

Aesthetic Restoration of Class V Lesions

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ABSTRACT

A Non Carious Cervical Lesion is the loss of tooth structure at the cemento-enamel junction level that is unrelated to caries. These lesions can affect tooth sensitivity, plaque retention, caries incidence, structural integrity and pulpal vitality. Erosion, abrasion and abfraction are believed to be causative in the formation of non-carious cervical lesions in this vulnerable area of enamel. This case report presents a 40-year-old female patient with the chief complaint of sensitivity to cold in upper posterior teeth.

Keywords: Non-carious cervical lesions; occlusion; tooth wear.

INTRODUCTION

G. V. Black classified lesion on the gingival third of the facial or lingual surfaces of the tooth as Class V lesions. A non-carious cervical lesion (NCCL) is the loss of tooth structure at the cemento-enamel junction (CEJ), level that is usually unrelated to dental caries.¹ In human dentition, they are classified into three categories, viz.: abrasion (loss of tooth structure of mechanical origin), attrition (caused by functional or parafunctional contact) and erosion (of chemical or idiopathic origin).² Abrasion is the wearing away of the structure through an abnormal mechanical process. Dental abrasion implies mechanical wear of tooth structure by repeated physical contact habitually by overzealous tooth brushing and/or abrasive dentifrices.³

It is important to consider the etiology in order to treat any lesion. CEJ is the area of structural weakness where enamel layer is at its least thickness.⁴ Regressive changes of the dentition such as abrasion, attrition and erosion are believed to be causative factors in the formation of NCCLs in such vulnerable areas.⁵ Loss of tooth structure in the cervical region cause aesthetic problems as well as discomfort because of the dentinal hypersensitivity to the patient.⁶ These lesions can also cause plaque retention, carious incidence, pulpal involvement and structural disintegrity of the tooth.⁷

Clinically, they are seen with increasing frequency and present unique challenges for successful restorations.

Treatment measures include resin-based composites, glass-ionomers or a combination of the techniques. Other treatment options include metal restorations, application of dentin bonding agents, copal varnishes, fluoride therapy and desensitizing agents. Besides, night guard, occlusal adjustments, dietary modification and oral habit cessation are adjunctive management modalities.

CASE REPORT

A 40-year-old female patient presented with sensitivity to cold in upper posterior teeth. She also complained of tooth defects that were visible when she smiled. Patient gave a history of using hard toothbrush. During clinical examination, generalized Class V lesions with dentinal involvement were observed (Figure 1, 2). After careful examination of the site and studying optical properties of the lesion, Beautifil II (Giomer direct restorative material) was selected for the restoration (Figure 3). The literatures suggest that Giomer restorative and adhesive systems have good biocompatibility, least long-term post-operative sensitivity, and possess anti-plaque formation properties.

The necessary oral prophylaxis was performed to establish optimum periodontal health. In the sub-sequent appointment, the teeth surfaces were cleaned with the slurry of pumice paste. It has been determined that 5500 K is the best light to use for shade matching. Hence, the tooth shade was determined using Rite Lite (AdDent Inc. USA) corpatrin to the adjacent teeth using direct

shade selection method (Figure 4). The shade was determined to be A3 (dentin shade) and universal incisor. The tooth preparation was done by slightly beveling the enamel margin using bur no: F216. The prepared teeth were isolated using cotton rolls. The enamel portion of the cavity were firstly treated with 37% hydrophosphoric acid (FI-bond II etchant) for 15 seconds then rinsed with water and air-dried. Then self-etch FI-Bond II primer was applied onto the entire cavity for 10 seconds, which was then air-dried thoroughly. The fluoride releasing FI-Bond II bonding system (FI-Bond II, Shofu Inc. Japan) was applied on the surface, gently air thinned and polymerized for 20 seconds.

The restorative material was placed by using Bi-layered shading technique. In this case, Beautifil II fluoride releasing light cured esthetic material (Shofu Inc. Japan) of A3 and universal incisor shade were used to achieve

desired esthetic result. The restorations were completed by following sequential order of finishing, polishing and super glossing using Super-snap rainbow kit (Shofu Inc. Japan) (Figure 5, 6).

DISCUSSION

The success of aesthetic restoration largely depends upon the thorough understanding of tooth defects; optical properties of the natural tooth; clinician's ability to select proper shades, opacities; properties and thickness of the restorative material; and ability to place them in correct location. It is author's experience that Beautifil II (Giomer) restorative materials are user-friendly in terms of its handling and shade matching properties and various literatures have justified their biocompatibility, fluoride release and recharge, strength, aesthetic and anti-plaque effect .



Figure 1: Pre-operative with showing Class V lesion on tooth #13, 14 and 15.



Figure 2: Pre-operative view showing Class V lesion on tooth #23, 24 and 25.



Figure 3: Giomer restorative material (Beautifil II).

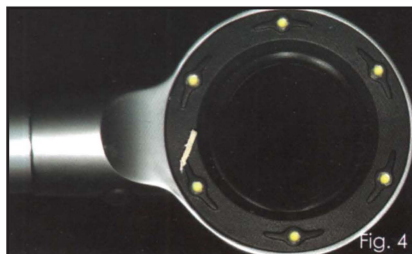


Figure 4: Shade taking under Rite Lite (AdDent Inc. USA).



Figure 5: Post-operative view of tooth #13, 14 and 15.



Figure 6: Post-operative view of tooth #23, 24 and 25.

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