CASE REPORT

Biliary stent migration causing perforation of the caecum and chronic abdominal pain

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SUMMARY

We report a case of biliary stent migration causing perforation of the caecum and presenting as chronic abdominal pain. The case was managed by colonoscopic removal of the stent.

BACKGROUND

Biliary stent migration accounts for 3% of the early complications and up to 17% of the late complications of endoscopic biliary stent insertion. Most stents pass unhindered through the digestive tract with approximately 1% causing a perforation. The vast majority of these perforations occur in the duodenum or in the presence of pre-existing bowel pathology, such as a diverticulum or hernia. The management is related to the location of the perforation and the clinical presentation.

CASE PRESENTATION

A 66-year-old man presented to clinic with a 3-month history of severe right upper quadrant and epigastric pain aggravated by eating and associated with nausea. His surgical background included a laparoscopic cholecystectomy over 15 years ago followed by surgery for retained common bile duct (CBD) stones. He had undergone previous endoscopic retrograde cholangiopancreatography (ERCP) 18 months before presentation in India for a presumed distal bile duct stricture. He later underwent a repeat ERCP in India, where he was informed that his stent had been removed. Clinically, he had not experienced clinical or biochemical jaundice at any point.

INVESTIGATIONS

Initial investigation consisted of an abdominal ultrasound which identified multiple small echogenic foci with shadowing at the porta hepatis in the region of the CBD. The duct itself was not identified. A magnetic resonance cholangiopancreatogram and a CT demonstrated a 12 mm CBD with a possible distal stricture. No stones were identified. Filling defects were present in the common hepatic duct but this was thought to be biliary tree air. The CT also confirmed the previous biliary stent had migrated and resulted in a localised perforation of the caecum (figure 1).

TREATMENT

ERCP demonstrated a wide ampulla with free drainage of bile. The colonoscopy located the plastic stent lodged within the caecum (figure 2) and this was successfully retrieved with a snare (figure 3).

Figure 1 CT scan demonstrating a biliary stent perforating the caecum.

OUTCOME AND FOLLOW-UP

The patient was observed overnight and discharged with an uneventful stay. He was followed up after 6 weeks and found to be completely well and pain-free.

DISCUSSION

Endoscopic placement of biliary stents carries a 5% risk of early complications which include infection (35%), pancreatitis (29%), bleeding (23%), perforation (6%), early stent migration (3%) and renal failure (3%).¹

The rate of late complications of biliary stents ranges from 5% to 30%, and include stent obstruction, migration and perforation. Stent migration

Figure 2 Endoscopic image of a migrated biliary stent perforating the wall of the caecum.

To cite: Jones M, George B, Jameson J, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-009124

Figure 3 Biliary stent removed from the caecum.

occurs in up to 17% of cases dependent on the type of stent used.¹ Stent migration is reported to occur in 17% of cases when a fully covered self-expandable metal stent (SEMS) is used, 7% with partially covered SEMS, 6% with plastic stents and 1% with uncovered SEMS.¹ It is thought that plastic stents are much more likely to migrate when used in the treatment of benign strictures.¹ Stents can migrate both proximally and distally, with proximally migrated stents usually presenting with symptoms of biliary obstruction. When SEMS migrate distally, they are rarely eliminated spontaneously and require trimming of the distally migrated segment or removal by endoscopy.¹

The majority of distally migrated plastic stents pass unnoticed through the digestive tract² but a proportion of these migrated stents can lodge in the bowel leading to local complications, with straight plastic stents posing the greatest risk.^{3–4} The most commonly reported complication is that of perforation, occurring in less than 1% of cases,⁵ but cases of fistula formation,⁶ obstruction,⁷ abscess formation and appendicitis⁸ have also been reported. Ninety-two per cent of perforations occur in the duodenum,³ but an increasing number of cases of migrated stents causing late complications in the distal small bowel and colon are being reported.⁹ Most cases of distal bowel perforation with biliary stents tend to occur in pre-existing pathologies of the bowel, such as within incisional hernia or diverticulum.² The majority of published cases report these complications occurring in the first 3 months after stent insertion with few cases occurring later than 6 months.^{6–10}

With the increased use of biliary stents, it is likely that the incidence of stent migration and complications will continue to increase, and as such it appears necessary to consider the management of patients with migrated stents. Current guidance surrounding the management of migrated stents is minimal, with the only hard recommendation being the use of ERCP in removing stents not spontaneously eliminated.

Learning points

- ▶ Endoscopic biliary stent placement carries a 5% risk of complication including infection, pancreatitis, bleeding, perforation and stent migration.
- ▶ Plastic stents are thought to migrate more commonly when used in benign strictures.
- ▶ The vast majority of perforations caused by a migrated stent occur in the duodenum or in the presence of pre-existing pathology.
- ▶ Management of such perforations is dependent on clinical presentation and location of the stent.

Contributors MJ was the case report author; BG was involved in the background information and discussion; JJ was involved in the critical appraisal; GG was involved in the critical appraisal and review.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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