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Paediatric dentistry

Dens invaginatus: a retrospective study of prophylactic invagination treatment

Ridell K, Mejàre I et al.
Int J Paediatr Dent 2001; 11: 92-97

Careful follow-up is necessary to identify treatment failures.

Pulpal complications are a significant risk in teeth with this developmental malformation. Over a period of nearly 30 years, 91 patients were seen in a Swedish clinic with 131 teeth diagnosed with dens invaginatus (dens in dente). Upper lateral incisors were involved in 112 cases, and central incisors and a premolar in the remainder. In 20 teeth the invagination was minor and confined to the crown, but in all the rest it invaded the root.

Periapical conditions were normal for 121 teeth; 10 of the remainder received endodontic treatment and 10 were extracted. In 95 of the periapically normal teeth, any caries was removed from the lumen, and calcium hydroxide was placed, followed by zinc oxide/eugenol cement with a conventional restoration. Treatment was by paedodontic specialists in all cases.

Eighty teeth in 57 patients were followed up for 6 to 128 months. In 9 cases, treatment failed, all with invaginations into the root; 5 failures were within 1 year, 3 within 1-3 years, and 1 after 5 years. The authors consider follow-up important to identify such teeth early for endodontic treatment.

Anatomy; orthodontics

Long-term stability of dental arch form in normal occlusion from 13 to 31 years of age

Henrikson J, Persson M et al.
Eur J Orthod 2001; 23: 51-61

Arch form did not remain stable, and tooth movement also occurred.

Most studies of arch form have been cross-sectional, and have tried to ascertain whether a specific form or forms exist. This study followed 30 subjects (11 male) with normal occlusion over an 18 year time span. Subjects were those still available from a group of 51 who were examined at age 13 to establish cephalometric and occlusal norms.

Casts of subjects were examined and digitized. Maxillary and mandibular arches were expressed in relation to conic sections (circle, ellipse, parabola, hyperbola). All arches at 13 yrs were found to be elliptical with varying degrees of eccentricity, which was used to stratify subjects into 3 groups. Mandibular arches were significantly more tapered in their form.

By age 31, there had been a significant reduction in eccentricity of arch form, with a more rounded arch. The change in the maxilla in all subjects and separately in females was significantly correlated with a reduction in intercanine width; change in the mandible was correlated in males with increased, and in females with slightly decreased intermolar distance; change in mandibular arch form also was correlated with increased lower incisor irregularity. The authors consider their results call into question the possibility of achieving post-orthodontic stability.

Oral medicine

A longitudinal analysis of salivary flow in control subjects and older adults with type 2 diabetes

Chávez EM, Borrell LN et al.
Oral Surg 2001; 91: 166-173

Older adults with poorly controlled diabetes may have reduced salivary flow, without the complaint of xerostomia.

Xerostomia reduces salivary defence mechanisms, and is a frequent complaint in diabetics. However, it is not known how diabetic salivary flow may vary with time. This study compared 29 type 2 diabetics (18 poorly controlled) with 23 healthy control subjects (both groups aged 54-90 yrs) at baseline and 24 (14) and 15 respectively one year later. Metabolic control and salivary flow parameters (unstimulated whole, unstimulated and stimulated parotid) were measured on both occasions.

There were no significant changes in metabolic control or salivary flow rates between the 2 visits. At both visits, poor metabolic control (HbA_{1c}>9%) appeared correlated with low salivary flow rates, and better control with higher flow, though not at the 5% level of significance for all flow rates. However, lower salivary flow did not correlate with xerostomia symptoms.

Orthodontics

Ultrastructure of cementum and periodontal ligament after continuous intrusion in humans: a transmission electron microscopy study

Faltin RM, Faltin K et al.
Eur J Orthod 2001; 23: 35-49

The lesser of two continuous intrusive forces produced less damage to the periodontium.

This was a rare histological study in human beings of the effects of intrusion. In 6 patients of mean age 15.3 yrs (range 14.1-16.7) whose first upper premolars were to be extracted for orthodontic reasons, 5 teeth each were subjected to apically directed forces of 50 cN and 100 cN for 4 weeks, while 2 teeth acted as controls. In each patient, the 2 teeth were treated differently. At 4 weeks, teeth were extracted with forceps and prepared for transmission electron microscopy.

In comparison with controls, intruded teeth showed resorbed cementum and degeneration of cells and matrix in cementum and periodontal ligament. There was also some alteration in vascular tissues. Changes were greater in the apical third of the root and also with the greater applied force. At the same time, significant amounts of repair were also observed despite the maintenance of the force. The authors comment that the lower level is preferable if continuous force is used, though intermittent force may be applied at a higher level.