

Toothbrush injury in an adult

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ABSTRACT

Tooth brushing is an oral hygiene measure. Keeping the toothbrush in the mouth and doing other works with both arms may lead to injury of the oral tissues. We hereby report a case of severe injury to the oral mucosal tissues caused by the toothbrush, which was treated surgically.

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Brushing of teeth is a must in maintaining the oral hygiene and the dental health. It is imperative to use them carefully otherwise any inadvertent trauma can cause major injury to the oral tissues while brushing the teeth.

This paper presents a case report from the Department of Dental Surgery, Government Royapettah Hospital, Chennai, where in an adult, the toothbrush has traumatized the buccal soft tissues on the left side. The injury was so severe that the removal of the toothbrush has necessitated surgical removal.

CASE REPORT

A middle-aged man, while brushing his teeth, was requested by his wife to fetch water from a water tank lorry. While he was filling up the plastic pot with water, with the brush in his mouth, suddenly to his unexpectedness, the hose pipe with which he was filling water, got slipped and hit his face with violent force causing severe trauma and the brush got embedded inside the buccal mucosa on the left side, the entire bristle portion was not seen outside. He reported to the surgical emergency department. He was thoroughly evaluated by the casualty medical officer and then referred to the department of dental surgery, with the toothbrush still in his mouth.

The patient was very anxious, could not speak, with the handle of the brush projecting outside from his mouth. The vital signs were normal. The patient was in good health, there was a small amount of saliva drooling from his mouth with little amount of bleeding from the injured

site. Extraorally, tender bulge was present on the posterior aspect of his left cheek. Intraorally, the bristle portion up to the neck of the toothbrush could not be seen with deep penetration. The brush has penetrated the buccal mucosa at the lower left second molar almost between the upper and lower teeth deep till the masseter muscle. The extraoral bulge was caused by the toothbrush lying within the muscle fibers and the skin and fascia Figures 1 and 2.

Surgical procedure

Under local anesthesia, a linear incision was placed along the length of the bristles for gaining access. Careful dissection was carried out to expose the bristles, simultaneously pulling the brush gently without causing damage to the surrounding structures; this way the entire brush was removed from the buccal mucosa. The traumatized soft tissue was explored for any remnants and then irrigated initially with saline followed by metronidazole. The wound was closed in layers. The patient was advised with suitable antibiotics and reviewed on the second and the seventh day. Postoperative period was uneventful and there were no further complaints Figures 3-6.

DISCUSSION

Tooth brushing should be done carefully; otherwise, it carries the risk of trauma to the soft tissues of the oral cavity. Toothbrush injury has been reported in children who have slipped and fallen down with the toothbrush inside their mouth. Very rarely it occurs in adults with the belief that the adults will be careful while brushing their teeth. These penetrating injuries may cause damage either to the buccal mucosa or pharynx with the resultant infection leading to a mild abscess locally or spread as a mediastinal infection.

Review of literature has reported both mucosal and

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Figure 1: Penetration projection seen extraorally – Left cheek



Figure 2: Bristles completely inside the buccal mucosa



Figure 3: Bristles carefully dissected out of buccal mucosa



Figure 4: Bristles completely removed from buccal mucosa

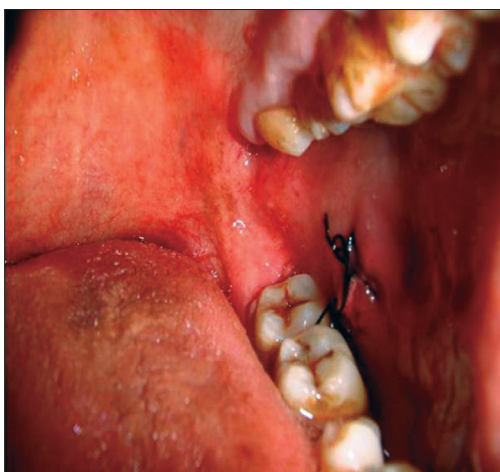


Figure 5: Soft tissue injury sutured



Figure 6: Sutured wound after one week

pharyngeal injuries due to objects held inside the mouth. Law *et al.*^[1] have described two cases of toothbrush injury in children, one in the soft palate and the other in the anterior pillar of fauces resulting in mediastinitis and retropharyngeal

abscess. Moran AJ^[2] reported toothbrush injury in a two-year-old child due to fall. Agrawal *et al.*^[3] reported the same in a child due to a cricket ball while brushing his teeth outside his house. Ebenezer *et al.*^[4] has reported an

unusual injury due to toothbrush in a child. Sasaki *et al.*^[5] has reported toothbrush injury causing life-threatening oropharyngeal trauma in a 10-year-old child. Toothbrush injury in children is more prevalent than in adult who are supposed to be more cautious. But in this case, it is purely due to negligence on the part of the adult that has caused the toothbrush injury.

Even though the intraoral penetration of toothbrush injury appears simple in retrieval under local anesthesia, sometimes it may become more serious leading to complications. Objects penetrating into the pharyngeal tissues and trauma to the internal carotid artery have been reported in the literature. The patients with these penetrating injuries should be carefully observed for the following:

- Bleeding from the site of injury
- Signs of any airway obstruction
- Nausea or vomiting
- Presence of infection at the site of injury and pyrexia
- Swelling of the soft tissue if any to be recorded
- Finally any neurologic changes to be assessed

Depending on the symptoms, the surgical management has to be decided. If these symptoms are not present and if the patient is very co-operative, retrieval can be done under local anesthesia. In this case, since the patient is an adult, and also very co-operative, we managed to remove the toothbrush embedded into the buccal mucosa under local anesthesia. It is generally advisable to remove carefully. Otherwise any attempt to pull the brush will lead to tear in the tissues and blood vessels, leading to postoperative complications.

Intraoral toothbrush injury should always be treated like any other surgical injury; hemostasis must be obtained before suturing. The size of the laceration and the length of the incision made to remove the toothbrush should be taken

into consideration while suturing. It is always advisable to administer tetanus toxoid and prescribe appropriate antibiotics for the patient. They must be closely observed initially for at least 72 h and reviewed again after seven days at the time of suture removal. In this case, the patient was observed for nearly one month.

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