A Rare Cause of Acute Abdominal Pain After Endoscopic Retrograde Cholangiopancreaticography

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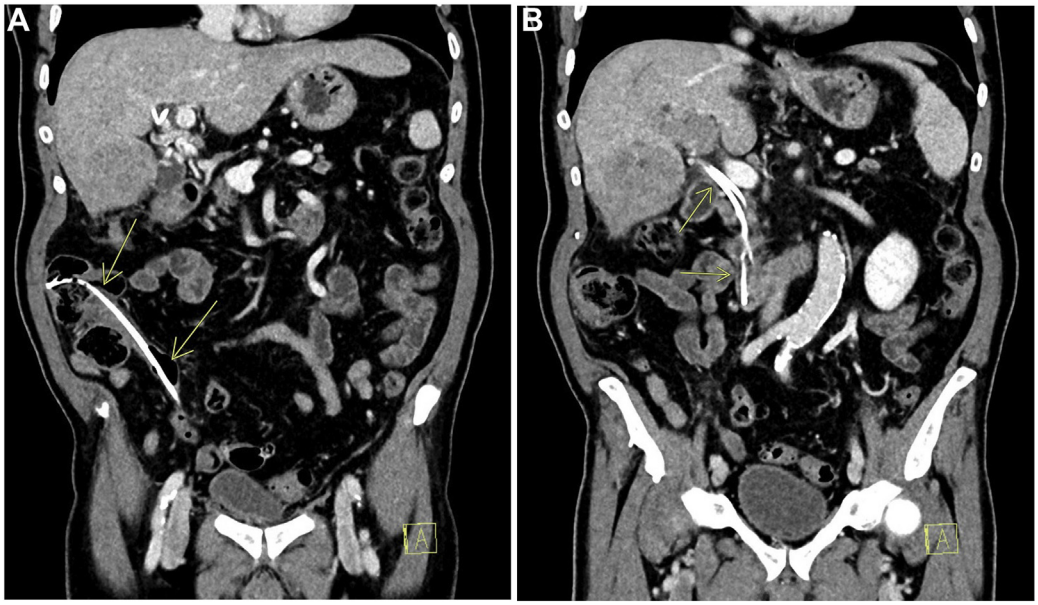

Question: A 76-year-old male patient was admitted to our hospital with acute abdominal pain located in the left upper and lower abdominal quadrants. He was recently diagnosed with a hepatocellular carcinoma causing compression of the bile duct system and a portal vein thrombosis. Furthermore, his medical history revealed diabetes mellitus and atrial fibrillation. His medication included anticoagulants and opioids because he experienced chronic dull abdominal pain. Two weeks before this hospital admission, 4 biliary stents were placed via endoscopic retrograde cholangiopancreatography (ERCP) to alleviate his symptoms. There were no remarkable findings at physical examination other than a diffuse painful abdomen at palpation and rebound tenderness. Laboratory examination showed no increase in cholestatic parameters and no signs of inflammation. An abdominal computed tomographic scan was performed showing a migrated stent that was located within the ileocecal valve and 3 remaining biliary stents in the common bile duct (CBD), of which 2 were partially dislocated toward the duodenum. Moreover, a new thrombosis of the superior mesenteric vein was found without signs of perforation (Figure *A* and *B*).

What caused his abdominal pain ?

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Conflicts of interest
The authors declare no conflicts.

0016-5085/$36.00
https://doi.org/10.1053/j.gastro.2020.11.054

Answer to Image

Several etiologies were considered that might cause the acute abdominal pain, such as a portal vein thrombosis, ulceration of the duodenum caused by the partially migrated CBD stents, ischemic colitis and opioid-induced constipation. We decided to remove and reposition the migrated stents in 2 sessions, despite the discrepancy between the location of the migrated biliary stents and the abdominal pain. First, we performed a colonoscopy during which we removed the ileocecal stent (Figure *C*). No mucosal damage was seen and the stent could be removed easily. Remarkably, the day after retrieving the dislocated biliary stent from the ileocecal valve the patient reported a significant decline in abdominal pain. The next day, an ERCP was performed during which 2 biliary stents were removed and 1 remaining stent was successfully repositioned. No mucosal damage of the duodenum was observed. Interestingly, this procedure did not have an impact on the mild abdominal pain that persisted after removing the stent the day before. Thus, the most likely explanation of the abdominal pain was the stranded biliary stent in the ileocecal valve, since removing this stent gave immediate pain relief. According to the literature, migration of plastic biliary stents occurs in up to 5%–10% of patients.[1] The majority of migrated stents pass spontaneously through the gastrointestinal tract. However, 27 case reports revealed incarceration (n = 4) or perforation (n = 23) as a complication of migrated plastic biliary stents in the colon.[2] Several stent characteristics and clinical factors have been identified that may contribute to biliary stent migration.[3] Studies suggest that biliary stent migration occurs more often in benign biliary strictures and when a sphincterotomy is not performed. Migration of stents is less likely in fibrotic strictures.[3] Another study demonstrated that papillary stenosis is a risk factor for stent migration.[3] No relation has been demonstrated between the length or diameter of the stent and its migration rate, however shorter stents tend to migrate proximally and longer stents distally.[3] Placing multiple biliary stents (>2) should lower the risk of stent dislocation because it is thought that they are more tightly held in their position.[3] Nowadays, a large variety of biliary plastic stents are available, including double pigtail stents and stents with side flaps, to decrease the risk of stent migration.

Entrapment of a migrated stent is most commonly caused by extrinsic fixation or irregularities of the bowel wall, such as the ligament of Treitz, parastomal or abdominal hernias, adhesions, and colonic diverticulae.[3] No clear risk factors for either stent migration or impaction could be identified in this patient.

Keywords: Abdominal Pain; Biliary Stent; Hepatocellular Carcinoma.

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