Treatment of Incipient Class I Caries

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To Protect, promote and improve the health of all people in Florida through integrated state, county and community efforts

Caries ?

Options

- Sealant
- Preventive Resin Restoration
- Class I Restoration

CAMBRA

TABLE 6

Occlusal Protocol***

ICDAS code	0	1	2	3	4	5	6
							
Definitions	Sound tooth surface; no caries change after air drying (5 sec); or hypoplasia, wear, erosion, and other noncaries phenomena	First visual change in enamel; seen only after air drying, or colored change "thin" limited to the confines of the pit and fissure area	Distinct visual change in enamel; seen when wet, white or colored, "wider" than the fissure/fossa	Localized enamel breakdown with no visible dentin or underlying shadow; discontinuity of surface enamel, widening of fissure	Underlying dark shadow from dentin, with or without localized enamel breakdown	Distinct cavity with visible dentin; frank cavitation involving less than half of a tooth surface	Extensive distinct cavity with dentin; cavity is deep and wide involving more than half of the tooth
Histologic depth		Lesion depth in P/F was 90% in the outer enamel with only 10% into dentin	Lesion depth in P/F was 50% inner enamel and 50% into the outer 1/3 dentin)	Lesion depth in P/F with 77% in dentin	Lesion depth in P/F with 88% into dentin	Lesion depth in P/F with 100% in dentin	Lesion depth in P/F 100% reaching inner 1/3 dentin
Sealant/restoration Recommendation for low risk	Sealant optional DIAGNOdent may be helpful	Sealant optional DIAGNOdent may be helpful	Sealant optional or caries biopsy if DIAGNOdent is 20-30	Sealant or minimally invasive restoration needed	Minimally invasive restoration	Minimally invasive restoration	Minimally invasive restoration
Sealant/restoration Recommendation for moderate risk	Sealant optional DIAGNOdent may be helpful	Sealant recommended DIAGNOdent may be helpful	Sealant recommended or caries biopsy if DIAGNOdent is 20-30	Sealant or minimally invasive restoration needed	Minimally invasive restoration	Minimally invasive restoration	Minimally invasive restoration
Sealant/restoration Recommendation for high risk *	Sealant recommended DIAGNOdent may be helpful	Sealant recommended DIAGNOdent may be helpful	Sealant recommended or caries biopsy if DIAGNOdent is 20-30	Sealant or minimally invasive restoration needed	Minimally invasive restoration	Minimally invasive restoration	Minimally invasive restoration
Sealant/restoration Recommendation for extreme risk **	Sealant recommended DIAGNOdent may be helpful	Sealant recommended DIAGNOdent may be helpful	Sealant recommended or caries biopsy if DIAGNOdent is 20-30	Sealant or minimally invasive restoration needed	Minimally invasive restoration	Minimally invasive restoration	Minimally invasive restoration

* Patients with one (or more) cavitated lesion(s) are high-risk patients. ** Patients with one (or more) cavitated lesion(s) and xerostomia are extreme-risk patients.

*** All sealants and restorations to be done with a minimally invasive philosophy in mind. Sealants are defined as confined to enamel. Restoration is defined as in dentin. A two-surface restoration is defined as a preparation that has one part of the preparation in dentin and the preparation extends to a second surface (note: the second surface does not have to be in dentin). A sealant can be either resin-based or glass ionomer. Resin-based sealants should have the most conservatively prepared fissures for proper bonding. Glass ionomer should be considered where the enamel is immature, or where fissure preparation is not desired, or where rubber dam isolation is not possible. Patients should be given a choice in material selection.

Preparation

- Etch only
- Toothbrush
- Pumice w/ cup
- Pumice w/ brush
- Air polish ($CaCO_3$/$NaHCO_3$)

Air polishing

Preparation

- Etch only
- Pumice (cup or brush)
- Air polish ($CaCO_3$/$NaHCO_3$)
- Air abrasion (Al_2O_3)
- Fissurotomy bur
- Fissure bur

Today's Trivia

Rubies  and Sapphires  are made out of the crystalline (gem quality) form of aluminum oxide (corundum).

Rubies get their deep red color from traces of chromium while sapphire colors come from other elements such as iron and titanium.

Materials – RDH / DA

- Unfilled sealant 0%
- Low-filled sealant < 10%
- High-filled sealant 10 – 60%

When does a highly filled sealant become a flowable composite?

Materials

- Unfilled sealant 0%
- Low-filled sealant < 10%
- High-filled sealant 10 – 60%
- “Flowable composite”
- Composite Resin
- Bonding agents?
- Shade / Opaque?
- Glass Ionomer?

American Dental Association

JADA, March 2008

Executive summary follows page 356

Evidence-based clinical recommendations for the use of pit-and-fissure sealants

A report of the American Dental Association Council on Scientific Affairs

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ABSTRACT

Background. This article presents evidence-based clinical recommendations for use of pit-and-fissure sealants developed by an expert panel convened by the American Dental Association Council on Scientific Affairs. The panel addressed the following clinical questions: Under what circumstances should sealants be placed to prevent caries? Does placing sealants over early (noncavitated) lesions prevent progression of the lesion? Are there conditions that favor the placement of resin-based versus. glass ionomer cement sealants in terms of retention or caries prevention? Are there any techniques that could improve sealants' retention and effectiveness in caries prevention?

Types of Studies Reviewed. Staff of the ADA Division of Science conducted a MEDLINE search to identify systematic reviews and clinical studies published after the identified systematic reviews. At the panel's request, the ADA Division of Science staff conducted additional searches for clinical studies related to specific topics. The Centers for Disease Control and Prevention also provided unpublished systematic reviews that since have been accepted for publication.

Results. The expert panel developed clinical recommendations for each clinical question. The panel concluded that sealants are effective in caries prevention and that sealants can prevent the progression of early noncavitated carious lesions.

Clinical Implications. These recommendations are presented as a resource to be considered in the clinical decision-making process. As part of the evidence-based approach to care, these clinical recommendations should be integrated with the practitioner's professional judgment and the patient's needs and preferences. The evidence indicates that sealants can be used effectively to prevent the initiation and progression of dental caries.

Key Words. Sealant; pit-and-fissure sealant; caries; caries prevention; primary prevention; secondary prevention; evidence-based dentistry; clinical recommendations.

JADA 2008;139(3):257-267.

While dental sealants have been recognized as an effective approach to preventing pit-and-fissure caries in children,[1-5] clinical questions remain about the indications for placing pit-and-fissure sealants, the criteria for their placement over early caries (that is, noncavitated caries) and techniques to optimize retention and effectiveness. This report on the clinical recommendations for use of pit-and-fissure sealants presents a critical evaluation and summary of relevant scientific evidence to assist clinicians with their clinical decision-making process.

USE OF SEALANTS: AN EVIDENCE-BASED APPROACH

Dentistry is a dynamic profession, continually reshaped by

ADA 2010

Seal all non-cavitated carious lesions (NCCLs)

JADA
September 2011 Survey

37.4% of general dentists in agreement

cavitated carious lesions (NCCLs) in children and young adults.

Methods. The authors mailed a questionnaire to a randomly selected sample of 2,400 general dentists (GDs) and pediatric dentists (PDs) in the United States. The sample was chosen by the ADA's Survey Center. The questionnaire included two photographs of NCCLs (permanent first molar and premolar) in a 12-year-old child. Respondents were provided with radiographic findings and asked to choose from several management options.

Results. In the absence of radiographic evidence of caries, 37.4 percent and 42.3 percent of GDs and PDs, respectively, indicated that they would seal the NCCL in the molar. For the premolar, a significantly lower percentage of GDs than of PDs indicated that they would seal the NCCL. With radiographic evidence of caries in dentin, less than 4 percent of all dentists surveyed indicated that they would seal the NCCLs, and more than 90 percent indicated that they would remove the caries and place restorations. Less than 40 percent of dentists indicated that they sealed NCCLs in their practice.

Conclusions. The U.S. dentists surveyed have not adopted evidence-based clinical recommendations regarding the sealing of NCCLs.

Practice Implications. New educational and dissemination programs should be developed regarding these evidence-based caries management approaches.

Key Words. Sealants; early carious lesions; evidence-based recommendations.

JADA 2011;142(9):1033-1040.

Managed Care Companies

Managed Care Companies

"Big Brother is watching…"

Sealant / Filling Ratio

By County

Outliers….

One Step Further….

Class I restorations done on teeth sealed within 3 years

Class I restorations done on teeth sealed within 3 years

By provider….

Credentials !!!

Treatment plan depends on the clinical judgement of the dentist

Treatment plan depends on the clinical judgement of the dentist

But…

Don’t be an outlier…

Public Health Dentistry

Public Health Dentistry

Emphasis On Prevention…