Treatment of Cervical Lesions

A Combined Periodontal-Restorative Team Approach
Components of a beautiful smile:

1) Incisal edge position
2) Tooth length
3) Gingival levels
Definition

Loss of tooth structure in the cervical area of the tooth.

Mair, 1992
Definition

Loss of tooth structure in the cervical area of the tooth.

- Carious Cervical Lesion
- Non-Carious Cervical Lesion
- Restored Cervical Lesion
Definition

Main etiological factors:

1) Plaque accumulation
2) Diet
3) Reduced salivary flow
The loss of substance along the gingival margin of the tooth, due to: abrasion, erosion, or abfraction.

*Bartlett & Shah, 2006*
Prevalence

Prevalence of cervical lesion up to 85%

Exposure of dentin is less frequent, 2-6%

Almost always on buccal

More common: premolar and canine
Least common: incisors

Bartlett and Shah, 2006
Bartlett et al, 1998
Khan et al, 1998
Borcic et al, 2004
Etiology

Possible etiological factors:

1) Mechanical
2) Chemical
3) Occlusal

Grippo, 1991
Etiology
Etiology

Kuroe et al, 2000
Etiology
When to treat?

Indication for treatment:

1) Dentinal hypersensitivity
2) Esthetic concern
3) Plaque accumulation
Treatment Options

Restorative Treatment

Surgical Treatment

Combined Treatment
Treatment Options

Restorative Treatment

Advantages:

Less time required to complete treatment
Reduced cost

Disadvantages:

Failed to restore tooth-gingiva harmony
Reduced bonding strength

Ven Meerbeek et al, 1996
Kwong et al, 2002
Treatment Options
Treatment Options
Treatment Options
Treatment Options

Surgical Treatment

Advantages:
- Restore the tooth natural proportion
- Increase of keratinized tissue

Disadvantages:
- Based on predictability of root coverage
- Increased cost & morbidity
Treatment Options
Treatment Options
Which Option?

Location of the lesion
dentin and/or enamel

Depth of the
cervical lesion
### Which Option?

<table>
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<th>CLASSIFICATION</th>
<th>DEPTH</th>
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<td>&lt;0.5mm</td>
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</tr>
<tr>
<td>Class III</td>
<td>0.5 to 2mm</td>
<td>yes</td>
</tr>
<tr>
<td>Class IV</td>
<td>&gt;2mm</td>
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Allen & Winter, 2011
The etiology and treatment of angular cervical tooth defects remains a controversial topic in current dental therapy. This problem is compounded when the cervical tooth lesion is accompanied by gingival recession. Angular cervical tooth defects were first recognized and described by Zsigmondy in 1894.

Miller in 1907 characterized the noncarious cervical lesion (NCL) as a slow and gradual loss of tooth substances resulting in smooth, wedge-shaped defects along the cemento-enamel junction (CEJ).

The classic treatment of these lesions has been to restore the exposed root surface to alleviate the patient’s root sensitivity, to improve the unesthetic appearance of the root color, or to satisfy the dentist’s perceived need to place a restorative material to minimize further progression of the lesion.

If gingival recession has occurred in the absence of a cervical lesion, the appropriate therapy is to provide periodontal treatment to re-establish the original gingival height.

The purpose of this article is not to provide a definitive answer to the etiology of the lesion, but to give guidelines for treatment of the lesion, recognizing the contemporary status of restorative and periodontal treatment.

Incidence

The incidence of NCLs reported in the literature ranges from 5% to 85% of the population.

Restorative and Periodontal Considerations for the Treatment of Noncarious Cervical Lesions

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Abstract: The etiology and treatment of angular cervical tooth defects remains a controversial topic in current dental therapy. The treatment of these lesions is compounded when the cervical tooth lesion is accompanied by gingival recession. This article presents an interdisciplinary approach to treatment of cervical tooth defects, recognizing the contemporary status of restorative and periodontal treatment. Treatment is based on the severity of the tooth surface defect, the extent of root exposure present, and the classification of the gingival recession. Where possible, restoration of cervical lesions should be avoided, thus circumventing the dilemma of restoring pathologic dentin. Periodontal root coverage procedures are the preferred treatment because of the high predictability for complete root coverage when treating Miller Class I and II gingival recessions.

Class I

Class II

Class III

Class IV

Figure 1 — Patient presented with cervical lesions and enamel loss on the mandibular left first and second bicuspids. Class II gingival recession is also apparent.

Advanced Esthetics & Interdisciplinary Dentistry
Vol. 1, No. 4, 2005
Which Option?

Miller classification

Amount of residual KT
Which Option?

No residual KT

Adequate KT
Which Option?

Predictable

Unpredictable

The bone or soft tissue loss in the interdental area and/or malpositioning of teeth is so severe that root coverage cannot be anticipated.

**The International Journal of Periodontics and Restorative Dentistry**

2/1985
### Which Option?

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<th>GRAFT &amp; RESTORE</th>
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<td><strong>Depth of recession</strong></td>
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<td>Class II, III or IV</td>
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<td><strong>Location of lesion</strong></td>
<td>Minimal to no enamel defect</td>
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*Allen & Winter, 2011*
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*CEJ-Cemento Enamel Junction  CRM-Cemento Restorative Margin  FGM-Free Gingival Margin*
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DEEP ROOT CARIES

Different is the case of deep carious cervical lesions (dCCLs), involving deep layers of dentin and/or affecting the root at a deeper apico-coronal level than the cervical area. In these cases, the anatomical landmark to be considered is the maximum apical extension of dCCL because it is necessary to achieve complete removal of the decayed tissue and cavity restoration.

Considering that a deeply placed restorative margin violating the dentogingival junction will produce loss of periodontal support and periodontal inflammation, the restoration of a dCCL must be preceded by, or be part of, a crown lengthening procedure in order to reestablish a proper biological width.

In general, as reported above, the presence of a GR associated with an NCCL/CCL on the root surface requires primarily a careful assessment of the lesion's characteristics and spatial relationships with the marginal periodontium to guide the choice of the most suitable surgical technique, with or without root restoration (Figure 6).

Nonetheless, it should be considered that some additional baseline site-specific patient characteristics may act as additional prognostic factors of the root coverage procedure, becoming relevant to the treatment planning.
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FIGURE 4.
Multiple gingival recessions (Miller I, maxillary left lateral incisor and canine) associated with NCCLs. A, Initial examination: the expected MRC lies at the level of the coronal NCCL step; B and C, Bilaminar technique of root coverage: CAF with subepithelial CTG; D, Sutures; E, Clinical appearance 1 month after surgery.

GINGIVAL RECESSION WITH DENTAL CERVICAL LESIONS

Bignozzi et al.

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Journal of Esthetic and Restorative Dentistry
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Non-carious Cervical Lesions Associated with Multiple Gingival Recessions in the Maxillary Arch. A Restorative-periodontal Effort for Esthetic Success. A 12-month Case Report

Correspondence to:
Mario Alessio Allegri
Vicolo S. Faustino 2, 37129 Verona, Italy; Tel: 0458015670; Fax: 0458015670; e-mail: marioallegri1973@libero.it

Zucchelli et al, 2011
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Zucchelli et al, 2011
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Zucchelli et al, 2011
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Zucchelli et al, 2011
Non-carious Cervical Lesions Associated with Multiple Gingival Recessions in the Maxillary Arch. A Restorative-periodontal Effort for Esthetic Success. A 12-month Case Report

Abstract

Restoration of non-carious cervical lesions (NCCLs) represents a major challenge for resin materials due to the different adhesive properties of the tooth structure, the biomechanical aspects of the cervical area, and the difficulties in the access and isolation of the operative field. Furthermore, NCCLs should be approached with a complete understanding of the role played by the marginal periodontal tissue. Whenever...

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Which Option?

Zucchelli et al, 2011
Which Option?

A

B

C

D

Zucchelli et al, 2011
Which Option?

Zucchelli et al, 2011
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Conclusions

1. NCCLs is a multifactorial disease, all risk factors should be addressed and corrected to assure long-term success.

2. Very frequently NCCLs requires a combined periodontal-restorative treatment.

3. Check the occlusion and adjust any occlusal interference. Consider an occlusal guard.

4. Maintenance therapy and proper oral home care are important for the prevention of NCCLs recurrence.
Thank You!