because aneurysmal formation of residual dissected BCA requiring surgical intervention seems rare. Kieffer et al. [3] reported 3 cases of surgical repair of chronic dissected innominate artery, in which detail has not been addressed. Residual dissected cervical branch of aortic arch poses potential risk of neurologic event. In rare cases, the residual dissected BCA grows and presents an aneurysmal formation in patients without Marfan's syndrome. The optimal surgical strategy for this rare clinical entity is unclear.

CASE DESCRIPTION

A 54-year old man without Marfan’s syndrome underwent total arch replacement for the repair of an acute type A aortic dissection 7 years previously. The diameter of the dissected BCA had increased gradually from 27 to 40 mm since the onset of the dissection (Fig. 1A and B). The proximal tear was observed at the anastomosis site between the BCA and prosthetic vascular graft, and the distal tear was observed at the right internal common carotid artery (CCA) (Fig. 1C). The patient showed no neurological disorder.

The treatment of choice for ‘Residual dissected brachiocephalic artery aneurysm after repair of acute type A aortic dissection’ will be published in a forthcoming issue of ICVTS.

Conflict of interest: none declared.

REFERENCES


Treatment solution by Yamauchi et al.

Our plan for treatment of the residual dissected BCA was to employ endovascular repair because redo open surgical repair might be associated with high mortality and morbidity. The main goal was to exclude blood from flowing into the large false lumen of the BCA and right common and internal carotid arteries from the proximal and distal tears. We planned that proximal tear would be covered with a stent graft and the exclusion of blood flow from distal tear would be embolization of the false lumen of the right CCA. We considered that carotid artery stenting would be insufficient to close the distal tear because the intima at the distal tear in the right carotid artery might not be fully expanded and closed in the chronic phase of dissection.

The procedure was performed with the patient under general anaesthesia and endotracheal intubation. For embolization of the false lumen of the right CCA, we tried to place delivery catheter at the false lumen of the right CCA from the right brachial artery and femoral artery only to fail because of the tortuosity of vessels for access. Then, the bilateral common carotid arteries were exposed, and an angiographic headhunter catheter (4-French, 100 cm; Medikit, Tokyo, Japan) was placed at the false lumen of the right CCA bifurcation via the primary tear at the anastomosis site, using the pull-through wire method (right axillary artery to left axillary artery). A 12-French introducer sheath (GORE® DrySeal Sheath with hydrophilic coating; W. L. Gore and Associates, Inc., Flagstaff, AZ, USA) was inserted into the right axillary artery. The distance from the origin of the branch of the graft anastomosed to the BCA and that of the right axillary artery was measured on angiography. A stent graft (PX161000; 16-16-95 mm, GORE® EXCLUDER AAA Contralateral Leg Endoprosthesis; W. L. Gore and Associates, Inc.) was then introduced and placed to cover the proximal tear. The proximal end of the stent graft was placed in the prosthetic vascular graft in the position of the ascending aorta, and the distal end was placed just before the bifurcation between the right CCA and right subclavian artery. To exclude blood from flowing into the false lumen of the BCA, the false lumen of the right CCA was embolized with an occlusion system (Interlock™ Fibered IDCTM Occlusion System, 12 mm × 30 cm, 10 mm × 30 cm, 10 mm × 30 cm; Boston Scientific, Natick, MA, USA) and detachable coils (Target XL™ 360 Standard Detachable Coils, 14 mm × 50 cm, 14 mm × 50 cm; Stryker

Figure 1: (A) Computed tomography immediately after the endovascular repair. The false lumen of the brachiocephalic artery was completely thrombosed. (B and C) Computed tomography 15 months after the total arch replacement. No residual false lumen was observed.
Completion angiography confirmed complete thrombosis and no blood flow in the false lumen of the BCA.

The patient’s postoperative course was uneventful, and no evidence of neurological impairment was present at discharge. Postoperative computed tomography immediately after the procedure demonstrated complete thrombosis of the false lumen. Computed tomography 15 months postoperatively revealed no residual dissection and shrinkage of the false lumen (Fig. 1A–C).

Conflict of interest: none declared.

EComment: Repair of an acute type A aortic dissection: how to deal with a residual dissected brachiocephalic artery aneurysm

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We read with great interest the clinical scenario by Yamauchi et al. about the presence of a residual dissected brachiocephalic artery aneurysm after repair of acute type A aortic dissection [1].

Brachiocephalic arteries are not infrequently affected by residual dissection and this finding is estimated as a low-risk factor for subsequent neurological events [2]. Neri et al. showed that residual brachiocephalic dissection was an independent predictor of neurological events among patients who underwent surgery for type A aortic dissection. All the events occurred in the territory that was dependent on a dissected artery. They also found that three components played an important role in the genesis of focal neurological disturbances: microembolism, impaired vasodilation reserve and the presence of a perfused false channel [3]. Kieffer et al. suggested that patients with isolated asymptomatic aneurysms who are at good surgical risk should undergo surgery when the aneurysms are saccular or when their maximum transverse diameter is more than 3 cm [4]. Our treatment plan for this 54-year old man without Marfan’s syndrome with a residual dissected brachiocephalic artery aneurysm would be the following: the procedure will be performed using hypothermic circulatory arrest and the arterial cannula will be put on the prosthetic vascular graft of the aorta. The dissected brachiocephalic artery, the common carotid artery and the site of the right internal carotid artery with the tear will be resected. An interposition polytetrafluoroethylene (PTFE) graft (10 mm) will be used for the reconstruction of the BCA trunk. Firstly, an end-to-end anastomosis between the right internal carotid artery and the graft will be constructed. Secondly, an end-to-side anastomosis between the right external carotid artery and the graft and then an end-to-side anastomosis between the right subclavian artery and the graft will be performed.

Finally, the interposition graft will be anastomosed on the prosthetic graft of the aorta. After completing the anastomoses, the operation will be completed as we usually do when we use hypothermic circulatory arrest.

Conflict of interest: none declared.

References