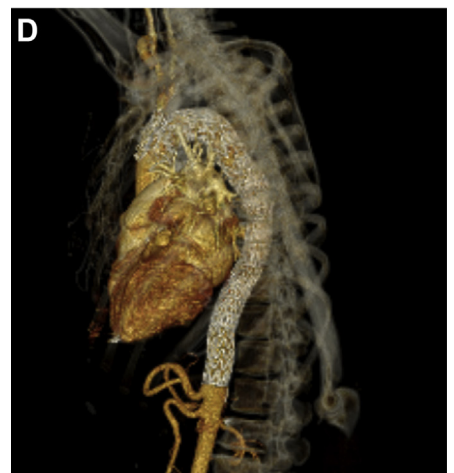
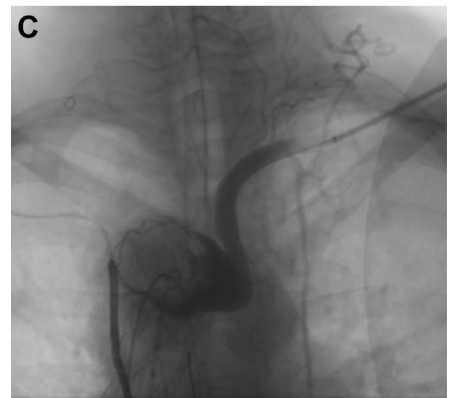
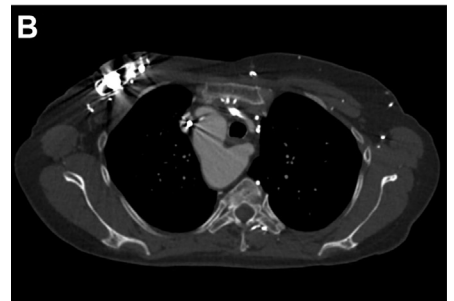
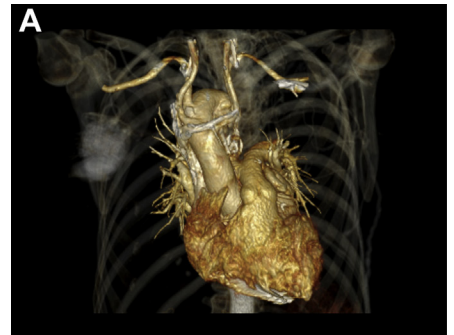


Right-sided aortic arch with aberrant left subclavian artery and Kommerell diverticulum

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A 69-year-old woman with right-sided aortic arch with an aberrant left subclavian artery presented to clinic with worsening dysphagia. History was significant for atrial arrhythmias status post ablation and nonischemic cardiomyopathy with a single-chamber implantable cardioverter-defibrillator. She underwent esophagoscopy with dilation for initial treatment of dysphagia. Physical examination findings and laboratory test results were unremarkable. Computed tomography aortography with multiplanar reformats demonstrated a right-sided aortic arch with an aberrant left subclavian artery (A/Cover) coursing retroesophageally (B) and a Kommerell diverticulum.

Given her symptomatic Kommerell diverticulum, she underwent a left common carotid artery to subclavian artery bypass with Dacron graft, thoracic endovascular aortic repair (TEVAR) extending across the left subclavian artery origin, and placement of an Amplatzer vascular plug distal to the Kommerell diverticulum in the left subclavian artery (C and D). Her postoperative course was complicated by type IA endoleak, requiring carotid chimney with proximal TEVAR extension, and distal aortic dissection, requiring extension of TEVAR distal to the level of celiac artery. At 6-month follow-up, the patient is noted to be doing well without any sequelae. Informed consent was obtained from this patient for the publication of this report.



DISCUSSION

Aberrant left subclavian artery is an uncommon congenital arch anomaly with 0.5% to 1.8% prevalence.¹ Right-sided aortic arch, occurring in approximately 0.1% of the population, results from persistence of the right fourth aortic arch and involution of the left fourth arch.² The presence of both a right-sided aortic arch and aberrant left subclavian artery is an extremely rare occurrence, about 0.05% of the population.³ The Edwards classification describes three types of right-sided aortic arch: type I, with mirror-image branching of the major arteries; type II, with aberrant left subclavian artery as demonstrated here; and type III, with isolation of the left subclavian artery.⁴ Kommerell diverticulum is the aneurysmal dilation of the aorta at the origin of the aberrant subclavian artery. Aberrant left subclavian artery and Kommerell diverticulum are generally asymptomatic but may cause symptoms such as dysphagia from compression of the esophagus. An alternative approach to endovascular repair with extra-anatomic bypass as described here is a hybrid endovascular repair using a two-vessel branched stent graft.⁵

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REFERENCES

1. Reece TB, Wallen TJ, Jagasia DH, Bavaria JE, Szeto WY. Open thoracic aortic repair for dysphagia in patients with Kommerell's diverticulum and right-sided aortic arch with aberrant left subclavian artery. *J Card Surg* 2010;1:62-4.
2. Hastreiter AR, D'Cruz IA, Cantez T, Namin EP, Licata R. Right-sided aorta. I. Occurrence of right aortic arch in various types of congenital disease. II. Right aortic arch, right descending aorta, and associated anomalies. *Br Heart J* 1966;27:722-39.
3. Shuford WH, Sybers RC, Gordon IJ, Baron MC, Carson GC. Circumflex retroesophageal right aortic arch simulating mediastinal tumor or dissecting aneurysm. *AJR Am J Roentgenol* 1986;3:491-6.
4. Edwards JE. Anomalies of the derivatives of the aortic arch system. *Med Clin North Am* 1948;32:925-49.
5. Hamady M, Sharma PM, Patel R, Godfrey AD, Bicknell CD. Hybrid endovascular repair of aneurysmal right-sided aortic arch and Kommerell's diverticulum using a two-vessel branched stent graft: case report and review of literature. *SAGE Open Med Case Rep* 2017;5. 2050313X17749082.

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