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Cariology

Caries rates for the mesial surface of the first permanent molar and the distal surface of the second primary molar from 6 to 12 years of age in Sweden

Mejäre I, Stenlund H
Caries Res 2000; 34: 454-461

This study of caries on two adjacent surfaces raises interesting questions.

A cohort of 536 children aged 11–13 yrs in 1985–6 was followed up to age 21–22 yrs. In 374 children, a mean of 5 sets of bitewings were available from age 5 onwards. Usually the same dentist saw each child each year. Whilst there were no guidelines about when to restore the distal of second primary molars (Ed), there was agreement that the mesial of first permanent molars (6m: the most caries-susceptible proximal surface in the young permanent dentition) should only be restored when obvious dentine caries was present. Topical fluoride preventive programmes were instituted for all subjects.

By age 9 yrs, 36% of children had sound proximal surfaces on second primary molars and 52% on first permanent molars; the mean defs of Ed was 0.7, and the mean DFS of 6m, 0.19. The relative risk of enamel caries on Ed was 2–3 times that for 6m (sig. for all 4 quadrants), and of dentine caries, 1–2 times (sig. for quadrant 2 only).

Enamel and dentine caries rates on 6m were compared for ages 6–12 and 11–22. For dentine caries only, the rate was 4 times higher in the younger age group than in the older. The authors conclude that the progression of caries from the inner part of the enamel into dentine in 6m is much quicker before age 12 than after, and ask whether it might be possible to prevent caries on 6m by restoring caries on Ed.

Trauma; dental pathology

Long-term prognosis of crown-fractured permanent incisors. The effect of stage of root development and associated luxation injury

Robertson A, Andreasen FM et al.
Int J Paediatr Dent

Luxation especially, and completed root development of fractured teeth also, may significantly affect pulpal circulation.

After treatment of 455 teeth with fractured crowns, 103 of which were pulpally involved, follow-up was for a mean of 2.3 yrs (range: 6 months to 17 yrs) in a Danish university hospital. Luxation (L) affected 69 teeth with concomitant pulpal involvement (PI), and 246 without. Treatment (usually within 4 hrs of injury) was with hard-setting Ca(OH)₂ and temporary crown for all teeth, after any pulp exposure had been treated by partial pulpotomy (if necessary) and capped with another Ca(OH)₂ material. Patients' own dentists subsequently provided composite or full crown restorations.

Ten teeth (6 of these had closed apices) of the 69 with L and PI

subsequently developed pulpal necrosis, and 69 (56) of the 246 teeth with L but not PI; in these groups, pulp canals were obliterated in respectively 2 and 14 teeth, but only in 1 tooth in the groups without L. Damage to the periodontal ligament also increased the likelihood of pulpal necrosis in teeth with L. The authors conclude that pulp necrosis or canal obliteration is rare after crown fracture, that L is a significant risk factor for them, and that root development is only of significance where L has occurred.

Trauma; epidemiology

Risk evaluation and type of treatment of multiple dental trauma episodes to permanent teeth

Glendor U, Koucheki B et al.
Endod Dent Traumatol 2000; 16: 205-210

Early trauma increases the risk of further episodes.

From a random sample of 106 Danish children born in 1970 and with primary or permanent dentition trauma, 83 who had suffered permanent dentition trauma were followed up to 1988. One trauma episode was recorded for 42 patients, 2 for 18, 3 for 15 and 4–7 for 8. Thus 50% of subjects suffered further trauma.

Where the first trauma occurred in the age group 6–10 yrs, multiple trauma was 30% higher than in the age group 11–18 yrs. The mode for the first of multiple traumas was 9 yrs, and for second trauma, 11 yrs; the respective mean numbers of trauma episodes suffered by these subjects were 2.7 and 3.9. The risk of multiple injuries when the first trauma was at 9 yrs was 8.4 times higher than at 12 yrs.

For patients who had 2 episodes, the mean interval was 3.9 yrs; the interval between first and second traumas in those with 4 episodes was 2.1 yrs. For every new trauma episode, the interval became shorter. Endodontic and surgical treatment was most frequent at 2nd and 3rd episodes, prosthetic treatment at 3rd and subsequent episodes.

Gastroenterology; periodontics

Randomized clinical trial of *Helicobacter pylori* from dental plaque

Butt AK, Khan AA et al.
Br J Surg 2001; 88: 206

This study shows that the plaque reservoir of a causal organism of many gastric and duodenal ulcers can only be removed by local periodontal debridement and follow-up.

It is currently considered that *Helicobacter pylori* in dental plaque may be a reservoir for gastric reinfection after apparently successful eradication. Following gastrointestinal problems, 135 patients were recruited; of these, 28 did not comply with the study protocol, and in 25 more *H. pylori* could not be isolated from plaque.

Patients with *H. pylori* were randomized to (1) triple therapy (omeprazole, clarithromycin + metronidazole); (2) triple therapy + local dental therapy (scaling + 7dys of chlorhexidine mouthrinse); (3) local dental therapy only.

In group 1, *H. pylori* was eradicated from 0 of 27 patients; in group 2, from 21 of 25; and in group 3 from 27 of 30. Triple therapy had no advantage, as might be expected when a microbe is harboured within the plaque biofilm. Periodontal assessment and plaque control should be added to triple therapy for patients with antral gastritis associated with *H. pylori*.