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Management and Clinical Implications of Natal Teeth in a Newborn: A Case Report and Literature Review

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ABSTRACT

Natal teeth are rare developmental anomalies present at birth that may cause feeding difficulties, aspiration risk, and parental concern. Although uncommon, they hold clinical significance in neonatal care due to their potential to interfere with normal oral function. This paper presents a case of a 12-day-old full-term male infant who exhibited two moderately mobile natal teeth in the mandibular anterior region, leading to feeding problems and irritability. The teeth were extracted under local anesthesia without complications, resulting in immediate improvement in breastfeeding and steady weight gain during follow-up. A review of the literature indicates that natal teeth occur in approximately 1 in 2,000 to 3,500 live births, most often in the mandibular central incisor region. Proposed etiological factors include genetic predisposition, superficial positioning of the tooth germ, syndromic associations, and environmental exposures. Management strategies vary globally, from conservative approaches for stable teeth to extraction in cases of mobility or feeding interference. Early recognition and appropriate management are crucial to prevent neonatal complications. This case, supported by global literature, emphasizes the importance of neonatal oral screening, parental counseling, and improved pediatric oral health awareness, particularly in low-resource settings, such as Afghanistan.

Keywords: Natal teeth, Neonatal teeth, Early tooth eruption, Feeding difficulty, Newborn oral health, Afghanistan.

1. Introduction

Natal teeth, defined as teeth present at birth, represent a rare developmental anomaly of primary dentition that can pose significant clinical, functional, and psychological challenges to parents and clinicians alike. The condition is distinguished from neonatal teeth, which erupt within the first 30 days of life. Although historically regarded as a curiosity, natal teeth have attracted increasing clinical attention due to their potential to interfere with breastfeeding, cause soft tissue trauma (Riga–Fede disease), and carry a risk of aspiration or ingestion if excessively mobile (1-3).

The prevalence of natal and neonatal teeth varies widely across populations, reflecting differences in diagnostic criteria, genetic backgrounds, and environmental factors. Global estimates range between 1 in 2,000 and 3,500 live births (4,5), although some regional studies have reported higher frequencies. For instance, studies in Nigeria and India reported rates as high as 1 in 1,000 live births (6,7), while European and North American data remains consistent with global averages (8). Most cases involve the mandibular central

incisors (85-90%), followed by the maxillary incisors, with a slight female predilection (9). No clear ethnic or racial predisposition has been established, but familial clustering suggests hereditary influence in some populations (10).

1.1 Proposed Etiological Factors

The precise etiology of natal teeth remains uncertain and is likely multifactorial. Several hypotheses have been proposed, encompassing genetic, developmental, and environmental factors.

Familial tendencies have been observed, suggesting an *autosomal dominant* pattern of inheritance. Early tooth eruption in one or both parents has been correlated with the occurrence of natal teeth in offspring (11). This indicates that genetic regulation of odontogenesis timing plays a pivotal role.

The most widely accepted developmental hypothesis attributes natal teeth to the superficial positioning of the tooth germ close to the alveolar ridge, allowing premature eruption (12). Disturbances during embryogenesis may accelerate dental follicle maturation or disrupt the normal eruption barrier.

Natal and neonatal teeth have been reported in association with congenital conditions, such as Ellis-van Creveld syndrome, Hallermann–Streiff syndrome, Pierre–Robin sequence, and cleft lip and palate (13,14). These associations reinforce the idea that natal teeth can serve as clinical indicators of broader systemic or developmental abnormalities.

Environmental pollutants, particularly polychlorinated biphenyls (PCBs) and dioxins, have been implicated in early tooth eruption. Following the Yusheng rice oil poisoning incident in Taiwan, infants born to exposed mothers exhibited a significantly higher incidence of natal teeth (15). Animal studies corroborate this link, demonstrating accelerated incisor eruption following exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) (16).

Although evidence is limited, metabolic and hormonal influences, such as increased osteoblastic activity, hyperthyroidism, and maternal malnutrition, have been proposed as contributing factors (17). These conditions may disturb the delicate balance between alveolar bone formation and eruption timing.

1.2 Clinical Features and Complications

Natal teeth are usually small, conical, or yellow-brown in color, with poorly developed roots and high mobility due to incomplete root formation (18). Their presence can lead to feeding difficulties, maternal nipple trauma, or ulceration of the ventral tongue—commonly known as Riga–Fede disease. In severe cases, mobility poses a risk of aspiration or swallowing, necessitating prompt intervention (19,20).

1.3 Management Approaches

Management of natal teeth depends on the tooth's mobility, morphology, and impact on feeding or oral soft tissues. Conservative management is preferred for asymptomatic or stable teeth. Approaches include smoothing sharp edges, covering the tooth with resin, or using feeding aids to reduce trauma (21).

Extraction is indicated when the tooth is highly mobile, interferes with feeding, or causes ulceration. The procedure should be performed under local anesthesia, with vitamin K prophylaxis if the infant is under 10 days old to prevent hemorrhage (22). Postoperative follow-up is essential to ensure uneventful healing and monitor future tooth eruption (23).

In low-resource settings, lack of awareness and limited access to pediatric dental care can delay diagnosis and increase the risk of complications. Public health initiatives emphasizing neonatal oral screening and parental education are critical for improving outcomes (24).

1.4 Rationale for This Study

Given the rarity of natal teeth and the variability in management approaches, the present report aims to contribute to the growing body of evidence by presenting a case from Afghanistan—an underrepresented context in the literature—and supplementing it with a comprehensive review of etiology, prevalence, and clinical management strategies to inform evidence-based pediatric dental practice.

2. Case Presentation

A full-term 12-day-old male infant was brought to the Ali Abad Teaching Hospital of Kabul University of Medical Sciences on February 12, 2023, with complaints of difficulty in breastfeeding, frequent crying, and disrupted sleep. His parents reported the presence of two central incisor teeth in the lower jaw since birth, which they believed to be the cause of his discomfort and feeding difficulties.

Upon obtaining a detailed family history, the mother denied any familial occurrence of natal teeth. She stated

that her two older children, a 5-year-old daughter and an 11-year-old son, had no dental abnormalities at birth. Her pregnancy was reportedly uneventful, with no history of infections, hormonal imbalances, or systemic conditions. She also denied exposure to any known environmental toxins during pregnancy.

Due to parental concerns about radiation exposure and the young age of the infant, radiographic imaging was not performed. Ethical approval for reporting this case was obtained from the Research Committee of Kabul University of Medical Sciences, and written informed consent was provided by the patient's parents for participation, management, and publication of this case.

2.1 Clinical Findings

The infant had a body weight of 2.25 kg, which was below the expected birth weight percentile, suggesting inadequate nutritional intake due to breastfeeding difficulties. Oral examination revealed the presence of two central incisor teeth in the anterior mandible (Figure 1). These teeth had approximately one-third of their crowns erupted and exhibited moderate mobility. No lingual ulcers or soft tissue abnormalities were observed during the examination. Considering the infant's young age and the parents' concerns regarding radiation exposure, radiographic imaging was omitted.

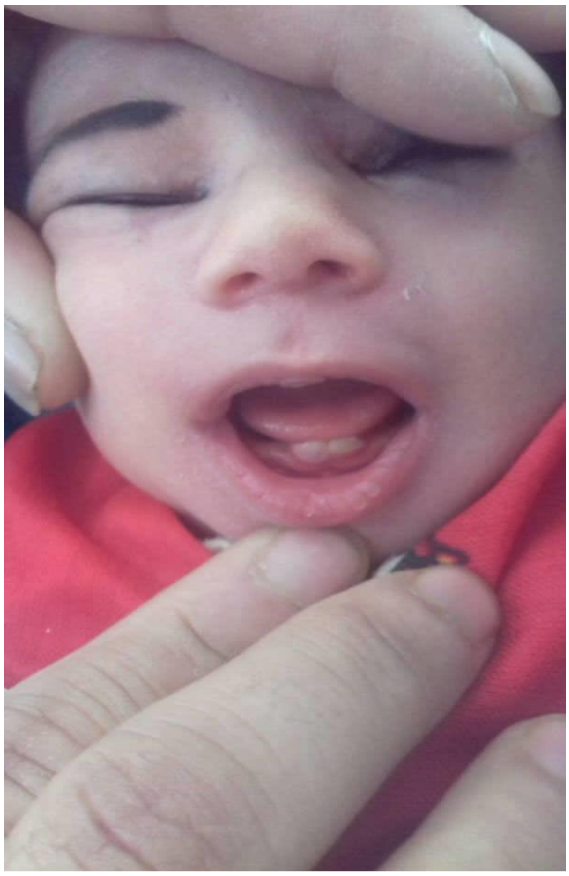

Figure 1: Frontal view showing typical oral manifestations of natal teeth

2.2 Therapeutic Interventions

Following intraoral and extraoral examinations, the Pediatric Dentistry team confirmed the presence of natal teeth in the anterior mandible and determined that extraction was the most appropriate management due to the risk of aspiration and feeding difficulties. Written informed consent was obtained from the infant's parents in accordance with hospital regulations.

As the infant was older than 10 days, vitamin K supplementation was not required before the procedure. For pain management, topical anesthesia was administered using 5% lidocaine hydrochloride gel, applied three times with sterile cotton swabs at 30-second intervals. Subsequently, local infiltration anesthesia with 1% lidocaine without epinephrine was delivered via a labial and lingual infiltration technique using a 30-gauge needle to minimize discomfort and reduce the risk of systemic absorption.

The extraction was performed using gentle forceps removal to avoid trauma to the developing alveolar bone (Figure 2). Hemostasis was achieved by applying sterile cotton gauze with light pressure to the extraction site. The mother was advised to initiate breastfeeding immediately, as breast milk contains immunoglobulins that facilitate healing and reduce infection risk.

Post-extraction examination of the teeth revealed normal shape, size, and coloration, with no apparent anomalies.

Figure 2: Natal teeth in the region of lower central incisor extracted

2.3 Follow-up and Outcomes

Post-extraction monitoring was conducted to assess the infant's healing progress and overall well-being. At the 24-hour follow-up, the mother reported the presence of a small clot at the extraction site, which resolved by the following day. Weekly follow-up communication with the mother revealed that after eight days, the extraction area had healed completely. The infant's discomfort, nighttime restlessness, and breastfeeding difficulties had also resolved.

From an initial weight of 2.25 kg, the infant demonstrated steady weight gain, reaching 3.1 kg after four weeks, indicating improved nutritional intake.

To ensure proper oral development, the parents were advised to schedule a follow-up dental evaluation at six months of age to monitor the eruption of primary teeth and assess any potential developmental concerns.

3. Discussion

Natal teeth, though uncommon, represent a well-documented anomaly that continues to attract attention due to its uncertain etiology and clinical implications. The current case of a 12-day-old male infant presenting with two natal mandibular incisors and feeding difficulties aligns with the typical pattern described in the literature, where approximately 85%-90% of natal teeth occur in the mandibular central incisor region (25). The patient's symptoms-poor feeding, irritability, and low birth weight-reflect the most frequently reported complications, including interference with breastfeeding and risk of aspiration (26).

3.1 Comparison with Previous Case Reports

Several published reports have documented similar clinical presentations and management outcomes. Rao and Mathad described a single natal tooth in a full-term infant associated with poor feeding, which was successfully managed by extraction (27). Likewise, DeSeta et al. presented a case series in which extraction was recommended for teeth demonstrating mobility or causing maternal discomfort. In the present case, the decision to extract the teeth was based on moderate mobility and feeding interference, consistent with these management guidelines (28).

In contrast, Olatosi et al. and Mhaske et al. advocated for conservative management in asymptomatic cases to preserve natural dentition, highlighting that unnecessary extraction could affect future occlusion or space maintenance (29,30). However, given the patient's nutritional risk and the absence of root formation, extraction was clinically justified.

Interestingly, some authors, such as Leung and Robson, have noted that extraction of stable natal teeth should be avoided when possible, as most represent prematurely erupted primary teeth rather than supernumeraries. Radiographic imaging is often recommended to differentiate between the two, but in our case, parental concern about radiation exposure precluded this step (31). Similar diagnostic limitations have been reported in other low-resource settings (32), emphasizing the importance of clinical judgment when radiography is not feasible.

3.2 Global Variations and Management Controversies

Management strategies for natal teeth vary globally and remain a topic of debate. While most clinicians

agree that highly mobile or symptomatic teeth should be removed, there is no universal consensus regarding the management of stable natal teeth. In Europe and North America, clinicians generally prefer a conservative approach, employing resin coverage or smoothing sharp edges (32). In Asia and sub-Saharan Africa, where access to pediatric dental materials and follow-up is limited, extraction remains the most common intervention (32).

The need for vitamin K prophylaxis before extraction has also been inconsistently applied. Early reports suggested that neonates under 10 days old should receive vitamin K to prevent hemorrhage due to immature liver function (32). In our case, the infant was older than 10 days, and no pre-extraction supplementation was required. This practice aligns with recent pediatric recommendations, but continues to vary by region and institutional policy (32).

Another area of ongoing debate involves the use of radiographic assessment. While imaging is valuable to distinguish supernumerary from primary teeth and assess root formation, its use in neonates is limited by parental apprehension and the absence of standardized radiographic protocols for newborns (33). Therefore, most diagnoses remain clinically based.

Although reports from the Middle East remain limited, published cases from Jordan, Saudi Arabia, and Pakistan indicate that natal teeth occur sporadically across the region (33). However, no large-scale epidemiological surveys have been conducted to determine their true prevalence in Middle Eastern populations. The scarcity of regional data highlights the need for multicenter collaboration and improved neonatal oral health reporting systems in countries, such as Jordan, Iraq, and Iran. Strengthening regional research could help clarify potential genetic, environmental, and nutritional factors influencing early tooth eruption in this part of the world. Given the lack of data, documentation of cases within regional journals, including the present report, contributes valuable insight and encourages awareness of neonatal oral anomalies in local clinical practice.

3.3 Gaps in Knowledge and Research Needs

Despite the large number of case reports, comprehensive epidemiological data on natal teeth remains scarce, particularly from low- and middle-income countries. A recent systematic review by Vitali et al. highlighted the lack of large-scale, population-based studies and the over-representation of cases from high-income regions (35). Additionally, most publications rely on isolated case descriptions, limiting the ability to generalize outcomes or establish standardized management protocols.

There is also insufficient understanding of the molecular and genetic mechanisms that drive premature tooth eruption. Although familial inheritance has been documented, no specific gene mutations have been consistently identified. Advances in developmental genetics could help clarify whether natal teeth arise from localized odontogenic activation or systemic endocrine dysregulation.

3.4 Contextual and Regional Relevance

This case also underscores the unique challenges of pediatric dental care in Afghanistan, where access to specialized dentistry is limited, and neonatal oral health awareness remains low. Studies from the region reveal that most caregivers are unfamiliar with normal oral development milestones, leading to delayed recognition and treatment of dental anomalies (36). Furthermore, socioeconomic barriers and the absence of neonatal oral health programs hinder timely intervention.

Despite these obstacles, the successful management of this case at a university-affiliated hospital demonstrates the capacity for quality clinical care within constrained healthcare systems. It also highlights the value of academic collaboration and documentation of such cases to improve local guidelines and contribute to the global literature on rare pediatric dental anomalies.

In summary, this case adds to existing evidence that early clinical recognition and timely intervention for natal teeth are crucial to prevent complications, such as aspiration, feeding difficulty, and malnutrition. Although extraction remains an effective treatment for mobile natal teeth, efforts should continue toward developing standardized global management protocols that consider cultural, economic, and clinical contexts. Expanding awareness among pediatricians, midwives, and dentists-particularly in low-resource and underreported regions, such as the Middle East-is essential for early detection and comprehensive care.

4. Conclusions

Natal teeth, though rare, present an important clinical consideration in neonatal oral health. The

present case reinforces that early recognition and appropriate management are essential to prevent potentially serious complications, such as aspiration, feeding difficulty, and malnutrition. Consistent with global findings, this report demonstrates that extraction remains the preferred approach when teeth exhibit mobility or interfere with feeding, while conservative management may be reserved for stable, asymptomatic cases.

The literature review reveals that while natal teeth are generally benign, their presence may indicate underlying developmental, genetic, or environmental influences. A multidisciplinary evaluation involving pediatricians, dentists, and caregivers is therefore vital for accurate diagnosis and holistic care. Despite numerous published case reports, significant knowledge gaps remain regarding the molecular mechanisms, long-term dental outcomes, and standardized management guidelines. Further multicenter studies and population-based data are needed to better define clinical protocols and understand regional variations in prevalence.

In low-resource settings, such as Afghanistan, where access to pediatric dental care is limited, the integration of neonatal oral screening into primary healthcare programs is strongly recommended. Public health initiatives aimed at raising awareness among healthcare providers and parents could significantly improve early detection and reduce complications. The successful outcome of this case illustrates that, even in constrained environments, evidence-based clinical practice and careful parental counseling can lead to optimal patient outcomes.

Overall, this report contributes to the existing body of knowledge by presenting a well-documented case from an underrepresented region, complemented by an updated review of etiology, prevalence, and management strategies. It highlights the need for increased research collaboration and capacity building in pediatric dentistry to ensure equitable oral healthcare for newborns worldwide.

Conflict of Interests

The authors declare that there are no conflicts of interest regarding the publication of this case study.

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