**Title**

Eccentric Abscess Due to Bile Duct Microperforation Caused by Self-expandable Metal Stent and Neoadjuvant Chemoradiation

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Eccentric abscess due to bile duct microperforation caused by self-expandable metal stent and neoadjuvant chemoradiation

Short title: Eccentric abscess due to microperforation

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A 50-year-old male with a mass in the pancreatic head and icterus was referred to our hospital. Contrast-enhanced computed tomography (CT) revealed a hypovascular mass compressing the superior mesenteric vein in the pancreatic head, and endoscopic ultrasonography-guided fine-needle aspiration of the mass indicated adenocarcinoma. For biliary decompression, we placed a fully covered self-expandable metal stent (SEMS) (10 × 60 mm WallFlex™; Boston Scientific, Natick, MA) with a duodenoscope via a transpapillary route. Thereafter, he underwent neoadjuvant chemoradiotherapy with a total dose of 50.4 Gy in 28 fractions and S-1 (80mg/m², twice daily on radiation day alone) for 1 month and subsequent chemotherapy with gemcitabine for 1 cycle (1000mg/m², on days 1, 8 and 15). Since contrast-enhanced CT after gemcitabine therapy showed the increase of the tumor, he underwent the second-line chemotherapy with FOLFIRINOX regimen (a combination of oxaliplatin 85 mg/m², irinotecan 180 mg/m², fluorouracil 400 mg/m² as an intravenous bolus and 2400mg/m² as a 46-h continuous infusion and l-leucovorin 200 mg/m², every 2 weeks) for 5 months. On day 32 during the regimen, he developed fever of 38.3 °C with elevated serum level of CRP [20.62 mg/dl]. He recovered from it by antibiotics administration for 7 days. Surprisingly, contrast-enhanced CT just before surgery revealed multiple hypovascular masses with marginal contrast enhancement mimicking cancer metastases around the hepatic hilum and portal vein (Figure A and B, arrow) in addition to the decrease of the original cancer (Figure A, dashed arrow). Since abscesses were more likely to emerge after the sequential therapies than cancer metastases according to the clinical course, we performed surgical exploration for an accurate diagnosis followed by a curative resection of the cancer. The eccentric masses were finally diagnosed as abscesses caused by bile duct microperforation based on the operative findings which were thinning of the bile duct, easy exposure of the SEMS (Figure C) and pus discharge from the masses. The resection of pancreatic cancer was successfully performed by subtotal stomach preserving pancreateoduodenectomy and the abscesses were drained.

There have been some reports regarding late complications of biliary SEMS placement such as bile duct perforation due to mechanical pressure by a SEMS and hepatic abscess due to
stent occlusion.\textsuperscript{1-3} This is the first report of an extrahepatic abscess at the eccentric site as a late complication of SEMS placement. The eccentric abscess can result from a combination of SEMS placement and neoadjuvant chemoradiation that will contribute to tissue damage and delayed healing at the bile duct. Thus, we have to take such an extrahepatic abscess into consideration as a differential diagnosis in addition to cancer metastasis when a mass emerges around a biliary SEMS during neoadjuvant therapy.
References


