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LETTER TO EDITOR

Diverticulitis due to upper gastrointestinal series using barium

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Dear Editor,

A 50-year-old woman presented to the gastroenterology clinic with a 2-day history of right lower quadrant (RLQ) abdominal pain. Vital signs were normal, and her abdomen was soft but tender in the RLQ. Laboratory evaluation showed that C-reactive protein and white blood cell count were elevated at 12.73 mg/dL (reference range, 0.00 to 0.30) and 14,000/μL (reference range, 3,500 to 8,500), respectively. Computed tomography (CT) revealed ascending colon inflammation with a very high CT value (mean Hounsfield units = 1,502) (**Figure 1**).

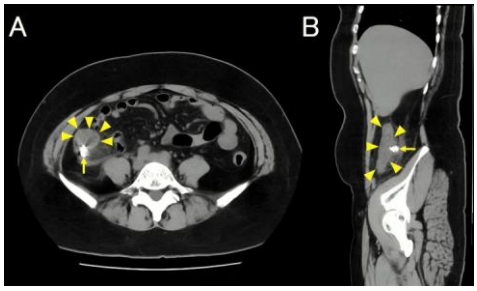

Figure 1. CT revealing ascending colon inflammation (arrowheads) with a very high CT value (arrows) (panel A: axial view and panel B: sagittal view) (reprinted with permission of the patient)

Twenty-three days previously, she had undergone upper gastrointestinal series using barium for gastric cancer (GC) screening. Thus, diverticulitis due to barium was suspected to be the main cause of intestinal inflammation. She was hospitalized; parenteral nutrition and treatment with an antibiotic agent were initiated. During 3 days of follow-up, the symptoms had abated, and her white blood cell count normalized. Four days after presentation, colonoscopy revealed multiple diverticula in the ascending colon, including one containing a yellowish-white, firm object consistent with a mixture of barium and feces (i.e., barolith) (part A in **Figure 2**).

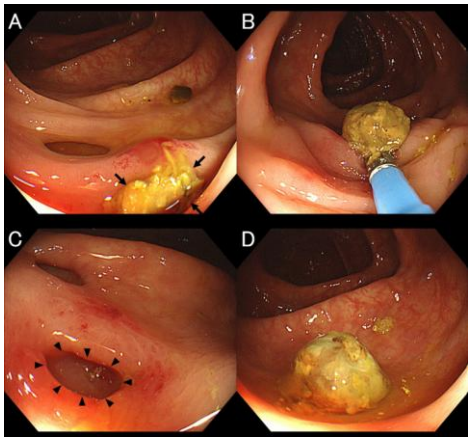

Figure 1. Panel A: colonoscopy revealing multiple diverticula in the ascending colon, and a diverticulum containing a yellowish-white, firm object consistent with a mixture barium and feces (arrows) (i.e., barolith) (reprinted with permission of the patient), panel B: endoscopic removal of the object (reprinted with permission of the patient), panel C: the diverticulum after the procedure (arrowheads), and panel D: the removed barolith

By pressing a pair of forceps against the edge of the diverticulum with a slight inward pressure, the object was successfully removed (parts B, C, and D in **Figure 2**). Abdominal X-ray confirmed the disappearance of a radiopaque lesion indicating the barolith (**Figure 3**). For prevention of diverticulitis recurrence, she was instructed to avoid barium examination (BE) in the future.

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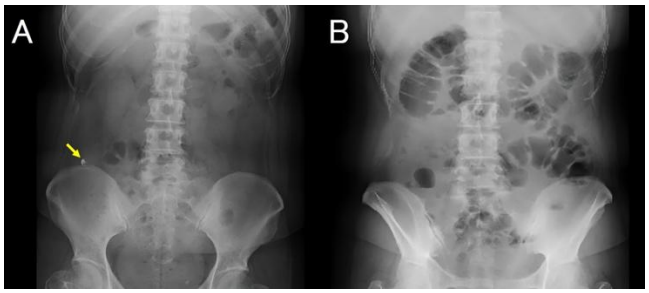

Figure 2. Abdominal X-ray confirming the disappearance of a radiopaque lesion (arrow) indicating the barolith (panel A: pre-procedure and panel B: post-procedure) (reprinted with permission of the patient)

Japan, a country with a high prevalence of GC, has a national program for GC screening. In Japan, GC screening started with BE as radiographic screening has contributed to the decline in GC mortality [1]. The current Japanese guideline for GC screening recommends endoscopic screening as well as radiographic screening [1]. Endoscopic screening is expected to provide more benefits than radiographic screening; however, it has also serious harms, such as life-threatening complications and overdiagnosis [1]. Thus, radiographic screening has still played an important role.

A nationwide population-based study showed that the risk of appendicitis was higher in the BE cohort compared with the non-BE cohort, especially in the first 2 months [2]. Appendicitis is caused by obstruction of the appendiceal lumen. Similarly, diverticulitis develops when a diverticulum becomes obstructed. Therefore, physicians need to be cautious of diverticulitis within the first 2 months after BE. It is important to note that diverticulitis may occur at a later stage following BE than common complications (e.g., aspiration, bowel obstruction, and perforation).

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AI statement: The author stated that no Generative AI or AI-based tools were used.

Declaration of interest: No conflict of interest is declared by the author.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the author.

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