the

tooth and runs down the cemento-enamel junction in apical direction, terminating at various depths along the root. Radicular invaginations or radicular grooves can lead to an untreatable periodontal condition. Such a groove is probably the result of tooth germ to form another root. As long as the epithelial attachment remains intact, the periodontium remains healthy. However once this attachment is breached and the groove becomes contaminated, a self-sustaining infrabony pocket can be formed along its entire length.^{1,2} These anomalies might be unilateral or bilateral, different terminologies have been used for the grooves, they are radicular anomaly, distolingual groove, radicular lingual

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groove, and palatogingival groove. This developmental defect which results in a concomitant periodontal periapical lesion will cause failure of root canal treatment, where there is an unattached periodontal ligament tract to the apex. The presence of the developmental groove provides a continuous interchange between the apical area and the oral cavity.^{3,4} Grooves often presents a diagnostic and treatment planning dilemma which are frequently associated with periodontal pocket and bone loss, pulpal necrosis of these teeth may precipitate a combined endodontic periodontal lesion.⁵ The purpose of this paper is to report two cases involving maxillary incisors with a deep palatal and radicular groove and associated periodontal and pulpal involvement. A combined treatment approach involving endodontic therapy and periodontal surgical management resulted in periodontal healing and resolution of the periradicular radiolucency.

2. Case reports

2.1. Case report-1

A 30-year-old female patient reported to the department with a chief complaint of bad breath and frequent pus discharge from gums in right upper front region since 6 months. She gave past history of root canal treatment in the same region. On clinical examination access cavity preparation was seen along with loss of coronal seal in 22 and a linear depression was observed on the palatal aspect (Fig. 1). Probing revealed the depression extending from the cingulum of the tooth towards the CEJ to a depth of 7 mm (Fig. 1). Periapical radiograph of the same revealed a moderate radiolucency with loss of lamina dura (Fig. 2). The pulp of adjacent and contra lateral teeth reacted normally to thermal and electric tests. A decision to endodontically re-treat the tooth followed by periodontal surgery was made, treatment plan was explained to

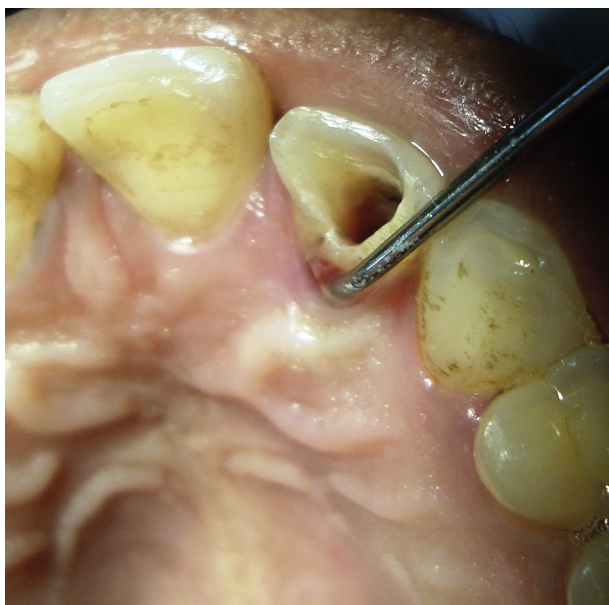


Fig. 1 – Pre-operative Photograph.



Fig. 2 – Pre-operative IOPA Radiograph.

patient and informed consent was taken. The tooth 22 was re-accessed, gutta percha was removed, and canals were cleaned and shaped using stainless steel hand files, irrigated with 5.25% NaOCl and CHX as the final irrigant. Canal was filled with $\text{Ca}(\text{OH})_2$ paste and sealed with cavitec. After 2 weeks of recall the canal was cleaned and obturated (Fig. 3). The periodontal surgery was performed by raising a full thickness mucoperiosteal flap. The granulation tissue was removed



Fig. 3 – Retreatment of 22 done.

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