

Mediastinal emphysema around the left carotid arteries from a toothbrush impalement injury

Manami Ueshima¹ and Yusuke Kono¹

¹Kameda Medical Center

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MAIN DOCUMENT

KEY WORDS

toothbrush injury, mediastinal emphysema, carotid arteries

CASE DESCRIPTION

A 1-year-old boy was brought to the emergency department with a fever after experiencing an oral cavity injury caused by a toothbrush. The preceding morning, with his parents momentarily distracted, the boy had fallen while brushing his teeth. His toothbrush got stuck in his throat, and his mother forcefully removed it. On checking the boy's mouth, the mother could see no bleeding or injuries. At a dental clinic, an examination the same day by a dentist revealed no active bleeding, and the boy was allowed to return home. Although the boy had done well at home during the day, a fever started during the night and continued into the next day.

On the boy's arrival in the emergency department, his vital signs were stable except for a temperature of 37.7°C. On physical examination, no bleeds or injuries in his mouth were evident. A complete blood count and basic metabolic panel were unremarkable. Contrast-enhanced head-to-chest computed tomography revealed mediastinal emphysema across a wide area, including the left common and internal carotid arteries (Figure 1). Visualization using a laryngeal fiberscope revealed an injury to the left oropharyngeal wall, permitting air to enter the mediastinum (Figure 2).

The boy was admitted to our hospital for careful monitoring and administration of antibiotics. Fortunately, he was discharged 8 days later without his condition worsening.

DISCUSSION

Injuries to the oral cavity by toothbrushes are common in children, but impalement by a toothbrush is rare. Few cases have been reported, even in children.^{1,2} The injury in this case was particularly life-threatening because of the mediastinal emphysema around the left carotid arteries. Had the toothbrush penetrated either artery, the child could have died from blood loss. If the emphysema had worsened, he might have died from airway obstruction or functional loss of blood circulation. Supervised or not, children typically use a toothbrush every day. Parents, dentists, and physicians should all be aware of the potential dangers.

ACKNOWLEDGEMENT

Nothing to disclose.

CONFLICTS OF INTEREST

None.

AUTHOR CONTRIBUTIONS

M Ueshima and Y Kono treated the patient and collected data and information. M Ueshima is the author of the present work. Y Kono critically reviewed the manuscript. All authors have read and approved the final version of the manuscript.

CONSENT STATEMENT

Written informed consent was obtained from the patient's family to publish this report in accordance with the journal's patient consent policy.

REFERENCES

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