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LETTER TO THE EDITOR

A rare cause of duodenal perforation: choledochal stent-related early luminal perforation

Nadir bir duodenal perforasyon nedeni: koledokal stente bağlı erken dönem luminal perforasyon

Ahmed Ramiz Baykan[1], Yılmaz Özdemir[1]

[1]Erzurum Training and Research Hospital, Erzurum, Türkiye

To the Editor,

Endoscopic biliary stent is widely used for the maintenance of bile flow in malignant or benign conditions. Although their migration mostly occurs in the form of excretion alongside stool, the rate of perforation caused by migration is 1%.[1] Migration usually occurs weeks or months after the procedure with early migration being quite rare. In this letter, we report a case of perforation in the second part of the duodenum caused by early migration of a stent. Informed consent was obtained prior to the study.

A 65-year-old female patient presented to our department with right upper abdominal pain. Her laboratory results were as follows: WBC, 8.9 (3.9-10.9); CRP, 5 mg/dl (0-5); AST, 69 U/L (5-34); ALT, 117 U/L (0-55); ALP, 180 U/L (40-150); GGT, 344 U/L (9-36); amylase, 27 U/L (25-125); t.bil, 7.8 mg/dL; d.bil, 5.8 mg/dL. Magnetic resonance cholangiopancreatography (MRCP) revealed multiple millimetric stones in the gallbladder, choledochal dilatation, and a choledochal stone measuring 12 mm (Figure 1). She underwent endoscopic retrograde cholangiopancreatography (ERCP). An Amsterdam-type stent of 10F/10 cm was placed because the stones could not be extracted. After the procedure, her complaints lessened. The abdominal CT performed 48 hours after the procedure because the right upper quadrant pain had been intense. CT showed that the stent in the choledochus caused compression on the second part of the duodenum (Figure 2). Abdominal CT, which was performed the next day to address the increasing pain and the development of leukocytosis (WBC: 25.2), showed retroperitoneal air and contrast media leaking into this area (Figure 3). The endoscopic examination of the patient who was considered to have developed perforation due to stent compression showed that the choledochal stent migrated toward and penetrated the opposite wall (Figure 4). The Amsterdam-type stent was removed using a snare, and a 7F pigtail nasobiliary drain was attached in its place. Due to the small size of the perforation area, through-the-scope (TTS) clipping was scheduled, but the procedure was terminated after the patient's oxygen saturation had decreased during the procedure. Thereafter, there was no intestinal extravasation of contrast media on the abdominal CT taken after the regression of abdominal pain. A retroperitoneal drain was placed, and the patient was followed up with IV hydration and antibiotherapy. During her follow-ups, her leukocytosis and biochemical values regressed to normal range. Three weeks later, the ERCP procedure was repeated and the choledochal stones were extracted, after which the patient was discharged.

We believe that the straight stent in our patient and the presence of choledocholithiasis in the etiology are a risk factor for stent migration, although risk factors for stent migration have not yet been clarified. Arhan et al.[2] emphasize that in benign strictures, long stent, proximal and postcholecystectomy-related strictures were a risk factor for distal migration, while short

Address for Correspondence: Ahmed Ramiz Baykan, Erzurum Training and Research Hospital, Department of Gastroenterology, Erzurum/Turkey E-mail: ahmedbaykan@gmail.com
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stent, distal and postcholecystectomy-related strictures were a risk factor for proximal migration.

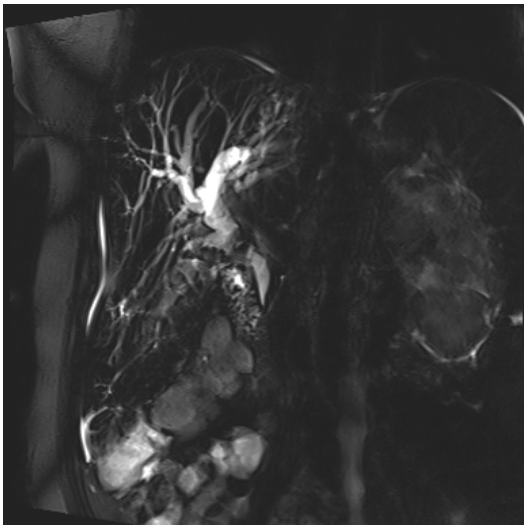

Figure 1. Magnetic resonance cholangiopancreatography (MRCP) revealed choledochal dilatation and a choledochal stone measuring 12 mm.

In patients who develop perforation, the decision of medical, surgical, or endoscopic treatment mainly depends on the general condition of the patient and the location of perforation. Conservative treatment is appropriate for small wall defects where there is a small amount of fluid leak.[3,4] Our patient was followed up conservatively since there was no intestinal extravasation of oral contrast media after the stent was removed. Surgery or endoscopic treatment should be considered in patients not responding to conservative treatment. The mortality rate of a surgical intervention after conservative treatment is between 13-37.5%.[5] In small perforations, endoscopic endoclipping is another way to seal the perforated area, which can be performed in experienced centers. Through-the-scope (TTS) endoclipping can be easily performed on openings of less than 1 cm in suitable localizations. However, disadvantages of this procedure include the requirement for more than one clip and the concern that the clips cannot completely seal the opening. Although these concerns are partially relieved in over-the-scope clipping (OTSC), they are replaced by other concerns.

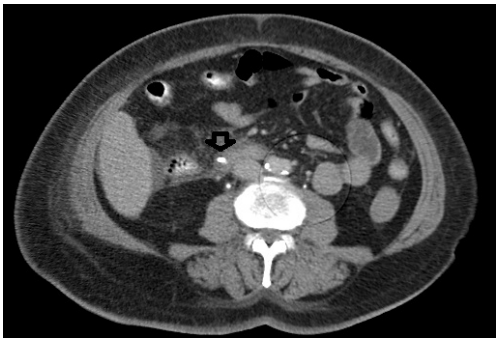

Figure 2. CT showed that the stent in the choledochus caused compression on the second part of the duodenum.

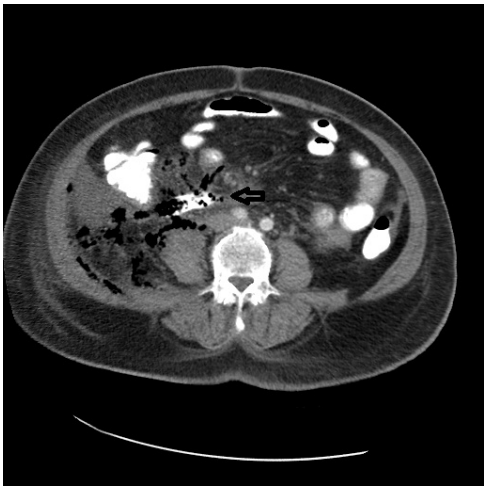

Figure 3. The arrow points to retroperitoneal air and contrast media leaking.

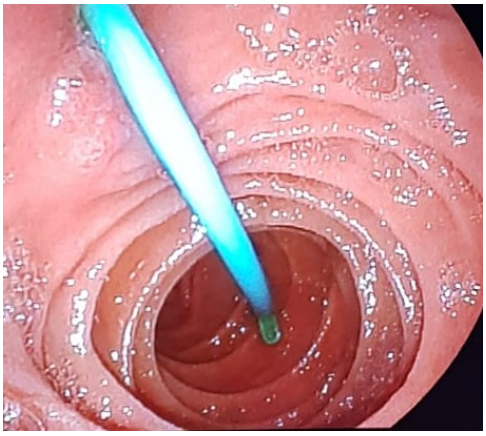

Figure 4. Choledochal stent migrated toward and penetrated the opposite wall (endoscopic image).

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