

## CASE IMAGE

# Natural excretion of a metallic susceptor originating from an ingested heated tobacco stick

Hirohito Doi | Toshihiko Kakiuchi  | Masafumi Nishino | Masato Yoshiura

Department of Pediatrics, Faculty of Medicine, Saga University, Saga, Japan

**Correspondence**

Toshihiko Kakiuchi, Department of Pediatrics, Faculty of Medicine, Saga University, 5-1-1, Nabeshima, Saga 849-8501, Japan.

Email: [kakiucht@cc.saga-u.ac.jp](mailto:kakiucht@cc.saga-u.ac.jp)

**Key Clinical Message**

Clinicians should not only consider the presence of metallic foreign bodies within the digestive tract but also contemplate the possibility of nicotine poisoning during the diagnostic process.

**Abstract**

When clinicians encounter cases of accidental ingestion of some types of heated tobacco, they must consider not only nicotine poisoning but also the possibility of a metallic foreign body within the digestive tract during diagnosis. In children, even sharp or relatively large ingested foreign bodies can spontaneously pass below the esophagus. Considering that this 12-mm metal piece is small, natural excretion may be considered rather than endoscopic removal.

**KEYWORDS**

endoscopy, heated tobacco products, ingestion, intestinal excretion, pediatric

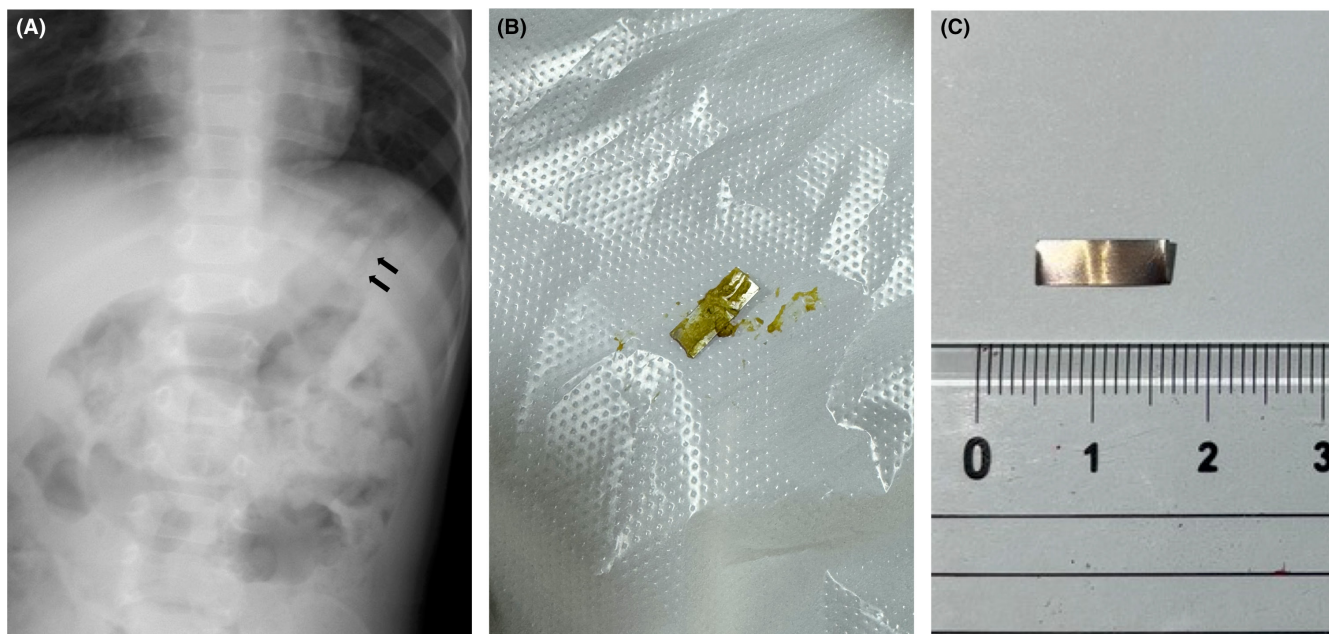
This study included an 11-month-old boy who was referred to our hospital after his mother found him with a heated tobacco stick in his mouth. Although he had consumed approximately half of the tobacco stick, he showed no signs of health issues or abnormalities in his vitals. Abdominal X-ray results revealed a metallic foreign body in the stomach (Figure 1A). Instead of removing it endoscopically, an observational method was performed to allow it to be excreted naturally, and it was safely excreted in feces 2 days later (Figure 1B, C), indicating no gastrointestinal bleeding or perforation. Another 9-month-old girl presented to our hospital after accidentally ingesting heated tobacco for 2 consecutive days. Moreover, the X-ray results revealed two pieces of metal in her stomach and beyond (Figure 2A). She also showed no particular adverse events, as the metal objects disappeared, as confirmed by X-ray 2 days later. (Figure 2B). In both cases, no

symptoms suggestive of nicotine poisoning or gastrointestinal symptoms were observed from the beginning to the end of foreign body aspiration.

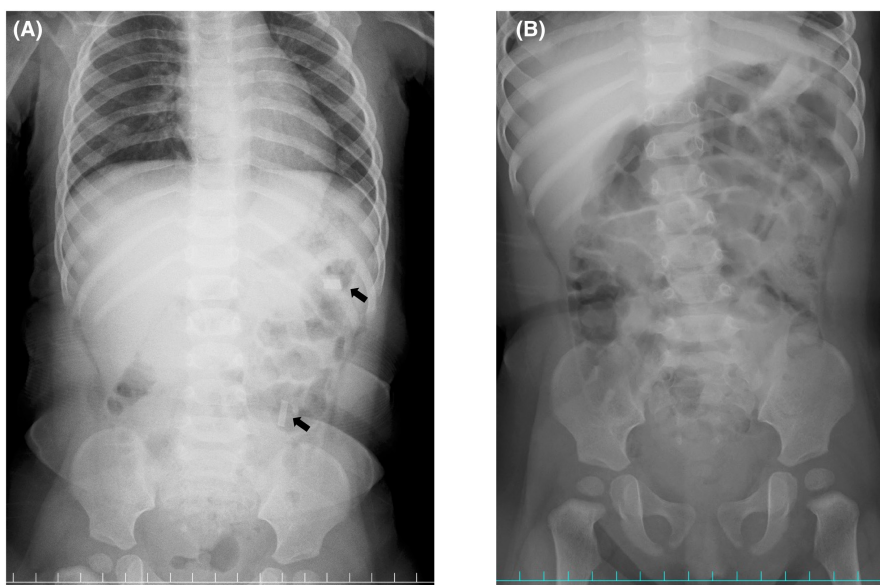
To facilitate the heating and smoking of tobacco without fire, some heated tobacco sticks contain rectangular metallic susceptors. Therefore, clinicians must consider not only nicotine poisoning but also the possibility of a metallic foreign body within the digestive tract during the diagnosis of accidental ingestion of this kind of heated tobacco.<sup>1</sup> Certainly, clinicians should not neglect to be on the lookout for symptoms (consciousness disorder, nausea, vomiting, dizziness, palpitation, dysphoria, salivation, and abdominal pain) and vital signs (bradycardia, hypotension, etc.) of nicotine poisoning.<sup>2</sup> In addition to nicotine poisoning, treatments for accidental ingestion of foreign objects such as metal pieces should also be considered. Regarding the removal

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**FIGURE 1** (A) Abdominal X-ray findings of the first patient. A metal object was found in the stomach. (B, C) Two days after the accidental ingestion, the metal foreign object was excreted in the stool. Black arrows; metallic foreign bodies.



**FIGURE 2** (A) In the second abdominal X-ray of the patient, two metal foreign bodies were found in the stomach and beyond. (B) The two foreign bodies were not detected in the X-ray examination that was performed 2 days later. Black arrows; metallic foreign bodies.

of rectangular metal susceptors in heated tobacco sticks, there is only one case report of endoscopic removal.<sup>1</sup> In children, even sharp or relatively large ingested foreign bodies can spontaneously pass below the esophagus.<sup>3</sup> Considering that this 12-mm metal piece is small, natural excretion may be considered rather than endoscopic removal.

#### AUTHOR CONTRIBUTIONS

**Hirohito Doi:** Investigation; writing – original draft. **Toshihiko Kakiuchi:** Conceptualization; data curation; formal analysis; investigation; project administration; supervision; writing – review and editing. **Masafumi**

**Nishino:** Data curation; investigation. **Masato Yoshiura:** Data curation; investigation.

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#### CONFLICT OF INTEREST STATEMENT

The authors declare no competing interests.

## DATA AVAILABILITY STATEMENT

All data generated or analyzed during this study are included in this published article.

## CONSENT

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

## ORCID

Toshihiko Kakiuchi  <https://orcid.org/0000-0002-9995-5522>

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