

## Management of Eruption Cyst: A Case Report

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### Abstract

**Objective:** This study reviews eruption cysts in children and their management related to dental and oral health. It also presents a case report of a 6-year-old boy diagnosed with an eruption cyst on tooth 21.

**Methods:** Surgical exposure was performed under local anesthesia, exposing the tooth's crown, removing the remaining root 62, and applying pressure packs for 10 minutes to stop the bleeding.

**Results:** The tooth showed a regular eruption pattern following the removal of the cystic lesion. Therefore, the patient was kept on regular

recall. After one month, the tooth erupted in the oral cavity.

**Conclusion:** Surgical intervention is often considered in symptomatic cases where the erupting cyst is painful, bleeding, or infectious, whereas no treatment is required in asymptomatic patients. So, it is crucial to have sound knowledge amongst clinicians regarding eruption cysts to provide proper treatment and reassure the apprehensive parents regarding this lesion.

**Keywords:** Children, Eruption Cyst, Swelling.

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### Introduction

An eruption cyst is an odontogenic cyst with the histologic feature of a dentigerous cyst surrounding a tooth crown that has erupted through bone but not through soft tissue and is clinically visible as a soft fluctuant mass on the alveolar ridge.<sup>1</sup> In the past, an eruption cyst was considered a type of dentigerous cyst occurring in soft tissues. Whereas the typical dentigerous cyst develops around the crown of an unerupted tooth within the jaw bone, an eruption cyst occurs within the soft tissues overlying a tooth during the eruption process. Most authors refer to an eruption cyst as a cystic lesion dissimilar to the dentigerous cyst. According to the World Health Organization (WHO) classification of epithelial cysts of the jaws, an eruption cyst is a separate entity. It also has its morphology code for the international classification of diseases for oncology. The prevalence rate of this cyst is as low as 0.6% as they have not been extensively researched. One of the reasons for low prevalence may be attributed to the fact that most of the eruption cysts are asymptomatic and resolve unnoticed. Patients report to the dental clinic solely in case of symptomatic eruption cyst.<sup>2</sup>

The eruption cyst is a form of soft tissue benign cyst accompanied by an erupting primary or permanent teeth and appears shortly before the appearance of these teeth in the oral cavity. Clinically, an eruption cyst presents as a soft, translucent, blood-filled, dome-shaped lesion or clear fluid over the crown of an erupting tooth. The eruption cyst is usually present during the first

The eruption cyst is usually present during the first decade of life in the singular or multiple, unilateral or bilateral form. These cysts are found in children of various ages and adults if a deadly eruption occurs. Eruption cysts are estimated to occur in the age range of 6-9 years, coinciding with the eruption of the permanent first molars and incisors. The exact etiology of the eruption cyst is still unclear. However, Aguilo et al. in a retrospective clinical study of 36 cases, found that early caries, trauma, infection, and lack of space for eruption were possible causative factors.<sup>3</sup>

Surgical and non-surgical management are two basic treatment modalities for managing eruption cysts. In cases where the eruption cyst is asymptomatic, no treatment is required as they would disappear on their own. However, surgical intervention is considered for symptomatic cases where the eruption cyst is painful, bleeds, or is infected.<sup>1</sup> This case report describes an eruption cyst in permanent maxillary anterior teeth and its successful management.

### Case Report

A 6-year-old boy came with his mother to the dental clinic of RSGMP UNHAS Makassar with the main complaint that the upper left front tooth had not erupted and there was a bulge when it palpated, produced positive tenderness and a bluish-black color that made the child not confident, so that became consideration of the child's parents to come for treatment. Soft tissue examination

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revealed gingival swelling in area 21. Clinically the gingival lesion appeared bluish-black, well-defined, and dome-shaped, with significant buccal gingival swelling over the unerupted area of tooth 21. The swelling was about 1×1 cm in size and was very soft and fluctuating **Figure 1**. The overlying mucosa was smooth, and there was no ulceration. The periapical radiograph of the lesion confirmed the presence of 21 at the eruption stage, and there was no bone involvement or radiolucency around this

tooth **Figure 2**. Therefore, clinically and radiographically, it was diagnosed as an eruption cyst of tooth 21. Parents said that tooth 11 had erupted when the child was five years old, while tooth 61 had never been traumatized and had no history of extraction. In addition, the remaining 62 tooth roots also appear.

The clinical condition was explained to the patient's parents that if it is not associated with pain or other difficulties, it is only advisable to observe the swelling for two-three weeks as it may rupture on its own due to masticatory pressure and may not require intervention at all. In this case, the treatment protocol followed was "wait and watch" because, in most cases, the cyst ruptured spontaneously, allowing the tooth to erupt. Nevertheless, after two weeks, the lump did not burst and got more prominent, so it was considered for surgery.

Based on the radiographic features, a provisional diagnosis of an eruption cyst was made. Surgical exposure was performed under local anesthesia, exposing the crown of the tooth, removing the remaining root of tooth 62, applying pressure packs for 10 minutes to stop the bleeding, and the operated area was then reviewed **Figure 3**. Post-operative healing was uneventful. The tooth showed a normal eruption pattern following the removal of the cystic lesion **Figure 4**. The patient was kept on regular recall. After one month, the tooth erupted in the oral cavity **Figure 5**.

## Discussion

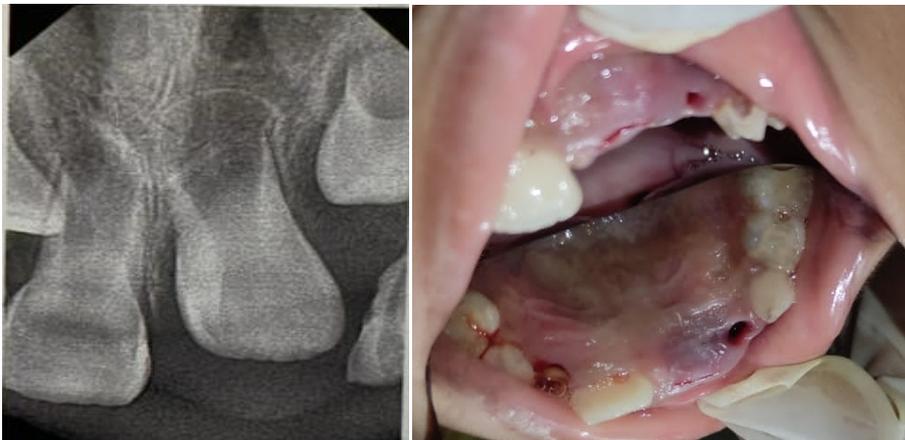
While the process of dental eruption tends to progress without any significant events, it can be a stressful experience, mainly if something unusual occurs during this period. For example, the sight of an eruption cyst, a type of lesion associated with erupting teeth, can cause panic in parents, who may conclude that this often large, bluish-purple, or bluish-black lesion is some malignant tumor.

The eruption cyst is a benign tissue cyst resulting from separating the dental follicle from the crown of an erupting tooth. Fluid accumulation occurs within this created follicular space. Eruption cysts most commonly are found in the mandibular molar region. The color of these lesions can range from average to blue-black or brown, depending on the amount of blood in the cystic fluid.<sup>3</sup>

Eruption cyst is more frequently seen in the first decade of life when the primary dentition and many permanent dentitions erupt. Permanent molars and incisors are the most commonly affected teeth.<sup>1</sup> Gender predilection of eruption cyst is controversial. Anderson and Bodner reported a male predilection with a male: female ratio of 2:1, similar to our case



**Figure 1** Clinical feature.



**Figure 2** Radiographic feature. **Figure 3** After surgical exposure.



**Figure 4** One week follow-up.

**Figure 5** One month follow-up.

between the genders, and data presented by Seward et al. had shown a female predilection.<sup>1</sup>

The exact etiology of this lesion remains controversial. Some authors attribute its development to degenerative cystic changes in the reduced enamel epithelium following the completion of amelogenesis, while others suggest that the cyst develops from the epithelial remnants of the dental lamina overlying the erupting tooth. Others have proposed early caries, chronic periapical inflammation or trauma, infection, and a lack of space for eruption as possible etiological factors.<sup>3,4</sup>

In one recently published case report, an eruption cyst developed in a patient who received cyclosporin-A. Another case in which drug administration was suggested in connection with eruption cyst formation was described by Nomura et al., who reported multiple eruption cysts in a 4-year-old boy with Menkes Kinky Hair Disease who was treated with an anticonvulsant (diphenylhydantoin). However, in the present study, none of the patients had taken any medication, and none had any systemic diseases.<sup>4</sup>

Radiography is not essential for diagnosing eruption cyst-like or any other odontogenic cyst since there is no involvement of the bone. However, the intraoral periapical radiograph is highly recommended to evaluate the morphology of the involved tooth or its surrounding bone.<sup>5</sup>

Before delivering any treatment, the differential diagnosis should be considered, which varies from granuloma, amalgam tattoo, hemangioma, and Bohn nodule to eruption hematoma. The exact difference between eruption cyst and hematoma is not known. However, the cyst glows under transillumination, whereas the hematoma does not glow. An eruption cyst is known as eruption hematoma or blue stain if it becomes bluish because of bleeding occurring within the cyst due to trauma or local infection. It could also be the first sign of a follicular cyst. In our case, bluish discoloration was absent, indicating no sign of bleeding. The eruption cyst is small in size and does not require any treatment, and the affected teeth erupt normally under masticatory pressure. In the present case, the treatment protocol followed was “wait and watch,” In most cases, the cysts rupture spontaneously, thus permitting the tooth to erupt.<sup>6</sup>

A simple incision or partial excision of the overlying tissue to expose the crown and drain fluid is indicated when the underlying tooth is unerupted or enlarged. In the case above, the wait and watch phenomenon was initially observed as it was not associated with discomfort and was expected to erupt on its own. Nevertheless, after 15 days, the cyst was still increasing in size when the patient reported back again. Therefore, incision and surgical exposure of the crown were performed.<sup>7</sup>

A novel treatment modality suggested by Boj et al. consists of using Er, Cr-YSGG laser for treating eruption cysts. Advantages over conventional lancing with a scalpel include non-requirement of anesthesia, minimum operative bleeding, and patient comfort. The procedure's high equipment cost and technique sensitivity limit its use in clinical practice.<sup>1</sup>

## Conclusion

The eruption cyst commonly arises as a bulge of the overlying mucosa of the deciduous or permanent teeth during the eruption. Surgical intervention is often considered in symptomatic cases where the erupting cyst is painful, bleeding, or infectious, whereas no treatment is required in asymptomatic patients. So, it is crucial to have sound knowledge amongst clinicians regarding eruption cysts to provide proper treatment and reassure the apprehensive parents regarding this lesion.

## Acknowledgment

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## Conflict of Interest

The authors affirm no conflict of interest in this study.

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