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Treatment of traumatized primary mandibular lateral incisor with pulp polyp: A case report

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Abstract
The outcome of traumatic dental injury involving pulpal tissue is often not predictable because the patient and injury which are related to variables can influence the treatment of choice and prognosis of case. This case report represents the case of a 5 year old boy with complicated crown fracture with pulp polyp in the primary right mandibular lateral incisor (82) which was treated only 1 week after traumatic injury on the same tooth. The treatment of choice was complete extirpation of the pulp from the pulp chamber and root canal followed by obturation with Metapex (Calcium Hydroxide+Iodoform) in single visit. Glass ionomer cement was used as entrance filling material and that tooth was then restored with composite resin in the same visit.

Keywords: pulp polyp, primary incisor, dental trauma

1. Introduction
Traumatic injuries to primary dentition are the second most frequent cause of consultation in pediatric dental practice. The most frequently affected primary teeth are the upper central incisors and more than one tooth can be affected [1]. The teeth are less firmly held in place in preschool children due to very elastic periodontal ligament and large marrow spaces in alveolar bone. So, damage to supporting tissues is more common than hard tissues of tooth due to slight traumatic injury [1].
If the fracture of crown or both crown and root of tooth exposes pulp to oral environment, prompt treatment is important to minimize bacterial invasion and maximize pulpal healing, preventing necrosis of the pulp [2]. The time gap between accident and treatment is a vital consideration for traumatically exposed pulp before deciding therapeutic approach [3]. However, if the pulp shows resistance and reactivity against bacterial infection can evolve to a hyperplasia.
The present case reports distinct response of traumatically exposed pulp by formation of pulp polyp in primary mandibular lateral incisors and its treatment.

2. Case Report
A 5 year old healthy boy was presented with his parents to the Postgraduate Clinic of Pediatric and Preventive Dentistry of Guru Nanak Institute of Dental Sciences and Research, Kolkata. The chief complaint was the aesthetic impairment due to presence of a red mass in the lower front teeth region.
A detailed history revealed that the boy fell to the floor and had a dental trauma 1 week before. At that time, no immediate emergency dental care was conducted. The patient was asymptomatic.
Intraoral examination revealed enamel-dentin-pulp fracture with pulpal growth coming out from the primary right mandibular lateral incisor (82) (Figures 1). Both the primary maxillary central incisor (51 and 61) and left maxillary canine (63) had caries. Extraoral examination was normal. Periapical radiograph examination revealed radiolucency involving pulp chamber and no periapical alterations were observed in 82. (Figure 2)
The informed consent was obtained from his parents and considering the presence of pulp polyp on tooth (82), an endodontic intervention was proposed. At first, The proliferated pulpal mass was excised with a spoon excavator (figure 3) The tissue was collected in a sterile gauze

piece and sent for histopathological studies.

The coronal access was done with high speed diamond bur under a rubber dam and local anesthesia. After coronal pulp amputation a bright red hemorrhage was observed. Continuous rinsing of the amputated pulp with saline achieved hemostasis without blood clot formation. The treatment of choice was complete extirpation of coronal and radicular pulp using hand files. The root canal was obturated with Metapex (Calcium Hydroxide+ Iodoform), followed by glass ionomer cement was used as an entrance filling material and then that tooth was restored with composite resin (figure 4). Periapical radiograph was done to confirm the proper obturation of the same tooth (figure 5).

3. Discussion

In the present case, the fracture of the 82 occurred on the palatal aspect of the tooth with exposed pulp. Though the pulp was exposed to thermal changes and mastication for 1 week without sensitive tooth or pain. The pulp proliferated as a reddish mucosa like exophytic polypoid growth despite the oral insults towards the pulp.

The histological examination (Figure 6) revealed presence of pericellular connective tissue stroma showing very few scattered necrotic epithelial cells, few collagen fibres, eosinophilic coagulum and hemorrhagic areas but no signs of cellular atypia could be detected. The overall light microscopic features are suggestive of granulation tissue.

The occurance of pulp polyp is not common in primary teeth and there is more chances to occur in children under 2 years of age [2]. Potential for pulp proliferation is very important for pulp polyp formation. Probably due to the open root apical foramen found in pulp of primary teeth in younger children, which contributes to an excellent blood supply and a high level of bacterial resistance more severe hyperplastic proliferation of pulp is seen than elders [4-6]. Therefore this clinical sign of pulp polyp formation suggests absence of necrosis which is advantageous for younger children. Pulp necrosis in more advanced stages may lead to early primary tooth loss or further permanent tooth complications [7].

Pulp hyperplasia can be interpreted by parents as a negative aspect or some condition that requires more attention. So children who have pulp polyps sought treatment more quickly. Usually, the hyperplasia of pulp is asymptomatic except during mastication when the pressure may cause discomfort due to movement of fractured crown fragments. So, some children may take up to 1 year to seek treatment

Due to complexity in diagnosis and association with dental fracture many clinicians may opt for dental extraction. But we have adopted endodontic treatment instead of extractions because the tooth was not severely compromised. We have performed total extirpation of the pulp in a single visit and obturated with Metapex (calcium hydroxide+ iodoform). Further studies should be conducted to verify the longevity of endodontical treatment of pulp polyp affected teeth and whether there is any adverse effect of this type of treatment on permanent teeth.

3.1 Figures

(A) (B)

Fig 1: (A) Facial view of traumatized teeth (enamel-dentin-pulp fracture) of Primary Right Lateral Incisor (82) (B) Occlusal view of 82. Note the presence of pulp polyp.

Fig 2: The initial periapical radiography showing no periapical alterations in 82

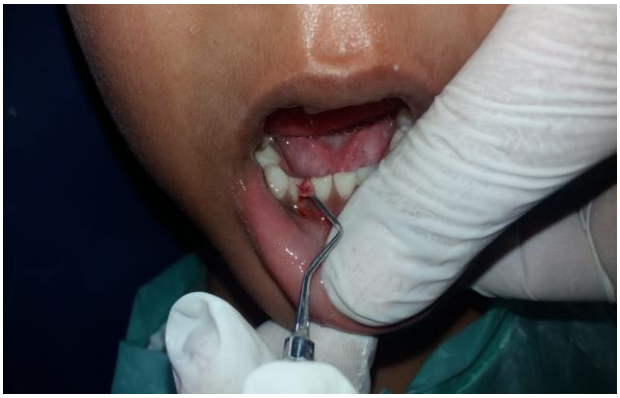

Fig 3: the proliferated pulpal mass was removed with a spoon excavator

Fig 4: the tooth was restored composite after obturation with Metapex

Fig 5: Obturation of 82 using Metapex

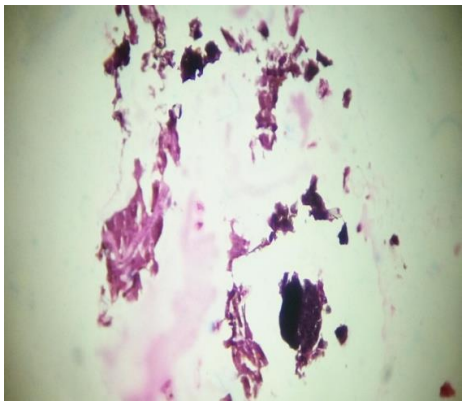

Fig 6: Photomicrograph of the specimen

4. Conclusions

Pulp polyp in traumatized primary teeth is not a uncommon condition and it should be treated in conservative means whenever possible without any delay.

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Conflicts of Interest
There are no conflicts of interest.

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