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Case report

Small-bowel obstruction owing to kitchen sponge eating as a pica behavior: A case report

Rika Yoshida, MD^{a,*}, Shota Tanaka, MD^{a,b}, Takeshi Yoshizako, MD^a, Shinji Ando, MD^{a,b}, Hidemitsu Mukumoto, MD^b, Yoshikazu Takinami, MD^c, Hajime Kitagaki, MD^a

^a Shimane University, Faculty of Medicine, Department of Radiology, 89-1, Enya-cho, Izumo, Shimane 693-8501, Japan

^b Masuda Red Cross Hospital, Department of Radiology, Shimane, Japan

^c Shimane University, Faculty of Medicine, Department of Emergency, Izumo, Shimane, Japan

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ABSTRACT

Small-bowel feces sign is useful to detect the corresponding site of stenosis or obstruction in patients with moderate and high degrees of small-bowel obstruction. The CT findings of kitchen sponge are very similar to small-bowel feces sign. With careful image interpretation, it is possible to judge whether the cause of obstruction is sponge. We report a case of a 26-year-old man small-bowel obstruction due to kitchen sponge eating as pica behavior, focusing on image findings.

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Introduction

Small-bowel obstructions are a common cause of acute abdomen and account for approximately 4% of all patients presenting to emergency departments with complaints of abdominal pain [1]. The small-bowel feces sign indicates increasing water absorption owing to stagnation of intestinal tract contents due to small-bowel obstruction [2]. Therefore, the content of the small intestinal tract shows feces-like

appearance. This small-bowel feces sign is useful in detecting corresponding sites of stenosis or obstruction in patients with moderate and high degrees of small-bowel obstructions [2].

Pica refers to consumption of nonfood items such as mud, clay, and hair and is commonly affects children, pregnant women, and individuals with cognitive disabilities [3]. However, sponge pica is a very rare variant. We report on a patient with small-bowel obstruction owing to sponge eating as a pica behavior, with a focus on imaging findings.

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* Corresponding author.

E-mail address: yoshidar@med.shimane-u.ac.jp (R. Yoshida).

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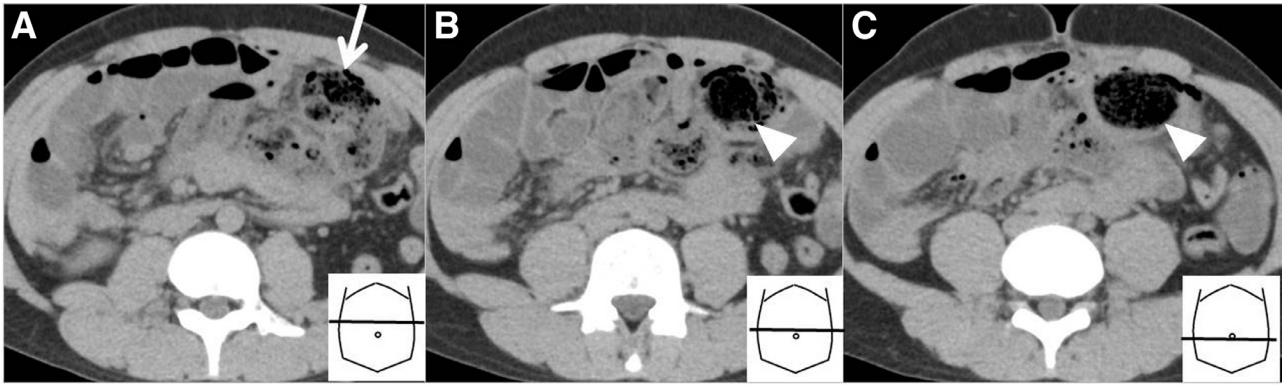


Fig. 1 – (A, upper level; B, middle level; C, lower level) Axial CT scan shows the dilated and fluid-filled small-bowel loops. The small-bowel feces sign can be seen (A, arrow; B, arrowhead). On the distal side, the small-bowel feces sign appeared as a uniform collection of fine air bubbles (B, C, arrowhead).

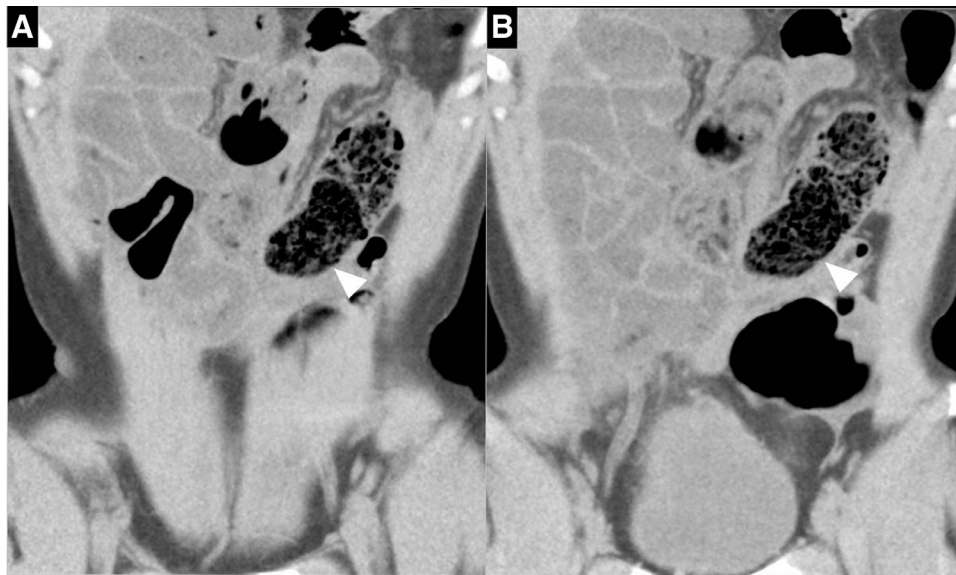


Fig. 2 – (A, anterior level; B, posterior level) On coronal imaging, we noted differences in the appearance of the distal side, proximal side, and intervening boundary. The appearance on the distal side of the feces sign led us to suspect a sponge-like obstruction (arrowhead).

Case report

A 26-year-old male presented to the emergency department with complaints of a 1-day history of abdominal pain with nausea and vomiting. His past medical history was significant for hypertrophic pyloric stenosis in infancy and intestinal resection owing to intestinal malrotation during childhood. Prior treatment details were unknown and the patient was diagnosed with a cognitive disability. The family history was noncontributory, and all biological tests were within reference limits.

An axial nonenhanced CT scan showed dilated and fluid-filled small-bowel loops. Small-bowel feces sign was evident

(Fig. 1, arrowhead, arrow). On the distal side, the small-bowel feces sign was relatively uniform in appearance, comprising collections of fine air bubbles (Fig. 1B, 1C, arrowhead). On coronal imaging, we noted differences between feces visualized on the distal and proximal sides, separated by a common boundary (Fig. 2). On the distal side, we observed a sponge-like formation and therefore suspected small-bowel obstruction owing to kitchen sponge eating as a pica behavior. After this, the patient was referred for emergency surgery.

Surgical findings included a yellow sponge that filled the dilated small-bowel loop (Fig. 3). No adhesions or internal hernias were observed. CT findings showed an appearance of a uniform small air bubble of the sponge along with signs of small-bowel feces.



Fig. 3 – Surgical specimen shows a yellow kitchen sponge filling the dilated loop of the small bowel (arrowhead).

Discussion

In patients with small-bowel obstruction, CT has become an important tool for diagnosis and determining treatment options. The small-bowel feces sign indicates increasing water absorption owing to stagnation. This sign is useful for detecting stenosis or obstructions in these patients [2]. In addition, the sign is frequently present in patients with moderate and severe small-bowel obstructions [2].

Patients with pica crave to consume non-nutritive substances, such as ice, hair, paper, drywall, paint, metal, stones,

glass, feces, or chalk [3,4]. Sponge eating, for example, a sponge toy or kitchen sponge, is a sign of pica [3,4]. According to previous reports, sponge toys and gastroliths (Bezoar) can induce small-bowel obstructions [3-5].

CT shows the impaction gastroliths as well-delineated masses in the intestinal lumen, with mixed densities and air-containing, although without an encapsulating wall [3]. In our case, sponge impaction resembled gastroliths and the small-bowel feces sign.

By checking the differences in appearances between the distal side, proximal side, and feces sign boundary, we were able to identify sponge as the cause of small-bowel obstruction preoperatively. Foreign bodies such as sponges may resemble the small-bowel feces sign in patients with pica behaviors.

In conclusion, on CT, the sponge appeared markedly similar to the small-bowel feces sign. On careful image interpretation, it was possible to accurately determine the cause of obstruction.

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