

Cervical Enamel Projection – A Rare Case Report with its Management

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INTRODUCTION

Periodontitis is a multifactorial disease. It is primarily a bacterial plaque induced inflammatory disease along with local factors that favors niches for plaque accumulation and retention. Among the various plaque retentive factors, developmental abnormality like cervical enamel projection may predispose plaque accumulation, difficulty in maintaining oral hygiene measures, and consequently, cause periodontal breakdown.¹

According to the prevalence report of cervico-enamel projection by Bhusari P, it is frequently found in mandibular molars than in maxillary (2:1) with the highest incidence found in the mandibular second molar (14.7%) followed by the maxillary second molar (14.6%) and occurring least in the mandibular third molar (5.5%).² Presence of cervico-enamel projection on maxillary lateral incisors has not been documented in the literature.

The case reported here is a rare case of pronounced bilobed cingulum mimicking as a cervico-enamel projection on the palatal aspect of maxillary lateral incisors and its management.

ABSTRACT

A developmental anomaly like cervical enamel projection is a rare finding in the maxillary anterior region. Its ectopic presence attracts attention in literature. This type of anomaly is typically found in the furcation region of molars. The case report presented here deals with the ectopic presence of combined anomalous lesion and its management. A 18 year old male presented with pronounced bilobed cingulum extending as a cervical enamel projection on the maxillary right lateral incisor associated with pain, exudation and difficulty in mastication. Enameloplasty and regenerative procedure was performed. The possible etiology, its management and healing evaluated by CBCT are presented in this report. One year follow up showed satisfactory healing with no recurrence of abscess.

KEY WORDS

Cervical enamel projection, Enameloplasty, Periodontitis, Regeneration

CASE REPORT

A systemically healthy 18 year old male patient reported to Department of Periodontics with the chief complaint of pain and swelling on the palatal aspect of maxillary right lateral incisor. A history of recurrent abscess formation on the palatal aspect of the right anterior region was elicited from the patient.



Figure 1. 6 mm pocket on palatal aspect of maxillary right lateral incisor



Figure 2. Pronounced bilobed cingulum on maxillary right lateral incisor

On intraoral examination, a 6 mm pocket was recorded on the palatal aspect of maxillary right lateral incisor (fig. 1). A bilobed enamel projection on the cingulum region of the maxillary right lateral incisor extending onto the cementum

upto the cervical third of the root was appreciated and was confirmed to be the etiology for the periodontal breakdown and bone loss (fig. 2).

Intra oral peri-apical radiograph (fig. 3) did not show any evidence of any bony changes following which a CBCT scan (fig. 4) was taken which showed the presence of cemento-enamel projection extending to the cervical one third of the root.



Figure 3. IOPA radiograph of maxillary right lateral incisor

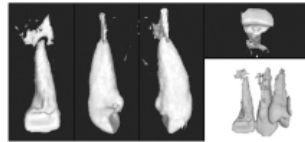


Figure 4. Pre - operative CBCT images of Maxillary right lateral incisor.

(Left - Right) Palatal, Mesial, Distal and Incisal view of cervical enamel projection extending to the cervical one third of the root

Phase I therapy was performed and after adequate plaque control, surgical periodontal therapy was initiated. Crevicular incisions were placed and a muco-periosteal flap was elevated to expose the cervico-enamel projection and the bone defect on the palatal aspect of the maxillary right lateral incisor. (fig. 5) Debridement of the defect followed by odontoplasty of bilobed projection was performed (fig. 6). Steaky bone (Allograft graft with iPRF) was prepared and placed in the defect.³ The graft was covered by PRF membrane and the flap was approximated with interrupted sutures. (fig. 7 and 8) Analgesic was prescribed to the patient for post operative management of pain.

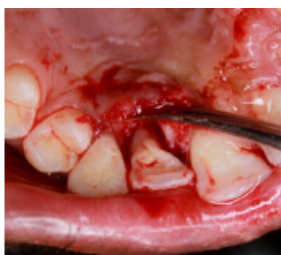


Figure 5. Reflection of muco-periosteal flap to expose the cervical enamel projection.



Figure 6. Defect debridement and odontoplasty



Figure 7. Steaky bone placed at defect site



Figure 8. Flap approximation with sutures

Uneventful healing was observed on the 7th post-operative day. Follow-up was performed at one month, three months and one year post-operatively. CBCT scan was recorded one year post-operatively which showed resolution of the periodontal defect. (fig. 9)

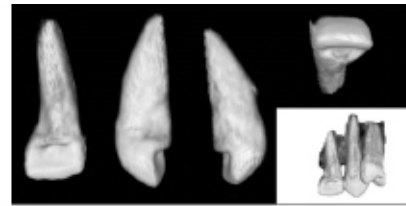


Figure 9. Year post - operative CBCT images of Maxillary right lateral incisor.

(Left - Right) Palatal, Mesial, Distal and Incisal view after odontoplasty.

DISCUSSION

Masters and Hoskins first reported prevalence of the cervico-enamel projections on molars. After examining 474 extracted molars, they devised a grading system to describe the severity of its occurrence in furcation area.⁴ However; there is very limited literature published on the same. Harris and Overton reported that the cervico-enamel projection was seen commonly on the labial aspect of maxillary incisors.⁵

Atkinson indicated a possible relationship between Cervico-enamel projection and periodontal breakdown. He suggested that the anatomy and location of Cervico-enamel projection might act as a probable cause for the rapid pocket formation. The enamel projection prevents connective tissue attachment onto the root surface. The gingival connective tissue adjoining the Cervico-enamel projection is attached to the root by epithelial attachment, which is less resistant to the insult of bacterial plaque.⁶

Attachment of connective tissue on to the enamel is not possible.⁷ The junctional epithelium instead; present in these areas consists of hemi-desmosomes and basal lamina. As a result, when enamel forms on roots, it may predispose the area to increased probing depths in the presence of gingival inflammation.⁸ Goldstein described this attachment as a 'locus minori resistentia'. The morphology of Cervico-enamel projection enables the adherence of dental plaque. This combined with the reduced access to oral hygiene measures might enhance periodontal breakdown.⁹

These could be the possible reasons for the formation of recurrent abscess as reported by the patient in the present case. Elimination of the enamel projection from the root surface enables connective tissue attachment to take place. The connective tissue seal attained, furthermore helps to minimize the pathway for bacterial plaque to infiltrate around the alveolar bone and prevent its resorption. The bone defect here was treated with a combination of allograft and iPRF (steaky bone). The use of bone graft material along with blood derived platelets enhances angiogenesis and regeneration.¹⁰

The two dimensional Intraoral peri-apical radiograph failed to show bone defect present on palatal aspect of the tooth. On the contrary, it could well be appreciated on the CBCT

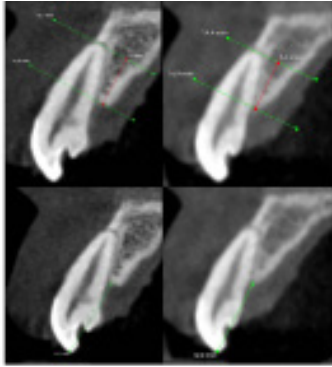


Figure 10 (a,b). Distance between the apex of the tooth and the crest of the alveolar bone. (c,d) distance from the incisal edge to the alveolar crest.

which aided in diagnosis and treatment planning. (fig. 10 a, c) For defect fill analysis, two measurements were compared: i) From tooth apex to alveolar crest (7 mm) and ii) From incisal edge to alveolar crest (12.7 mm). Post-operative CBCT images (fig. 10 b, d) showed gain of 0.6 mm with the error of just 1 mm. The angular defect fill is usually observed in horizontal fashion. (fig. 11) However, the gain of 0.6 mm was observed in this case.

The cases of Cemento-enamel projection can be treated successfully by proper diagnosis based on clinical and

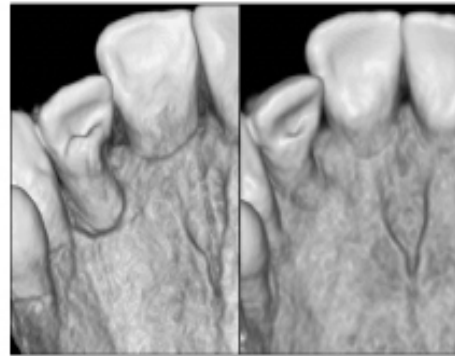


Figure 11. Pre and post-operative CBCT scan image of palatal aspect of maxillary right lateral incisor.

radiographic examination, odontoplasty with regenerative therapy (if required) and supportive periodontal therapy plays an important role in maintenance of the attachment apparatus.

Though Cervico-enamel projection is considered to be the secondary factor for periodontal breakdown, but, in most of the cases, it goes unnoticed leading to failure of periodontal therapy. Early and prompt diagnosis may enhance the regenerative potential around the involved tooth.

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