

Eruption Cyst Treated with Diode Laser: A Case Report

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ABSTRACT

Eruption cyst or eruption hematoma is a soft tissue cyst of odontogenic origin that occurs in mucosa, which forms shortly before the eruption of the primary or permanent tooth. It is usually found in children. In some cases, it has been seen that it disappears on its own. If there are complications like pain, bleeding or infection, surgical exposure and drainage are necessary. This case is associated with erupting permanent tooth, and its surgical crown exposure has been done by using a diode laser.

Keywords: Dentigerous cyst, Diode lasers, Eruption cyst, Hematoma, Hemangioma, Melanoma, Neonatal alveolar lymphangioma.

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BACKGROUND

Eruption cyst or eruption hematoma is soft tissue odontogenic developmental cyst.¹ It is painless, soft, circumscribed, bluish swelling present on the gingival mucosa and superficially overlying the erupting permanent tooth.² Eruption cyst is a form of odontogenic cyst which lies in the soft tissue without involving the bone. Eruption cysts are soft, smooth, painless swelling over the erupting tooth with a normal color of the gingiva or pale blue. In the majority of cases, it has been seen that it disappears on its own and is mostly seen at the age between 6 and 11 years of age when permanent teeth are at the eruption stage. This article presents a case report of an eruption cyst in a permanent right maxillary erupting central incisor treated with a diode laser.

CASE DESCRIPTION

An 8-year-old child came to the Department of Periodontology in Mahatma Gandhi Dental College and Hospital, Jaipur, with a chief complaint of pain and swelling in the upper left front region since 2 months. The patient's history revealed that the lesion was initially small and had gradually increased to its present size. Initially, there was no pain but in the past 4–5 days the pain started. There was no past dental history. Intraoral clinical examination revealed single dome-shaped raised swelling in the mucosa of the alveolar ridge which was completely covering the erupting permanent central incisor tooth number 21 and extending on both labial and palatal gingiva. The color of the gingiva was pink to bluish with a smooth surface in relation to that lesion (Fig. 1). While on palpation, it was soft in consistency, fluctuant, and nontender. Radiographically it was difficult to distinguish the cystic space of the eruption cyst because it was directly in the soft tissue with no bone involvement seen, and permanent central incisor tooth number 11 was developing normally. Topical anesthesia was given around that lesion and local infiltration using 2% lignocaine with 1:80,000 epinephrine was administered both labially and palatally mucosa. Using a soft tissue diode laser with an output of 1.6 W, the crown was exposed labially and palatally. And the cystic lining was excised and sent for histopathological examination. During incision the fluid content inside the cyst started oozing out with minimal bleeding and curettage was performed and irrigation was done (Fig. 2). The patient was advised to take cold food and beverages and avoid sticky, spicy, hard, and hot food items for 1 week.

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Histopathology revealed surface oral epithelium on the superior aspect. Underlying lamina propria shows an inflammatory cell infiltrate. Showing a nonkeratinized squamous epithelium with underlying connective tissue. It has been seen that most of the time eruption cyst is associated with other abnormalities like hematomas, natal tooth, and Epstein pearls in a premature newborn baby. Also reported, the formation of the cyst can be associated with taking the medication like cyclosporine³ and in some cases, it can accompany some syndrome-like kinky hair disease, one such case was reported by Nomura *et al.*⁴ Differential diagnosis varies in the form of granuloma, amalgam tattoo, hemangioma, melanoma, and hematoma.^{5,11} After 1 month the lesion was completely disappeared and the permanent central incisor was erupting without any hindrance (Fig. 3).

DISCUSSION

Kramer in 1974 defined cyst as “a pathological cavity which contains fluid, semi-fluid, or gaseous contents and is not created by the accumulation of pus.”⁶

Eruption cyst is a type of odontogenic cyst,⁷ it generally appears on the alveolar mucosa enclosing the erupting tooth and does not involve the underneath bone, as seen in the cases of dentigerous cyst.^{8,9} Mostly, this type of cyst disappears on its own but sometimes it worsens because of infection and requires surgical intervention. Surgery is usually done to expose the tooth crown followed by the drainage of the cyst cavity by incision or partial excision.

Before the treatment, the differential diagnosis should be taken into consideration which can affect the treatment plan. On oral



Fig. 1: Preoperative figure



Fig. 2: Immediate postoperative



Fig. 3: Postoperative 1 month

examination, the eruption cyst appears as circumscribed, fluctuant, often translucent swelling of the alveolar ridge. On radiographic examination, eruption cyst becomes difficult to detect because

there is no bone involvement.¹¹ When the circumcoronal cystic cavity contains blood, the swelling appears purplish or dark blue that is called as "Eruption hematoma."¹² Bohn's nodule is a whitish color, round, firm on palpation. It is mostly seen in maxillary gingiva.¹³ Granular cell tumor (epulis) is seen only in newborns. Mostly it is seen as two masses evolving from the maxillary alveolar ridge and on palpation it is a smooth, firm, and well-circumscribed, but is pedunculated unlike eruption cyst.¹⁴ The dentigerous cyst is red in appearance and hard on palpation, the most important factor to differentiate, from eruption cyst, is that on radiographical examination it shows radiolucency.¹⁵

Aguilo et al.¹⁶ conducted a study in which 36 cases were examined to estimate the prevalence of the eruption cyst among all teeth. He concluded that there are 2.8% chances in the incisor and the molar areas, 17.2% in the canine and the premolar area. Most of the cases of eruption cyst are seen in males than in females and involvement of the right side is frequently observed than the left side.^{8,10}

These cysts are mostly seen in the permanent dentition, but some of the cases have been detected in neonates and are termed as "congenital eruption cyst" as it is present at birth.¹⁷ The parents of neonate may notice a bluish translucent dome-shaped elevation on the alveolar mucosa due to which there can be difficulty in suckling may be because of pain which leads to refusal to take feed.¹⁸

Alemán Navas et al.¹⁸ reported a case of neonate with a lesion that was present in the anterior region of the mandible, which was exophytic, soft, yellowish, and on palpation it was compressible.

Joshi and Dixit¹⁹ reported a case of a child with a lesion present in the upper right central incisor tooth in which the swelling was dome-shaped, pink in color with a smooth surface along with high labial frenum. The diagnosis of eruption cyst was based on the clinical and radiographic features. It was decided to carry out surgical exposure of the crown along with labial frenectomy using a soft tissue diode laser. At 8 months follow up the incisors were completely erupted.

Diode laser²⁰ is an excellent tool for treating these types of cases. The laser does not produce heat and patient feels comfortable without complaining any type of pain and irritation. Sometimes in many cases, it eliminates the need for local anesthesia and also provides hemostatic properties, and because of this reason it becomes more advantageous while treating eruption cyst. The treatment can also be done with conventional but visibility of the working area can be obstructed due to excess bleeding and in that case diode laser is an excellent tool as it is bactericidal and anticoagulant and provide minimal bleeding with better visibility.¹⁹ Surgery done by laser does not require suture and there is less postoperative pain and swelling, with no scar formation as compared to the conventional therapy.^{21,22}

In the present case after 4 months of treatment, the lesion had completely disappeared and the deciduous central incisor had erupted without any problem.

CONCLUSION

It is important that the dentist should diagnose the eruption cyst and reassure the parents about the benign nature of the lesion. The treatment becomes easier with the laser technique especially while dealing with pediatric patients. The laser can be used for a variety of procedures that can be carried out for modern dentistry, such as periodontal therapy, soft tissue surgery, as well as in implantology, and endodontic procedures. But the cost of the laser is the major disadvantage in dentistry.

CLINICAL SIGNIFICANCE

Proper knowledge is required to diagnose and treat eruption cyst.

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