Abstracts of the Scientific Literature

Knowledge of dental trauma first aid (DTFA) among school personnel and emergency centers in London

The aim of this cross-sectional study was to investigate the awareness and practices of dental trauma first aid (DTFA) in hospital emergency settings and in primary and secondary schools in London. Questionnaires and semi-structured interviews were conducted in a randomly selected sample of 125 schools and a total of 31 walk-in casualty centers. A person responsible for emergency care of children represented each of these study sites. Response rates of 82% and 87% were achieved for schools and casualty/emergency centers, respectively. The school respondents who had previously received advice on DTFA were three times more likely to be willing to replant an avulsed tooth compared to those who had not. A third of casualty personnel showed gaps in knowledge in DTFA. Results from schools showed an unwillingness to start emergency action mainly due to perceived inadequacy in knowledge/skills and also for legal reasons. The authors concluded that there is a need for further studies focused on the barriers resulting in unwillingness to provide DTFA among school personnel and responsibilities of professionals other than dentists.
Comments**: This is a well-done study that has examined the need for establishing a protocol for dental trauma first aid at schools and other emergency care settings.* ***NR.

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Addo M E, Parekh S, Moles D R, Roberts G J. Knowledge of dental trauma first aid (DTFA): the example of avulsed incisors in casualty departments and schools in London. Brit Dent J 2007, 202: E7, 1-6.

29 references

Osteogenesis Imperfecta: (OI)-medical management update

The purpose of the article is to update the oral health care provider on the etiopathogenesis of OI and the importance of appropriate dental management. Osteogenesis imperfecta is a relatively common hereditary connective tissue disorder characterized by bone fragility and fractures. Other frequently affected tissues include tendons, ligaments, skin, sclera, teeth, and middle and inner ear. Molecular studies have demonstrated that most cases result from mutations affecting the genes responsible for the formation of type 1 collagen. The phenotypic presentation varies from mild to lethal. Commonly observed dental abnormalities include dentinogenesis imperfecta (DI) and malocclusion. General anesthesia and surgical considerations include increased bleeding tendency, increased potential for malignant hyperthermia, impaired healing and difficulty with intubation. Medical therapies using bisphosphonates have resulted in reduced fracture risk and decreased bone pain. To date, no cases of bisphosphonate-associated osteonecrosis have been reported in patients with osteogenesis imperfecta. With appropriate precautions, the patient with osteogenesis imperfecta can tolerate and benefit from the delivery of necessary dental care to control oral disease, improve function, and improve esthetics.
Comments:** This is a well-written article with a clear concise outline of the findings associated with OI. It provides an in-depth, contemporary understanding of the disease with an emphasis on medical, orofacial findings and their management.* ***GEM

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Huber, M.A. Osteogenesis imperfecta. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007; 103: 314-20.

64 references

Posterior crossbite and TMJ clicking

Unilateral posterior crossbite has been considered a risk factor for temporomandibular joint (TMJ) clicking. The aim of this study was to investigate a possible association between unilateral posterior crossbite (UPC) and temporomandibular disk displacement with reduction. A survey was carried out in 1291 adolescents (708 males and 583 females) with a mean age of 12.3 yrs (range, 10.1–16.1 yrs), who underwent an orthodontic and functional examination performed by 2 independent examiners. UPC was found in 157 participants (12%). Fifty-three participants (4%) were diagnosed as having disk displacement with reduction. Only 8 participants (0.6%) were found to have both UPC and disk displacement with reduction. Logistic regression analysis failed to reveal a significant association between UPC and disk displacement with reduction. UPC does not appear to be a risk factor for temporomandibular joint clicking, at least in young adolescents.
Comments: *This result suggests that a possible TMJ functional adaptation to a UPC may exist in child and young adolescent. Early orthodontic treatment for UPC in these populations should not be recommended based on ly on the aim to prevent TMJ clicking. There is a need for study on the long-term effect of UPC on TMJ disk displacement.* ***YHW***

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Farella1 M, Michelotti1 A, Iodice1 G, Milani S, Martina R. Unilateral posterior crossbite is not associated with TMJ clicking in young adolescents. J Dent Res 2007; 86:137-41.

36 references

Oral health in myotonic dystrophy

Myotonic dystrophy or dystrophia myotonica (DM) is a hereditary neuromuscular multisystem disease with a varying clinical expressivity and severity. The objective of this study was to assess the oral health in children with myotonic dystrophy. Fifty-six DM patients, aged 2.7–18.0 yr, were compared with age- and gender-matched control patients with respect to caries, plaque, and gingivitis. Oral function and signs of temporomandibular dysfunction (TMD) were assessed, and the ability to co-operate in dental treatment was estimated. Questionnaires concerning eating habits, dental care, traumatic injuries to teeth, and orofacial function were also used. In comparison with the healthy control group, the DM patients had significantly more caries, plaque, and gingivitis. They also had more TMD problems and lower co-operation ability. General sedation was frequently needed to carry through dental treatment.
Comments*: Because of the higher prevalence of caries and gingivitis, DM patients need an intensive and frequent prophylactic care. For DM children with multiple caries, due to a variety of TMD problems and less cooperation, general anesthesia is necessary for a successful dental treatment.* ***YHW***

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Engvall M, Sjögreen L, Kjellberg H, Robertson A, Sundell S, Kiliaridis S. Oral health in children and adolescents with myotonic dystrophy. Eur J Oral Sci 2007; 115:192–7.

31 references

Effects of TiF derivative on enamel

The potential of a new titanium fluoride (TiF) derivative for caries prevention was tested in a pH-cycling model. Daily treatments with various concentrations (100, 250, and 500 ppm) of TiF were compared with similar NaF treatments given at the same pH. Bovine enamel lesions were subjected to 3 wk of pH cycling. The effects were assessed by analyzing Ca uptake and loss in the re- and demineralizing solutions, respectively, and by post pH cycling microradiographic analysis of the lesions. NaF reduced Ca loss, increased Ca uptake, and induced overall lesion remineralization. These effects were enhanced with increasing NaF concentration from 100 to 250 ppm but not from 250 to 500 ppm. Treatments with the TiF derivative gradually caused almost complete inhibition of Ca loss and uptake (lesion 'arrestment'), irrespective of the concentration of the TiF derivative. To test the permanence of protection, sound enamel was pretreated with either the TiF derivative or NaF, and demineralized for 14 d at pH 4.4 and 4.6. Calcium loss data showed that up to 80% inhibition of demineralization could be achieved for the TiF derivative, which was not possible for NaF treatments. The TiF derivative is a promising agent for the prevention of dental caries, especially when aimed at preventing the onset of caries.
Comments**: TiF derivative appears to be beneficial in preventing incipient caries, particularly in a very cariogenic environment. This study showed that at relatively low concentrations a high degree of protection is obtained.* ***YHW
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Exterkate RAM, ten Cate JM. Effects of a new titanium fluoride derivative on enamel de- and remineralization. Eur J Oral Sci 2007; 115:143-7.

19 references

Dental caries and oral health behavior in ADHD

This study tested the hypothesis that children with attention deficit hyperactivity disorder (ADHD) exhibit a higher caries prevalence and poorer oral health behavior than children in a control group. Twenty-one children with ADHD and a control group of 79 children, all aged 13 yr, underwent a clinical dental examination and completed two questionnaires on dietary habits and dental hygiene habits. Differences between the groups regarding decayed, missed, or filled surfaces, decayed surfaces, initial caries lesions, and gingival inflammation were non-significant. In comparison with control group, fewer children in the ADHD group brushed their teeth every morning (48% vs 75%) and evening (48% vs 82%). Children with ADHD were 1.74 times more likely to eat or drink more than five times a day than children in the control group. At age 13, children with ADHD did not exhibit a significant higher caries prevalence but did have poorer oral health behavior.
Comments**: For children with ADHD, besides the emphasis on oral hygiene and dietary habits, the intervals between each dental examination should be shorter to prevent a possible higher caries incidence in adolescence due to their poor oral health behavior.* ***YHW
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Blomqvist M, Holmberg K, Fernell E, Ek U, Dahllöf G. Dental caries and oral health behavior in children with attention deficit hyperactivity disorder. Eur J Oral Sci 2007; 115:186-91.

42 references