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Case Report

Management of Eruption Cyst with High Maxillary Labial Frenum: A Case Report

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Abstract

Eruption cyst is a benign, developmental odontogenic cyst that accompanies an erupting primary or permanent tooth, forming shortly before the tooth's appearance in the oral cavity. It usually occurs within mucosa overlying an erupting tooth. In most cases the eruption cyst ruptures on its own as tooth continues to erupt and may not require any surgical intervention. However, if it is associated with complications like pain, bleeding or infection, surgical exposure and drainage may be necessary. This report unveils a case of an nine-year-old female with a long-standing eruption cyst over erupting maxillary incisor along with presence of high frenal attachment. The treatment performed included incision and drainage of the eruption cyst and labial frenectomy in the same appointment using soft tissue laser.

Keywords: Eruption Cyst; Laser; Frenectomy; Surgical Excision; High Frenal Attachment

Abbreviation

EC: Eruption Cyst

Introduction

Eruption cyst (EC) is a benign, developmental odontogenic cyst that accompanies an erupting primary or permanent tooth, forming shortly before the tooth's appearance in the oral cavity [1]. Originally classified as dentigerous cyst, eruption cyst currently is classified as a separate entity [2,3].

EC is believed to arise from the separation of the dental follicle from the enamel of the erupting crown of the tooth due to accumulation of fluid or blood in a dilated follicular space after amelogenesis [4,5], while others suggest that the cyst develops from the remnants of dental lamina overlying the erupting tooth [6]. Other possible causes could be presence of dense fibrous tissue which could impede the eruption from the soft tissue. This could be attributed to trauma to the primary teeth, early caries or deficient space for eruption [2,7].

These cysts are commonly seen in the first decades of life, more prevalent in the Caucasian race and usually coinciding with the eruption of permanent first molar followed by maxillary incisors [8]. Clinically EC presents as a dome-shaped raised swelling in the mucosa of the alveolar ridge which is soft on palpation and the colour ranges from transparent, bluish, purplish to blue-black [3,4,9]. The pathogenesis of EC is probably similar to that of dentigerous cyst. The difference is that, in EC, the tooth is hampered in breaking through to the surface by the soft tissues of the gingival rather than the bone [10].

This case report describes a case of an eruption cyst in permanent maxillary anterior tooth along with high labial frenal attachment and its successful management. To our knowledge, such a case has not been reported in literature.

Case Report

A 9-year-old girl along with her father reported to our outpatient department with a chief complaint of swelling in relation to the maxillary right permanent incisor for 9 months. History revealed that the lesion was initially small and had gradually increased to its present size. There was no associated pain, rupture or pus discharge in the affected region. Medical history was noncontributory. Past dental history revealed trauma to her corresponding primary incisor when the child was 4 years old, and was extracted at the time. Adjacent central incisor was not affected at the time of trauma and exfoliated normally at the age of 7.5 years following which the permanent incisor erupted.

On clinical intra-oral examination, a single well-demarcated, dome-shaped swelling completely covering the alveolar ridge of #11, extending to labial and palatal gingiva, measuring 1cm x 1cm in diameter was seen (Figures 1 and 2). The swelling appeared

pink in colour with smooth surface. On palpation, it was soft in consistency, compressible, fluctuant, and non-tender without any purulent discharge. The adjacent tooth (#21) was near completion of eruption. Labial frenum showed high attachment with insertion into the palatal inter-incisal region and responded positively to the blanch test.

Figure 1: Pre-operative intra-oral photograph showing a dome shaped eruption cyst with high frenal attachment.

Figure 2: Pre-operative intra-oral photograph showing papilla penetrating type of frenal attachment with palatal view of eruption cyst.

An intra-oral periapical radiograph of the site of interest (Figure 3) revealed normally developed #11, showing Nolla's staging between 7 and 8. The crypt lining the erupting #11 was found to be normal and the follicular space around the crown was within normal limits.

Figure 3: Pre-operative intra-oral radiograph showing normally erupting #11 and #21.

Based on the clinical and radiographic features, a diagnosis of eruption cyst was made and it was decided to carry out surgical exposure of the crown along with labial frenectomy using a soft tissue diode laser. The procedure was explained to the parent and informed consent was obtained.

On the day of the procedure, a topical anesthetic (Precaine, Pascal International, USA) was applied using an earbud and local infiltration using 2% lignocaine with 1:80,000 epinephrine (Lignospan, Septodont, France) was administered in the labial and palatal mucosa. The crown was exposed labially and palatally first followed by the frenectomy procedure using QuickLase™ (Pen-Lase, Quicklase, United Kingdom) soft tissue diode laser with 810 nm wavelength (Figure 4). Patient was advised to avoid sticky, hard or spicy food items for 1 week and was prescribed 0.12% chlorhexidine mouthwash for 2 weeks. Additionally, topical application of vitamin E at the surgical site was prescribed to promote healing.

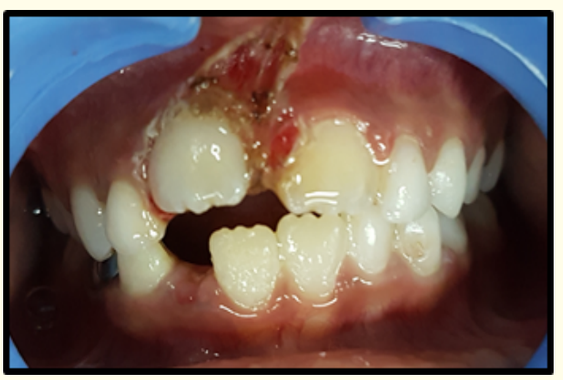

Figure 4: Immediate post-operative photograph showing crown exposure with #11 and frenectomy performed using laser.

Patient was followed up after 1 week, 1 month, 6 months and 8 months till both the incisors were completely erupted (Figure 5). Post-operative healing was uneventful. Patient was followed up after 1 week, 1 month, 6 months and 8 months till both the incisors were completely erupted (Figure 5). Post-operative healing was uneventful.

Figure 5: Intra-oral facial view at 8 month follow up.

Discussion

Generally, the eruption cysts do not require treatment and the clinician can follow a "wait and watch" or no treatment protocol. Interventional treatment may not be necessary because the cyst

ruptures spontaneously, thus permitting the tooth to erupt [5,7]. Simple or partial incision to expose the crown and compression of the overlying tissue to drain the fluid are indicated when the underlying tooth fails to erupt, or the cyst shows enlargement [4,11,12].

Other reasons of surgical interventions include the tooth undergoing any trauma, signs of bleeding or the patient has complaints about the appearance [12]. In our study, the patient had aesthetic concerns. Hence, we performed surgical exposure with laser as suggested by Boj., *et al.* [13] in their report. It has certain advantages over conventional lancing with scalpel. They include non-requirement of anesthesia, no excessive operative bleeding, does not produce heat or friction and patient will be comfortable. It is bactericidal and has coagulative effects, tissue healing is faster, and it is not associated with postoperative pain.

Differential diagnosis should be considered before delivering any treatment and varies from neonatal alveolar lymphangioma, pyogenic granuloma, amalgam tattoo and Bohn's nodule to eruption hematoma [2,14]. The eruption hematoma occurs because of bleeding in the gingiva and accumulation of blood is external to the epithelium of the enamel [4]. While in the eruption cyst, it is the cystic fluid that mixes with the blood. The exact difference between the two is still unknown. The eruption cyst glows under transillumination but the hematoma does not glow [9]. Other authors reported that if bleeding occurs within the cyst, due to trauma or local infection, the eruption cyst becomes bluish in color and is then known as an eruption hematoma, or a blue stain, which may be the first sign of a follicular cyst [15,16]. In our case, there was no bluish discolouration seen which indicates no signs of bleeding.

Conclusion

This case report illustrates management of a unique case of an eruption cyst along with a co-existing high labial frenal attachment. A procedure was performed with laser to expose the crown along with frenectomy of the aberrantly placed frenum. The treatment was completed successfully without any untoward complications.

Conflict of Interest

No conflict of interest.

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Volume 2 Issue 5 May 2018