# Acute obstructive cholangitis caused by an enterolith in a duodenal diverticulum

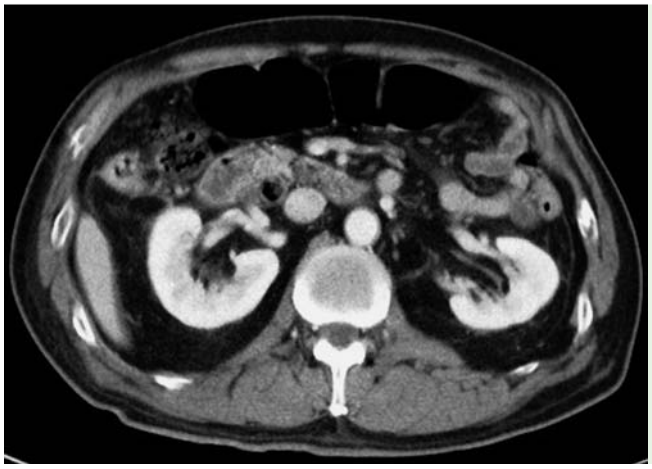

**Fig. 1** Computed tomographic image showing a diverticulum in the second part of the duodenum.

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

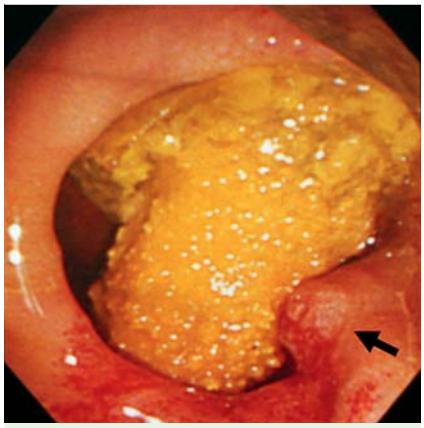

**Fig. 2** Endoscopic examination revealed a periampullary diverticulum occupied by a yellow stone. The arrow indicates the ampulla of Vater.

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

**Fig. 4** Successful endoscopic removal of the enterolith was performed.

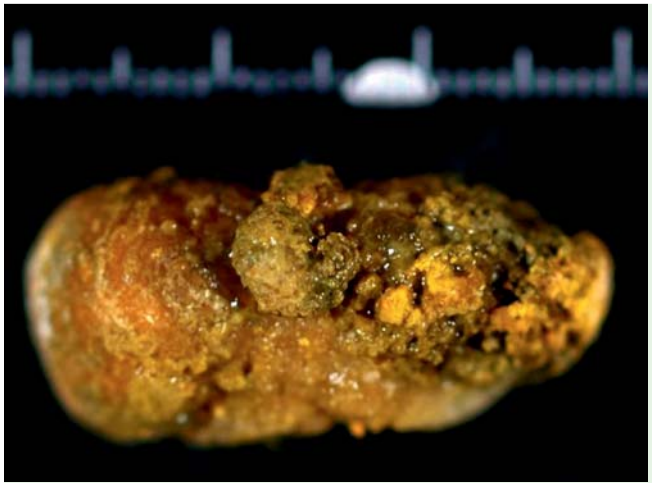

**Fig. 5** Enterolith removed from the duodenal diverticulum.

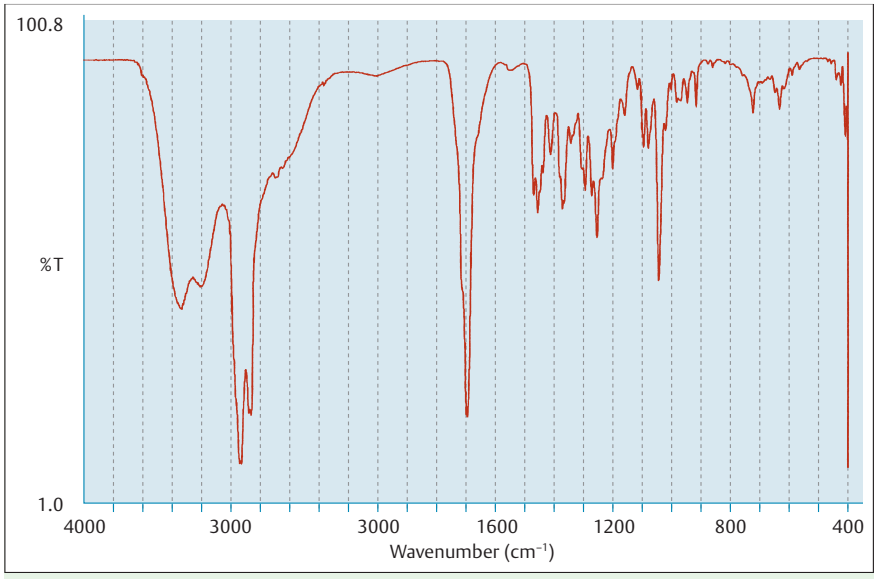


**Fig. 6** Infrared absorption spectrophotometry showed that the enterolith consisted mainly of deoxycholic acid. T, transmittance.

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## Bibliography

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