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Letter to Editor

# Coil Migration into Common Bile Duct after Postcholecystectomy Hepatic Artery Pseudo-aneurysm Coiling

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**Abstract**

We report an interesting case of 50-year-old female who had postcholecystectomy hepatic artery pseudoaneurysm. This pseudo-aneurysm was coiled by interventional radiologist. Patient later presented with obstructive jaundice which was due to migration of pseudoaneurysm coils into bile-duct.

**Keywords:** *Coil migration, hepatic artery pseudo-aneurysm, jaundice*

## Introduction

Laparoscopic cholecystectomy allows early mobilization and discharge compared to open cholecystectomy but there is ten fold incresead risk of biliary complications with laparoscopic approach. There is risk of vascular injury with this approach in 0.25- 0.50 % of procedures. Hepatic artery pseudoaneurysm is a rare post-cholecystectomy complication. Majority of these pseudo-aneurysms are successfully managed by coiling by interventional radiologists.

Spontaneous extrusion of hepatic artery pseudo-aneurysm coils into common bile duct is one of the rare possible event that may present as pain abdomen and jaundice.

## Case Report

A 50-year-old female patient underwent laparoscopic cholecystectomy for symptomatic gall-stone disease. Postoperatively, after about 1 month she had melena with drop in hemoglobin to 4.6 g/dL. Upper gastrointestinal (GI) endoscopy showed hemobilia. Computed tomography angiography showed hepatic artery pseudoaneurysm [Figures 1 and 2]. She underwent coiling of the pseudoaneurysm by interventional radiologist with the asymptomatic postprocedure course. One year later, she had increasing jaundice with pruritus. Laboratory investigations revealed direct hyperbilirubinemia with raised alkaline phosphatase and gamma-glutamyl transpeptidase. Magnetic resonance cholangiopancreatography revealed stricture of the common hepatic duct at the level of cystic duct with coils *in situ* within hepatic artery pseudoaneurysm. She underwent endoscopic retrograde cholangiopancreatography (ERCP) with the placement of single 10 Fr plastic biliary stent. Brushing from the bile duct and bile cytology were negative for malignancy. She underwent elective ERCP with re-stenting 3 months later, with the placement of two 10 Fr biliary stents. Her clinical course was unremarkable, and she was taken for stent exchange 4 months later. Previously, placed stents were removed. Cholangiogram showed filling defects in the common bile duct. Bile duct was swept with small biliary stone extraction balloon. Metal coils were seen coming out of papilla [Figure 3].

## Discussion

Conventional angiography with embolization of pseudoaneurysm is less invasive than surgery and has been reported to have a success rate between 79% and 100%.[1] Endovascular intervention has limitations of difficult access and may be complicated by rupture of the pseudoaneurysm sac, incomplete occlusion and perforation of the artery with the vascular catheter. Marone *et al*. in a single-center study comparing open repair of pseudoaneurysm with endovascular therapy reported open repair as gold standard, especially for an aneurysm involving visceral hilum.[2]

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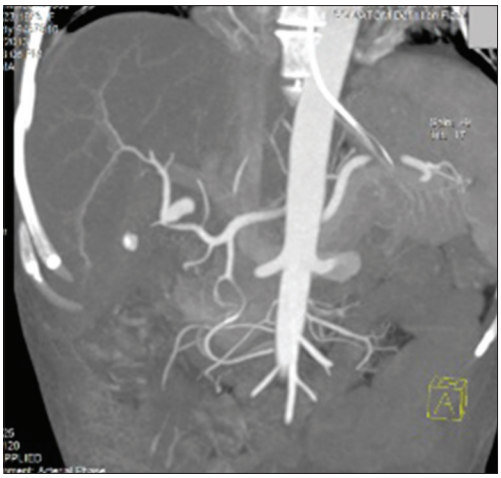

**Figure 1:** Computed tomography angiogram showing hepatic artery pseudoaneurysm

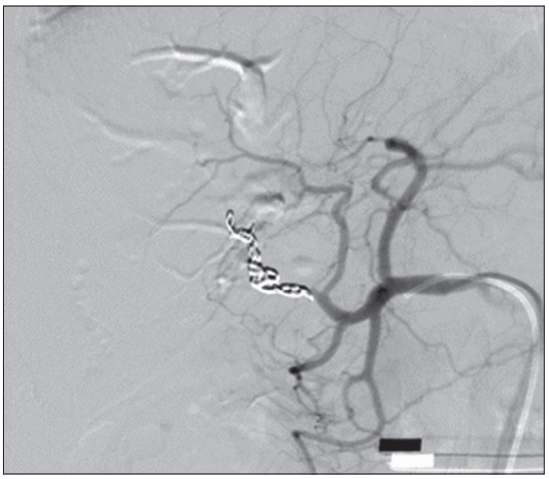

**Figure 2:** Image showing coil embolization of hepatic artery pseudoaneurysm

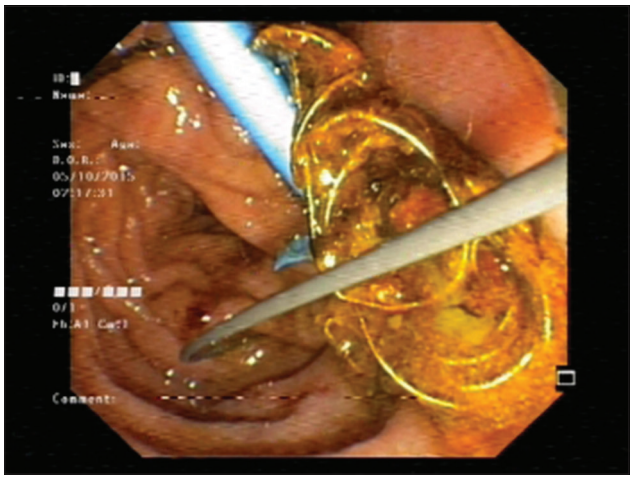

**Figure 3:** Endoscopic image showing coil coming out of ampulla during endoscopic retrograde cholangiopancreatography

Several endovascular interventions that have been used for the obliteration of visceral artery pseudoaneurysm include coiling, thrombin injection, gel foam, cyanoacrylate glue, and stent-graft placement. Ethylene vinyl alcohol copolymer and multi-layered flow modulator stents have also been used for pseudoaneurysm occlusion. Sometimes, the combination of these techniques is used.[3-5] Endovascular stenting is preferred when the pseudoaneurysm involves large caliber and less tortuous artery. Fully covered stents have the advantage of keeping distal flow patent.

Coils for the obliteration of the pseudoaneurysms and for control of GI bleed has been used extensively for many years. Endoscopic ultrasound allows proper visualization and deployment of the coils in the targeted area. Sharma *et al*. reported successful obliteration of hepatic artery pseudoaneurysm by endoscopic ultrasound coiling.[6] Philips and Augustine reported another interesting case of endoscopic ultrasound-guided coiling of rectal varices.[7]

In our case, endovascular coiling was done by an interventional radiologist. Migration of hepatic artery pseudoaneurysm coils into the bile duct is a rare known complication. Kao *et al*. reported spontaneous extrusion of hepatic artery pseudoaneurysm coils into the bile duct.[8] A similar case of "coilodocholithiasis" was reported by Bent *et al*.[9] A case of splenic artery pseudoaneurysm that underwent coiling and presented 3 months later with pain abdomen and on endoscopy, there was a large gastric ulcer with coil extrusion into the gastric lumen. Inflammation and infection at the coil site have been proposed as an inciting event in the process of coil extrusion.[10]

## Conclusion

This case represents a rare known complication of hepatic artery pseudoaneurysm coiling. One must remain vigilant, especially when patient presents with pain abdomen or jaundice during the post-procedure follow-up.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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