Duodenal diverticula are common. While they are usually asymptomatic, several complications have been reported. A 78-year-old man was admitted to our hospital with high-grade fever (39.6°C) and jaundice. His laboratory data showed liver dysfunction and elevations of the white blood cell count and serum C-reactive protein concentration. Abdominal ultrasonography demonstrated dilated biliary ducts. Abdominal computed tomography (CT) revealed a diverticulum in the second part of the duodenum (Fig. 1).

We suspected obstructive cholangitis. Endoscopic retrograde cholangiography (ERC) was performed. Gastrointestinal endoscopy revealed a periampullary diverticulum occupied by a yellow stone (Fig. 2). ERC showed no abnormalities (Fig. 3). Therefore, we made a diagnosis of biliary tract obstruction caused by an enterolith in the periampullary duodenal diverticulum. We performed successful endoscopic removal of the enterolith (Fig. 4).

The extracted enterolith was oval-shaped, yellowish in color, measured approximately 3 cm in diameter, and had a hard outer rim with an irregular surface (Fig. 5). Separate layers within the wall were appreciated and there was no evidence of any nidus, such as a fruit pit. Infrared absorption spectrophotometry showed that the enterolith consisted mainly of deoxycholic acid (Fig. 6).

Duodenal diverticula are commonly encountered and are generally regarded as clinically insignificant entities. They can, however, sometimes produce serious complications, including diverticulitis, perforation, hemorrhage, biliary and/or pancreatic obstruction, partial duodenal obstruction, fistula formation with adjacent organs, diarrhea secondary to blind loop syndrome, and enterolith formation [1]. Enterolith formation is known to occur within regions of stasis, such as Meckel’s diverticulum or a blind loop, or as a result of stricture due to Crohn’s disease or tuberculosis. Duodenal diverticula may also represent such a region of stasis [2].

In conclusion, we performed successful endoscopic removal of an enterolith in a duodenal diverticulum. Obstructive cholangitis caused by an enterolith in a periampullary diverticulum is rare, but is an important entity for endoscopists.

**Competing interests:** None

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**Fig. 1** Computed tomographic image showing a diverticulum in the second part of the duodenum.

**Fig. 2** Endoscopic examination revealed a periampullary diverticulum occupied by a yellow stone. The arrow indicates the ampulla of Vater.

**Fig. 3** Endoscopic retrograde cholangiography showed no abnormalities.

**Fig. 4** Successful endoscopic removal of the enterolith was performed.
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Fig. 5 Enterolith removed from the duodenal diverticulum.

Fig. 6 Infrared absorption spectrophotometry showed that the enterolith consisted mainly of deoxycholic acid. T, transmittance.