2014-12-01

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http://hdl.handle.net/10026.1/4227

Archives of Orofacial Sciences

Archives of Orofacial Sciences
The Journal of the School of Dental Sciences
Universiti Sains Malaysia

Arch Orofac Sci (2014), **9**(2): 105-107.

Case Report

Penetrating toothbrush injury in a child: an unusual presentation

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Revised edition: 07/08/2014. Accepted: 07/08/2014. Published online: 19/11/2014.

Abstract We present an unusual case of a penetrating toothbrush injury in a 6-year old child. The injury was sustained due to a fall at home and resulted in accidental implantation of an adult toothbrush in the facial soft tissues. The toothbrush was removed under general anaesthesia without any complications. This case highlights a rare presentation involving extra oral penetration of a toothbrush which is not reported previously in the literature.

Keywords: Face, paediatric, trauma, toothbrush.

Introduction

Foreign bodies in the aero-digestive tract are well recognised in the paediatric population. Common foreign bodies include fish bones, coins, pins, screws, toy parts and food items (Wai et al., 2001; Park et al., 2006; Pokharel et al., 2008). Similarly foreign bodies may also be encountered in the cranio-maxillofacial region and common objects include fragments of wood, pencils, surgical instruments and materials, and shrapnel. We report an unusual case of penetrating toothbrush injury in a child (Santos et al., 2011; Aregbesola et al., 2013). We report an unusual case of a penetrating injury of the face caused by a toothbrush in a child.

Case report

A 5-year old male child was referred to the maxillofacial surgery department regarding a penetrating facial injury sustained at home. The child experienced a fall at home while he was running with a toothbrush in his hand and hit his face against the floor. His mother heard him scream and upon arriving at the scene saw him lying on the floor in pain and bleeding from the right side of his face. The child was taken to a local medical practitioner who advised the parents to take him to the maxillofacial surgery department in Lahore. The child was based in a rural community approximately 250 miles from the dental hospital. He presented two days after the injury and was assessed as an emergency patient. Clinical examination revealed a hard object embedded the soft tissues of his right cheek adjacent to the mandibular body (Figure 1). The area was extremely tender and part of the foreign body was visible through the external opening of the wound and appeared to be a red plastic object. His medical history was unremarkable. A lateral skull radiograph revealed the presence of a foreign body in the right facial tissues (Figure 2). A provisional diagnosis of a broken toothbrush embedded in the facial soft tissues was made. This was later confirmed with the child and his mother as they were seemingly aware of a broken toothbrush fragment at the site of injury.

Fig. 1 Lateral view of the right face showing a penetrating foreign body in the soft tissues.

Fig 2 Lateral skull view showing the presence of a foreign body in the soft tissues of the right face. Note the radiopaque tufts of toothbrush bristles.

Fig 3 Retrieved foreign body was an adult-size toothbrush fractured near the shank.

The patient was booked on the emergency theatre list on the same day and the foreign body was approached through the existing wound under general anaesthesia. Blunt dissection was carried out to free the object from the adjacent soft tissue. Upon retrieval the foreign body was identified as an adult-size toothbrush broken below the shank area (Figure 3). Primary closure of the wound was carried out with simple interrupted sutures. The patient was discharged the following day with postoperative antibiotics and analgesics. The patient was followed up periodically over the next three months. The wound healed uneventfully without any further complications.

Discussion

This case highlights a rare occurrence of penetrating toothbrush injury in a child. The precise mechanism by which the toothbrush managed to penetrate the tissues remains unclear. The child was not reported to have any pre-existing skin defect or wound which may have facilitated the entry of the toothbrush into the tissues. The magnitude of force and angle of impact coupled with the bodyweight of the child may all have possibly contributed to this inimitable pattern of trauma. Toothbrush-related penetrating injuries have been reported previously involving intra oral penetration (Moran 1998; MacLeod 1989, Oza et al., 2002). Toothbrush bristles have also been reported in the maxillary sinus in a paediatric patient due to self-inflicted injury (Janardhan et al., 2010). However, the present case highlights extra oral implantation of a toothbrush which has not been reported previously.

This case also underscores the need for ready access to maxillofacial surgery services for rural communities in underdeveloped countries. The size of the toothbrush precluded any significant movement of the foreign body in the tissues which may be a risk with smaller objects like needles. However, delayed management can lead to significant discomfort to the paediatric subjects with a risk of infection, unpleasant facial scarring and chronic draining sinuses if left untreated. Unlike injuries caused by road traffic accidents, interpersonal violence including fires, domestic accidents may not be preventable through legislation and perhaps increased vigilance on part of parents can play a significant part.

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