

# An unusual Case of Cervico Palatal Caries and its Management – A Case Report

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## ABSTRACT

**Introduction:** With more and more patients retaining their teeth over the course of time, there has been an increased challenge in planning the treatment and restoration of Class V cervical carious lesions. The etiology of these carious lesions makes it difficult to make the choice of restorative options because it affects the durability and success of the restorative materials used. A combined minor periodontal and restorative or endodontic procedure is to some extent simple, and when performed properly, can provide excellent and durable dentistry in the problematic areas. The following case report depicts use of such multi disciplinary approach in management of cervico-palatal caries.

**Case report:** A 25 year old male patient reported to the department complaining of pain in upper right front region. On intraoral examination, tooth #13 was tender to percussion. Radiograph revealed an irregular radiolucency at the cervical aspect of the crown and coronal one-third of the root. Root canal treatment was performed and a crown lengthening procedure was done on the palatal aspect of the tooth followed by post endodontic restoration and fixed prosthesis.

**Conclusion:** A proper evaluation of the etiology of the cervical caries provides a definitive platform for good treatment decisions and counselling of patients to avoid the recurrence of these lesions. A multidisciplinary approach ensures that the patient has a functional restoration which is mechanically sound but also biologically compatible.

**Keywords:** cervical caries, palatal caries, amalgam

## INTRODUCTION

Adequate access to deep cervical caries can be problematic. The inability to view, isolate, and access the entire lesion may result in residual caries, poor adaptation of the restoration, and defective margins.<sup>1</sup>

Minor periodontal procedures, ranging from gingivoplasty and crown lengthening procedures involving a single tooth, to conventional flap surgery can provide enhanced visibility and access to the troublesome areas. When preventive measures prove to be ineffective and restorations must be placed, access, visibility, and appropriate material selection are paramount.<sup>1</sup>

A combined minor periodontal surgery and restorative or endodontic procedure is to some extent simple, and when performed properly, can provide excellent and durable dentistry in the problematic areas.<sup>1,2</sup>

## CASE REPORT

A 25 year old male patient reported to the Department of Conservative dentistry and Endodontics at D Y Patil School of Dentistry complaining of pain in upper right front region since 2 weeks which aggravated on eating and drinking cold food items and drinks. The patient had no past dental history or medical history. No history of trauma in upper anterior region.

On extra oral examination, lymph nodes were non palpable, no extra-oral swelling or sinus seen. On intraoral examination, the palatal surface of tooth #13 showed interruption in the enamel surface on the cervical one-third of the tooth. Tooth #13 was tender to percussion.

Radiographic evaluation suggested an irregular radiolucency at the cervical aspect of the crown and coronal one-third of the root suspecting caries involving the pulp. No periapical radiolucency seen. (Figure 1)

We came to the provisional diagnosis of chronic irreversible pulpitis with apical periodontitis in relation to tooth #13.

The treatment plan decided was Root canal treatment of tooth #13. Due to extent of caries in the root, crown lengthening procedure in the palatal aspect of the tooth was planned followed by post endodontic restoration and fixed prosthesis.

Local anesthesia (2% lignocaine with 1:80000 adrenaline) was administered using local infiltration in relation to tooth #13. Caries excavation was done using spoon excavator and round carbide bur. Access cavity was made using endo-access bur (DENTSPLY mailefer) (Figure 2). Working length was determined with #20 K file (MANI) and confirmed on RVG (Figure 3a). Cleaning and shaping was done using K files (MANI) with apical preparation till #35 file and step back till #50 file. During cleaning and shaping recapitulation and copious irrigation was done with saline. The access cavity was sealed with temporary restoration.

In the following appointment, master cone radiograph was taken using #35 2% gutta percha cone (Figure 3b). Apical tug back was also confirmed. Final irrigation protocol followed was 5% Sodium Hypochlorite and saline. The canals were dried with paper points. Zinc oxide eugenol cement was used as sealer along with gutta percha points.

Obturation was done using cold lateral condensation method (Figure 3c) and temporary restoration was given to seal the access cavity.

The patient was referred to the Dept. of Periodontology for Crown lengthening procedure in the palatal aspect with #13. In the following appointment, isolation was obtained by placing multiple layers of gingival retraction cords along the palatal aspect of #13. Post obturation restoration was done

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Figure-1: Pre-operative radiograph



Figure-2: Access Opening

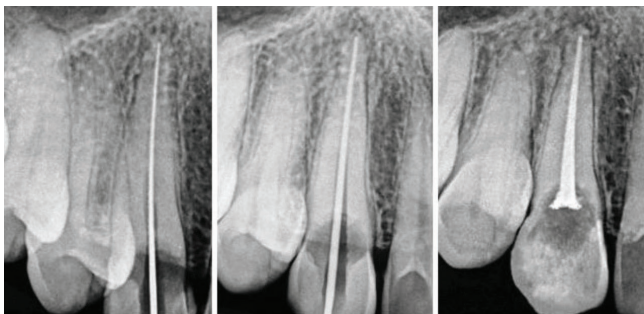


Figure-3: (a) Working length radiograph, (b) Master cone radiograph, (c) Obturation radiograph



Figure-4: (a) Post obturation restoration, (b) Lateral profile after crown cementation

with silver amalgam (Figure 4a). Tooth preparation was done and the crown was cemented in the following appointment (Figure 4b).

**DISCUSSION**

With patients retaining their teeth over the course of time, there has been an increased challenge in planning the treatment and restoration of Class V cervical carious lesions. Cervical carious lesions are special types of tooth decay which are characterized by destruction of hard tissue of the tooth at the cervical margin. The location of these lesions can be solely in enamel or, many times after gingival recession, on the root surfaces. The etiology of these carious lesions makes it difficult to make the choice of restorative options because it affects the durability and success of the restorative materials used.<sup>3</sup>

Teeth that have undergone endodontic treatment are weaker and bear a lower lifetime prognosis. Knowing this fact, special considerations are required for the final restoration, particularly in cases where extensive loss of tooth structure is present.<sup>4,5</sup>

Amalgam acts as a very good material for restoring large defects since it has adequate strength in bulk and hence the choice of post endodontic restorative material in this case.

While much of today's focus is on the use of esthetic materials, when the cervical carious lesions are in the non-esthetic zone, the lingual or palatal aspects of the anterior or posterior teeth, the choice of dental amalgam provides the patient with long-lasting restorations.<sup>3</sup>

Dental amalgam can be placed in a compromised field that might be difficult to isolate due to salivary or bleeding contamination as seen in most lesions which are significantly deep gingivally. Amalgam has adequate mechanical properties for many core build-up situations. It is radio-opaque and is less technique sensitive as compared to composites. It has high thermal conductivity and coefficient of thermal expansion. It has been reported that due to its high compressive strength and rigidity, silver amalgam is the most reliable direct core build-up material under simulated clinical conditions.<sup>6,7</sup>

**The multidisciplinary approach**

The relationship between periodontal health and the restoration of teeth is considered to be integral and inseparable. Maintenance of gingival health is one of the key factors for tooth and dental restoration longevity. When the restorative margins on the tooth are placed too deep within the sulcus, there is an encroachment of the biologic width. Plaque accumulation may occur around inadequate restorations which may have ledges or areas that are not cleansable.<sup>8-10</sup>

Crown lengthening is performed when there is insufficient room for crown preparation and reestablishment of the biologic width is required.<sup>10</sup> A 360 degree ferrule is mandatory for optimum health of hard and soft tissues. As in this case, placing a ferrule wasn't possible in the palatal aspect of the crown and hence crown lengthening was done and amalgam was given as the most favourable post obturation restoration.

**CONCLUSION**

No single solution is present for planning the treatment and restoration of Class V carious lesions. A thorough evaluation of the etiology of the cervical caries provides a sound basis for good treatment decisions and patient counselling to avoid the recurrence of these lesions. Complex restorations are clinically rewarding but careful treatment planning is definitely required to ensure their longevity in the mouth. This aspect of a multidisciplinary approach ensures that the patient has a

functional restoration which is mechanically sound but also biologically compatible.

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