Bilateral Eruption Cysts in a 15-month-old Child: A Conservative Management Approach

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ABSTRACT

An eruption cyst is a benign, developmental cyst associated with primary or permanent teeth. It usually resolves with the eruption of tooth and is asymptomatic in nature. But if it gets symptomatic or infected, it requires treatment. The present article reports a clinical case with a conservative treatment approach for the management of bilateral eruption cysts in a 15-month-old child.

Keywords: Cyst, Eruption, Teething.

Journal of Postgraduate Medicine, Education and Research (2022): 10.5005/jp-journals-10028-1560

INTRODUCTION

Tooth eruption is a process by which the tooth moves from its developmental position in the jaw to its functional position in the oral cavity. A child with teething suffers from a lot of problems, such as, sensitive painful gums, episodes of fever, drooling saliva, lack of sleep, crying, etc. and one of the reasons could be an eruption cyst.¹

Eruption cyst is a type of soft tissue benign cyst and has been considered a type of dentigerous cyst in the past as both cysts arise from accumulation of fluid between crown of an erupting tooth and reduced enamel epithelium of the surrounding dental follicle.^{2,3} An eruption cyst, however, differs from the latter in two ways; a typical dentigerous cyst, develops around the crown of an unerupted tooth within the jaw bone whereas, an eruption cyst occurs within the soft tissues overlying a tooth during the eruption process³ (Fig.1). Moreover, the eruption cyst mostly has hemorrhagic contents mixed in the pale colored cystic fluid, following surface trauma to the soft tissue giving it a blue to purple hue, and thus the name, eruption hematoma. According to the World Health Organization (WHO) classification of epithelial cysts of the jaws, eruption cyst is now considered a separate entity.^{2,4-6}

There are number of theories about its origin, such as early caries, trauma, infection, lack of space for eruption, a dense fibrous soft tissue, and genetic predisposition but the exact etiology of factors impeding the eruption through soft tissues is not yet known.^{5,7}

These cysts usually occur in first decade of life, a period when the primary dentition and many of the permanent teeth start erupting, with the mean age of occurrence is between 4 and 8 years.⁴⁻⁸ A slightly higher prevalence has been observed in males, with reported male to female ratios of 1.4:1^{5,9} and 2:1.⁶

The limited data on the prevalence of this condition and its reported low prevalence may be due to the fact that most physicians and dentists only see symptomatic cysts while many others resolve with tooth eruption and go unnoticed.² From the available literature, it appears to be more prevalent in the Caucasian race.^{2,4,8}

It can occur unilaterally or bilaterally, be singular or multiple.^{2,5} Clinically, eruption cyst appears as a translucent, dome shaped raised swelling, which is soft to touch. Color ranges from transparent, bluish, purple to blue-black depending on the contents of the cystic fluid.^{2,5,8}

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How to cite this article: Kaur K, Kapur A. Bilateral Eruption Cysts in a 15-month-old Child: A Conservative Management Approach. *J Postgrad Med Edu Res* 2022;56(1):37–40.

Source of support: Nil

Conflict of interest: None

Literature shows that the main reason to visit a dentist for the first time for this condition is appearance of cyst along with missing tooth in that area. Pain has been reported as a secondary factor, which further indicates the asymptomatic nature of this cyst.²

Management of eruption cyst ranges from observation and follow-ups to surgical excision of the cystic lining. Treatment, when indicated, is usually challenging in very young children due to the inability to cooperate and thus the need for sedation.

The present article reports a clinical case with a conservative treatment approach for the management of bilateral eruption cyst in a 15-month-old child.

CASE DESCRIPTION

A 15-month-old male child was referred by his physician to the Pediatric and Preventive Dentistry Unit, Oral Health Sciences Center, with the chief complaint of bluish discoloration in right upper back tooth region since 3–4 days. The bluish lesion was initially small but was gradually increasing in size. There was associated pain and feeding difficulty present. The child's past medical and dental history were not significant.

On intraoral examination, the patient was in primary dentition stage, clinically presenting with erupted upper and lower incisors. A bluish colored, soft, fluctuant, tender, nonpulsatile, localized swelling was seen in the region of erupting right maxillary

Fig. 1: Diagrammatic illustration of dentigerous and eruption cyst

Fig. 3: Eruption cyst in 54 region

Fig. 2: Eruption cyst in 64 region and erupting 54

Fig. 4: Erupting 54 and 64 (1 month follow-up)

primary first molar, which was gradually increasing in size and was of concern to the parents. A similar bulge was also seen in left maxillary primary first molar region, which was smaller in size and asymptomatic in nature (Figs 2 and 3). There was no previous history of trauma and infection in the concerned region. Based on the clinical findings, a provisional diagnosis of eruption cyst was made.

The patient was prescribed syrup paracetamol (125 mg), as and when required, for pain relief during feeding and to allow time for resolution of cyst and spontaneous eruption of the tooth. At 7 days recall period, the child presented with further increase in size of the swelling with associated pain. Since the child was very young, as a part of conservative management, it was decided to aspirate the lesion. Since aspiration of a cystic lesion is a minor procedure the option of general anesthesia was ruled out. After obtaining written informed consent from the parents, the child was made to sit comfortably in his mother's lap in a knee to knee position with the operator. Topical anesthesia (2% lignocaine jelly) was applied in the region and the cyst was aspirated gently with 26 gauge needle to release its contents and decrease the pressure. The child was distracted by using his favorite toy and appeared to be comfortable and playful in the mother's lap during the procedure. The aspirate was a blood tinged clear fluid. The area was cleaned with a gauze piece and a long gauze pack was placed. The child was kept under observation for 30 minutes before discharge. Syrup paracetamol

was prescribed to avoid any postoperative pain and discomfort to the child. The eruption cyst in left maxillary first primary molar region was kept under observation since it was asymptomatic and also for the need to keep the procedure and experience as short and comfortable for the young child.

After 10 days the patient reported with erupting right maxillary primary first molar uneventfully with no associated symptoms (Fig. 3). One month follow-up showed eruption of both the primary maxillary first molars (Fig. 4). At 6-month follow-up both the teeth were found to be fully erupted (Fig. 5). Routine preventive advice was given and dietary counseling was done for the parents for maintenance of optimum oral health of the child. A periodic 6-month follow-up was also advised.

DISCUSSION

The etiology of eruption cyst is still controversial. The effect of certain drugs like cyclosporin (an immunosuppressant) and diphenylhydantoin (an anticonvulsant), in its pathogenesis has been suggested due to associated findings reported in a few cases.^{5,6,8,10} A detailed medical history should therefore always be recorded to know the exact cause. In the present case, the patient did not have any significant medical history. The child's physician had observed the condition during a routine visit and referred them to the pediatric dentist for a closer observation and management.

Fig. 5: Six months follow-up showing fully erupted 54 and 64

Clinically, eruption cysts appear as a soft, translucent swelling, most commonly associated with the primary mandibular central incisors, first permanent molars and primary maxillary incisors.⁸ In the present case, it was seen in relation to the deciduous maxillary first primary molars. The cyst in right maxillary first primary molar region was bluish-black in color measuring 8 mm x 10 mm in diameter, tender and fluctuant on palpation. The cyst in left maxillary first primary molar region was bluish in color measuring 5 mm x 5 mm in diameter and was non-tender on palpation. Tunc et al. reported a cases series of 66 eruption cysts in 53 patients with mean age of 5.4 years in which 62.5% of the eruption cysts were in the erupting maxillary primary first molar region and 55.8% were associated with maxillary permanent central incisors. In the literature, the average size of the eruption cyst is variable, depending on size, and number of associated teeth, but usually less than 1.5 cm.³

Radiographically, an eruption cyst is not detectable as there is no bony involvement but a soft tissue shadow of the cyst and a dilated erupting tooth crypt may be visible.^{2,3} Even so, radiography is recommended for evaluation of the morphology of the involved tooth or its surrounding jaw bone.^{2,4-6} In the present case, after clinical examination, no further investigations were done as the child was very young.

Wait and watch is the most common treatment approach used for eruption cyst due to absence of any sign and symptoms and spontaneous resolution with tooth eruption. In the case series reported by Tunc et al. majority of the eruption cysts (86.8%) were not associated with any discomfort and were managed with follow-ups without any active intervention. Treatment is required in only symptomatic cases which get secondarily infected, cause pain, discomfort, and difficulty in feeding and mastication. The present case needed active intervention only for the right maxillary cyst which was found to be increasing in size with associated pain and feeding difficulty.

Treatment for symptomatic cyst involves simple excision or exposure of the crown.^{5,6,8} Only seven cases (13.2%), out of the 66 cases reported by Tunc et al. required incision of the cyst due to symptoms of pain and aesthetic concern of parents. Of these seven cases, three cases required surgical exposure under local anesthesia and four cases required nitrous oxide-oxygen analgesia, due to the age and uncooperative nature of

the children.⁵ A surgical excision of multiple eruption cysts in a 22-month-old male child was done under general anesthesia by Gaddehosur.⁸ In a case report by Navas et al. a congenital eruption cyst in mandibular anterior region of an infant was managed conservatively by fine needle aspiration without any sedation as was done in the present case.⁴

Boj et al. used Er, Cr: YSGG laser in a 6-year-old child to treat eruption cyst associated with left maxillary central incisor. As reported by the authors, the advantage of using laser over conventional method was avoiding the need for local anesthesia, rapid tissue healing, minimal bleeding, less postoperative pain, and edema as compared to conventional methods.¹¹

Histopathologically, the epithelial surface of cyst facing the oral cavity is lined by keratinized squamous oral epithelium corresponding to gingiva or alveolar ridge tissue. Lamina propria underlying the oral epithelium and overlying the roof of the cyst shows a variable inflammatory cell infiltrate. The roof of the cyst, shows a thin layer of nonkeratinizing squamous epithelium. In noninflamed areas, the epithelial lining of the cyst is characteristically of reduced enamel epithelial origin, consisting of 2–3 cell layers of squamous epithelium. If the epithelial lining is inflamed, acute inflammatory cells are found in the epithelium which proliferates and shows reactive spongiosis.³ Histopathological investigation was not done in the present case as no cystic lining was excised. The fluid aspirated from the cavity was blood tinged and was discarded after aspiration. Both teeth were found to be normally erupting at follow-up visits with no symptoms or recurrence.

If the cystic lesion does not resolve even after the eruption of associated tooth then provisional diagnosis other than eruption cyst should be considered. In this age-group, the most common differential diagnosis for an eruption cyst include epstein pearls, bohn nodules, dentigerous cyst, hemangioma, and gingival cyst of newborn.³

CONCLUSION

Tooth eruption is a much awaited event for parents and any abnormality in this process can raise concerns. Eruption cyst is always associated with erupting teeth and due to its size and color, parents usually have a tumor scare. Knowledge among clinicians is required for the correct diagnosis and management of eruption cyst to adequately guide and reassure the parents.

REFERENCES

1. Jones M. Teething in children and alleviation of symptoms. *J Fam Health Care* 2002;12(1):12–13.
2. Nagaveni NB, Umashankara KV, Radhika NB, et al. Eruption cyst: a literature review and four case reports. *Indian J Dent Res* 2011;22(1):148–151. DOI: 10.4103/0970-9290.79982
3. Morrison A. Eruption cyst. PathologyOutlines.com website. <https://www.pathologyoutlines.com/topic/mandiblemaxillaeruptioncyst.html>. [Accessed December 16th, 2021].
4. Navas RMA, Mendoza MGM, Leonardo MR, et al. Congenital eruption cyst: a case report. *Braz Dent J* 2010;21(3):259–262. DOI: 10.1590/s0103-64402010000300015
5. Şen-Tunç E, Açikel H, Sönmez IS, et al. Eruption cysts: a series of 66 cases with clinical features. *Med Oral Patol Oral Cir Bucal* 2017;22(2):e228–e232. DOI: 10.4317/medoral.21499
6. Bodner L, Goldstein J, Sarnat H. Eruption cysts: a clinical report of 24 new cases. *J Clin Pediatr Dent* 2004;28(2):183–186. DOI: 10.17796/jcpd.28.2.038m4861g8547456

7. Aguilo L, Cibrian R, Bagan JV, et al. Eruption cysts: retrospective clinical study of 36 cases. *ASDC J Dent Child* 1998;65(2):102–106.
8. Gaddehosur CD, Gopal S, Seelinere PT, et al. Bilateral eruption cysts associated with primary molars in both the jaws. *BMJ Case Rep* 2014;2014:bcr2013202606. DOI: 10.1136/bcr-2013-202606
9. Anderson RA. Eruption cysts: a retrograde study. *ASDC J Dent Child* 1990;57(2):124–127.
10. Nomura J, Tagawa T, Seki Y, et al. Kinky hair disease with multiple eruption cysts: a case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996;82(5):537–540. DOI: 10.1016/s1079-2104(96)80200-9
11. Boj JR, Poirier C, Espasa E, et al. Eruption cyst treated with laser powered hydrokinetic system. *J Clin Pediatr Dent* 2006;30(3):199–202. DOI: 10.17796/jcpd.30.3.2x11gv112n806261