Case study of eruption cysts

Eruption cyst not uncommon: A series of three cases Abstract Aim: Presentation of three clinical cases with an eruption cyst

- Background: Eruption cysts are rarely seen benign cysts most commonly encountered on the mucosa before the tooth eruption
- Case description: In two patients, eruption cyst occurred in the maxillary arch and in one patient it found in the lower arch . The three eruption cysts were found with the permanent teeth.
- Surgical treatment was done in all three cases and tooth erupted in normal pattern
- Conclusion: Eruption cyst requires surgical interventionwhen patient experiences any hurt, bleed ing or when they get infected and face unesthetic appearance . Surgical excision requires to relive the child from discomfort.
- Clinical significance: Knowledge about occurrence of eruption cyst, a rare developmental eruption disturbance is very essential to provide the correct diagnosis and treatment Key words: Benign cyst, eruption cyst, surgical excision

INTRODUCTION eruption cysts are rarely encountered benign soft tissue lesions seen on the mucosa before the tooth eruption takes place. Some authors belived them as either dentigerous cysts or follicular cysts. However, they are categorized as separate lesions as they seen only in soft tissue .

T he pathogenesis behind the development of this cyst is not known. One author has found trauma, infection and deficient space for eruption as main etiological factors for their occurrence based on the retrospective study of their 36 case s. It appears to be to arise from the separation of the

epithelium ffrom the enamel of the crown of the tooth due to an accumulation of fluid or blood in a dilated follicular space.

The exact etiology of occurrence of eruption cyst is not clear. Aguilo et al. 3 in their retrospective clinical study of 36 cases, found early trauma, infection and the deficient space for eruption as possible causative factors. It seems to be toarise from the separation of the epithelium from the enamel of the crown of the tooth due to an accumulation of fluidor blood in a dilated follicular space literature search shows low prevalence of these cysts. The reason behind low prevalence could be attributed to the fact of being them considered as dentigerous cysts by many investigators in addition to this only few reports show the definitive diagnosis of these cysts using biopsy since they are benign lesions

This may also suggest that either the eruption cyst is an unusual lesion or it is an accepted local disturbance that is associated with the eruption of many teeth. The clinicalsignificanceof low prevalence may also be due to the factthatmost often the dentist sees only symptomatic eruption cysts and the majorityresolves unnoticed

CASES DISCRIPTION

We hereby report three cases of eruption cyst who reported to the Out Patient Department ofPedodontics and preventive dentistry, College of Dental sciences, Davangere, IndiaCase No A12-year-oldmale child along with his parents reported with thechief complaint of bluish black swelling on the gums in the front region of the upper jaw [Figure1a]. History of the case revealed lesion started appearingweeks back as translucent swelling over

normal mucosa and it increased to its present size. The color of thelesion also slowly changed from its normal red mucosa to the present bluish black colorone week back No fluiddischarge or any other associated symptoms were associated. The general physical examination of the child showed no abnormalitiesExamination of the oral cavity revealed that the child was in the mixed dentition stage. Soft tissue examination did not show any abnormalities except, the presence ofswelling on the buccal gingiva with respect to unerupted 11, not extending to palatal surface. Clinically the lesion as bluish-black, circumscribed, fluctuant swelling that measured approximately 1 x 1. 5 cm in diameter and was very soft inconsistency. The mucosa was smooth and no ulcerationor bleeding was present Case No An 8-year-old female patient reported with the chief complaint of non erupting upper front tooth alongwith a swelling in upper anterior region Figure1b]. Lesion started appearing 6weeks back as translucent swelling over normal mucosa and it slowly increased toreach present size. It associated with dull aching pain on mastication. The general physical examination of the child showed no abnormalities. Examination of the oral cavityshowedthat the child was in the mixed dentition stage. All the permanent 1st molars had completely erupted and allcentral incisors except were erupted. Swelling measured approximately 1x 1 cm in diameter and was very soft and fluctuant and slightly bluish in color. The was smooth with no ulceration or bleeding Case No A 7- year-old boy reported with the chief complaint of swelling inlower left back tooth region [Figure 2a]. Lesion started appearing 3 weeks back translucent swelling in the region of unerupted left permanent first molarand it slowly increased to its present size. Examination of the oral cavity revealed that the child was in the mixed dentition stage. All the

permanent 1st molars had completely eruptedexcept mandibular left molar Swelling measured approximately 2 x 2. 5 cm in diameter and was very soft and fluctuant with bluish color. In this case too, the overlying smooth with no ulceration present Radiographic examination Case 1 showed presence of 11, case 2 showed presenceof 21, case 3 showed presence of 36 in the stage of eruption and involvement or any radiolucency surrounding this tooth. Based on clinical and radiographic examination, the lesions were diagnosed as eruption cyst associated with 11, Treatment The clinical condition was explained to the parents and they were advised to observe the swellings for another 2 weeks as it may rupture on its and may notrequire any surgical intervention. Patients reported after 15-20 days. In all three cases, the swelling was not resolved and complained of discomfort associated with swelling while chewing food.

The surgical procedure was explained to the parents and consent was obtained for the same. A blood investigation was carried out before the procedure. In first two patients, the treatment included incising the eruption cyst with BP bladeno. 15 and draining the contents of the cyst. A window was cut leading to the exposureof 11 and 21. In third patient as little big with thick mucosa overlying, the superficial part present over 36 was excised completely and it was sent for histological examination. content of the cyst was drained completely. Post operative instructions were given in all patients [Figure 1c, 1d and 2b]. The case 1 and case reviewed after one month and a normal eruption pattern was observed [Figure 1e, 1f]. In addition of surgical excision of cyst in case 3, pulp for 74, cementation of modified distal shoe with intra-mucosal extension was cemented to guide the eruption of 36

[Figure 2c] and reverse crown and loop space maintainer cementation was done to prevent the mesial migration of 46. Case reviewed after 2 and 4 weeks and a of 36 was observed [Figure 2d and 3a]. After 3 month, when complete eruption of 36 was observed, distal shoe appliance was replaced and loop space maintainer [Figure 3b Microscopic examination: Haematoxylin and Eosin stained section from case No. 3 revealed, stratified squamous parakeratinized epithelium with areas of acanthosis. Connective tissue was moderately fibrous with areas of extravasated RBC's, few blood vessels and chronic inflammatory cell infiltrate of plasma cells and lymphocytes. Few inactive odontogenic rests was also seen in the connective tissue DISCUSSION on clinical examination eruption cysts appears as aelevated dome shaped swelling more commonly encountered on the mucosa of the alveolar ridge. On palpation these lesions feel soft in consistency and the surface colour usually appears as bluish, purple to black or transparent color on clinical examination eruption cysts appears as aelevated dome shaped swelling more commonly encountered on the mucosa of the alveolar ridge. On palpation these lesions feel soft in consistency and the surface colour usually appears as bluish, purple to black or transparent color.

I t raised Clinically, eruption cyst appears as a dome shaped raised swelling in the mucosa of the alveolar ridge, which is soft to touch and the color ranges from transparent, bluish, purple to blue-black. 2 Inall three presented cases here, thecolor of the cyst ranged from reddish black to bluishEruption cyst found to appear more in the upper arch compared to lower and commonly involving anterior teeth. to be more prevalent in the maxillary

archinvolving anterior teeth. Eruption cyst associated with molars and premolars is very rare. Nagaveni et al., 5 reported development of this cyst in relation to mandibular first premolar which is a rare finding on radiographic examination it is difficult to differeciate between the cystic space of eruption cyst. The reason could be the presence of both the cyst and tooth in the soft tissue. In case of dentigerous cyst we can appreciate anunilocular radiolucent region in the shape of a half moon on the crown of a non-erupted tooth. 2on histological examination the eruption cysts shows the similar microscopic features of the dentigerous cysts which consists of connective fibrous tissue covered by a fine layer of non-keratinized cellular epithelium. area It is difficult to distinguish the cystic space of eruption cyston radiographbecause both the cyst and tooth are directly in the soft tissuein contrast to dentigerous cyst in which a well-definedunilocular radiolucentarea is observed in the form of a half moon on the crown of a non-erupted tooth. 2Histologically, the eruptioncyst presents the same microscopic characteristics as the dentigerous cyst, with connective? brous tissue covered with a fine layer of non-keratinized cellular epithelium. 2 On histologic examination of tissue excised from case no. 3 showed stratified squamous parakeratinized epithelium with focal areas of acanthosis, chronic inflammatory cells and few inactive odontogenic rests in connective tissue most of the times, the eruption cysts do not need any treatment and they resolve on their own. 4, 7 surgical treatment is required when they show bleeding, infected, hurts the patients or esthetically unpleasing. 2, 8 Treatment is done to give relief from the discomfort resulting from the eruption cysts. The treatment involves simple excision or excision of the overlying tissue to expose the crown and draining the fluid is carried out in

cases where the underlying tooth is not erupting or when the cyst is increasing in size.

Mostly, the eruption cysts do not require treatment and majority of them disappear on their own. 4, 7 Surgical intervention is required when they hurt bleed, are infected, or esthetic problems arise. 2, 8 Treatment has to be performed in order for the childto be relived from discomfort arising lesion. Simple incision or partial excision of the overlying tissue to expose the crown anddraining the fluidis indicated when the underlying tooth is not erupting or the cyst is enlarging advanced imaging techniques like the diode laser system is an excellent equipment for the management of eruption cyst. The advantages include elimination for the need of local anesthesia in majority cases. 9 As a result the occurrence of possible complications, toxicity and allergic reactions are avoided. This diode laser has bactericidalcoagulative effects. In addition to this one can appreciate mild bleeding and better visualization of the working area as compared to conventional scalpel method of treating eruption cysts. 10 In thepresented 3 cases, we used scalpel for incising or excising the lesion as we did not have access to the laser therapy in our department.

The diode laser system is an excellent toolfor management of eruption cyst, since it eliminates the need for local anesthesia in most casesPainless character of laser has been attributed to its transitory anesthetic effect due to the blocking of thenerve conduction in Na/K pump. 9 The patient is comfortable, not noticing the sensation of vibration or observing the contact of the laser handpiece with the mucosa. 4As of local anesthesia is not used, the possibility of complications, toxicityand allergic reactions are eliminated.

The diode laser has bactericidal coagulative effectsalso. Compared with conventional scalpel there is mild bleeding and better visibility of working areawith use of laser. 10 In the presented 3 cases, we used scalpel for incising or excising the lesion as we did not have access to the laser therapy in our institution.

Conclusion: Eruption cyst requires surgical intervention when they hurt, bleed, are infected, or esthetic problems arise. Treatment has to be performed in order to relive the child from discomfort.

Clinical significance: Knowledge about occurrence of eruption cyst among clinicians is very essential to provide the correct diagnosis and treatment.