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An Unusual Case of Double-Pigtail Biliary Stent Migration

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A 72-year-old woman with double cancers involving the hilar bile duct and the pancreatic tail was transferred to the author's department with palliative care. Twelve months previously, she had undergone an endoscopic retrograde cholangiopancreatography; thus, a 7 Fr 10 cm straight plastic stent and a 7 Fr 11 cm double-pigtail plastic stent were placed in the hilar biliary stricture (Fig. 1). Although chemotherapy was initiated, the cancers had gradually progressed. Two weeks previously, she had begun to receive an intravenous opioid for cancer pain.

At presentation, her vital signs were normal. She was not icteric, and her abdomen was soft. Unexpectedly, abdominal radiography revealed that the pigtail stent had been broken and migrated (Fig. 2). Further imaging with computed tomography confirmed migration into the ileum without perforation. No stent migration had occurred in the 50 days before transfer as determined by reviewing radiographic images. Owing to the site of migration, there were no indications for endoscopic removal, and conservative therapy was performed. Laboratory evaluation showed a markedly elevated serum carbohydrate antigen 19-9 level of 4,100,000.0 U/mL (range, 0.0-37.0). In addition, she presented with severe generalized weakness due to the cancer progression. She died on the 3rd day after transfer.

Endoscopic biliary stenting is indicated to treat obstructive jaundice. Biliary stents are generally classified into two types: metal and plastic stents. The migration rate of biliary self-expandable metal stents is less than 1%.[1] On the other hand, biliary plastic stent migration occurs with a frequency of approximately 10%.[1] Migration is divided into two categories: proximal (into the bile duct) and distal (out of the bile duct). The rates of distal stent migration have been reported to range between 4.0% and 6.2%.[2,3] However, the risk of migration depends on clinical backgrounds and stent factors.[1] Since benign biliary strictures may become less tight due to resolution of inflammation and edema, distal migration of biliary stents is more com-

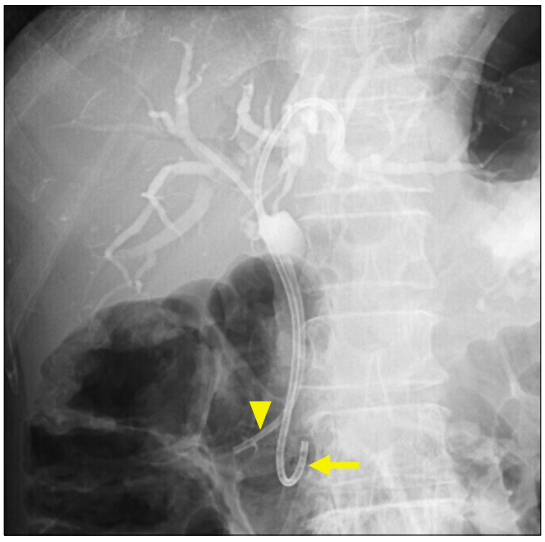

FIG. 1. Straight (arrowhead) and double-pigtail plastic stents (arrow) placed in the malignant hilar biliary stricture.

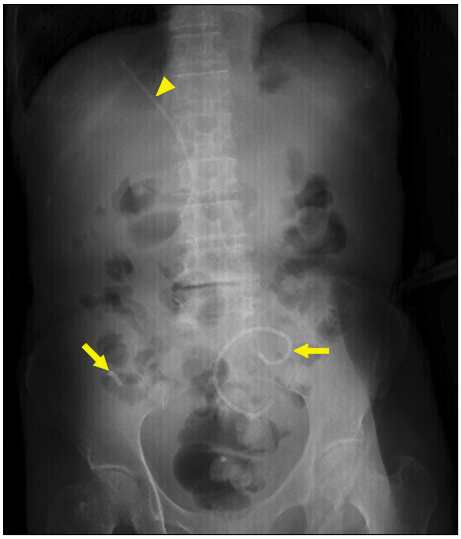

FIG. 2. Abdominal radiography revealing migration of a broken pigtail stent (arrows) and normal position of a straight stent (arrowhead).

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mon in benign than malignant strictures.[1] Furthermore, double-pigtail biliary stents can play a role in an anti-migration effect by anchoring in the bile duct.[4] Multiple stents are associated with a decreased frequency of migration, possibly due to mechanical narrowing of the bile duct and increased friction between the stents.[1] Therefore, the present case is extremely unique.

Distal migration of biliary stents most frequently affects the duodenum.[1] The majority of complications (e.g., perforation, intra-abdominal abscess) caused by stent migration are seen with straight stents.[1] This may be due to the side flaps or barbs.[1] In the present case, the broken side of the pigtail stent had increased the risk of perforation. Whether a broken stent was migrated or a migrated stent was broken, it is fortunate that the stent passed through the duodenum without complications.

CONFLICT OF INTEREST STATEMENT

None declared.

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