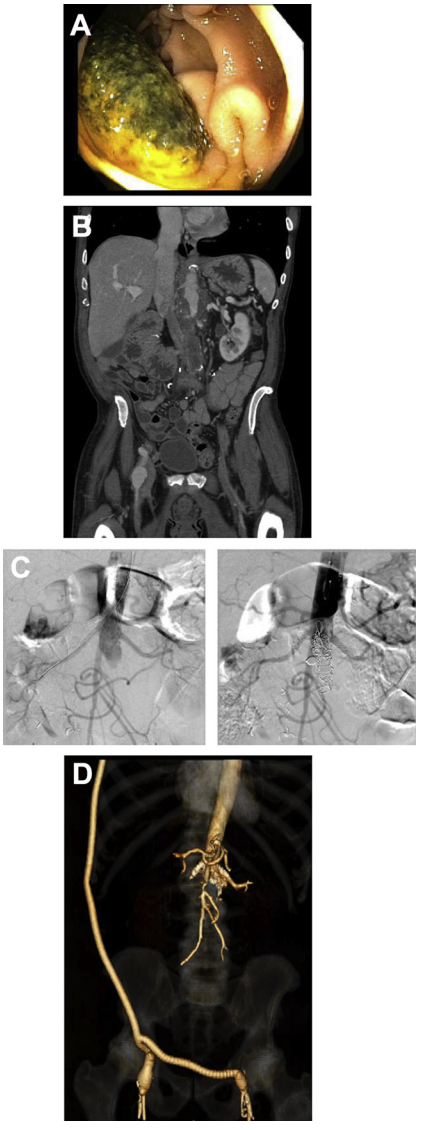
Unique endovascular repair of an aortic pseudoaneurysm after staged approach for an aortoduodenal fistula

Sara Gaines, MD, Trissa A. Babrowski, MD, Christopher Skelly, MD, *and* Ross Milner, MD *Chicago, Ill*

Secondary aortic enteric fistula (SAEF) is a rare complication after open aortic replacement. A SAEF can be classified as aortoenteric erosion if the graft is seen within the mucosa of the gastrointestinal tract and results most commonly from open aneurysm repair (36%) and aortobifemoral bypass for aortoiliac occlusive disease (30%).[1,2] Data comparing open vs endovascular repair for the management of SAEF are lacking. However, complete excision of all infected graft material and infected tissue has been recommended for patients fit for surgery.[3]

A 71-year-old man with a history of hypertension, diabetes, and peripheral arterial disease had undergone aortobifemoral artery bypass for aortoiliac occlusive disease 30 years before his current presentation with back pain. His hemoglobin was 7.8 g/dL, a fecal occult blood test result was positive, and he had an elevated white blood cell count (22×10^9/L). Computed tomography angiography demonstrated fluid between the duodenum and aortic graft. Esophagogastroduodenoscopy revealed an exposed graft within the third portion of the duodenum (*A*). Given the complexity of the required enteric resection and the redo nature of femoral artery exposure, we proceeded with a staged approach consisting of lower extremity revascularization with an axillary to bifemoral artery bypass, followed by removal of the graft with oversewing of the aorta. Resection of D3/D4 and reconstruction with duodenojejunostomy followed. Intraoperative cultures showed growth of *Saccharomyces cervisaea*, *Candida glabrata*, and *Streptococcus intermedius*. He was treated with 6 weeks of intravenous micafungin and ceftriaxone. He recovered well from both operations.

Surveillance imaging during the following year revealed the development of a pseudoaneurysm of the distal stump of the aorta measuring 4.1 cm (*B*). Endovascular and open approaches were both discussed with the patient. He was opposed to open surgery owing to the high risk of the redo nature of femoral artery exposure and the duration of recovery. He underwent coil embolization of the aortic stump with covered stent insertion into the right and left renal arteries via open left axillary artery exposure (*C*/Cover). The renal stents were placed to allow for complete embolization without coverage of the renal arteries. He recovered well from the intervention. Follow-up computed tomography angiograms at 1 and 6 months demonstrated patent renal artery stents, intact coils, and no evidence of contrast filling into the pseudoaneurysm cavity (*D*). No infection was evident.



From the Section of Vascular Surgery and Endovascular Therapy, Department of Surgery, University of Chicago Medicine.

Author conflict of interest: R.M. has been paid consulting fees by Endospan, Medtronic, and W.L. Gore & Associates. S.G., T.A.B., and C.S. have no conflicts of interest.

E-mail: rmilner@surgery.bsd.uchicago.edu.

The editors and reviewers of this article have no relevant financial relationships to disclose per the Journal policy that requires reviewers to decline review of any manuscript for which they may have a conflict of interest.

J Vasc Surg Cases and Innovative Techniques 2020;6:612-3

2468-4287

https://doi.org/10.1016/j.jvscit.2020.08.027

SAEFs are life-threatening conditions that can result in severe hemorrhage, sepsis, and mortality. The present case has demonstrated an unusual case of aortic stump breakdown that was managed with a unique endovascular approach. The patient provided written informed consent for the report of his case.

REFERENCES

1. Chung J. Management of aortoenteric fistula. Adv Surg 2018;52:155-77.
2. Kahlberg A, Rinaldi E, Piffaretti G, Speziale F, Trimarchi S, Bonardelli S, et al. Results from multicenter study on aortoenteric fistulization after stent graft of the abdominal aorta (MAEFISTO). J Vasc Surg 2016;64:313-20.
3. Chakfé N, Diener H, Lejay A, Assadian O, Bernard X, Caillon J, et al. European Society for Vascular Surgery (ESVS) 2020 clinical practice guidelines on the management of vascular graft and endograft infections. Eur J Vasc Endovasc Surg 2020;59:339-84.

Submitted Aug 20, 2020; accepted Aug 26, 2020.