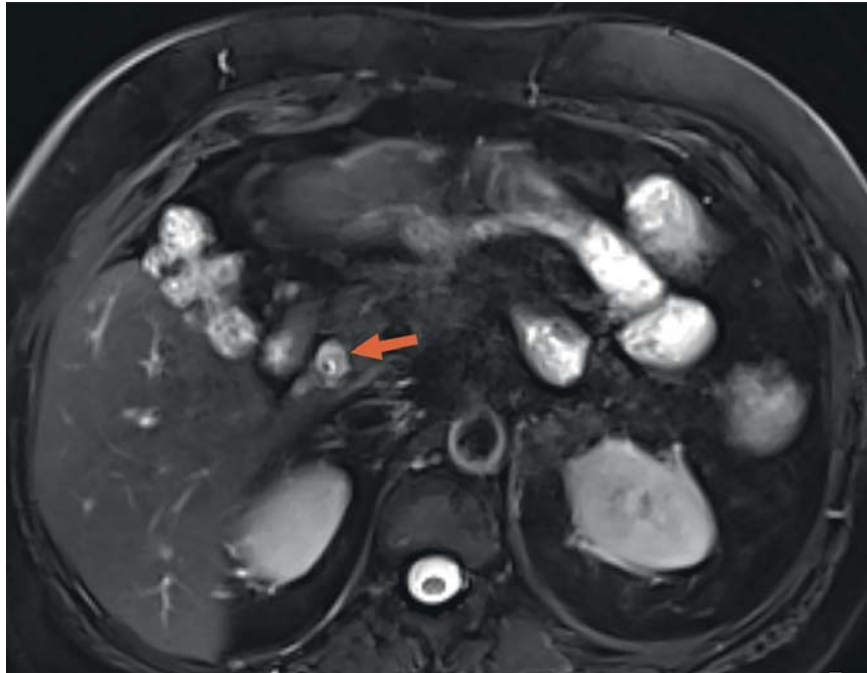
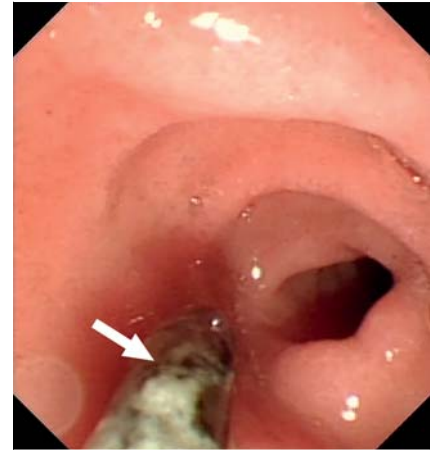


## Late complications caused by the neglected biliary stent



► **Fig. 1** Magnetic resonance cholangiopancreatography revealed a dilated common bile duct with multiple stones and a neglected biliary stent (arrow).



► **Fig. 2** The proximal end of the biliary stent (arrow) was seen at the duodenal bulb during endoscopy.



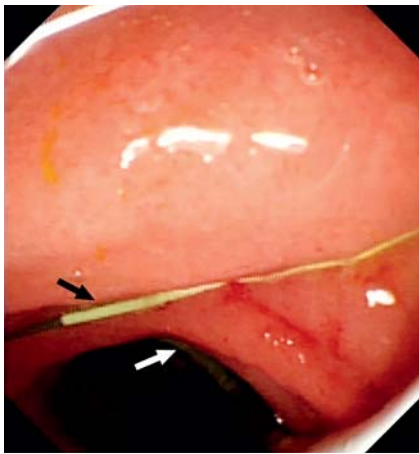
► **Fig. 3** The fluoroscopy image showed that the common bile duct was dilated with multiple filling defects (arrow). The proximal end of the pigtail biliary stent was located outside the contrast-filled biliary system.

A 50-year-old woman was admitted with fever, jaundice, and abdominal pain. She was diagnosed with acute cholangitis secondary to a neglected biliary stent. Previous history included placement of a double-pigtail stent 6 years earlier for choledocholithiasis, to be followed by an elective cholecystectomy. However, she had not attended the follow-up appointment for biliary stent removal. Upon admission, a magnetic resonance cholangiopancreatography was done (► **Fig. 1**). During endoscopic retrograde cholangiopancreatography, the proximal end of the biliary stent was seen in the lumen of the duodenal bulb (► **Fig. 2**), and the distal end was seen at the papilla. The cholangiogram showed that the common bile duct was dilated with multiple filling defects, and the proximal end of the biliary stent was out of the biliary system (► **Fig. 3**). The stent had caused the formation of a fistula between the

common hepatic duct and the duodenal bulb. This was further supported by the ease of passing the guidewire through the fistula after removal of the stent (► **Fig. 4**). A narrowing of the confluence of the hepatic ducts was also demonstrated (► **Fig. 5**). Subsequently, all calculi were removed and a 5-Fr nasobiliary tube was placed in the left hepatic duct. The patient recovered uneventfully, and the tube was removed 2 days later (► **Video 1**). Late complications of biliary stent placement are stent dysfunction, stent migration, biliary cast formation, and less frequently, duodenal perforation and bleeding [1,2]. Choledochoduodenal fistula occurring between the common hepatic duct and duodenal bulb due to neglected stent is rare. In this case, chronic irritation by the stent had induced inflammation and led to narrowing of the confluence of the hepatic ducts. Although the fistula

is expected to heal uneventfully after stent removal, the stricture may worsen over time and cause recurrent cholangitis. A watchful waiting strategy was planned for this patient.

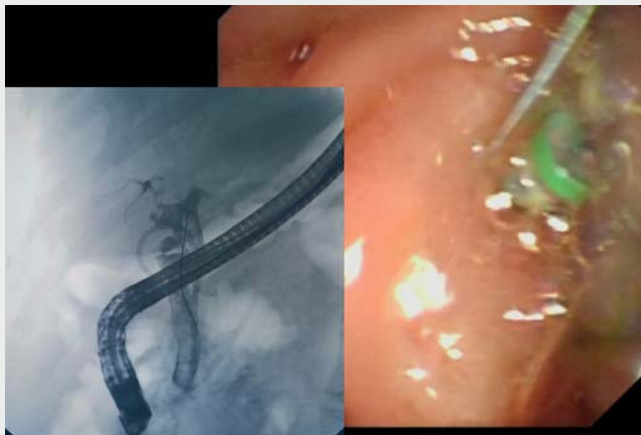
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► **Fig. 4** The guidewire (black arrow) passed through the fistula (white arrow) into the duodenum.



► **Fig. 5** The hepatic duct was deformed into a right angle (arrow), and the confluence of left and right hepatic ducts was narrowed.



► **Video 1** The biliary duct, which had been neglected for 6 years, and common bile duct stones were cleared during endoscopic retrograde cholangiopancreatography. A fistula between the common hepatic duct and duodenal bulb was demonstrated.

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## Competing interests

The authors declare that they have no conflict of interest.

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