A 61-year-old man developed a productive cough. A chest roentgenogram demonstrated consolidation in the right lower lobe and a right hilar prominence, features suggestive of pneumonia. The illness progressed to bilateral pneumonia, despite treatment with antibiotics. A computed tomographic scan revealed compression of the tracheobronchial tree (A) caused by a 7-cm aortic arch aneurysm (B). His past medical history included aortic root replacement. A preoperative risk analysis resulted in a EuroSCORE of 68%. Because of the high risk and the large arch aneurysm adherent to the retrosternum (C), the patient underwent a hybrid endovascular repair of the aortic arch aneurysm using an extrathoracic debranching technique.1

The right external iliac artery and bilateral carotid arteries were exposed. An inflow anastomosis was performed at the proximal site of the right external iliac artery using a 10- × 8-mm axillobifemoral bypass graft. Two limbs of the bifurcated graft were used for end-to-side anastomoses with the carotid arteries. Afterward, the innominate artery and the left carotid artery were suture ligated proximally. Since a subsequent angiogram confirmed the flow of the left subclavian artery, we omitted its reconstruction. A 37-mm × 15-cm stent graft was deployed distally followed by the deployment of a 40-mm × 20-cm stent graft via the left common femoral artery. The left subclavian artery was coiled. A completion angiography demonstrated total aneurysm exclusion (Cover).

The patient required mechanical ventilation postoperatively but was extubated on postoperative day 14. On 9-month follow-up, the bypass graft remained patent, and the patient was doing well.

Aortic arch debranching techniques expand the applicability of thoracic endovascular aneurysm repairs. Of these techniques, debranching via a thoracotomy approach2 and extrathoracic debranching benefit patients who underwent sternotomies, particularly in the presence of large aneurysms next to the sternums, because these techniques do not require redo sternotomies. Moreover, the extrathoracic approach can avoid the need for a thoracotomy. Therefore, this technique seemed to be more suitable for our patient with bilateral pneumonia. Originally, extrathoracic debranching techniques required six anastomoses. We modified the technique to decrease the number of anastomoses to three. On the other hand, long-term graft patency is a major concern. Thus, this technique should be limited to select patients.

REFERENCES

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