A Case of a Natal Tooth Showing a Pediculated Polyp–like Appearance

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Abstract
Here, we report a rare case of a natal tooth of the lower primary incisor region associated with a pediculated polyp–like mass lesion. The lesion occurred in a 27-day-old newborn boy. Macroscopically, the natal tooth was not of uniform color and the contour of the cervix was ill-defined. Soft X-ray imaging clarified the shape but there was no root visible. Histopathologically, the natal tooth was immature and incompletely formed.

Introduction
Eruption of the mandibular primary teeth begins at approximately six months of age. However, a tooth or several teeth occasionally erupt in newborn infants. Various terms have been used for these teeth, such as congenital teeth, fetal teeth, deciduous teeth and dentition praecox (1). According to Massler et al. (2) those teeth that are present in the oral cavity at the time of birth are termed natal teeth, and teeth that erupt during neonatal period (within one month after birth) are termed neonatal teeth (2). The reported incidence of natal and neonatal teeth ranges from 1 in 30,000 to 1 in 11 (1), and the teeth most often affected are the lower primary central incisors (90% of cases) (2, 3). While there have been several reports of natal teeth, their histopathological appearance has not been described in detail.

In this case report we describe the clinical and histopathological findings of a natal tooth with a polyp–like appearance.

Case report
A 27-day-old newborn boy was referred with a chief complaint of a mobile mass with tooth–like hard tissue in the lower incisal region, associated with irritability while feeding. The tooth–like tissue had been present since birth. It had gradually elongated and changed into a polyp–like mobile lesion three days after birth. There was a family history of natal teeth, with the boy’s sister having a natal tooth. However, his parents and second eldest sister did not have natal or neonatal teeth.

The boy had been of average size at birth (weight, 3.5 kg and height, 50 cm). On examination, the boy appeared generally healthy. Oral examination revealed a soybean sized (0.8 × 0.3 cm) and pediculated polyp–like mass containing tooth–like hard tissue, in the lower right first primary incisor region (Fig. 1). The boy was playing with the lesion using his tongue. A clinical diagnosis of a natal tooth was made, and, since the lesion was hypermobile and could have been swallowed or inhaled, extirpation was performed under topical anesthesia. Follow-up visits revealed that all primary teeth erupted normally except for the lower right first primary incisor.

Macroscopically, the extirpated material consisted of a long, slender, oval and globular shaped polyp–like mass measuring 0.8 × 0.3 × 0.2 cm in size. Half of the mass was milky white and the other half yellowish brown with incomplete tooth crown–like hard tissue (Fig. 2). Soft X-ray (Softex) examination clearly demonstrated a crown–like radiopaque image (Fig. 3).

Microscopically, the decalcified section revealed
Fig. 1. Intraoral view of the natal tooth.

Fig. 2. Macroscopic view of the extirpated material.

Fig. 3. Soft X-ray image of the specimen.

Fig. 4. Microscopic appearance of the lesion revealing incisor crown and fibrous connective tissue. No root is present. (Hematoxylin and eosin stain, ×2).

Fig. 5. Microscopic appearance of the lesion showing dentinal caries. (Hematoxylin and eosin stain, ×10).
incisal crown shad dentin, and pulp–like and fibrous connective tissues (Fig. 4). Enamel–like basophilic material was observed on the surface of the dentin (Fig. 4). Dentinal tubules were evident running irregularly through the dentin, as were calcospherites and predentin of various thickness (Fig. 4). In the cervical region, dentinal caries was visible with bacterial colonies seen in the dentinal tubules (Fig. 5). The pulp–like and fibrous connective tissues were rich in blood capillaries and fibroblasts, and neutrophil infiltration was also evident (Figs. 4, 5). Neither root nor Hertwig’s sheath were visible. The mucosal stratified squamous epithelium showed parakeratosis (Fig. 5).

**Discussion**

The cause of natal and neonatal teeth is unclear, but etiological factors include a superficial position of the germ (4), infection or malnutrition (5), a febrile state or hormonal simulation (6), hereditary factors (7, 8) and hypovitaminosis (9).

In the present case, no root was present on the natal tooth. Since a root is important for tooth eruption (10), these findings suggest that the superficial position of the tooth germ might have played a role in formation of the natal tooth. Hereditary factors may also have played a role, since the boy’s eldest sister also had a natal tooth.

There have been a few studies describing the histopathological appearance of natal teeth (Table 1). Some investigators have reported that most natal teeth have hypoplastic enamel, irregular dentin formation, no root and minimal cementum (3, 4, 9, 11–13). Hals (3) showed that enamel caries was present in the enamel of natal teeth removed at 7 days after birth, and Anneroeth, et al. (11) also reported enamel and dentinal caries in natal teeth extracted 17 days after birth. In the present case, the macroscopic contour of the cervix was unclear, the color of the crown was not uniform, and dentinal caries was observed, all findings consistent with the presence of hypoplastic enamel. No root was visible on histopathological and soft X-ray examination, and histopathological examination revealed irregularly running dentinal tubules and no cementum. Furthermore, caries could occur on enamel and dentine of natal teeth at latest in 7 and 17 days after birth in human life.

It is well recognized that natal and neonatal teeth can cause trauma to the infant’s tongue and nursing mother’s nipple. Neonatal teeth are usually less mobile than natal teeth, and natal teeth frequently become less mobile by one month of age (14). It has been reported that some newly erupted natal and neonatal teeth are mobile due to a gingival rather than a bony attachment, resulting from incomplete

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**Table 1. Histopathological features in the literature.**

<table>
<thead>
<tr>
<th></th>
<th>Gross appearance</th>
<th>Crown</th>
<th>Root</th>
<th>Pulp</th>
<th>Caries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enamel</td>
<td>dentine</td>
<td>dentin</td>
<td>cementum</td>
<td>inflammation</td>
</tr>
<tr>
<td>Hals (3)</td>
<td>2 natal teeth</td>
<td>unknown</td>
<td>hypoplasia</td>
<td>irregular tubules and partly no tubules</td>
<td>+ inflammation</td>
</tr>
<tr>
<td></td>
<td>removed at 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>days after birth</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Anneroeth, et al. (11)</td>
<td>54 natal and neonatal teeth ; removed day is not described</td>
<td>unknown</td>
<td>hypoplasia</td>
<td>no tubules in small area ; secondary dentin formation</td>
<td>+ inflammation</td>
</tr>
<tr>
<td>The present study</td>
<td>1 natal tooth</td>
<td>pediculated polyp</td>
<td>hypoplasia</td>
<td>irregular tubules</td>
<td>no root formation</td>
</tr>
<tr>
<td></td>
<td>removed at 27</td>
<td></td>
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<td></td>
<td>days after birth</td>
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root formation (1). In the present case, it is feasible that tooth eruption led the fibrous connective tissue formation with inflammation under the natal tooth. The pediculated polyp–like appearance of the lesion may have also been the result of the boy playing with it with his tongue. There was no injury in the oral cavity of the infant. However, he was irritable during suckling. Since the lesion was hypermobile and could have been swallowed or inhaled, extirpation was performed.

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References