Stent graft collapse caused by acute aortic dissection after endovascular repair for thoracoabdominal aortic aneurysm repair

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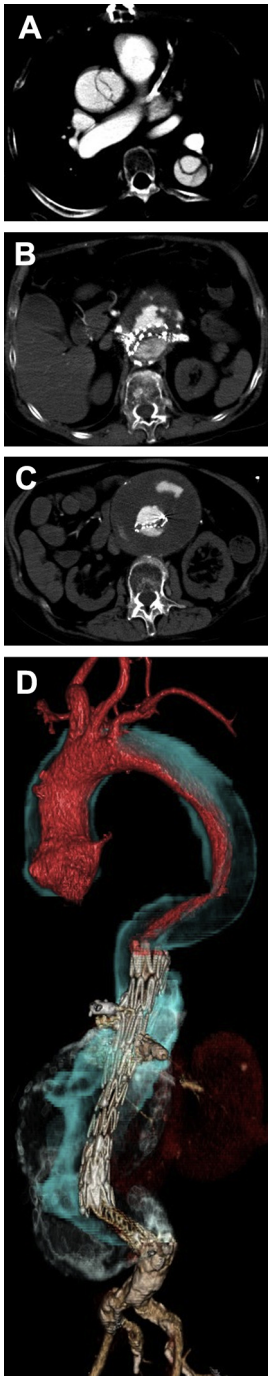
A 56-year-old woman diagnosed with Stanford type A acute aortic dissection was transferred to our hospital. She had struggled with systemic lupus erythematosus that has been treated with glucocorticoid and immunosuppressants for more than 40 years. Additionally, the patient underwent off-pump coronary artery bypass grafting for unstable angina 13 months before, and fenestrated endovascular aortic aneurysm repair for Crawford type IV thoracoabdominal aortic aneurysm 4 months before.

A contrast-enhanced computed tomography scan revealed that aorta had been dissected from the ascending aorta to the descending aorta (*A*), and the stent graft had collapsed owing to false lumen compression, causing new multiple endoleaks (*B*). Moreover, the renal stents were pulled out from the main body and there were signs of bilateral renal malperfusion (*C*). The three-dimensional image clearly shows that the true lumen (*red*) was severely compressed by the false lumen (*blue*) and the stent graft was also collapsed entirely and detached from the aneurysm (*D*/cover).



The patient was severely distressed and showed signs of bilateral limb ischemia. Arterial blood gas showed severe lactic acidosis and hypoxemia, and laboratory findings suggested multiorgan failure. The patient was intubated and sedated owing to agitation caused by severe pain and respiratory distress.

We recommended emergent aortic arch repair under redo sternotomy and complex endovascular repair for the fenestrated stent graft and branch endografts. However, the patient declined to undergo any invasive treatments and died the next day. The patient waived consent and the patient's family provided consent for the publication of the patient's case detail and imaging.

Stent graft collapse owing to aortic dissection after endovascular aortic aneurysm repair is extremely rare.[1] Although a treatment strategy for this type of situation has not been established, successful reexpansion of stent grafts by thoracic endovascular aortic repair[2] or axillobifemoral bypass[3] for Stanford type B aortic dissection and total arch replacement for Stanford type A aortic dissection[4] have been reported. However, our case might required not only open aortic arch repair, but also complicated endovascular repair including stent graft fixation.

We should be aware that the subsequent surgery become quite challenging when a stent graft crush happens in a patient with complex endovascular treatment.

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