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## CONSERVATIVE DENTISTRY

### The effect of etching on bacterial microleakage of an adhesive composite restoration

Murray P E, Smyth T W, *et al.* *J Dent* 2002; **30**: 29-36.

**Etching minimized microleakage, which in turn was related to pulpal inflammation.**

In 110 noncarious, intact premolar teeth scheduled for orthodontic extraction, buccal class V cavities were prepared into dentine 1 mm coronal to the CEJ. In 35 cavities, phosphoric acid gel (PA) was applied for 1 minute to etch the walls, followed by restoration with adhesive resin. In 35 other cavities, EDTA was applied for 30 seconds to remove the smear layer, followed by restoration as in the PA group. A further 40 control cavities (C) were restored similarly but without etching.

Teeth were extracted 20–381 days later; bacterial microleakage was discovered in 20% of PA cavities, 51% of EDTA and 65% of C. The quantities of bacteria discovered followed a similar hierarchy. Pulpal inflammatory activity was greatest where there was microleakage in all 3 groups, but the PA and EDTA groups had more inflammation than the C group. Odontoblast density was reduced beneath cavities, probably through cavity preparation trauma. There were no differences in relation to the time to extraction. The authors recommend use of PA for these restorations.

## CONSERVATIVE DENTAL SURGERY

### Removal of caries using only hand instruments: a comparison of mechanical and chemo-mechanical methods

Nadanovsky P, Carneiro F C, *et al.* *Caries Res* 2001; **35**: 384-389.

**In the absence of local anaesthesia, the chemo-mechanical (CM) method was more comfortable than mechanical (M).**

In 66 subjects, each with a pair of similar carious coronal cavities in similar teeth, cavity preparation was randomized to 2 methods. A high-speed bur was used to breach enamel. Then in CM cavities, a solvent gel was applied and special hand instruments were used to remove caries until a hard surface was reached. In M cavities, new sharp conventional excavators were used to reach the same endpoint.

Caries was found by an independent operator in 4 M and 7 CM cavities, and LA was requested in respect of 4 M and 7 CM cavities. Discomfort was present during 1/3 of CM and 2/3 of M preparations. Preparation took a mean 9.2 min in CM and 8.6 min in M cavities.

## DENTAL PUBLIC HEALTH

### Changes in dental conditions during a decade in a middle-aged and older Swedish population

Kronström M, Palmqvist S, *et al.* *Acta Odontol Scand* 2001; **59**: 386-389.

**There were small changes apart from a substantial increase in fixed prosthodontic appliances.**

In 1989 a random sample of 3,000 subjects aged 45-69 years in one Swedish county was sent a questionnaire on their dental condition; 80% responded. In 1999, 2,708 of the original sample still living in the county were sent a further questionnaire; 70% responded; 1,665 participated in both studies.

Those with all teeth remaining decreased from 27% to 17% over the 10 years; prevalence of one jaw edentulous increased from 5% to 7%, and of removable partial dentures (RPDs) from 6% to 7%; on both occasions, 11% had all missing teeth replaced by fixed prosthodontics.

During the decade, 25% had lost teeth, 10% received new fixed bridgework, 3% RPDs, 3% new complete dentures and 1% implant treatment. The authors note that questionnaire reports are not exact, owing to failure of memory.

## OBSTETRICS; PERIODONTICS

### Higher risk of preterm birth and low birth weight in women with periodontal disease.

López N J, Smith P C, *et al.* *J Dent Res* 2002; **81**: 58-63.

**Another study of this controversial matter suggests a possible adverse effect of periodontal diseases.**

In this study from Chile, 406 subjects with gingivitis who were given OHI and scaling were termed healthy (H). They were compared with 233 who had definite periodontitis, remained untreated until after parturition and were termed the periodontal disease group (PD). The H group had more primiparous women (50% v. 25%), were younger (mean 24 v. 27 yrs), had fewer previous abortions (5% v. 14%), fewer smokers (15% v. 21%) and fewer obese (24% v. 43%), than the PD group. All subjects had free ante-natal care.

Periodontal findings included higher mean probing depth (3 mm v. 2 mm) and attachment loss (1.9 mm v. 0.8 mm) in the PD group than the H group. Preterm birth prevalence was 1.5% in the H group and 5.2% in the PD group; respective low birth weight prevalences were 1% and 3.4%. Multivariate logistic regression gave an adjusted risk ratio for low birth weight in the PD group of 3.6, and for preterm birth, 2.9.