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Case Report

Concomitant endoscopic biliary, duodenal and colonic stent placement for advanced carcinoma of gall bladder

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ABSTRACT

Combined biliary and duodenal stent placement has been reported previously in multiple series. Rarely, colonic obstruction may present simultaneously with duodenal and biliary obstruction in advanced pancreaticobiliary cancers. Biliary, duodenal and colonic obstruction managed simultaneously using endoscopic modalities have been reported in only one case report previously. Here we report outcomes of a case of carcinoma of the gall bladder with biliary, gastric outlet and colonic obstruction managed by endoscopic placement of biliary, gastroduodenal and colonic self-expanding metal stents.

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Keywords: Biliary tract; Duodenum; Endoscopy; Gallbladder; Stents

Introduction

Malignant biliary obstruction is commonly associated with gastric outlet obstruction in advanced pancreaticobiliary malignancies. Simultaneous placement of biliary and gastro-duodenal self-expanding metal stents (SEMS) for palliation has been reported previously. Rarely colonic obstruction can occur in patients with advanced carcinoma of the gall bladder, which is amenable to therapy using colonic SEMS. We report a rare case of simultaneous endoscopic palliative SEMS placement for biliary, duodenal and colonic obstruction in a patient with advanced carcinoma of the gall bladder. This case report conforms to the Declaration of Helsinki and written consent was taken from the patient for publication.

Case Report

A 46-year-old male, presented with mild persistent dull aching upper abdominal pain with weight loss for 1 month. Computed tomography (CT) scan showed mass of ~3.5 cm size in the gall-

bladder fossa arising from neck of gall bladder abutting the duodenum and the hepatic flexure of the colon. Ultrasound guided fine needle aspiration from the mass confirmed histologic diagnosis of adenocarcinoma gall bladder. Patient subsequently received chemo-radiation for 8 weeks in view of a locally advanced inoperable disease. On reassessment imaging after therapy, patient had progressive disease with proximal common bile duct (CBD) obstruction with intrahepatic biliary radicle dilatation and subacute intestinal obstruction due to hepatic flexure colonic infiltration and evidence of duodenal infiltration (Fig. 1). Patient had multiple episodes of vomiting with abdominal pain with abdominal distension. Total bilirubin had increased to 6.0 mg/dL with Alkaline phosphatase of 510 U/L. Total leucocyte counts were 12,000/mm³, however patient was afebrile. Patient was kept nil per orally and started on broad spectrum antibiotics with intravenous hydration. Colonic SEMS placement was planned first as relief of intestinal obstruction took precedence over biliary stent placement.

Colonoscopy showed an ulceroinfiltrative lesion at hepatic flexure with luminal narrowing. WallFlex Colonic SEMS (25 mm × 90 mm; Boston-Scientific, Marlborough, MA, USA) was placed

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across the stricture (Fig. 2). On attempted passage of side-view duodenoscope on the day after colonic stent placement and relief of colonic obstruction, there was type I malignant bilio-duodenal stenosis. Scope was negotiated across with difficulty. Free cannulation of the bile duct was achieved and cholangiogram showed 2 cm proximal CBD stricture. WallStent SEMS (10 mm × 80 mm; Boston-Scientific) was placed across the stricture (Fig. 3). Patient then reported symptoms of Gastric Outlet Obstruction with persistent vomiting for 2 days. WallFlex SEMS (22 mm × 90 mm; Boston-Scientific) was placed across the duodenal luminal narrowing two days after biliary stenting (Fig. 4, 5). Subsequent CT scan at 1 month after stent placement, showed patent stents with mass in the gall bladder fossa (Fig. 6). There was complete relief of symptoms of gastric outlet obstruction (GOO) and intestinal obstruction. The patient received palliative chemotherapy with Capecitabine with Oxaliplatin for 8 cycles. The patient did not have any further episodes of gastric outlet, intestinal or biliary obstruction over 8 months of follow up after stent placement, after which he succumbed to neutropenic sepsis with progressive disease.

Discussion

In a previous study from Northern India, gall bladder cancer was the most common cause of malignant gastric outlet obstruction seen in 42% patients.¹ On the other hand, pancreatic cancer is the most common cause of gastric outlet obstruction in the West.² Biliary obstruction is seen in 56% cases before symptoms of GOO, concomitantly in 25% and after GOO in 19%.³ Successful concomitant biliary and duodenal stent placement has been described in multiple series.^{4,5} Gastro-duodenal SEMS improve performance status and quality of life in patients with malignant gastric outlet obstruction. In patients who undergo both duodenal and biliary SEMS placement, biliary placement done endoscopically through the duodenal SEMS is technically challenging, both in terms of accessing ampulla of Vater and also placement of the stent. Hence biliary SEMS placement is done prior to duodenal SEMS commonly. In patients with type I stenosis, placement of a short SEMS can help access the ampulla.⁶ Our patient presented with features of subacute intestinal obstruction. After relief of distal obstruction with colonic SEMS placement, patient had symptoms suggestive of gastric outlet obstruction, which were then palliated by SEMS

Fig. 1. Computed tomography suggestive of right colonic thickening (thick white arrow) and duodenal thickening (yellow arrow).

Fig. 3. Proximal common bile duct stricture (arrow) with upstream biliary dilatation.

Fig. 2. (A) Colonic ulceroinfiltrative lesion with narrowing at hepatic flexure. (B) Colonic self-expanding metal stent placement across ulceroinfiltrative lumen occluding lesion.

placement.

Colonic infiltration with development of cholecystocolic fistula with colonic obstruction is a rare occurrence in gall bladder malignancies, described in few case reports.⁷ Technical success of colonic SEMS placement in patients with obstruction secondary to extra-colonic malignancies is lesser than in colonic malignancies.⁸ Although SEMS are not recommended as the primary therapeutic modality for proximal colonic obstruction, they remain a viable alternative to surgery. Our patient had technically and functionally successful SEMS placement, thus obviating the need for a stoma and leading to an improved quality of life.

Fig. 4. Duodenal infiltration leading to gastric outlet obstruction and narrowing.

Concomitant endoscopic stent placement for biliary, duodenal and colonic obstruction has been described in only one case report.⁹ Complications like tumour ingrowth or over growth occur in up to 15% patients with biliary, gastroduodenal and colonic SEMS in situ. Migration is more common with covered rather than uncovered SEMS.^{10,11} Our patient did not have any further episodes of luminal or biliary obstruction after SEMS placement. The technical challenges in this case were the need for colonic stent placement in a patient with proximal obstruction of the colon due to an extracolonic pathology. Also relief of distal obstruction was foremost, followed by stenting for proximal obstruction. This case adds to the limited available literature on endoscopic triple stent placement in advanced hepato-pancreatico-biliary malignancies, with favourable results.

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Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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Fig. 5. Types of bilioduodenal stenosis. (A) Type I: stenosis in the duodenum before the ampulla of Vater; (B) type II: stenosis at the level of ampulla of Vater; (C) type III: stenosis beyond the ampulla of Vater. CBD, common bile duct. Data from the article of Mutignani et al (*Endoscopy*. 2007;39:440-7).⁶

Fig. 6. (A) Three-dimensional computed tomography (3D CT) reconstruction (front) of concomitant biliary, duodenal and colonic stents *in situ*. (B) Rotated 3D CT Reconstruction of triple stents placement.

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