

Molar Luxations Caused by Holding Water Taps. Report of Five Cases

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Luxation of a primary molar occurs rarely. Here, we describe five cases of primary molar luxation caused by holding a water tap pipe in the mouth during bathing. The patients were aged 16 to 19 months and the mandibular first primary molar was affected in all five cases. The second primary molar had not erupted. It is assumed that the flange of the pipe got stuck in the interdental space between the mandibular primary canine and first primary molar and the affected first molar was pushed out by force with the flange acting as a lever.

Keywords: tooth luxation, primary molar, water tap

INTRODUCTION

Luxation of primary teeth is a relatively common injury in children.¹ This usually occurs due to trauma when children fall down and at that time they may hold something in their mouth like a pencil, toothbrush or toy.² Maxillary primary incisors are most commonly luxated, whereas primary molars are rarely affected.³⁻⁶ In preschool children, only 0.5 % of traumatic dental injuries involved the primary molars, most of which were crown fractures.⁷

We present five unusual cases of mandibular primary molar luxation in children, all of which had been caused by holding a water tap pipe during bathing.

CASE REPORTS

Case 1

A 19-month-old boy was brought to our after-hours clinic as his primary tooth had come out and there was gingival bleeding. When he was being bathed by his mother, the water tap pipe which he had been grasping in his mouth could not be removed. His mother shook his face forcefully to detach the pipe, but the tooth came out along with it. On examination, avulsion of the right mandibular primary first molar was observed with no tooth fracture and bleeding from the socket had stopped (Figures 1, 2). The primary second molar had

not erupted and there was no damage to the other intraoral tissues. Tooth replantation was not performed so that the permanent tooth could be saved.

Case 2

A 16-month-old girl was brought to our after-hours clinic with the complaint of bleeding from the gingiva. She was bathing with her grandmother and her grandmother picked her up without noticing that the child was holding the water tap pipe in her mouth. On examination, her right mandibular primary first molar was luxated and was severely mobile though it was still in the alveolus. The bleeding had already stopped and no other intraoral injury was found. The primary second molar had not erupted. The tooth was extracted because it was very difficult to stabilize the tooth.

Case 3

A 17-month-old boy was transferred to our after-hours clinic in an ambulance due to tooth avulsion and bleeding from the oral cavity. When he was bathing with his mother, he began to cry because the water tap pipe had got stuck in his mouth and could not be taken out. As his mother removed the tap from his mouth, bleeding and avulsion of the tooth occurred. On examination, his left mandibular primary molar had avulsed without fracture, but bleeding from the tooth socket had ceased. The primary second molar had not erupted. There was no other oral tissue injury. Considering the safety of the permanent successor, replantation was not performed.

Case 4

An 18-month-old boy was brought to our after-hours clinic in an ambulance with tooth avulsion and bleeding from the oral cavity. When he was bathing with his mother, he held the water tap pipe in his mouth, but he found that he could not take it out. When his mother pulled out the pipe, the tooth came out too and there was bleeding. On examination, his right mandibular primary first molar had come out and oozing was found from the socket. The tooth showed no fracture and no other injuries were found in the oral cavity. The bleeding stopped soon. The primary second molar had not erupted. The avulsed tooth was not replanted to prevent any untoward effects on the permanent tooth.

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Figure 1. Clinical photograph of Case 1. The mandibular right primary first molar was avulsed.

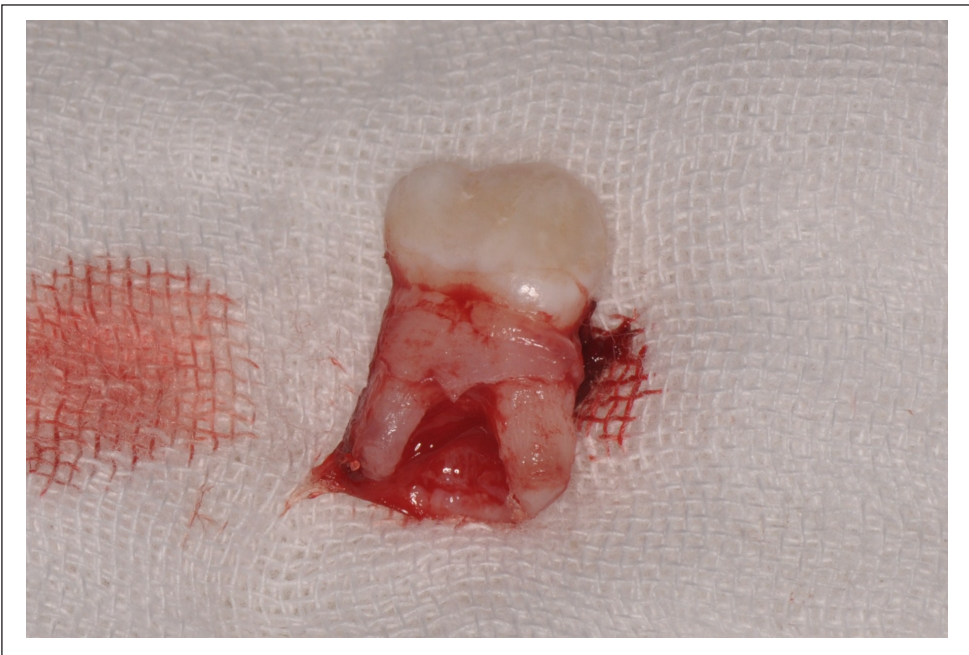


Figure 2. Photograph of the avulsed mandibular right primary first molar in Case 1. Root formation was incomplete.

Case 5

A 17-month-old girl was brought to our after-hours clinic with the complaint of tooth mobility and bleeding. She had been holding a water tap while bathing, and she could not remove it. When her mother removed it forcefully, the tooth became mobile and bleeding occurred. On examination, her left primary first molar was severely mobile and oozing was observed. Other sites of trauma could not be found and the primary second molar had not erupted. After hemostasis, the tooth was extracted as it was difficult to save.

The summary of the cases is shown in Table 1.

DISCUSSION

Few reports have described luxation of the primary molar.³⁻⁵ According to our clinical records, 452 cases of traumatic primary teeth luxation other than cases of jaw bone fracture were attended to between January 1, 2002 and December 31, 2011. Only six cases (1.33 %) involved primary molar avulsion, of which five are reported here. The other one was reported in a 19-month-old boy, who had fallen down from the stairs with a toy vehicle. All the five cases reported here showed similar situation and age (Table 1). The affected tooth was the mandibular primary first molar with

Table 1. Summary of the cases.

- The patients were holding the water tap pipe with flange in their mouths.
- The age ranged from 16 to 19-month-old.
- The luxated tooth was a mandibular primary first molar.
- The root canal formation of the luxated tooth was not complete.
- The primary second molar had not erupted.

incomplete root formation and the adjacent second primary tooth had not erupted. We speculate that the mechanism of the luxation was as follows. The water tap that had caused the problem in all the cases was of a similar type; it had a ring-like flange around the lower end of the pipe and the diameter of the pipe with flange was about 20 mm (Figure 3). We assume that the flange got stuck in the interdental space between the mandibular primary canine and the first molar. This interdental space is relatively large because of the primate space; a unique case report has even described a penny coin stuck in the space.^{8,9} When the child moves his head in panic, the pipe works like an elevator and the affected tooth is pulled out by the force of the lever. To the best of our knowledge, primary molar luxation in previous reports was mainly caused by a strong extraoral force such as that during a traffic accident, a fall or when hit by a swing.⁵ There was no report of primary molar luxation caused by an intraoral force.

When water tap injury occurs, as this injury is classified under mouth poke injury, it goes without saying that thorough examination of all the intraoral soft tissues is needed.¹⁰ In case of primary tooth luxation, the effects on its permanent successor must be considered. As for primary anterior teeth, it was controversial whether the teeth should be replanted or not.¹¹ In the case of primary molar luxation, a treatment protocol has not been established probably because of the few number of cases. Though replantation of the primary molar might be effective for maintenance of the space for the permanent dentition and occlusal stability, in fact it seemed to be very difficult to fix the primary molar with an unerupted adjacent tooth. Pulpal therapy of the luxated primary molar was also questionable in terms of the timing, prognosis, and its effects on the formation of the developing premolar.⁵ Observation of a larger number of cases is needed to establish proper treatment of primary molar luxation.

This report clearly shows the risk of primary molar luxation when holding a water tap pipe with flange in the oral cavity. But theoretically, the shape of the holding object was mostly responsible for the primary molar luxation. We should keep in mind that primary molar luxation may occur when children hold objects in their mouth.

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Figure 3. Photograph of the similar type water tap that caused the injuries. The outer diameter of the pipe with flange was about 20 mm.

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