Fever associated with teething

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Abstract

A relationship between teething and fever was sought by examining mothers' reports of the 20 days before the eruption of the first tooth in 46 healthy infants. Twenty infants had a fever of >37·5°C on day 0 compared with seven infants (or fewer) from day 19 to day 4. The danger of attributing fever to teething is emphasised.

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Teething it has been claimed, produces nothing but teeth.[1] Others claim, as did Hippocrates, that 'teething children suffer from itching gums, fever, convulsions, diarrhoea, especially when they cut their eye teeth and when they are very corpulent and costive' (25th aphorism, third book).[2] Illingworth 'searched through the whole of the word literature for evidence of this and found none' (that is, bronchitis, diarrhoea, rash, convulsions, and fever).[1]

This study attempts to address the question of systemic symptoms and signs associated with teething in a scientific manner by a prospective controlled investigation. The research was performed as the result of reading a 'spoof' article that claimed that fever is associated with teething.[3]

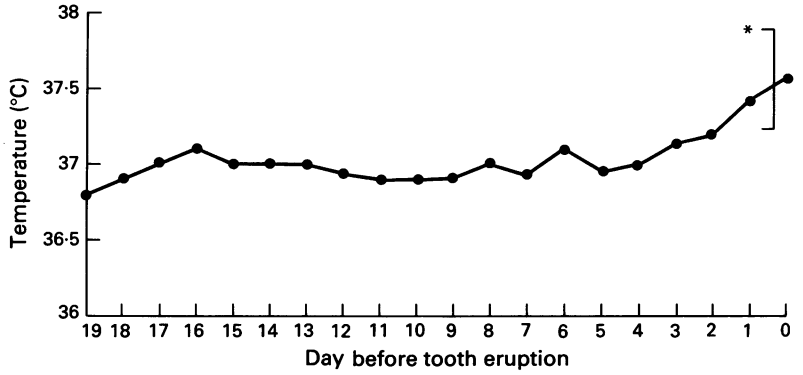

*Figure 1 The mean daily temperature of children by day before eruption of first tooth; *95% confidence interval 37·33 to 37·86.*

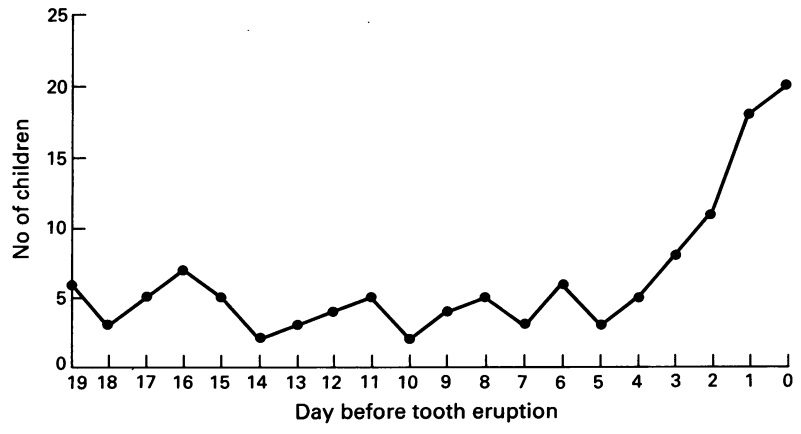

Figure 2 Number of children with fever of >37·5°C by day before eruption of first tooth.

Subjects and methods

Mothers of 46 healthy infants seen between April and September 1988 on a regular basis at the well baby clinic of one of the authors (LJ) were requested to write down the details of a daily examination of their infants on a supplied form. They examined rectal temperature and the gums for evidence of dental eruption and noted if there was any diarrhoea, convulsions, bronchial symptoms, or any other diseases; medications and medical examinations were noted. The mothers were told to bring the infant into the clinic for professional confirmation when tooth eruption was suspected. To simplify the analysis only data collected up to the eruption of the first tooth were analysed. The day that tooth eruption was noted is referred to as day 0 and all data refer to the previous 20 days.

No explanations were given to the mothers as to why they were to check their infants so closely but all were delighted with the special attention. Information from the forms was organised so that the 20 days before the first tooth eruption could be compared. The charts of the patients were re-examined to see if any difference was noted in the 10 days before tooth eruption compared with the previous 10 days as regards fever, otitis media, diarrhoea, cough, and convulsions. The mean daily temperature was calculated and statistical analysis was performed using the χ^2 method.

Results

As expected the first tooth to erupt was a lower central incisor at between 6 and 18 months (mean 8 months). This is similar to the 7·5 month average quoted by Illingworth.[1]

The mean daily temperature was between 36·9°C and 37·1°C from day 19 to day 4. Three days before the tooth eruption occurred the mean (SE) daily temperature increased to 37·14 (0·66) on day 3, 37·2 (0·68) on day 2, 37·4 (0·76) on day 1, and reached its highest value of 37·6 (0·85) on the day the tooth erupted; 95% confidence interval 37·33 to 37·86 (fig 1). On this day, 20 infants had a fever of >37·5°C compared with seven or fewer infants from day 19 to day 4 (fig 2). On the day of eruption 15 had fever of ≥38°C compared with five or fewer infants on days 19 to day 4. Using >37·5°C as

the cut off point, this difference was significant at a p value of $<0{\cdot}025$ by χ^2. Comparison of days 0 to 9 and 10 to 19 showed 47 *v* 67 days of otitis media, 85 *v* 72 days of diarrhoea, and 52 *v* 58 days with cough; no convulsions occurred.

Discussion

The tendency in the past to attribute serious disease to teething was so prevalent that in 1842 teething was the registered cause of death in 4·8% of all infants who died in London under the age of 1 year and 7·3% of those between the ages of 1 to 3 years according to the Registrar General's report.[2] Although today no such connection is worthy of consideration, the question remains as to whether minor symptoms, especially fever, are associated with teething.

Most texts express opinions without any factual basis. 'There is no definite evidence to support claims of accompanying temporary systemic disturbance. Such disturbance, the most common of which are low grade fever, facial rash and mild diarrhoea are not attributable to eruption of teeth'.[4] 'In the olden days it was a custom to blame teeth for colds, diarrhoea and fever'.[5] An earlier paediatric text in 1907 noted 'there may be a slight fever and restlessness with loss of appetite associated with the eruption of a tooth'.[6]

From the data presented here it would seem that the 'granny's tale' that infants cut their teeth with fever is supported. We would like to stress the danger in attributing fever to teething without ruling out other pathology. Children are teething from about 6 months to 6 years and therefore can easily be found to be teething when ill from other causes. Only the eruption of the first tooth is a clear landmark and so this study limited itself to the period before its emergence. We are intrigued by our finding and have no explanation to offer at this stage for the observation.

We were taught as students to listen to parents; grandma seems also to have had something to tell us.

1 Illingworth RS. *The normal child*. 3rd Ed. London: Churchill 1964:77–80.
2 Guthrie L. Teething. *BMJ* 1908;ii:468.
3 Bennett AJ, Bradno DS. The teething virus. *Pediatr Infect Dis* 1986;5:399–401.
4 Nelson WE, ed. *Textbook of pediatrics*. 9th Ed. Philadelphia: WB Saunders, 1969:756.
5 Spock B. *Baby and child care*. New York: Pocket Books, 1968:243.
6 Kerley CG. *The treatment of the diseases of children*. Philadelphia: WB Saunders, 1907:36.

Growth patterns after surgery for virilising adrenocortical adenoma

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Abstract

Analysis of growth in nine girls after successful surgical removal of a virilising adrenocortical adenoma showed that five girls continued to grow rapidly for up to 18 months after operation and subsequently had normal growth velocities. The other four girls grew at normal rates after surgery. Only one girl showed progressive advance in bone age after operation and she subsequently had precocious puberty.

Although more than 200 cases of adrenocortical tumour have been described in the literature,[1 2] the natural history of growth and pubertal development after successful surgery has been poorly documented. This paper describes the growth patterns after surgery in nine girls who presented between 1969 and 1988 with virilisation due to adrenocortical adenomas.

Patients and methods

The hospital records of nine girls born between 1965 and 1986 who had successful surgical resection of an adrenocortical adenoma were reviewed. Clinical details of these patients are given in the table. All the subjects were 4 years old or less at the time of diagnosis and five had symptoms for less than three months before presentation. Virilisation with clitoromegaly and growth of pubic hair was present in all cases but two also showed features of Cushing's syndrome; one of the latter patients (case 1) also had hemihypertrophy and was hypertensive at presentation. In all cases the tumours were well encapsulated and apparently complete resection was possible. Tumour weight ranged from 10 to 40 g in all but one case in which a larger tumour (193 g) with some features of a carcinoma was found.

All measurements were obtained using a Harpenden stadiometer and bone age was assessed by two observers using the Tanner-Whitehouse radius, ulna, and short bones (RUS) method. Only reported heights were available for parents. Duration of follow up after surgery ranged from 2·5 to over 20 years (median 10 years).

Results

Information on height and bone age at the time

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