- 34 **Ahern JH**, Boland EA, Doane R, *et al*. Insulin pump therapy in pediatrics: a therapeutic alternative to safely lower HbA1c levels across all age groups. *Pediatr Diabetes* 2002;**3**:10–15.
- 35 **Mack-Fogg JE**, Orlowski CC, Jospe N. Continuous subcutaneous insulin infusion in toddlers and children with type 1 diabetes is safe and effective. *Pediatr Diabetes* 2005;**6**(1):17–21.
- 36 **Fox LA**, Buckloh LM, Smith SD, *et al*. A randomized controlled trial of insulin pump therapy in young children with type 1 diabetes. *Diabetes Care* 2005;**28**(6):1277–81.
- 37 **DiMeglio LA**, Pottorff TM, Boyd SR, *et al*. A randomized controlled study of insulin pump therapy in diabetic preschoolers. *J Pediatr* 2004;**145**:380–4.
- 38 **Eugster EA**, Francis G. Position statement: continuous subcutaneous insulin infusion in very young children with type 1 diabetes. *Pediatrics* 2006;**118**(4):1244–9.
- 39 **National Institute for Clinical Excellence (NICE)**. *Guidance on the use of continuous subcutaneous insulin infusion for diabetes*, Technology appraisal guidance no 57. London, UK: NICE, 2003.
- 40 **Pearson ER**, Fletcher I, Njolstad PR, *et al*. Switching from insulin to oral sulfonylureas in patients with diabetes due to Kir6.2 mutations. *N Engl J Med* 2006;**355**(5):467–76.
- 41 **Hattersley AT**, Ashcroft FM. Activating mutations in Kir6.2 and neonatal diabetes. *Diabetes* 2005;**54**:2503–15.

IMAGES IN PAEDIATRICS.....

doi: 10.1136/adc.2006.103887

Meningococcal septicaemia and dental changes

A case is described where localised tissue necrosis in meningococcal septicaemia led to profound dental disturbances in later life. *Neisseria meningitidis* infection may lead to disseminated intravascular coagulation (DIC), necrosis and infarction of organs, haemorrhage into the internal organs,^{1–3} hypocalcaemia² and post-recovery bone abnormalities.³ Dental complications have been reported with disruption of odontogenesis or delayed tooth eruption.^{1 3 4}

Case report

An 8-year-old girl was referred because of the discolouration of her permanent teeth.

She had had an episode of meningococcal septicaemia at 13 months of age. The main findings at that time were DIC with necrosis of part of the facial skin of her upper lip and fasciitis affecting her limbs.

Extra-oral examination at 8 years of age revealed old scars above the upper lip. Intra-oral examination showed that two lower permanent and one primary upper incisor teeth were severely hypoplastic.

Intra-oral radiographs showed a complicated image in the area of the upper front teeth (fig 1). There was a disturbance in the formation of the permanent upper lateral incisors and the upper left permanent canine. The crown of the upper left permanent central incisor (21) had stopped developing after the formation of the incisal edge. The other upper central incisor (11) presented with a similar image but tooth development seemed to have recommenced, probably with resolution of the septicaemia.

Discussion

The teeth do not all form at the same time and permanent incisors have usually initiated at or about the time of birth.

Tooth structure does not remodel and so changes in the form of teeth do not “heal” but go on to form a permanent record. Disturbances in the permanent dentition usually become obvious at 6–7 years of age when eruption of the permanent teeth begins.

It is difficult to discern the level at which the meningitic septicaemia affected the process of tooth development. Walton *et al* suggested that the occurrence of enamel defects was due to a probable subclinical premaxillary osteomyelitis.³

The purpose of this article is to inform paediatrician colleagues about such possible dental complications and to suggest that they might guide the families affected to seek dental care offered by specialist paediatric dentists.

V Siapka, P J M Crawford

Child Dental Health, Dental School, Bristol, UK

Correspondence to: P J M Crawford, Child Dental Health, Dental School, Bristol BS1 2LY, UK; peter.crawford@bristol.ac.uk

Competing interests: None.

References

- 1 **Coyne BMC**, Montague T. Teeth grinding, tongue and lip biting in a 20-month-old boy with meningococcal septicaemia. Report of a case. *Int J Paediatr Dent* 2002;**12**:277–80.
- 2 **Baines PB**, Hart CA. Severe meningococcal disease in childhood. *Br J Anaesth* 2003;**90**(1):72–83.
- 3 **Walton AG**, Meehan JG, Welbury RR. Meningococcal septicemia and disseminated intravascular coagulation affecting the premaxillary permanent tooth germs. *J Dent Child* 1998;**65**(3):191–3.
- 4 **Faibis S**, Widmer R, Sapir S. Meningococcal septicaemia and dental complications: a literature review and two cases. *Int J Paediatr Dent* 2005;**15**:213–19.

Figure 1 Left: upper occlusal radiograph. Middle: line drawing showing the identified tooth fragments Right: line drawing showing expected tooth development at this age.