

Type IIIB endoleak caused by fabric erosion after thoracic endovascular aneurysm repair

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A 78-year-old man who had undergone coronary artery bypass grafting and thoracic endovascular aortic repair (TEVAR) for a descending aortic aneurysm 7 years ago (A) developed chest pain. At the initial TEVAR, two stent grafts (Talent; Medtronic, Santa Rosa, Calif) were used; the distal stent graft (34 × 115 mm) was deployed first, and the proximal stent graft (36 × 114 mm) was deployed inside the distal stent graft.

Contrast-enhanced computed tomography (CT) revealed rupture of the descending aneurysm with weak enhancement of the thrombus outside the stent graft (B). The rupture was diagnosed to be due to type II endoleak, and emergent replacement of the descending aorta was indicated. The aneurysm was exposed through the fourth intercostal space, and femorofemoral partial cardiopulmonary bypass was established with systemic heparinization.

Inside the aneurysm, blood flowing out through the hole of the upper stent graft was detected (C). Both stent grafts were partially removed, and 28-mm Gelweave (Vascutek Terumo, Inchinnan, Glasgow, United Kingdom) was anastomosed to the residual stent grafts and native aorta. His postoperative course was uneventful except for refixation of the rib, and he was discharged home 3 weeks later. Postoperative CT revealed patency of the graft (A).

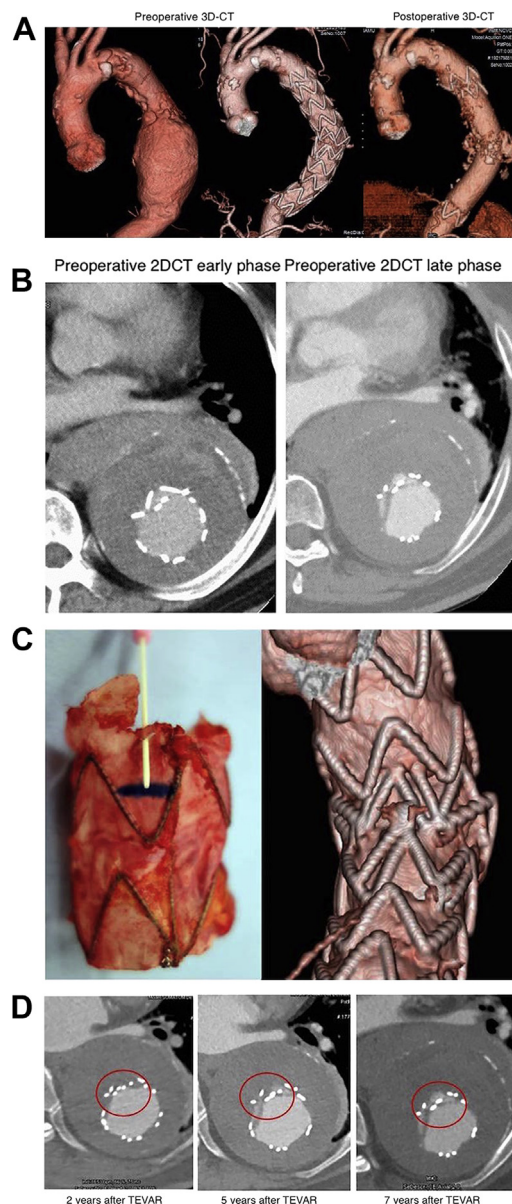
Detailed review of the past CT scan revealed that the bare stent of the distal stent graft had dug into the fabric of the proximal stent graft on the minor curvature (C). At this portion, the erosion was not found 2 years and 5 years after TEVAR but was detected at 7 years with rupture (D).

Consent for the publication of images was obtained from the patient in a written form.

DISCUSSION

Type III endoleak after TEVAR is rare.¹⁻³ In a controlled trial, it was encountered in 1 of 160 patients.² The leak through a defect in graft fabric due to the fractures or holes involving the endograft is defined as type IIIB.

Ellozy et al⁴ stated that the stiff longitudinal spine of the Talent stent graft can be disadvantageous in the severely angulated neck. In this patient, fabric erosion occurred because of the compression



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of the bare stent outside, which did not align with the minor curvature and stood straight against the curved proximal stent graft. Recent improvement of the flexibility of the stent graft might contribute to prevention of this complication after TEVAR.

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