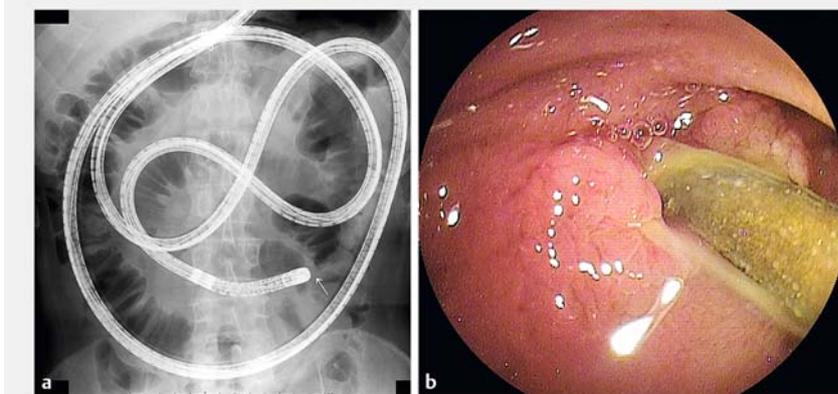


Successful endoscopic retrieval of a toothpick stuck in the small intestine using double-balloon enteroscopy



► **Fig. 1** Abdominopelvic computed tomography scan showing the distended and fluid-filled small bowel (S) and caliber change (arrow) in the proximal part of the small intestine, which is consistent with small bowel obstruction, on: **a** axial view; **b** reconstructed sagittal image, which also shows a high-density needle-shaped structure inside the small intestine (arrowhead).

A 59-year-old man was admitted to our hospital with nausea and vomiting. Laboratory test results demonstrated an elevated white blood cell count of 10 540/ μ L (normal range 3200–8000/ μ L) and his C-reactive protein (CRP) level was 2.82 mg/dL (normal <0.30 mg/dL). He had a history of appendectomy for appendicitis and ventriculoperitoneal shunting for subarachnoid hemorrhage. Abdominal computed tomography (CT) showed a small-bowel obstruction (SBO) with dilatation, fluid collection, and caliber change in the proximal part of the small intestine (► **Fig. 1 a**). Ascites, ab-



► **Fig. 2** Double-balloon enteroscopy (DBE) via the oral route showing: **a** on radiographic imaging, the position of the stuck toothpick in the small intestine (arrow); **b** on endoscopic view, the ingested toothpick stuck in the small intestine wall.



► **Fig. 3** Photograph of the removed 6.5-cm toothpick (arrow). For comparison, an unused toothpick (arrowhead) is also shown.

sceses, and free air were not observed; however, a high-density needle-shaped structure was noted incidentally inside the proximal part of the small intestine with minimal surrounding inflammation (► **Fig. 1 b**).

A transnasal ileal tube was placed to decompress the SBO; after 4 days, the SBO had improved, so the tube was removed. In order to remove the foreign body from the small intestine, we performed double-balloon enteroscopy (DBE) via the oral route (► **Fig. 2 a**). DBE revealed a wooden toothpick that was stuck in the proximal part of the small intestine (► **Fig. 2 b**), and we successfully removed the toothpick using grasping forceps without any complications (► **Fig. 3**; ► **Video 1**). A follow-up CT scan immedi-

ately after the DBE revealed no free air surrounding the small intestine.

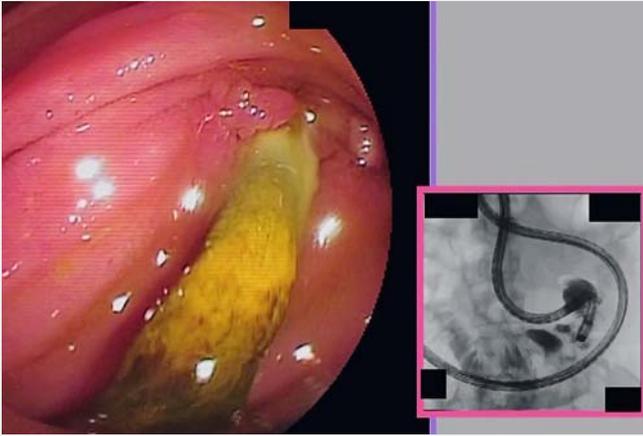
The patient had no memory of ingesting the toothpick. His clinical course was uneventful, and he was discharged 9 days after the DBE.

According to previous reports, toothpick perforation of the duodenum can be treated with endoscopic removal [1–3]. However, toothpick perforation of the small intestine, which often exists with other complications, such as abscess formation, has previously been treated by laparotomy [4,5]. To the best of our knowledge, this is the first English case report of the successful endoscopic removal of a toothpick stuck in the small intestine using DBE. We suggest that DBE may offer a nonsurgical alternative for the removal of a toothpick stuck in the small intestine.

Endoscopy_UCTN_Code_TTT_1AP_2AD

Competing interests

None



Video 1 Endoscopic retrieval of a toothpick stuck in the small intestine using double-balloon enteroscopy via the oral route and grasping forceps.

Bibliography

DOI <https://doi.org/10.1055/a-0992-8959>

Published online: 9.9.2019

Endoscopy 2020; 52: E45–E46

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Stuttgart · New York

ISSN 0013-726X

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References

- [1] Robert B, Bartoli E, Fumery M et al. Duodenal perforation due to toothpick perforation, an uncommon cause of chronic abdominal pain. *Endoscopy* 2012; 44: E27–E28
- [2] Hsieh MJ, Lee TC, Tseng CH et al. Duodenum-penetrating toothpick with liver abscess: removal with single-balloon enteroscopy. *Endoscopy* 2011; 43: E11–E12
- [3] Wu SS, Yen HH, Chen YY et al. Successful endoscopic retrieval of an impacted toothpick in the duodenum (with video). *Gastrointest Endosc* 2006; 63: 329; discussion 329
- [4] Lai CMS, Lui TH. Small bowel perforation by toothpick. *BMJ Case Rep* 2018. doi:10.1136/bcr-2018-225258
- [5] Mark D, Ferris K, Martel G et al. Radiological diagnosis of a small bowel perforation secondary to toothpick ingestion. *BMJ Case Rep* 2013. doi:10.1136/bcr-2013-009869