A 40-year-old man was transferred from a rural hospital with symptoms of multiorgan failure. Before admission, his antihypertensive medication had been intensified because of arterial blood pressures up to 240/120 mmHg, which resulted in an apparently normotensive situation, measured at the right arm.

At our hospital, we performed computed tomography angiography to exclude an aortic dissection (Figure 1A). We found an impressive aortic coarctation (Figure 1A, red arrow), obviously responsible for the multiorgan malperfusion, accompanied by a 5.3-cm aneurysm of the ascending aorta. Invasively measured blood pressure at the right radial artery (Figure 1B, white arrow) and the right femoral artery (Figure 1B, blue arrow) determined an enormous gradient of almost 100 mmHg. In addition, transesophageal echocardiography visualized a bicuspid aortic valve (not shown). Because of multiorgan failure attributable to hypotension with subsequent disseminated intravascular coagulopathy and anatomic location of the aortic coarctation precluding safe stent placement or surgical repair, we decided to bridge the patient with a less invasive operation by performing a subclavian-to-femoral artery extra-anatomic bypass (Gore-Tex graft; Figure 1C, red arrows). With this strategy, the coarctation (Figure 1D, blue arrows) was bypassed and the organ perfusion improved initially. Thereafter, the patient underwent major surgery with replacement of the aortic valve and the ascending aorta (Bentall procedure with a 27-mm biological valve and a 30-mm Dacron graft) and an ascending-to-descending aortic bypass via median sternotomy (18-mm Dacron graft; Figure 2A and 2B, white arrows).

The patient was extubated 2 days after surgery. Renal and liver function recovered entirely. After 44 days, the patient was discharged in healthy condition.

Disclosures

None.

References

Figure 1. A, Enhanced sagittal computed tomography angiography revealed the aortic coarctation constricting the aorta to 3 mm (A, red arrow). B, Screen shot of the clinical parameters of the patient. Besides a heart rate of 107 bpm and a saturation of 96%, the enormous gradient of almost 100 mm Hg between the right arm (B, white arrow) and the right leg (B, blue arrow) are demonstrated. C and D, Three-dimensional reconstruction image of computed tomographic angiography demonstrating the subclavian-to-femoral artery extra-anatomic bypass using an 8-mm Gore-Tex graft (C, red arrows) bypassing the severe aortic coarctation (D, blue arrows).

Figure 2. A and B, Three-dimensional reconstruction image of computed tomographic angiography demonstrating the 18-mm (B, magnification) Dacron graft from the ascending to the descending aorta bypassing the aortic coarctation (white arrows).
A 2-Step Extra-Anatomic Bypass Rescue Procedure for Bridging Aortic Coarctation in a Patient With Multiorgan Failure
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