

## ERUPTION CYST: A CASE REPORT

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**ABSTRACT:** The eruption cyst is regarded as a soft tissue analogue of the dentigerous cyst, but is considered as a distinct clinical entity. It is defined as a cyst that lies superficial to the crown of an erupting tooth, and is lined by stratified squamous non-keratinizing epithelium. Clinically, it appears as a soft, often translucent swelling of the gingival mucosa overlying the crown of the involved tooth, and may vary from pink to bluish-purple in colour. It is usually seen in children and the teeth commonly affected include the permanent first molars and maxillary incisors. Radiographically, no evidence of bone involvement is seen and treatment consists of simple excision of the roof of the cyst. This paper describes a case of an eruption cyst in a 7-year old male patient, which presented as a swelling involving the gingiva overlying the crown of 21, along with a review of the literature.

**KEYWORDS:** Eruption cyst, Gingiva, Eruption hematoma

## INTRODUCTION

Kramer has defined a cyst as a pathological cavity having fluid, semifluid or gaseous content, which is not created by the accumulation of pus, and is frequently, but not always, lined by epithelium. The eruption cyst is a benign, developmental, odontogenic cyst associated with a primary or permanent tooth in its soft tissue phase after erupting through the bone.<sup>1</sup> It develops as a result of separation of the dental follicle from around the crown of an erupting tooth that is within the soft tissues overlying the alveolar bone.<sup>2</sup>

The exact etiology of occurrence of the eruption cyst is not clear. However, early caries, trauma, infection and deficient space for eruption have been suggested as possible causative factors.<sup>3</sup> The presence of particularly dense fibrous tissue could also be a factor which may impede eruption in the soft tissues. These cysts are most commonly seen in the first and second decades of life, usually coinciding with the eruption of the first permanent molars and maxillary incisors.<sup>4</sup>

This case report describes a case of an eruption cyst in a 7-year old boy, which presented as a dome-shaped

gingival swelling in relation to the maxillary left central incisor.

## Case Report

A 7-year-old boy along with his parents reported to our out-patient department with a chief complaint of swelling in relation to the maxillary left central incisor since 1 month. History revealed that the lesion was initially small and had gradually increased to its present size. There was no associated pain, but the patient gave a history of difficulty in mastication due to the swelling. There was no history of trauma or infection. Intra-oral examination revealed a single well-demarcated, dome-shaped swelling covering the alveolar ridge in region of 21, extending from the labial to the palatal gingiva by crossing over the alveolar ridge, measuring 1 × 1 cm in diameter [Figures 1, 2]. The swelling was bluish-pink in colour with a smooth surface, soft in consistency, fluctuant, and non-tender on palpation.

An intra-oral periapical radiograph showed a developing 21 with almost fifty percent root formation complete. There was no evidence of any bone involvement [Figure 3]. Based on the clinico-radiographic features, a provisional diagnosis of an Eruption Cyst was



**Fig. 1. Intra-oral view from labial aspect showing a gingival swelling**



**Fig. 2. Intra-oral view from occlusal aspect showing a dome-shaped swelling surrounding 21**

made. Surgical exposure was carried out under local anaesthesia, exposing the crown of the tooth, and the excised tissue was sent for histopathological examination [Figure 4]. Post-operative healing was uneventful. The tooth showed a normal eruption pattern following the removal of the cystic lesion [Figure 5].

Microscopy showed a stratified squamous parakeratinized epithelium with an underlying connective tissue stroma. A cystic lining resembling the reduced enamel epithelium was seen within the stroma. A faint demarcation was noted between the cystic stroma and overlying stroma. The cystic stroma was extremely cellular and showed a moderate chronic inflammatory cell infiltrate [Figure 6]. Based on the histopathologic findings, a final diagnosis of an Eruption cyst was made.

**Discussion**

Eruption cyst is thought to be the soft tissue analogue of the dentigerous cyst, but is recognized as a separate clinical entity.<sup>5</sup> While the typical dentigerous cyst develops around the crown of an unerupted tooth lying in the bone, the eruption cyst occurs when a tooth is impeded in its eruption within the soft tissues overlying the bone.<sup>3,6</sup>

The exact etiology of this lesion remains controversial. Some authors attribute its development to degenerative cystic changes in the reduced enamel epithelium following completion of amelogenesis, while others suggest that the cyst develops from the epithelial remnants of the dental lamina overlying the erupting tooth.<sup>7</sup>

These cysts are found in children of different ages and occasionally in adults if there is delayed eruption. Most eruption cysts are thought to occur in the age range of 6-9 years, a period coinciding with the eruption of the permanent first molars and incisors. The incisal and molar areas are regarded as the most common sites of occurrence, followed by the canine and premolar areas.<sup>1</sup>



**Fig. 3. Intra-oral periapical radiograph showing a developing 21 with a soft tissue shadow around the crown**



Fig. 4. Exposure of crown of 21 following excision of the lesion



Fig. 5. Post-operative view showing an erupting 21

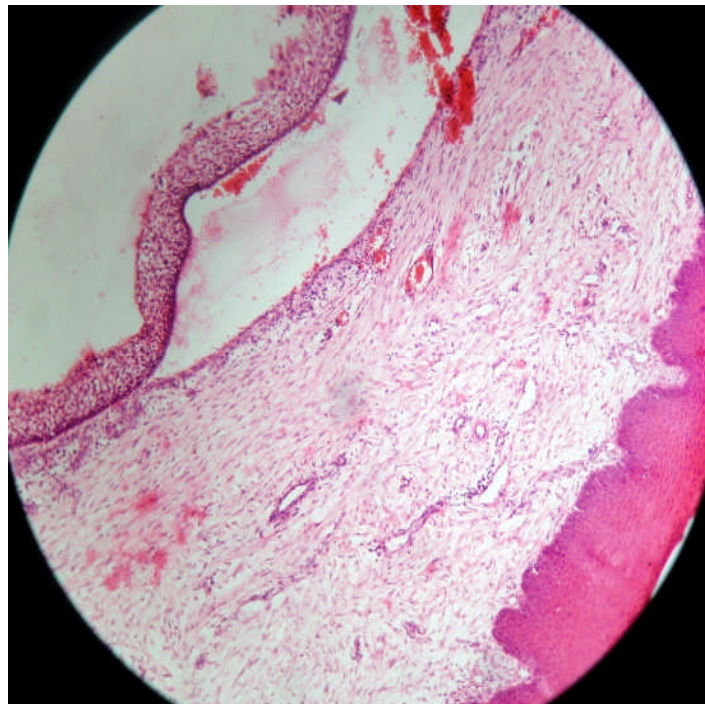


Fig. 6. Histopathology showing stratified squamous parakeratinized epithelium with an underlying connective tissue stroma, with a cystic lining resembling reduced enamel epithelium within the stroma.

Clinically, the eruption cyst appears as a smooth swelling over the erupting tooth and may be either the colour of normal gingiva or blue. It is usually painless unless infected and is soft and fluctuant.<sup>6</sup> Surface trauma may result in a considerable amount of blood in the cystic fluid, which imparts a blue to purplish-brown colour to the lesion; such a lesion may be referred to as an "eruption haematoma".<sup>2</sup> The eruption hematoma occurs because of bleeding from the gingiva during eruption and the

accumulation of blood is external to the epithelium of the enamel, while in the eruption cyst, the cystic fluid mixes with the blood. The exact difference between the two is still unclear.<sup>1,5</sup> Transillumination is a useful diagnostic aid to differentiate these two lesions - the eruption cyst glows under transillumination while the hematoma does not glow.<sup>6</sup>

The present case was associated with a maxillary central incisor and clinically appeared similar to lesions previously described in literature.

Radiographically, a soft-tissue shadow may be seen in the region of the cyst, but there is usually no bone involvement, except that the dilated and open crypt may be seen on the radiograph.<sup>6</sup> Our case also showed a soft-tissue shadow overlying the crown of the erupting tooth, with no bone changes.

Histologically, the superficial aspect of the lesion is covered by keratinized stratified squamous epithelium of the gingiva, which is separated from the cyst by a strip of dense connective tissue of varying thickness which usually shows a mild chronic inflammatory cell infiltrate. The deep portion which represents the roof of the cyst shows the same microscopic characteristics as the dentigerous cyst, with a fibrous connective tissue covered by a thin layer of non-keratinized squamous epithelium.<sup>3</sup>

Treatment usually consists of marsupialization, in which the dome of the cyst is excised, exposing the crown of the tooth which is allowed to erupt.<sup>6</sup> In some cases, treatment may not be required because the cyst may rupture spontaneously, permitting the tooth to erupt.

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