Systemic and Local Teething Disturbances: Prevalence in a Clinic for Infants

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ABSTRACT

The aim of this study was to present data as reported by parents on primary tooth eruption and the occurrence of local and systemic manifestations in children ages 0 to 3 years seen at the baby clinic of the Araçatuba Dental School, UNESP, São Paulo, Brazil. Data from 1,813 records were analyzed, yielding 1,165 records suitable for review. Some type of local and/or systemic manifestation during primary tooth eruption was reported for 95% (1,129) children studied. The predominant manifestation was gingival irritation (85%), while the least frequent symptom (26%) was a runny nose. (*J Dent Child*. 2004;71:24-26) Keywords: TEETHING, INFANT ORAL HEALTH, PAIN

Teething is a natural physiological process that usually occurs without problems. It consists of the migration of the tooth from its intraosseous position in the jaw to eruption in the oral cavity. It involves gingival as well as other tissues and physiological mechanisms.¹

Some authors have associated primary tooth eruption with alterations such as irritability, gingival irritation, increased salivation, fever, agitated sleep, diarrhea, and loss of appetite.^{2,3} These disturbances are responsible for the referral of many babies to dental practices, since they provoke discomfort and pain in the patient. Parents always ask about the probable relationship between these phenomena and the eruption of the primary teeth.

The relationship between tooth eruption and organic or systemic manifestations in children is controversial among dentists and physicians within the literature.^{4,5} It remains unclear whether the disturbances are caused by the eruption of the primary teeth or whether they simply coincide with tooth eruption.

Since these disturbances are mainly observed during the eruption of the primary teeth, the objective of the present

study was to determine their occurrence in a population seen at a dental baby clinic.^{6,7}

METHODS

A total of 1,813 records obtained from patients ages 0 to 3 years seen at the baby clinic of the Araçatuba Dental School, UNESP, Sãu Paulo, Brazil during the period from January 1996 to December 2001 were analyzed.

The clinic exclusively treats babies during the first year of life, and parents are questioned regarding the occurrence of disturbances during tooth eruption. Since the patients were evaluated at 2-month intervals, a collection of data on the occurrence of such alterations could be obtained.

Analysis of the records showed the presence of the following symptoms: (1) gingival irritation; (2) runny nose; (3) diarrhea; (4) fever; (5) general agitation; (6) increased salivation; and (7) agitated sleep. It also showed a frequent association between tooth eruption and the occurrence of these disturbances, so these were considered variables for the analysis.

RESULTS

Of the 1,813 records analyzed, 648 were excluded due to lack of sufficient information. Of the 1,165 records selected, 1,104 (95%) reported some type of manifestation, while the absence of symptomatology during primary tooth eruption was reported by the parents in the case of 61 children (5%).

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Among the 1,104 children (95%) who manifested some kind of symptomatology, gingival irritation was observed in 943 children (85%), agitation in 812 (74%), increased salivation in 773 (70%), fever in 510 (46%), agitated sleep in 427 (39%), diarrhea in 381 (35%), and runny nose in 282 (26%). Other symptoms reported by the parents were vomiting, loss of appetite, and gingival inflammation (Table 1).

The most frequently involved teeth were the lower central incisors (52%), followed by maxillary central incisors (20%), mandibular first molars, and the mandibular canines (Table 2).

DISCUSSION

Some authors maintain that eruption of the primary teeth is a physi-

ological process and does not lead to discomfort. Rather, these disturbances occur parallel to the eruptive process.⁸⁻¹² Other researchers have recognized that the phenomenon of tooth eruption is responsible for the occurrence of local or systemic manifestations such as fever, diarrhea, loss of appetite, agitated sleep,^{3,5,13-15} dehydration, increased salivation, cutaneous eruption, and gastrointestinal disturbances.7

Other

In the present study, symptoms were observed in 95% or 1,104 babies ages 0 to 3 years, with gingival irritation being the most prevalent (85%). The same findings were also observed by Barlow et al.¹⁶ Pierce et al observed the presence of immunoglobulins in tissue surrounding the erupting tooth. The interaction of immunoglobulins with matrix proteins and mast cells can provoke an itching reaction that is no more than an allergic reaction (hypersensitivity). This reaction varies among children due to differences in their immunological responses.17

Irritability was the second most prevalent manifestation among the children studied (74%). Several studies^{7,10,12} have shown this irritability to be the most frequent symptom during eruption of primary teeth. Tooth eruption is believed to cause an anxiety crisis, perceived in almost all babies as a mood change, provoking the constant need to be held in the caregiver's arms, with fear reactions triggered by inoffensive stimuli.¹⁸ Many authors reported that irritability might be related to sleep alterations, with the baby presenting insom-

Table 1 . Prevalence of Disturbances During Tooth Eruption		
Disturbances	Total	%
Gingival itching	943	85
Irritation	812	74
Increased salivation	773	70
Fever	510	46
Agitated sleep	427	39
Diarrhea	381	35
Runny nose	282	26

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<i>Table 2. Prevalence of the Teeth Involved</i>					
Teeth involved	Total	%			
Mandibular primary central incisors	579	65			
Maxillary primary central incisors	225	23			
Mandibular canines	59	7			
Mandibular molars	26	3			

agitated sleep during primary tooth eruption.3,5,14,19,20 present study, agitated sleep was observed in 39% of ildren studied.

e third most frequent manifestation observed in the It study was increased salivation (70%). The onset of mptom is generally observed before tooth eruption and bably related to maturation of the salivary glands—which during this age-rather than tooth eruption, as well as inability of the child to swallow saliva.^{4,10}

ver was often reported by the patient's parents, but has considered to be of little significance by several investi-^{7,10,12,15} According to Galili et al²¹ and Carpenter²² the mportant disturbance during tooth eruption was body temperature. Multiple tooth eruptions may establish a stress condition, during which the resistance against infections is reduced and incidence of infectious diseases is increased. Bennet and Spencer suggest that fever during the process of primary tooth eruption is caused by the human teething virus (HT virus), which, at the beginning of life, is responsible for a primary infection that becomes subclinical. The HT virus remains in a latent state in the alveolar crypt until its stimulation through eruptive movements, provoking fever as well as local signs and symptoms such as gingival inflammation, hemorrhage, and pain.13

Foster and Rocha et al have suggested that diarrhea during tooth eruption is associated with the contamination of the baby's fingers or objects put into the mouth.^{14,23} Kruska associated diarrhea or intestinal disturbances with bacterial infections or feeding problems and questioned the relationship with tooth eruption.¹⁰ In the present study, diarrhea was observed in 381 babies (35%).

The least frequently reported disturbance during tooth eruption was a runny nose (26%), as also observed by Praetzel et al.2

It is important to note that all the aforementioned symptoms might occur alone or in combination and are temporary, disappearing within a few weeks. Guidance of the parents during this period is extremely important and might range from recommendations regarding improved hygiene and the most appropriate diet in simple cases to the prescription of anti-inflammatory and antipyretic drugs in more severe cases of fever, pain, and gingival inflammation. In the latter case, the pediatric dentist should advise the parents to seek a pediatrician to identify any concurrent illness.

Although the relationship between primary tooth eruption and occurrence of signs and symptoms is controversial, in the present study 95% of the patients showed some type of disturbance, as reported by parents, thus indicating the need for studies clarifying this relationship.

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