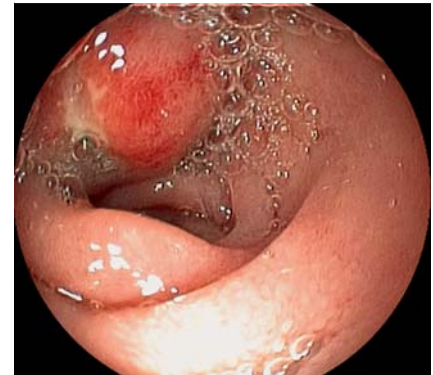


## Impaction of a gallstone into the duodenal wall



**Fig. 1** Computed tomography (CT) scan showing cholecystitis and presence of an impacted stone (arrow); note the presence of air in the gallbladder, implying the presence of a cholecystoduodenal fistula.



**Fig. 2** Esophagoduodenoscopy demonstrating protrusion of the duodenal wall; note the central erosion.



**Fig. 3 a** Endoscopic ultrasonography of the impacted gallstone (STONE). Note the normal common bile duct (CBD). **b** Endoscopic Doppler ultrasound of the impacted gallstone; note absence of signal from the common bile duct (arrow), contrary to the vessel next to it (arrowhead).



Complications of asymptomatic gallstone disease are generally rare, with an incidence of < 1% per year. One of the most unusual complications of cholelithiasis is the formation of cholecystoduodenal fistula [1,2]. These fistulas are usually asymptomatic and diagnosed intraoperatively, but they can present with profound symptoms, including sepsis or biliary ileus (a condition known as Bouveret syndrome) [1–3]. When the condition is clinically suspected, the diagnosis can be confirmed using a variety of radiological and endoscopic tests [3]. Prognosis depends on timely recognition and present of comorbid conditions. Management should be tailored to the individual patient, and therapeutic options include endoscopic techniques and surgery, however, there may be a high risk of mortality, especially in complicated cases or in elderly patients [1,3,4]. Therefore, early recognition of this rare complication is vital for careful selection of the treatment modalities which will guarantee increased survival. We report a case of cholecystoduodenal fistula with impaction of a gallstone into the duodenal wall in a patient with an otherwise asymptomatic cholelithiasis. A 57-year-old diabetic patient was admitted to hospital due to anemia, dyspepsia, and an elevated erythrocyte sedimentation rate. Clinical examination was unremarkable. Transabdominal ultrasound revealed cholelithiasis. An abdominal computed tomography scan suggested presence of a cholecystoduodenal fistula with an impacted gallstone (Fig. 1).

Esophagoduodenoscopy showed protrusion of the duodenal wall with central erosion (► Fig. 2).

Endoscopic ultrasonography, focused at the point of the protrusion, revealed that it corresponded to a gallstone with a diameter of 3 cm, impacted in the duodenal wall, whereas the common bile duct was normal (6 mm) (► Fig. 3), thus excluding a choledochoduodenal fistula.

The patient was referred for surgery, which confirmed the previous findings. He was discharged 5 days later in excellent condition. Our case highlights this rare but clinically important complication of cholelithiasis and the important role that endoscopic methods can have in its prompt diagnosis and effective treatment.

**Competing interests:** None

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**I. S. Papanikolaou<sup>1</sup>, D. Polymeros<sup>1</sup>, C. Kontopoulou<sup>2</sup>, D. Chatzilia<sup>1</sup>, K. Triantafyllou<sup>1</sup>**

<sup>1</sup> Hepatogastroenterology Unit, 2nd Department of Internal Medicine-Propaedeutic, Attikon University General Hospital, Medical School Athens University, Athens, Greece

<sup>2</sup> 2nd Department of Radiology, Attikon University General Hospital, Medical School Athens University, Athens, Greece

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#### Corresponding author

**I. S. Papanikolaou**

Hepatogastroenterology Unit,  
2nd Department of Internal Medicine-  
Propaedeutic, Attikon University General Hospital,  
Medical School Athens University  
31 Vournazou Street  
11521 Athens  
Greece  
ispapn@hotmail.com