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Management of Toothbrush Fragment Which is Left in Buccal Space in Children: Case Report

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Abstract: ***Introduction: Intraoral penetrating injury mostly occurs in children because they often play while holding objects in their mouth. Objects such as wooden sticks, pencils and toothbrushes commonly cause intraoral penetrating injury in children. The injury site includes intraoral mucosa, palate, even oropharynx. Emergency management and wound closure are needed. Objective: The fast and right emergency management and adequate wound closure in patient with toothbrush fragment which is left in buccal space. Case Report: A 2.5 years old boy patient came to Emergency Department Hasan Sadikin Hospital Bandung. He fell down while he was playing with toothbrush in his mouth. He suddenly slipped and fell down. The toothbrush head penetrated his left buccal mucosa and was broken, it was embedded in his cheek. After the removal of toothbrush head was done, wound debridement and suturing was performed. The medication was anti-tetanus serum, antibiotic and analgesic. Discussion: Management of toothbrush fragment which is left in buccal space should concerns signs and symptoms of airway obstruction, uncontrolled hemorrhage, acute infection, neurological changes and wide lacerated wound. If these symptoms are not apparent and the patient is cooperative, wound management can be done under local anesthesia. Hemorrhage control can be achieved with wound suturing. Antibiotic and analgesic is given along with anti-tetanus serum injection. Conclusions: Management of toothbrush fragment which is left in buccal space in children can be performed by concerning emergency signs and symptoms before performing wound closure and administration of the right medication.***

Keywords: injury, toothbrush fragment, buccal space, children

1. Introduction

Foreign body impaction in the oral and maxillofacial region may result from trauma or may be iatrogenic. It can produce chronic inflammatory reactions and be a source of infection[1]. Intraoral penetrating injury mostly occur in children because they often play while holding objects in their mouth. Objects such as wooden sticks, pencils and toothbrushes commonly cause intraoral penetrating injury in children[2]. The injury site includes intraoral mucosa, palate, even oropharynx[3].

Surgical procedures are performed under local anesthesia, incision is made along the fragment of toothbrush to gain access. Careful dissection is carried out so that the toothbrush fragment can be exposed. The toothbrush is pulled simultaneously without damaging the structure of surrounding tissues. In this way, the entire toothbrush fragment can be removed from the buccal mucosa. Traumatized soft tissue are explored to ensure that there are no residual fragments and then being irrigated with saline followed by metronidazole. The wound is closed layer by layer. The appropriate antibiotics are prescribed and patient evaluation is held on the second and seventh day[4].

This is a case report of a child patient with a toothbrush fragment got embedded inside his buccal space.

2. Case Report

A 2.5 years old boy patient came complaining a toothbrush head embedded in the inner of his left cheek.About 21 hours prior to admission, while he was playing at home in Setiabudi area with toothbrush in his mouth, he suddenly slipped and fell down with the mechanism is his face hit the floor so that the tip of the toothbrush stuck his inner left cheek, the toothbrush head was broken and left inside his inner cheek.Then the patient brought to Hasan Sadikin Hospital Emergency Department.

Figure 1: Extraoral and intraoral presentation of the patient

Primary survey revealed no signs of emergency. Secondary survey was within normal limit. General status was good except the asymmetrical face because of edema of his left cheek. Intra oral examination showed a lacerated wound in the buccal mucosa approximately 1 x 0.5 x 1 cm in size with irregular edge and muscle based. Laboratory findings revealed the increasing of white blood count (27.000/ mm^3) and platelet count (654.000/ mm^3).

In the Emergency Department, patient was immediately injected by anti-tetanus serum. After the removal of the toothbrush head from the buccal space, the wound was then debrided. The lacerated wound was closed by suture placement. A stesolid 10 mg was administrated suppository. On discharge, patient was given amoxicillin syrup (125 mg, 3 x 1 ¾ cth) and ibuprofen syrup (120 mg, 3 x ¾ cth).

Figure 2: (a) Intra oral post debridement and extraction **(b)** Toothbrush fragment

Figure 3: Intra oral post suturing

Instructions were given to follow oral hygiene instructions, regular diet and application of hyaluronic acid gel at the sutured area. The patient was reviewed at 2 day interval post operatively. The suture removal was performed at 7 days interval post operatively. The lacerated wound had healed well with no complication symptoms.

Figure 4: Extraoral and intraoral postsuture removal

3. Discussion

The diagnosis and early detection of foreign bodies are usually based on the patient's history, clinical examination and the various radiological imaging. The orofacial soft tissue spaces are potential anatomic spaces between deep fascial layers, they are bounded by bones, muscles or salivary glands and mostly filled with loose connective tissue. These have been variously classified into the suprahyoid and infrahyoid groups. The buccal and submasseteric spaces are examples of the suprahyoid fascial spaces. The impaction of a foreign body may induce an inflammatory reaction[1].

Management of toothbrush fragment which is left in buccal space should concerns signs and symptoms of airway obstruction, uncontrolled hemorrhage, acute infection (swellings or abscess of the soft tissue), neurological changes (nausea, vomiting or alteration in mental status) and wide lacerated wound[4]. If these symptoms are not apparent and the toothbrush fragment is embedded in the buccal space, it can be removed under local anesthesia, provided the patient is cooperative[5].

After removal of the toothbrush fragment, hemostasis should always be evaluated. Failure to do so could lead to the formation of a hematoma or bleeding into the deeper tissue

spaces, which could be fatal. Suturing of the wound should be done taking into consideration the size of the laceration and the length of the incision made to release the toothbrush fragment. After discharge, the patient should be reviewed closely for several days as complications could take up to 72 hours to manifest[6].

The timely removal of retained foreign bodies from the tissue is important in order to relieve the patient of all symptoms and also minimize possible complications such as cellulitis, abscess, necrotizing fasciitis, foreign body allergic reaction and osteomyelitis[1]. Infection can occur through the oral micro-flora that is carried into the deeper tissues with the initial injury or later through the mucosal laceration itself. This can then spread rapidly into the surrounding tissues and have life-threatening consequences[4]. Antibiotic and analgesic is given along with anti-tetanus serum injection7,8.

4. Conclusion

Management of toothbrush fragment which is left in buccal space in children can be performed by concerning emergency signs and symptoms before performing wound closure and administration of the right medication.

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