

Case Report

Alveolar Cysts of the Newborn with Differential Diagnosis

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Abstract

A broad range of developmental anomalies and morphological variants may occur in the oral cavity of the newborns. Dental lamina cysts, also known as gingival cysts of the newborn, are benign oral mucosal lesions of transient nature present at birth. Although the prevalence is high, they are rarely seen because of the transient nature of the lesions. They are self limiting and disappear spontaneously a few weeks or months after birth. Hence no treatment is required for such cases. Clinical diagnosis of these conditions are important in order to avoid unnecessary therapeutic procedure.

Key Words: Alveolar cyst, Gingival cyst, Newborn cysts, Bohn's nodules, Epstein's pearls.

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Introduction

Congenital cysts are those that are present at birth. A number of complications can be associated with congenital pathologies in the oral cavity like pain on sucking, refusal to feed, respiratory difficulty because of airway obstruction, aspiration of fluids or teeth when natal or neonatal teeth are present which in turn provokes a greater stress and fear to the parents regarding these congenital oral lesions. Henirich Bohn and Alois Epstein were the first authors to describe the small palatal cysts of the fetus and newborns in 1800's¹. Thus "Epstein's Pearls" and "Bohn's nodules" were named after them. Based on the histological origin and location in the oral cavity, Fromm et al, (1967)¹ classified oral mucosal cysts as Epstein's pearls, Bohn's nodules, dental lamina cyst or alveolar cyst of the newborn. Epstein's pearls are keratin filled. Cysts that occur in mid palatine raphe region near the mucosal surface. They are believed to arise from the trapped embryological epithelial remnants present along the line of fusion of the palatal halves. Bohn's nodules are also keratin filled cysts but scattered over the palate, most numerous along the junction of the hard and the soft palate and apparently derived from palatal salivary gland structure. Dental lamina cysts are found on the alveolar ridge of the newborn or very young infants representing cysts originating from the remnants of the dental lamina. It is important that the clinician does not mistake these cysts for natal/neonatal teeth or any other pathology in the newborn and render treatment to the patient as these are transient in nature and disappear within two weeks to five months after birth². Based on the location, these cysts can be called as Palatine cysts and Alveolar cysts. Those that are located in the midpalatine raphe are called Palatine cysts and those located on the buccal, lingual or crest of the alveolar ridge are called Alveolar cysts³. The reported-prevalence of alveolar cysts in newborn ranges from 25-53%, while for palatal ones is about 65%⁴.

Case report

Consultant in oral medicine, diagnosis and radiology department was on call for a consultation in the Neonatal ICU to attend a just born male neonate born with multiple swellings in the oral cavity. History revealed that it was a full term, normal delivery of a male neonate weighing 2.415kg and length measuring 44cms with a heart rate of 130 beats / min with no complications during pregnancy or delivery. All the required vaccinations were started soon after birth and his medical history was non-contributory. The complaint was that the neonate was refrained from breast feeding due to the reasoning of intraoral swellings. General examination was unremarkable. Intraoral examination revealed the presence of two cystic swellings, one on the left posterior maxillary alveolar ridge (Fig 1) and the other on the anterior mandibular alveolar ridges (Fig 2) exactly on the midline each measuring about 3x5mm and 5x6mm in size respectively. They were roughly oval in shape with a translucent smooth shiny surface



Fig 1: Alveolar cysts on the left maxillary posterior and anterior mandible.

and well defined borders. The cystic swellings were filled with clear fluid. On palpation the swellings were soft in consistency, non-tender (as the intensity of cry did not increase with palpation of the swelling), fluctuant, compressible but not reducible. The swelling in the mandibular midline was easily displaced to the lingual sulcus and was prominent only when pushed with the tongue while the baby cry for feed. Correlating the history of swellings present at birth, their site and the translucent fluid filled nature, a provisional diagnosis of gingival cysts of the newborn was given. Considering the inconspicuous nature of dental lamina cysts, the mother was reassured and advised to proceed with normal breast feeding for the neonate.



Fig 2: Closer view of the cyst on anterior mandible

Differential Diagnosis

Eruption cyst: These are commonly seen within the mucosa overlying the teeth that are about to erupt. The cyst appears as a bluish, translucent, elevated, compressible, dome-shaped lesion of the alveolar ridge, and is one of the local disturbances to eruption of teeth. But eruption cysts are uncommon in neonates and if present are usually associated with natal or neonatal teeth and in the current presentation there was no sign of neonatal or natal teeth eruption.

Alveolar lymphangioma: These are blue, dome shaped, fluid filled lesions in the alveolar ridge present at birth and are typically bilateral but in the current presentation the two cystic swellings were single in each arch.

Congenital hemangioma: Not uncommon at birth but the site and colour of the swellings in our case does not correlate with congenital hemangioma. And there was no other red macules (portwine stain) present in current presentation.

Congenital Mucocele: Is not common and moreover in the current presentation the translucent swellings were on the alveolar ridges which are deprived of minor salivary glands.

Discussion:

Gingival cyst of newborn also known as dental lamina cyst is a true cyst. The cyst may be solitary or many in

numbers. The Gingival cysts are commonly seen in the anterior part of the alveolar ridge. In the study reported by Donley and Nelson, the cysts were more commonly seen in the maxillary arch than in the mandibular arch and whenever they existed in mandible, they also appeared in the maxilla⁵. During the bell stage of the tooth development, the dental lamina disintegrates into discrete islands of epithelial cells. Usually these clusters degenerate and resorb. Sometimes, they persist as epithelial pearls in the gingiva, or islands within the jaw, in which case they are termed as the "rests of Serres". These remnants proliferate to form small keratinised cyst. It is believed that fragments of dental lamina that remain within the alveolar ridge mucosa after tooth formation proliferate to form these small, keratinized cysts⁶. The majority of these cysts degenerate and involute or rupture into the oral cavity within two weeks to five months of postnatal life^{7,8}. They are generally asymptomatic and do not produce any discomfort for the infant. Most authors do not recommend any treatment since the lesions are asymptomatic and disappear spontaneously by fusing with the oral epithelium and discharging its contents into the oral cavity during the neonatal period^{5,6,7}. In accordance with Donley's study the current presentation also proves that mandibular cysts are usually accompanied by maxillary cysts and the literature review shows that most of the newborn cysts reported were single in number in contradiction to this presentation of two cysts each one in the maxilla and mandible⁵.

Conclusion

It might be jittering for the parents to see a swelling in the newborn but as dental lamina cysts are benign, asymptomatic and transient, reassurance to the parents regarding the benign and self healing nature of the swelling is the best recommended advice. A close follow up of the condition is mandatory to confirm the clinical diagnosis as in cases similar to ours where the baby is just born and no invasive investigatory procedures could be performed. In the current presentation the neonate was reviewed after a week during which there was remarkable decrease in the size of the cysts.

References

- 1) Fromm A. Epstein pearls, Bohn's nodules and inclusion cyst of the oral cavity. *J Dent Child* 1967;34:275-87.
- 2) Flinck A, Paludan A, Matsson L, Holm AK, Axelsson I. Oral findings in group of newborn Swedish children. *Int. J. Clin Pediatr Dent* 1994; 4:67-73.
- 3) Jorgenson RJ, Shapiro SD, Salinas CF, Levin LS. Intraoral finding and anomalies in neonates. *Pediatrics* 1982;69: 577-82
- 4) Paula JD, Dezan CC, Frossard WT. Oral and Facial inclusion cysts in newborns. *J. Clin Pediatr Dent* 2006; 31: 127-29.
- 5) Donley CL, Nelson LP. Comparison of palatal and alveolar cysts of the newborn in premature and full-term infants. *Pediatr Dent* 2000; 22: 321-324

- 7) Kumar A, Grewal H, Verma M . Dental lamina cyst of newborn: a case report. J Indian Soc Pedod Prev Dent 2008 ; 26(4): 175-176
- 8) Regezi JA. Cyst of jaws and neck. In: Regezi JA, Sciubba JJ, Jordan RC, editors. Oral pathology: Clinical pathological correlation. 4 th ed. W.B. Saunders Co. 1999: p. 246.
- 9) Madléna M, Nagy G, Nagy A, Keszthelyt G. Inclusion cysts Case report. Fogorv Sz 1992 ; 85(4): 115-117.

Enigma of HIV 'Cure'

The Second Case of Apparent HIV "Cure" in a Baby from Milan, Italy following the case of the "Mississippi baby" that received widespread attention in 2013/2014 raised many questions about the immune dynamics of any viral infection¹.

The Lancet reported a case from University of Milan, of a baby born to a HIV-positive mother, who was 'transiently cured' of HIV following ART treatment, but to later exhibit detectable HIV infection. The baby was born in December 2009, intensive ART treatment instituted shortly after birth and appeared to have been cured of HIV in 3 years time. The viral load indicated that the virus had been eradicated and even antibodies to HIV disappeared to become seronegative. This indicated that the immune system has overcome the infection and even the virus disappeared from the system so that no more antibodies need to be produced to curtail the virus. The ART was stopped with the mother's consent and the child remained negative for two years, to show up HIV viral load again. The researchers concluded that the viral reservoirs had not been eliminated by ART, despite the virus being undetectable for more than 2 years, but kept at bay. Though the authors suggest that the child's high viral load at birth, infection in utero and low birth weight, may have precluded long-lasting viral remission, the virus stayed in the system and the original infecting strain rebound². The antiretroviral drugs though have substantially decreased HIV morbidity and mortality in the world, these drugs may not eradicate the virus and eliminate viral reservoirs in toto. This may not be necessary in the context that many of these epidemics are 'attenuated' in the long run, and such rebound from reservoirs in spite of the protective immunity induced are known in many diseases. Understanding the mechanism of this remission and relapse thus is a priori in infectious diseases research.

References:

1. <http://www.niaid.nih.gov/news/newsreleases/2014/Pages/MississippiBabyHIV.aspx>
2. Persaud D, Gay H, Ziemniak C, Chen YH, Piatak M Jr, Chun TW, Strain M, Richman D, Luzuriaga K. 2013 Absence of detectable HIV-1 viremia after treatment cessation in an infant. N Engl J Med. 2013 Nov 7;369(19):1828-35. doi: 10.1056/NEJMoa1302976. Epub 2013 Oct 23.
3. Giacomet V, Trabattoni D, Zanchetta N, et al. No cure of HIV infection in a child despite early treatment and apparent viral clearance. Lancet. 2014 Oct 4;384(9950):1320. doi: 10.1016/S0140-6736(14)61405-7.

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