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Endodontics

Evaluation of the ability of thermal and electrical tests to register pulp vitality

Petersson K, Söderström C et al.
Endod Dent Traumatol 1999; 15: 127-131

Cold and electric tests were good predictors of pulp vitality, but heat was not.

Vitality tests were performed in 56 patients with 59 teeth of unknown pulpal status, who were all awaiting endodontic treatment, and in 9 subjects with 16 intact teeth with radiographically normal supporting tissue. Teeth were isolated and tested with three methods: cold (ethyl chloride), heat (hot gutta-percha) and an electric pulp tester. Pulp chambers of the 59 teeth awaiting endodontic treatment were opened to determine pulp status and 29 were found to be necrotic; the 16 intact teeth were considered to have a vital pulp.

Cold tests correctly identified 24 of the 29 necrotic pulps, 27 of the 30 vital pulps in the endodontic group, and all 16 intact vital pulps. For heat, the respective figures were 25, 17 and 2; and for electric tests, 21, 27 and 16. Respective sensitivity, specificity and positive and negative predictive values were 0.83, 0.93, 0.89 and 0.9 for cold, 0.86, 0.41, 0.48 and 0.83 for heat, and 0.72, 0.93, 0.88 and 0.84 for electric tests. Accuracy, defined as the proportion of correct results, was 89% for cold, 59% for heat and 85% for electric tests.

Oral and maxillofacial surgery

Does diplopia persist after blow-out fractures of the orbital floor in children?

Cope MR, Moos KF et al.
Br J Oral Maxillofac Surg 1999; 37: 46-51

Younger patients have more persistent problems than adults following this type of fracture.

Because blow-out fractures are relatively rare in children, this study combined data from 2 groups of British hospitals over a 20 year period. Several small studies have reported a poorer outcome for children than for adults.

In 9 subjects aged 0-9 years, the commonest reported aetiology was a fall, and in 25 aged 12-15, it was an assault. In 39 cases, diplopia was the commonest complaint, and periorbital haematoma was found in 25 cases, and ophthalmoplegia in 23.

The 0-9 age group tended to have a linear 'trapdoor' defect in the anterior orbital floor, and the 12-15 group had larger 'open door' defects. Surgical management was applied generally to those with more severe presentation ($n = 31$) and the remaining 14 were managed conservatively. Diplopia was more likely to be prolonged in the youngest age group, taking 10-18 months to resolve in 5 cases, compared with 3-8 months in all except one of 11 older cases. In the light of their findings, the authors make recommendations for management of these rare fractures.

Paediatric dentistry

Epidemiology of traumatic injuries to the permanent incisors of 9-12-year-old schoolchildren in Damascus, Syria

Marcenes W, Al Beiruti N et al.
Endod Dent Traumatol 1999; 15: 117-123

This study estimated a lower rate of injury than in UK, USA and most Arabian countries, and there were differences in the details.

A multi-stage random sample of children was selected to represent 165,000 children aged 9-12 in Damascus schools. The response rate was 100%, and the authors state that in some schools all children asked to participate, making the sample larger (1,087) than the minimum 0.4% required. Not all children are sent to school, and nearly 60% of the sample was male.

The prevalence of injuries rose from 5.2% at 9 years to 11.7% at 12 years (15-20% in most other studies). This did not differ significantly according to gender. Overjet > 5mm in 69 subjects was associated with a trend towards increased injury (11.5% v. 7.6%), though not reaching significance ($P = 0.06$). Inadequate lip coverage in 194 subjects was significantly associated with increased injury (14.9% v. 6.5%; $P < 0.01$).

The commonest reported cause of injury was violence (51%), probably representing rough play, followed by traffic accidents (24%). Sports injuries were virtually unknown in this population, as sports facilities are not widely available. Most injuries were reported as occurring at age 9 or 10. About half involved enamel only, and half dentine. Only 7 of 105 teeth had received treatment, and about 70% of untreated teeth were considered to need treatment.

Conservative dentistry

Five year evaluation of class III composite resin restorations in cavities pre-treated with an oxalic- or a phosphoric acid conditioner

van Dijken JWV, Olofsson AL et al.
J Oral Rehabil 1999; 26: 364-371

There was no overall difference in outcome between these conditioning systems.

Oxalic acid conditioners have been introduced in the belief that they have a milder effect on dentine than phosphoric acid. In 52 patients each requiring at least 3 anterior proximal composite restorations, 151 class III and 12 class IV fillings were placed, mostly as replacements. At least one cavity in each patient was conditioned with phosphoric acid on enamel, and in 2 others oxalic acid was applied to the whole cavity with two different composite systems.

At the 5 year recall, 7 restorations had been replaced with crowns, and 7 were in patients who did not return. Restoration fracture made 4 fillings unacceptable during the follow-up; in 2 cases, caries progressed; and in one case, colour match was unacceptable at 5 years. Modified USPHS criteria were used. The authors note that incisal fractures in class III restorations were limited to oxalic acid conditioned teeth; overall there were no differences between the 3 systems.