

Migration of Gastric Varix Coil After Balloon-Occluded Antegrade Transvenous Obliteration

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ABSTRACT

This is a case report of a man with alcoholic cirrhosis who underwent transjugular intrahepatic portosystemic shunt and balloon-occluded antegrade transvenous obliteration for gastric fundal varices in 2017. After almost a year, we found extensive migration of the coil into the gastric fundus on upper endoscopy. Continued vigilant surveillance endoscopy may help detect this complication.

INTRODUCTION

Extensive migration of coils after balloon-occluded antegrade transvenous obliteration (BATO) or balloon-occluded retrograde transvenous obliteration (BRTO) is uncommon. Several case reports have described coil migration into the gastrointestinal tract for coils in splenic artery pseudoaneurysms,¹⁻⁴ gastric⁵ and jejunal⁶ varices, and after liver transplantation.⁷ We report a rare case of coil migration after BATO for gastric fundal varices.

CASE REPORT

A 58-year-old man with alcoholic cirrhosis underwent transjugular intrahepatic portosystemic shunt (TIPS) placement and BATO for large type 1 isolated gastric varices (IGV-1) in 2017. Surveillance esophagogastroduodenoscopy (EGD) was performed in early 2018 and revealed a small IGV-1 in the fundus with stigmata of previous embolization coil (Figure 1). In early 2019, the patient was admitted for hemodynamically stable hematemesis. A computed tomography (CT) scan was acquired, and it demonstrated an occluded TIPS, which was not previously known. He underwent coil-assisted BRTO, followed by TIPS revision, and the hematemesis resolved. Follow-up EGD and CT scan approximately 6 months later showed a dangling BATO coil granuloma in the fundus of stomach (Figure 2). The patient has done very well since his hospitalization without intervention on the coil to date. Our plan is to repeat EGD in 6 months and then annually as surveillance for varices.

DISCUSSION

Extensive migration of coils after BATO/BRTO for IGV-1 into the gastric fundus has not been reported in the literature to our knowledge. Erosion of a coil into the gastric fundus seen on EGD more than 1 year after procedure is a unique finding in our case report. Given the stability of the patient, we decided to perform surveillance endoscopy for varices in 6 months and then annually.

There are multiple cases reported in the literature on coil embolization for gastrointestinal varices. One case reported the migration of a percutaneously placed jejunal varix coil into the jejunum.⁶

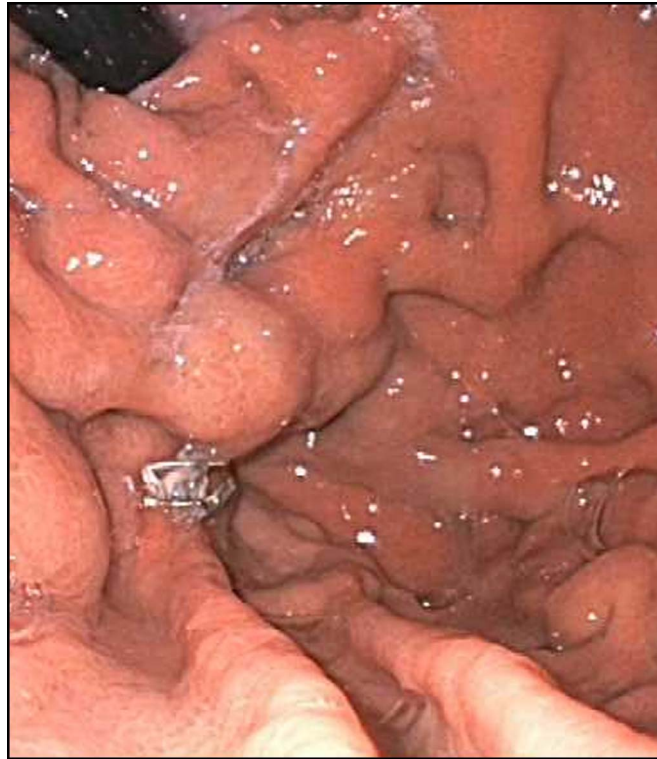


Figure 1. IGV-1 with stigmata of previous treatment (embolization coils) in the gastric fundus on EGD from early 2018. EGD, esophagogastroduodenoscopy; IGV-1, type 1 isolated gastric varices.

Few reports have described gastric migration of coils placed for gastric varices. Hussain et al incidentally found one coil “knuckled” over a distal gastric varix 2 weeks after TIPS.⁵ No intervention was performed for this migrated coil. Another unique case described a patient who had massive hematemesis because of coil migration into the stomach after liver transplantation, despite the definitive measure for lowering portal pressure in the form of a liver transplant. The gastric varix coil eroding the stomach was not retrievable on endoscopy,

resulting in the need for urgent laparotomy and partial gastrectomy. Unfortunately, the patient died postoperatively, despite all efforts.⁷

Our case report draws attention to the rare but potentially lethal risk of gastric varix coil migration and erosion into the stomach through unknown mechanisms, although potentially related to inflammation leading to fistula formation. Given the fact that our patient had coil migration after a prolonged period of time,

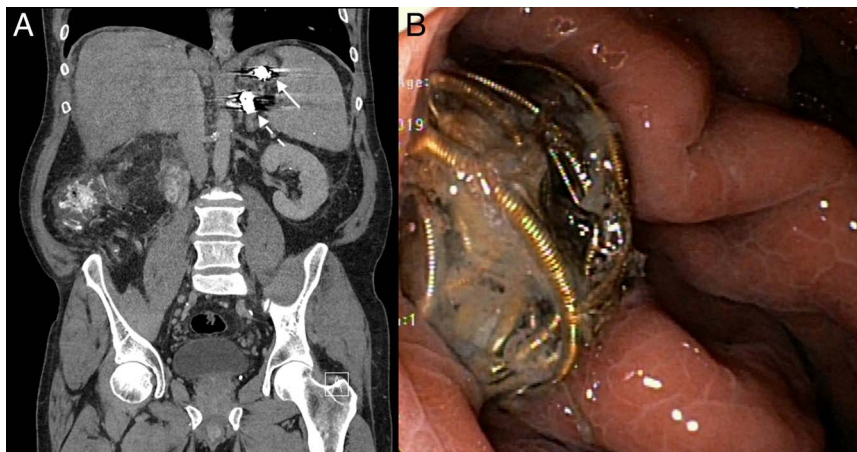


Figure 2. (A) Abdominal coronal CT demonstrating a superior coil mass from previous BATO (straight arrow) protruding into the stomach, and an inferior coil mass from recent coil-assisted BATO (discontinuous arrow) plugging the outflow of the splenorenal shunt and (B) BATO coil granuloma dangling in the fundus of stomach on EGD from late 2019. BATO, balloon-occluded antegrade transvenous obliteration; BATO, balloon-occluded retrograde transvenous obliteration; CT, computed tomography; EGD, esophagogastroduodenoscopy.

we suggest vigilant surveillance with endoscopy in patients with a history of coil embolization.

DISCLOSURES

Author contributions: AJ Pusateri wrote the manuscript. MS Makary and K. Mumtaz edited the manuscript. K. Mumtaz is the article guarantor.

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Informed consent was obtained for this case report.

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REFERENCES

1. Han YM, Lee JY, Choi IJ, et al. Endoscopic removal of a migrated coil after embolization of a splenic pseudoaneurysm: A case report. *Clin Endosc.* 2014;47(2):183–7.
2. Pratap A, Pokala B, Vargas LM, Oleynikov D, Kothari V. Laparoscopic endoscopic combined surgery for removal of migrated coil after

- embolization of ruptured splenic artery aneurysm. *J Surg Case Rep.* 2018; 2018(2):rjx242.
3. Shah NA, Akingboye A, Haldipur N, Mackinlay JY, Jacob G. Embolization coils migrating and being passed per rectum after embolization of a splenic artery pseudoaneurysm, “the migrating coil”: A case report. *Cardiovasc Intervent Radiol.* 2007;30(6):1259–62.
4. Takahashi T, Shimada K, Kobayashi N, Kakita A. Migration of steel-wire coils into the stomach after transcatheter arterial embolization for a bleeding splenic artery pseudoaneurysm: Report of a case. *Surg Today.* 2001;31(5):458–62.
5. Hussain S, Ghaoui R. Porto-gastric fistula from penetration of coil from gastric varix after TIPS procedure for bleeding gastric varices. *J Interv Gastroenterol.* 2011;1(1):33.
6. Kim J, Lee D, Oh K, et al. Surgical removal of migrated coil after embolization of jejunal variceal bleeding: A case report. *Korean J Gastroenterol.* 2017;69(1):74–8.
7. Levi Sandri GB, Lai Q, Mennini G, Trentino P, Berloco PB, Rossi M. Massive bleeding from a gastric varix coil migration in a liver transplant patient. *J Gastrointest Liver Dis.* 2013;22(3):249.

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