

# Esthetic Management of Self-inflicted Dental Trauma in a Child Patient

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## Abstract

Self-mutilating habits are those in which the patient enjoys deliberately damaging himself/herself. Children have a habit of placing foreign objects into their mouth giving them a temporary feeling of relief. This case report describes an atypical case of a 4-year-old female patient with an anomalous habit of chewing pencil which led to the formation of window-like facets and trauma in primary maxillary anterior teeth. Suspected etiology was lack of mother's attention which made patient anxious and indulge into such deleterious habit. As a result, this habit turned into traumatic injury as she continued to bite deliberately on the pencil tip to suppress anxiety. The article highlights the importance of taking complete history from the parents of pediatric patients with any suspected abnormal habit that should not be neglected.

**Keywords:** Dental trauma, masochistic habit, primary teeth

## INTRODUCTION

Self-inflicted oral mutilation (masochistic habits) is defined as deliberate harm to one's own body without suicidal intentions.<sup>[1,2]</sup> Oral self-injuries can be inflicted, either by accident or through a conscious deliberate effort or because of some anomalous habit.<sup>[3]</sup> These habits are referred as functional oral self-mutilation injuries which are performed knowingly by healthy patients as a response to certain stimuli, especially in order to attract attention.<sup>[4,5]</sup> Self-mutilation injuries are most frequently located on the head, particularly the oral and perioral tissues, the hands, and the neck.<sup>[6,7]</sup> Habits such as finger nail biting, digit sucking, or sucking on objects such as pens, pencils, toothpicks, knives, thread, dental floss, or pacifiers can be self-mutilating if neglected for a longer period of time causing damage to oral and paraoral structures.<sup>[8]</sup> One such case of masochistic habit has been presented in this case report in which the patient had a habit of chewing graphite pencil which caused trauma to anterior primary teeth in a 4-year-old female patient.

## CASE REPORT

A 4-year-old female patient reported to the department of pedodontics and preventive dentistry with the chief

complaint of pain in the upper front teeth region of the mouth for 4–5 days. The onset of pain was mild and insidious that gradually progresses and aggravates on chewing food and relieved on taking medication. The medical history was noncontributory. The parents belonged to middle-class socioeconomic background, and both the parents were working. On general examination, the child was healthy and showed negative behavior toward examination process.

Clinically, extraoral examination revealed the absence of any kind of abnormality. Intraoral examination showed the formation of window-like facets on incisal edges of 51, 52, and 61 [Figure 1]. Open pulp chamber was seen in 51 and 61, but 52 was asymptomatic. Radiographic examination revealed the involvement of enamel, dentin, and pulp along with periodontal ligament widening with respect to 51 and 61 [Figure 2]. A sensibility test was performed to check vitality status suggesting negative response (nonvital pulp) in relation

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**Figure 1:** Window-like facet involving incisal edges of 51, 52, and 61.



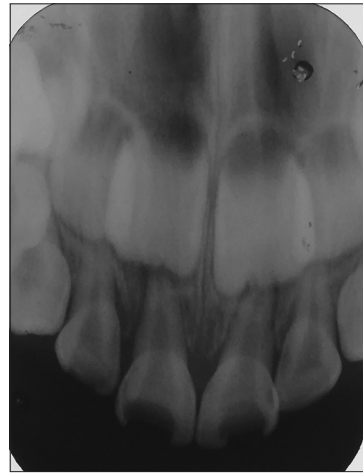
**Figure 3:** Shape and size of facet resembling pencil tip.



**Figure 5:** Esthetic composite restoration of 51, 52, and 61.

to 51 and 61 and positive response (vital pulp) in relation to 52. Marks of graphite pencil were also seen on occlusal surface of molars and incisal edge of incisors. However, no facets were seen on mandibular incisors. Oral hygiene of the patient was poor. The patient behavior according to the Frankel Rating Scale was definitely negative.

On interviewing parents regarding any unusual habit or practice involving the child's mouth, they revealed that the patient has the habit of biting pencil on the tip for more than a year.



**Figure 2:** Intraoral periapical radiograph showing radiolucency involving enamel, dentin, and pulp in relation to 51 and 61 and involving enamel and dentin in relation to 52.



**Figure 4:** Intraoral periapical radiograph showing obturated canals of 51 and 61.

The size and shape of facets were similar to that of pencil tip [Figure 3]. Expected etiology for the formation of facets was a chronic habit of prolonged biting on pencil tip causing mechanical trauma to incisal edge leading to facet formation in a particular area. The mother of the child also briefed on the fact that she finishes one complete graphite pencil in a day and showed a negative response to teachers if asked for discontinuation of the habit.

The treatment plan was first to modify the behavior of the patient toward dental treatment and second endodontic treatment of affected central incisors, followed by esthetic restoration and patient counseling aiming to discontinue the deleterious habit. Informed consent was obtained before initiating the treatment. After administering local anesthesia (Ligno × 2% with 1:80,000 adrenaline), access opening was gained into the pulp chamber using round bur (BR-40) mounted on high-speed handpiece. Necrotic pulp was extirpated using barbed broach (Dentsply Maillefer,

Germany) and irrigated with 3% hydrogen peroxide (LA Pharma Chem) and normal saline. Biomechanical preparation was done using H-file (MANI files) till file no. 40 and temporary dressing (Orafil-G) was given. In the next visit, the canal was dried with paper points and obturated with Metapex (DiaPex Plus) and sealed with glass-ionomer cement [Figure 4]. In subsequent visit, composite restoration was done to restore the esthetics, followed by finishing and polishing [Figure 5].

The patient was motivated and counseled regarding the deleterious effects of chewing pencil. The patient is under regular follow-up visits and happy with her treatment. Frankel's behavior rating of the patient was positive at the end of the treatment.

## DISCUSSION

Diagnosing self-inflicted injury to dental hard and soft tissues in children is a big challenge for a clinician practicing in dental setup. Most of the case reports describe self-inflicted soft tissue injuries more than hard tissue injuries. Dentists' goal should be focused on preventing trauma to oral tissues and minimizing the risk of compromised oral health.<sup>[9]</sup> Such injuries are more prevalent in mentally retarded children than children with normal intelligence.<sup>[10]</sup>

Based on etiology, self-inflicted dental injuries are categorized as injuries superimposed on a preexisting lesion or irritation (Type A), injuries secondary to another established habit (Type B), and injuries of unknown or complex etiology (Type C). The present case is categorized under Type B.<sup>[8]</sup>

A single treatment modality is not available for the prevention and management of self-mutilating behavior. The first step is to obtain correct diagnosis based on medical history and thorough clinical examination. Next comes symptomatic treatment to reduce tissue damage and most importantly correction of destructive habit.<sup>[11,12]</sup> In the present case, oral findings and history given by parents were relatable to confirm the diagnosis. Pulp therapy was the best treatment option available.

For correction of destructive habit, emotional component of the child should not be sidelined because the etiology of such behavior is mostly emotional.<sup>[13]</sup> In the present case, the mother of the patient was also working which made us to reach the conclusion that the patient had a feeling of abandonment and anxiety due to the absence of the mother. A pencil is easily available to the kids going to kindergarten, and this habit is commonly seen in this age group. To reduce anxiety and gain the mother's attention, the patient attempted to chew pencil which subsequently led to trauma in upper front teeth.

The treatment is often complicated by lack of compliance and communication.<sup>[11]</sup> To achieve successful results, parents should be educated and counseled regarding ill effects of self-mutilating behavior; the patient's behavior must be changed with positive reinforcement and psychological treatment if needed.<sup>[11]</sup>

Dentists and other health professionals should carefully consider the possibility of self-injury, even in physically healthy individuals, and they should follow-up by investigating all of the diagnostic possibilities for the lesions in doubtful situations.<sup>[11]</sup>

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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