

Abstracts on this page have been chosen and edited by Dr Trevor Watts

Oral medicine; behavioural science

Biological mercury measurements before and after administration of a chelator (DMPS) and subjective symptoms allegedly due to amalgam

Schuurs A, Exterkate R et al.
Eur J Oral Sci 2000; 108: 511-522

There was no causal relationship between amalgam fillings and symptoms subjectively attributed to them.

Numerous studies have indicated that mercury in amalgam fillings has no adverse systemic effects, but some people still claim to have such problems. In the present study, 68 subjects claiming to have symptoms from amalgam were compared with 52 controls. All subjects were aged 25–45 yrs and recruited via the media. Following tests and questionnaire at the first visit, they were randomly and double blindly given either 300 mg of DMPS (DL-2,3-dimercaptol-propanesulphonacid), a chelator which effectively removes mercuric ions, or a placebo, to take 1 hr before the 2nd visit 3 days later. At a 3rd visit 1 day later, treatment was evaluated. Urine was collected throughout the study.

Before treatment, 68 subjects reported at least one of 50 listed 'symptoms' (mean 4.6, max. 28). The 'symptoms' reported by more than 6 subjects were: metal taste (29), fatigue (21), memory loss (10), irritability (8), restlessness (8) and headache (7). Four subjects had no amalgam fillings; for the rest, mean DFT was 10.9 (max 27) and mean DFS, 23.6 (67). There were no differences in urinary or plasma mercury levels between the 2 groups either before or after DMPS treatment. All subjects had levels considerably below those at which adverse effects might be expected. Following detailed statistical analysis, the authors point out that unscientific claims about amalgam fillings have been publicized in the media, and this may be why certain people attribute to amalgam their subjective symptoms of unknown aetiology.

Oral pathology

Evaluation of premalignant potential in oral lichen planus using interphase cytogenetics

Kim J, Yook JI et al.
J Oral Pathol Med 2001; 30: 65-72

Lichenoid dysplasia (LD) had a high risk of malignancy which appeared linked to chromosome 9 monosomy.

A current trend in tumour research is using genetic techniques to identify patients who may be at risk of developing squamous cell carcinoma (SCC), which is believed to develop by a gradual buildup of genetic damage in response to appropriate factors. There is controversy over whether oral lichen planus (OLP) is a premalignant lesion. However, LD, which shows epithelial dysplasia, does appear to have malignant potential.

In this study, 15 OLP lesions were compared with 2 LD lesions in respect of their genetic characteristics. The LD lesions had progressed to SCC within 1 year of diagnosis. *In situ* hybridization was

performed for chromosomes 9 and 17, which appear to be most involved in head and neck SCC. In OLP there were significantly greater fractions of chromosome 9 monosomic and polysomic epithelial cells than lymphocytes. Polysomy was higher in the LD lesions but decreased almost to zero in the associated SCC, where monosomy increased greatly. Chromosome 17 showed no significant variations in the 3 lesions. The authors suggest that increased chromosome 9 monosomy in LD may relate to SCC development.

Removable prosthodontics

Relationship between oral function and occlusal support in denture wearers

Yamashita S, Sakai S et al.
J Oral Rehabil 2000; 27: 881-886

Masticatory function appears strongly related to possession of opposing posterior teeth.

This study compared subjects in a longitudinal aging project started in 1993 in Texas. Seventy dentate controls (C) and 4 types of denture wearer were examined: 46 with removable partial dentures (RPD) and some posterior occlusal support (group PD1); 19 with RPDs but no posterior support (PD2); 27 with either upper or lower complete dentures opposing natural teeth (CD1); and 26 with upper and lower complete dentures (PD2).

Bite force and masticatory performance were measured in all subjects. Group PD1 showed about 2/3 of the bite force and masticatory performance of group C; the other 3 groups were about 1/2 the levels for C. Statistical analysis showed that PD1 was significantly better than the other denture groups, and all were significantly different from C. The authors conclude that support between opposing natural posterior teeth is strongly related to masticatory function.

Periodontics; endocrinology

Associations of periodontal disease with femoral bone mineral density and estrogen replacement therapy: cross-sectional evaluation of US adults from NHANES III

Ronderos M, Jacobs DR et al.
J Clin Periodontol 2000; 27: 778-786

In females with high calculus scores who had never used HRT, there was an association between attachment loss (AL) and femoral bone mineral density (BMD).

This study used data from a large US cross-sectional epidemiological survey performed in 1988–1994, and based on 11,655 subjects. However, plaque was not scored, and calculus, AL and bleeding were measured only at mid-mesial and mesio-buccal sites in the 2 quadrants assessed.

In females with high calculus scores, those with low BMD had more AL than those with high BMD. In relation to HRT use for ≥ 2 years, there was slightly less AL than in those who reported never using it.

The authors suggest their findings indicate that osteoporosis may increase AL in such subjects, and that HRT may attenuate it. However, the findings may also be explained by variables common to personal healthcare, without any causal link.