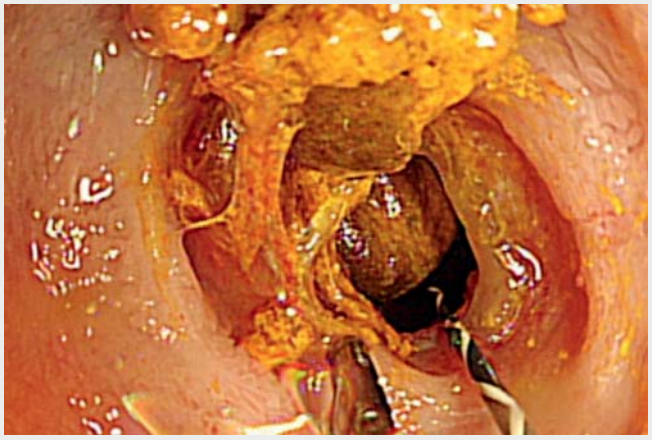
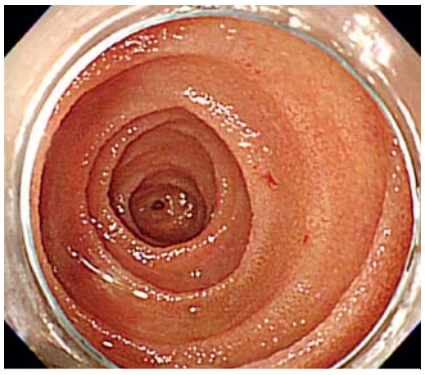
Endoscopic electrohydraulic lithotripsy of an enterolith causing afferent loop syndrome after Whipple's operation

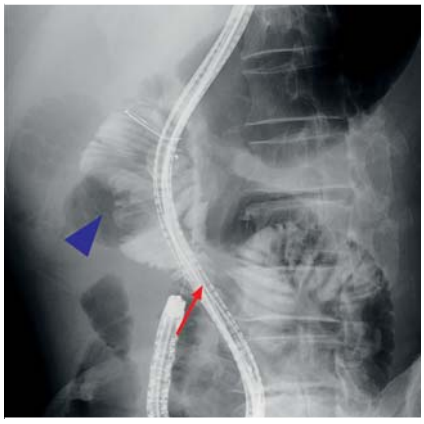
▶ **Fig. 1** Computed tomography showed a short segmental jejunal stricture and an enterolith (arrow).



Video 1 Endoscopic electrohydraulic lithotripsy of an enterolith causing afferent loop syndrome after Whipple's operation.



▶ **Fig. 2** Endoscopic view of the jejunal stricture.



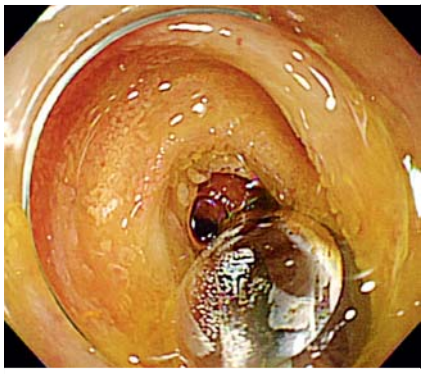
▶ **Fig. 3** Fluoroscopy finding of a filling defect (arrowhead) and jejunal stricture (arrow) with upstream dilatation.

We present the case of a 77-year-old man with an enterolith and severe jejunal stricture causing afferent loop syndrome, who was successfully treated with endoscopic balloon dilation and subsequent electrohydraulic lithotripsy (EHL).

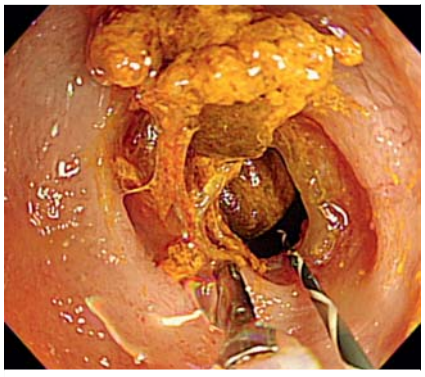
The patient underwent Whipple's operation and radiotherapy for duodenal cancer in 2004 and regularly visited the outpatient clinic without evidence of recurrence. In August 2019, he visited the emergency room with epigastric clamping pain, nausea, vomiting, and fever. Laboratory findings showed a cholestatic pattern of elevated liver function test and hyperbilirubinemia. Computed tomography revealed a short segmental jejunal narrowing with an impacted oval-shaped stone (1.6 cm) causing upstream afferent loop dilation (▶ **Fig. 1**) [1, 2].

The stricture site was reached by antegrade colonoscope (PCF H290D; Olympus, Tokyo, Japan) (▶ **Fig. 2**). Contrast media was injected into the afferent loop and revealed segmental narrowing and a huge filling defect (▶ **Fig. 3**). The stricture site was dilated with a controlled radial expansion balloon (Boston Scientific, Galway, Ireland; 8 mm, 10 atm, 30 seconds) (▶ **Fig. 4**, ▶ **Video 1**).

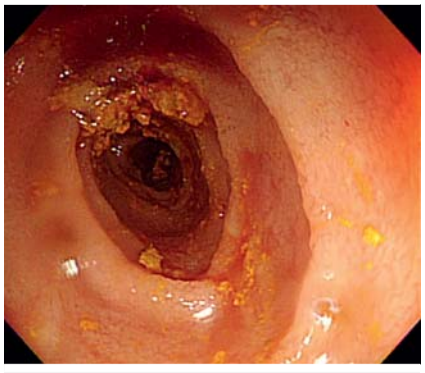
A large yellowish enterolith was noted on the proximal side of the jejunal stricture. We fragmented the stone using an EHL probe (3 Fr 3 m; WA09408A, Walz Elektronik GmbH, Rohrdorf, Germany) and electrohydraulic shock wave generator (Lithotron EL-27 Compact; Walz Elektronik GmbH) (▶ **Fig. 5**) [3, 4]. EHL of the enterolith was performed with saline irrigation through the working channel of the scope (▶ **Video 1**). The enterolith fragments were then retrieved using a basket (▶ **Fig. 6**). Forceps biopsy of the stricture site was obtained and revealed chronic enteritis. The patient's symptoms resolved, and laboratory findings returned to normal after treatment.



▶ **Fig. 4** Endoscopic view showing stricture site dilation using a controlled radial expansion balloon.



▶ **Fig. 5** Endoscopic view of electrohydraulic lithotripsy to fragment the enterolith.



▶ **Fig. 6** Endoscopic view after stone removal.

In our patient, the enterolith might have occurred due to jejunal hypomotility, stricture, and bacterial overgrowth after radiation therapy [5]. This case illustrates an alternative, less invasive option for the management of enteroliths with small-bowel stricture.

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Competing interests

None

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Bibliography

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