

Covered Stent Placement for Gastroduodenal Artery Stump Pseudoaneurysm Rupture Following Selective Coil Embolization

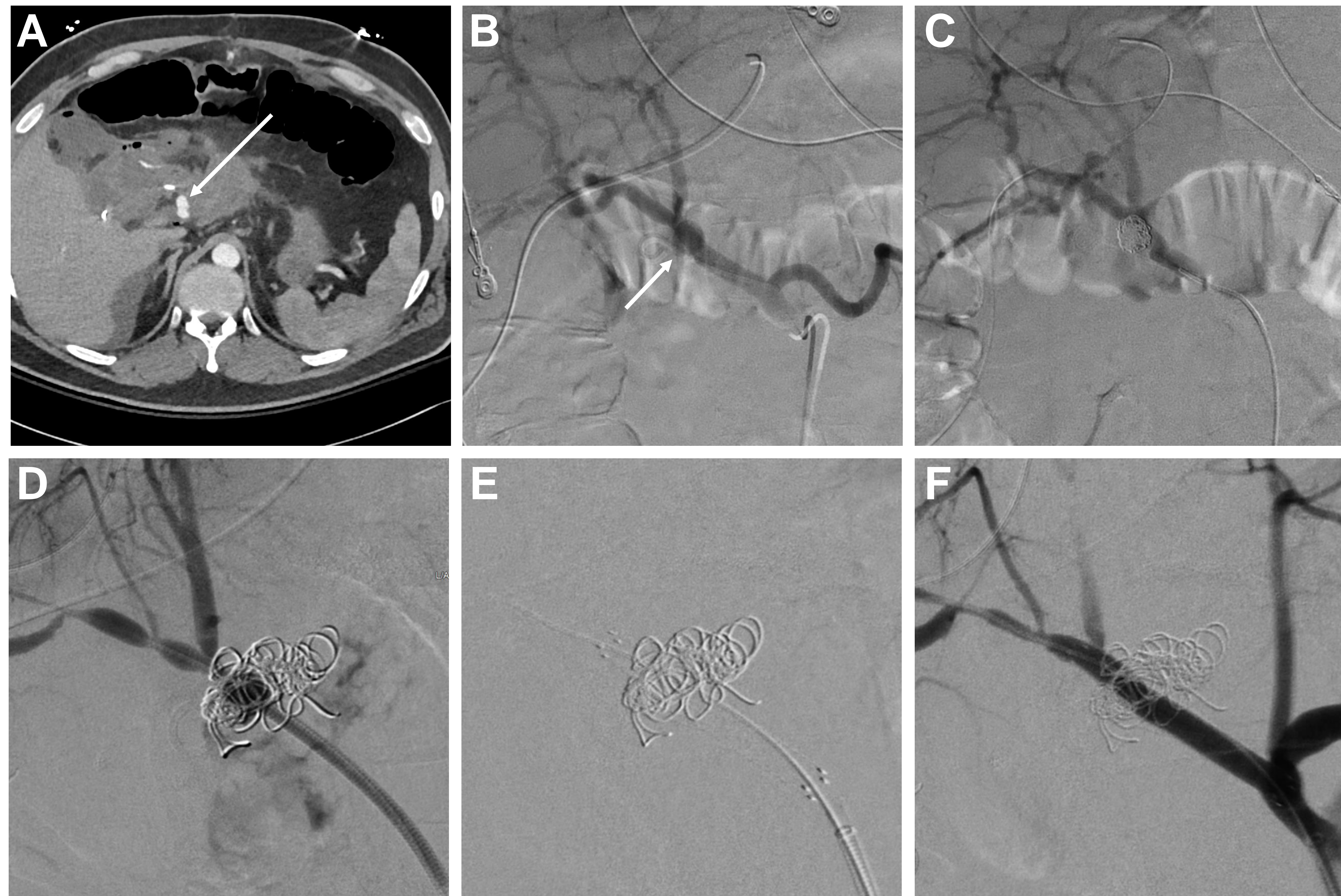
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Introduction

The gastroduodenal artery (GDA) stump pseudoaneurysm is a common site of delayed massive hemorrhage following a pancreaticoduodenectomy. We present a case of a GDA stump pseudoaneurysm rupture and coil unraveling after a selective coil embolization successfully managed with placement of a covered stent across the common and proper hepatic arteries.

Case Presentation

- 39-year-old male with intraductal papillary mucinous adenoma underwent a pancreaticoduodenectomy.
- On post-operative day 19, he developed an upper gastrointestinal bleed and underwent hepatic angiography which showed no signs of extravasation.
- The patient's condition continued to deteriorate, and a computed tomography angiography (CTA) revealed a suspected GDA stump pseudoaneurysm confirmed on repeat celiac arteriography (A, B).
- Selective coil embolization of the pseudoaneurysm using 6 x 30, 6 x 35, 8 x 35 mm micro-coils resulted in complete exclusion of the pseudoaneurysm (C).
- Seven days later, the patient experienced a syncopal episode and large bloody bowel movement. Selective common hepatic arteriography revealed a ruptured GDA stump pseudoaneurysm and unraveling of the coil pack. A 6 x 50 mm GORE® VIABAHN® covered stent was deployed across the common and proper hepatic artery (D, E).
- Completion angiograms demonstrated no further extravasation (F). The patient remained stable and experienced no recurrent hemorrhage.



- (A) CT angiogram of the abdomen demonstrated a pseudoaneurysm at the location of the gastroduodenal artery stump (arrow) with areas of surrounding hemorrhage but no evidence of active extravasation.
- (B) Selective celiac angiogram confirmed gastroduodenal artery stump pseudoaneurysm (arrow) without active extravasation.
- (C) Coil embolization resulted in complete exclusion of the pseudoaneurysm.
- (D) Selective common hepatic angiogram demonstrated unraveling of the previously placed coil pack with active extravasation from the GDA pseudoaneurysm.
- (E) AS 6 x 50 mm GORE® VIABAHN® covered stent was deployed across the common and proper hepatic arteries.
- (F) Completion celiac artery angiogram demonstrated no further extravasation or pseudoaneurysm.

Conclusions

- Endovascular trapping and selective coil embolization of GDA stump pseudoaneurysms can have limitations related to a short segment of the stump remnant and the proximity of the pseudoaneurysm to the origin of the GDA.
- Sometimes, the only means of technically successful endovascular trapping is a direct coil embolization of the pseudoaneurysm. Any other means of endovascular trapping such as sacrificing the hepatic artery and coiling across the pseudoaneurysm can pose increased risks of hepatic ischemic complications.
- When technically feasible, placement of a covered stent is an effective alternative in managing GDA stump pseudoaneurysms due to its ability to achieve hemostasis by effective exclusion of the pseudoaneurysm while preserving liver perfusion.

References

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