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Eruption Cyst: Distribution and Prognosis

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Abstract: ***Background: eruption cyst is defined as a benign developmental soft tissue cyst associated with an erupting primary or permanent tooth. The cyst which occurs in mucosa, is lined by stratified squamous nonkeratinized epithelium, and filled with fluid or blood (so they are sometimes called eruption hematoma). It appears clinically as soft compressible dome-shaped translucent pinkish or bluish gingival swelling overlying the crown of an erupting tooth. Eruption cyst can't be seen on radiograph due to lack of bony involvement. It usually left to disappear by itself, but sometimes needs intervention when causing complications like infection, bleeding or pain. Aim: To evaluate the distribution of eruption cysts within the dentition and according to gender, beside evaluating the prognosis and the need for intervention. Material and methods: 200 patients visiting pediatric dental clinic in Prince Rashid Hospital in the North of Jordan were diagnosed to have eruption cysts. Some of these cases were discovered by routine checkup, but the other patients came complaining of the lesion. The diagnosis was carried out by a specialized pediatric dentist. The cases were followed up three monthly for nine months until spontaneous rupture, occurrence of complications, or surgical removal otherwise. Results: of the 200 patients, 176 patients committed the follow up. 168 patients had their cysts ruptured spontaneously during the follow up period. 8 cases needed intervention. Conclusion: the majority of eruption cysts resolve spontaneously, some may need intervention, so close monitoring and follow up are required.***

Keywords: pediatric dentist, oral and maxillofacial surgeon

1. Introduction

Eruption cyst is a benign, developmental phenomenon associated with an erupting primary or permanent tooth forming shortly before the tooth's appearance in the oral cavity[1]

The cyst has a prevalence of 0.6%. This low prevalence may be attributed to the fact that most eruption cysts are asymptomatic and resolve unnoticed, patients report to dental clinic solely in case of symptomatic eruption cysts[2-5].

They arise from enamel organ epithelium after the enamel formation is complete.

The definite etiology of eruption cyst is unknown. Early caries, trauma, infection, and space deficiency are thought to be possible contributing factors for eruption cysts[3,4,6,7].

Also eruption cysts can be seen in children on immunosuppressants such as cyclosporines or those who are undergoing anticonvulsant therapy[4,8],

While some authors consider that degenerative changes occurring in the reduced enamel epithelium at the time of amelogenesis or accumulation of fluid or blood around the dental follicle leading to its separation from newly formed enamel are the main cause of epithelial eruption cysts. Other states that remnants of dental lamina overlying the erupting teeth could be responsible for this[6, 7, 9].

One of the other possible pathogenesis could be the presence of dense fibro-collagenous tissue restricting the movement of teeth through gingiva[10].

Histologically, eruption cyst resembles dentigerous cyst India 2009[11]. So, it was considered a dentigerous cyst related to soft tissues without bony involvement[12]

But now this is not acceptable any more because the typical dentigerous cyst develops around the crown of an unerupted tooth within the jaw bone, while eruption cyst occurs within the soft tissues overlying a tooth during the eruption process. According to the World Health Organization (WHO) classification of epithelial cysts of the jaws, eruption cyst is a separate entity and it has its own morphological code [13,14]

Although most eruption cysts occur in the early mixed dentition in the first decade of life which coincides with the eruption of permanent incisors and molars[3, 15, 16], they can occur at any age, and they can occur on primary as well as permanent teeth[9]. In one study, 8.3% of the cases were found in newborns where the cysts were associated with natal or neonatal teeth[13]. Also eruption cysts have been seen in adults (40-45) tears of age[17,18].

In most cases, eruption cyst regresses spontaneously without any intervention[19]. So, no treatment is recommended other than reassurance, observation, and follow-up. Despite that, eruption cysts may sometimes cause concern for parents and dentist. This is because it can be associated with some complications such as pain on sucking, refusal to feed, respiratory difficulty because of airway obstruction, aspiration of fluids[20]. So, eruption cyst needs no treatment when asymptomatic, since it will regress and disappear spontaneously. Intervention is carried out in symptomatic cases where the cyst is painful, bleeds, or get infected[3]. this intervention is usually surgical, use of laser can be also considered because tissue healing is better and faster than in conventional surgery, and there is less post-operative pain[2].

It is important to diagnose eruption cyst well because it can mimic other pathological entities like Bohn's nodule, hemangioma, lymphangioma, and other pathologies[21].

2. Material and Methods

Ethical approval was obtained to carry out this research from Professional Ethics Committee in Jordanian Royal Medical Services.

200 patients visiting pediatric dental clinic in Prince Rashid Hospital in the North of Jordan were diagnosed clinically by specialized pediatric dentist to have eruption cysts. Some of the cysts were discovered accidentally by the dentist or the parents, but few forced the patient to seek treatment because of complications. The age ranged from 6 months to 9 years with a mean age 6 years and 3 months (primary dentition and mixed dentition stages) . Some of these cases were discovered by routine checkup, but the others came after the lesion was discovered by the caregiver.

The cases were followed up by clinical examination three monthly until spontaneous rupture or surgical removal because of complication or delayed spontaneous resolution after a period of follow up for nine months, the complications included discomfort, feeding difficulties, infection, and delayed eruption of the associated tooth.

The age, gender of the patients, the location of the cyst whether in the maxilla or mandible and the related toot were recorded.

3. Results

of the 200 patients, 176 patients committed the follow up. 168 patients had their cysts ruptured spontaneously during the follow up period. 6 cases needed surgical intervention because of complications, and 2 cases were removed surgically due to delayed spontaneous resolution after the follow up period (nine months).

Spontaneous resolution	168	84%
Intervention after complication	6	3%
Intervention after delayed resolution	2	1%
No commitment	24	12%
Total	200	100%

Regarding the distribution of the cysts in the oral cavity:

Type of tooth	Number of cases	%
Incisor region	83	41.5%
Canine region	39	19.5%
Molar region	78	39%

Gender distribution of the cyst according to the gender:

Male	97	48.5%
Female	103	51.5%
	200	100%

4. Conclusion and Recommendations

Eruption cyst is a common pathological finding that is rarely associated with complications, and most often resolve spontaneously. But in some cases they can cause complications, then they need surgical intervention.

In this study, the cyst occurred more frequently. This goes with what was reported by Aguilo L et al where they found a prevalence of 82.8 % in incisal and molar regions, and 17.2% in canine region[22]. According to gender, the distribution of the cysts was approximately equal, which contradicts what was published by many authors who found either male or female predilection[13,23]. But this agrees with some others who reported no gender predilection of the eruption cyst[24].

References

[1] Nagaveni NB, Umashankara KV, Radhika NB, Satisha TM. Eruption cyst: A literature review and four case reports. Indian J Dent Res. 2011; 22: 148. doi: 10.4103/0970-9290.79982. [DOI] [PubMed] [Google Scholar]
[2] Boj J, Poirier C, Espasa E, Hernandez M, Jacobson B.Eruption cyst treated with a laser powered hydrokinetic system. Journal of Clinical Pediatric Dentistry 2006;30(3):199-202.
[3] Nagaveni NB, Umashankara KV, Radhika NB, SatishaTM. Eruption cyst: A literature review and four case reports. Indian Journal of Dental Research 2011;22(1):148.
[4] Dhillon S, Deshpande A. Eruption Cyst: Cause of Worry in Concerned Parents. Research & Reviews: A Journal of Dentistry 2014;5(1):1-4.
[5] Dhawan P, Kochhar GK, Chachra S, Advani S. Eruption cysts: A series of two cases. Dental Research Journal 2012;9(5):6
[6] Figueiredo NR, Meena M, Dinkar AD, Khorate M, Satoskar SK. Eruption cyst: a case report. Annals & Essences of Dentistry 2013;5(4).
[7] Ricci HA, Parisotto TM, Aparecida Giro EM, de Souza Costa CA, Hebling J. Eruption cysts in the neonate.~ 366 ~ International Journal of Applied Dental Sciences http://www.oraljournal.com Journal of Clinical Pediatric Dentistry 2008;32(3):243-6.
[8] Kuczek A, Beikler T, Herbst H, Flemmig TF. Eruption cyst formation associated with cyclosporin A: A case report. Journal of clinical periodontology 2003;30(5):462-6.
[9] Weber PB, Ilha MC, Borges TS, Ruschel HC, Kramer PF,Ferreira SH. Eruption cyst associated with tooth rotation on deciduous dentition: A case report. Stomatos 2015;21(40):21-6.
[10] O'Hara AJ, Collins T, Howell JM. Gingival eruption cysts induced by cyclosporine administration to neonatal dogs. Journal of clinical periodontology 2002;29(6):507-13
[11] Rajendran R. Shafer's textbook of oral pathology. Elsevier

[12] Kramer IR, Pindborg JJ, Shear M. The WHO Histological Typing of Odontogenic Tumours. A commentary on the Second Edition. Cancer. 1992; 70: 2988–94. doi: 10.1002/1097-0142(19921215)70:12<2988::aid-cncr2820701242>3.0.co;2-v. [DOI] [PubMed] [Google Scholar.
[13] Bodner L, Goldstein J, Sarnat H. Eruption cysts: a clinicalreport of 24 new cases. Journal of Clinical PediatricDentistry 2005;28(2):183-6.
[14] Gaddehosur CD, Gopal S, Seelinere PT, Nimbeni BS.Bilateral eruption cysts associated with primary molars inboth the jaws. Case Reports 2014, bcr2013202606.
[15] Dhawan P, Kochhar GK, Chachra S, Advani S. Eruption cysts: A series of two cases. Dental Research Journal 2012;9(5):647
[16] Joshi AV, Dixit UB. Management of Eruption Cyst with High Maxillary Labial Frenum: A Case Report. Acta.Scientific Dental Sciences 2018;2(5):87-89.
[17] Woldenberg Y, Goldstein J, Bodner L. Eruption cyst in the adult—a case report. International journal of oral and maxillofacial surgery 2004;33(8):804-5.
[18] Shear M. Cysts of the Oral Region. 2nd edn. London:Wright 1983, 76-78
[19] Kimura JS, Wanderley MT, Pinto-Junior DdosS, Zardetto CG. An unusual case of four simultaneous eruption cysts in an infant. J Dent Child (Chic) 2014; 81: 38–41. [PubMed] [Google Scholar.
[20] Rao RS, Mathad SV. Natal teeth: Case report and review of literature. J Oral Maxillofac Pathol 2009; 13: 41-46.
[21] Mohta A, Sharma M. Congenital oral cysts in neonates: report of two cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006; 102: e36-38.
[22] Aguiló L, Cibrián R, Bagán JV, Gandía JL. Eruption cysts: Retrospective clinical study of 36 cases. ASDC J Dent Child 1998; 65: 102-6.
[23] Anderson RA. Eruption cysts: A retrograde study. ASDC J Dent Child 1990; 57: 124-7
[24] Shaul H, Chatra L, Shenai P, Rao PK, Veena KM, Prabhu RV, et al. Eruption cyst: A case report. Pac J Med Sci 2013; 11: 34-8.