

12-1-2009

# Pulp Polyp Associated with a Natal Tooth: Case Report

Brian D. Hodgson

*Marquette University, [brian.hodgson@marquette.edu](mailto:brian.hodgson@marquette.edu)*

Rodney Vergotine

*University of Illinois at Chicago*

Lance Lambert

*University of Illinois at Chicago*

# Pulp Polyp Associated with a Natal Tooth: Case Report

Rodney J Vergotine \* / Brian Hodgson \*\* / Lance Lambert \*\*\*

*Natal teeth are an infrequent occurrence at birth. Often these teeth are extracted because they are very mobile and pose a risk of aspiration. This is a rare case in which a natal tooth was extracted by the pediatrician with his fingers. A root fragment remained and out of this developed a large pulp polyp. This relationship has not been previously reported.*

J Clin Pediatr Dent 34(2): 161–164, 2009

## INTRODUCTION

The response of the dental pulp to exposure to the oral environment can vary greatly. Pulp polyps, also called hyperplastic pulpitis, is an uncommon response to trauma that exposes the pulp to the oral environment.<sup>1-6</sup>

There are no reported studies of a pulp polyp developing from a root fragment alone. Reported studies involving trauma all involved complicated crown/root fractures or artificially induced trauma in lab animals.<sup>4,7</sup>

Natal teeth are rare in humans and a prevalence of 1:3,392 live births has been reported in the literature.<sup>8</sup> The most commonly affected teeth are the mandibular central incisors and the majority of these teeth represent the early eruption of the normal primary dentition.<sup>9</sup> The most common complications associated with natal teeth includes discomfort during suckling, aspiration of teeth, injury to the mother's breasts and sublingual ulceration (Riga-Fede disease).<sup>10</sup> Extraction of the natal tooth is indicated if it is excessively mobile, significantly interferes with feeding or is a supernumerary tooth.<sup>8,11</sup> Riga-Fede disease is not normally an indication for extraction of the natal tooth.<sup>10,12</sup>

A few isolated case reports have linked natal teeth to pathological gingival growths such as pyogenic granuloma,<sup>13</sup> peripheral ossifying fibroma<sup>14</sup> and reactive fibrous hyperplasia.<sup>15</sup>

## Case Report

A 4-month-old Hispanic female presented to the pediatric dentistry emergency clinic with her mother. The chief complaint was difficulty in feeding and a growth in the mouth on the lower jaw. History reveals a healthy infant the product of a normal, uncomplicated full-term pregnancy. Dental history reveals that she was born with 2 natal teeth, the mandibular left and right primary central incisors (#O, #P).

Tooth #O was extremely mobile, and extracted at 1 month of age by the pediatrician using his fingers. The mother noted the patient developed the oral growth at about 3 month of age. The patient now presents with an exophytic growth about 1cm in width by 5mm in height. The lesion was pedunculated, situated next to natal tooth #P on the alveolar ridge, pink in color, stippled surface and blanched easily with light pressure.

It appeared that the lesion was growing out of the socket of natal tooth #O (Figure 1). On radiographic examination of the area, what appears to be a root fragment could be visualized in the socket of natal tooth #O (Figure 2). A differential diagnosis included pulp polyp, congenital epulis, pyogenic granuloma and peripeheral ossifying fibroma. Due the extent of the lesion, age of the patient, increasing difficulty in feeding and potential difficulty in removing the root fragment it was decided to perform an excisional biopsy under general anesthesia.

The lesion was excised and the root fragment removed.

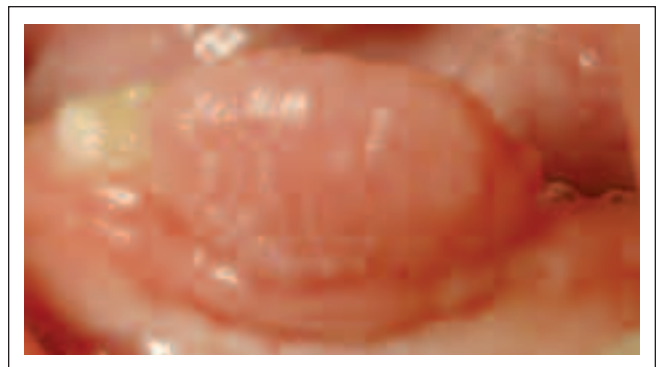


Figure 1. Picture of lesion intra-orally

\* Rodney J Vergotine, BChD, MSc(Dent), Department of Pediatric Dentistry, College of Dentistry, The University of Illinois at Chicago

\*\*Brian Hodgson, DDS, Department of Developmental Sciences, School of Dentistry, Marquette University, Milwaukee, Wisconsin, USA

\*\*\*Lance Lambert, DDS, Department of Pediatric Dentistry, College of Dentistry, The University of Illinois at Chicago, Chicago, Illinois, USA

Send all correspondence to: Rodney J Vergotine, 908 North Ridgeland Avenue, Oak Park, Illinois, 60302 USA

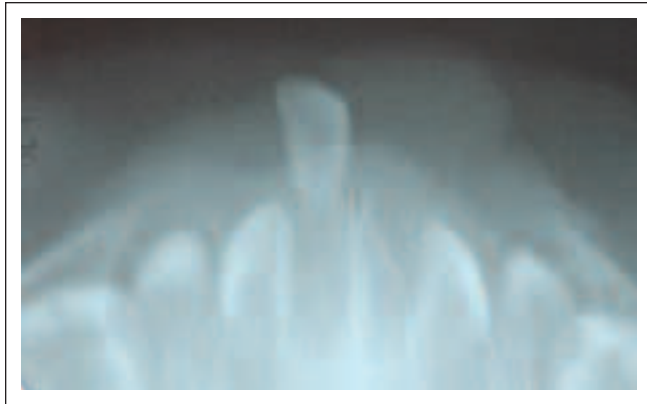
Phone: 312 996 1984

Fax: 312 996 1981

E-mail: rodney@uic.edu

The socket and incision area were closed with 3 chromic gut sutures (Figure 3).

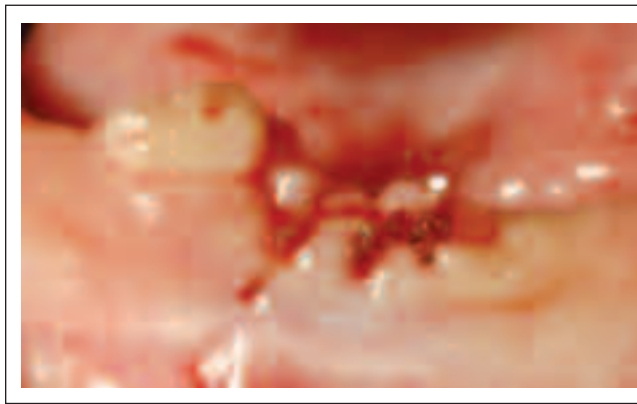
At the 2 month follow-up visit the area had healed completely (Figure 4). A radiograph of the area noted no pathology but did indicate that the extracted natal tooth #O was the actual deciduous tooth (Figure 5). Also noted on this radiograph is the development of permanent tooth #25 but no obvious sign of development of permanent tooth #24.



**Figure 2.** Initial radiograph

These findings were discussed with the parent and expectations regarding growth and development were addressed. A radiograph of the area is planned at the six month recall visit to assess the development of permanent tooth #24.

Histological examination of the lesion revealed a polypoid piece of fibrovascular granulation tissue with prominent dilated vascular channels in the center, and exhibiting mild chronic inflammation (Figure 6). The lesion



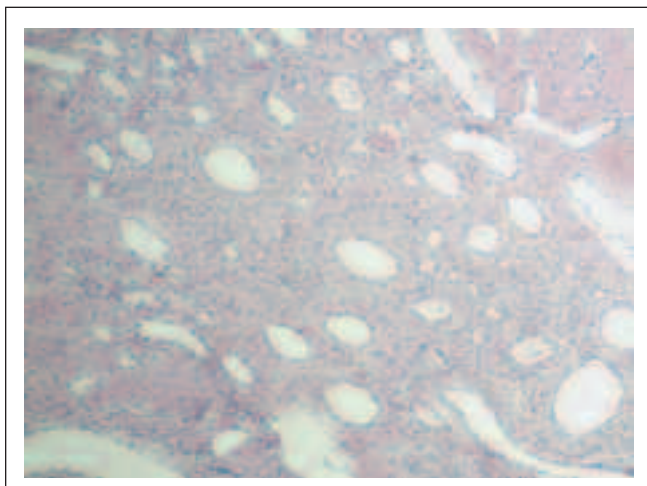
**Figure 3.** After surgical procedure picture



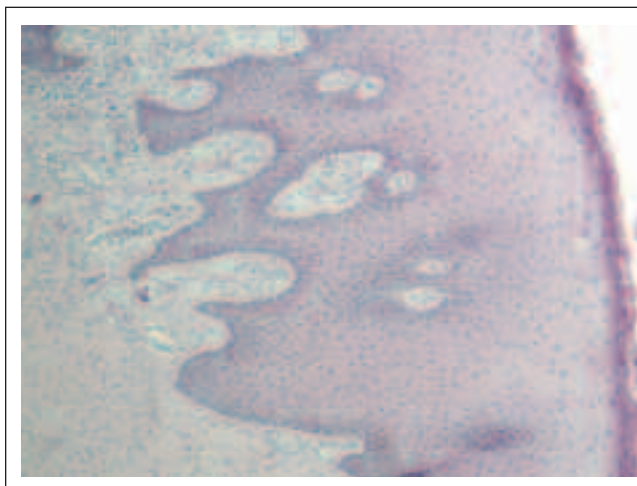
**Figure 4.** Post-operative picture



**Figure 5.** Post-operative radiograph



**Figure 6.** Prominent dilated vascular channels in center of lesion



**Figure 7.** Stratified Squamous Epithelium surfacing lesion

was surfaced by a layer of stratified squamous epithelium with a normal maturation pattern (Figure 7). A diagnosis of pulp polyp was rendered.

## DISCUSSION

This case report suggests that the extraction of a natal tooth and the subsequent remaining root fragment initiated the development of a pulp polyp. This type of relationship has not been previously reported. History of this case indicated that two months after the natal tooth was removed the infant presented with a gingival growth in the area of the removed tooth. This delayed presentation of a pulp polyp after traumatic injury to the tooth is consistent with the initiation and progression of this type of lesion.<sup>3</sup>

The differential diagnosis of this lesion should include pyogenic granuloma,<sup>13,16</sup> peripheral ossifying fibroma,<sup>7,14,17,18</sup> reactive fibrous hyperplasia,<sup>15,19,20</sup> peripheral odontogenic fibroma,<sup>21</sup> gingival fibrous hamartoma<sup>22</sup> and pulp polyp.<sup>3,4</sup>

Table 1 presents four of the abovementioned lesions in comparison to the patient in this case report. This comparison indicates how these four lesions (pyogenic granuloma, peripheral ossifying fibroma, reactive fibrous hyperplasia and pulp polyp) are very similar and that diagnosis for this case was dependant on the histo-pathological presentation, clinical picture and reported history.

In this case the history indicates that natal tooth was very mobile and was extracted as recommended by the literature.<sup>12,23</sup> There was no radiographic exposure made before extraction of the tooth thus the extent of root development was unknown. Referral to a pediatric dentist for consultation, radiographic exposure of area and removal of the tooth may have prevented the retention of a root fragment that led to the development of the pulp polyp. Curettage of the socket after extraction has been recommended by some authors to prevent the continued development of tooth-like structures after extraction of a natal tooth.<sup>9</sup> It is our opinion that a post-extraction radiograph should be taken before curettage of the socket area to ascertain any possible remaining fragments. The formation of a pulp polyp is an uncommon occurrence under most circumstances and the development of one in this case should be considered extremely rare.

## CONCLUSIONS

1. The extraction of natal teeth may leave root fragments.
2. A pulp polyp may develop from remaining root fragments.
3. Radiographic exposure pre- and post-extraction of a natal tooth will be useful to determine root development and complete removal of natal tooth.
4. Referral to a dentist, preferably a pediatric dentist, for assessment and possible removal of natal teeth should be promoted as standard of care.

## REFERENCES

1. Pugliesi DM, Cunha RF, Delbem AC, Sundfeld ML. Influence of the type of dental trauma on the pulp vitality and the time elapsed until treatment: A study in patients aged 0-3 years. *Dent Traumatol*, 20: 139-42, 2004.
2. Caliskan MK. Success of pulpotomy in the management of hyperplastic pulpitis. *Int Endod J*, 26: 142-8, 1993.
3. Caliskan MK, Oztup F, Caliskan G. Histological evaluation of teeth with hyperplastic pulpitis caused by trauma or caries: Case reports. *Int Endod J*, 36: 64-70, 2003.
4. Caliskan MK, Sepetcioglu F. Partial pulpotomy in crown-fractured permanent incisor with hyperplastic pulpitis: A case report. *Endod Dent Traumatol*, 9: 171-3, 1993.
5. Raslan N WW. Exposed human pulp caused by trauma and/or caries in primary dentition: A histological evaluation. *Dent Traumatol*, 22: 146-153, 2006.
6. Croll TP, Pascon EA, Langeland K. Traumatically injured primary incisors: A clinical and histological study. *ASDC J Dent Child*, 54: 401-22, 1987.
7. Bennett JS, McKean CF. The development of pulp polyps in miniature swine. *J Dent Res*, 45: 414, 1966.
8. Leung AK. Natal teeth. *Am J Dis Child*, 140: 249-51, 1986.
9. Zhu J, King D. Natal and neonatal teeth. *ASDC J Dent Child*, 62: 123-8, 1995.
10. Buchanan S, Jenkins CR. Riga-fedes syndrome: Natal or neonatal teeth associated with tongue ulceration. case report. *Aust Dent J*, 42: 225-7, 1997.
11. Seminario AL, Ivancakova R. Natal and neonatal teeth. *Acta Medica (Hradec Kralove)*, 47: 229-33, 2004.
12. Cunha RF, Boer FA, Torriani DD, Frossard WT. Natal and neonatal teeth: Review of the literature. *Pediatr Dent*, 23: 158-62, 2001.
13. Muench MG, Layton S, Wright JM. Pyogenic granuloma associated with a natal tooth: Case report. *Pediatr Dent*, 14: 265-7, 1992.
14. Kohli K, Christian A, Howell R. Peripheral ossifying fibroma associated with a neonatal tooth: Case report. *Pediatr Dent*, 20: 428-9, 1998.
15. Singh S, Subba Reddy VV, Dhananjaya G, Patil R. Reactive fibrous hyperplasia associated with a natal tooth. *J Indian Soc Pedod Prev Dent*, 22: 183-6, 2004.
16. Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: A review. *J Oral Sci*;48: 167-75. 2006.
17. Passos M, Azevedo R, Janini ME, Maia LC. Peripheral cemento-ossifying fibroma in a child: A case report. *J Clin Pediatr Dent*, 32: 57-9, 2007.
18. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. *Oral Surg Oral Med Oral Pathol*, 63: 452-61, 1987.
19. HINE MK. Fibrous hyperplasia of gingiva. *J Am Dent Assoc*, 44: 681-91, 1952.
20. Kohno M, Akanuma K, Noda T, Suzuki M. A case of fibrous hyperplasia in a 9-month-old infant. *Shoni Shikagaku Zasshi*, 24: 787-92, 1986.
21. Martelli-Junior H, Mesquita RA, de Paula AM, Pego SP, Souza LN. Peripheral odontogenic fibroma (WHO type) of the newborn: A case report. *Int J Paediatr Dent*, 16: 376-9, 2006.
22. Oliveira LB, Tamay TK, Wanderley MT, Rodrigues RM, Barboza CA, de Souza SO. Gingival fibrous hamartoma associated with natal teeth. *J Clin Pediatr Dent*, 29: 249-52, 2005.
23. Leung AK, Robson WL. Natal teeth: A review. *J Natl Med Assoc*, 98: 226-8, 2006.

