Commentary: A superb and meticulous technique, but needs cautious, lifelong follow-up

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Loeys–Dietz syndrome (LDS) causes spontaneous aneurysm and dissection of central and peripheral arterial beds.^{1,2} Therefore, aneurysmal change could follow at the anastomosis with the native aortic tissue after graft replacement. In this issue of the *Journal*, Tenorio and colleagues³ reported endovascular repair of large intercostal artery patch aneurysm using a branch stent-graft in a patient with LDS. Their sophisticated technique for the difficult procedure was described with excellent illustrations. I applaud the authors for the successful results.

Two issues emerge out of this case report. First is the patch aneurysm after the reconstruction of the segmental arteries at the thoracoabdominal aortic replacement. Patch aneurysm is often recognized after the thoracoabdominal aortic replacement, and the frequency is known to be high in patients with connective tissue disease such as LDS. The size of the patch at the initial operation could be presumed from the size of base of the aneurysm. The original patch was supposed to be too large. The huge patch was grown only 2 years after the initial surgery; therefore, we should apply this way of the reconstruction cautiously. The reconstruction is strongly related to the prevention of spinal cord dysfunction. Then, what was the adequate way of the reconstruction? Several novel techniques of the reconstruction of the small branch of aorta have been reported.^{4,5} Yet, they reported an aneurysmal change of the residual tissue at the segmental arteries during the follow-up period.⁶ At the moment we must focus to minimize the size of the native tissue at the patch, especially in patients with LDS.⁷ The typical patient with LDS could be found easily and the caution could be paid to do the procedures; however, even patients with LDS might not always have typical features. I believe the age of the patient may be a significant issue to consider. When the patient for the procedure is young, short graft interposition or a minimum patch technique should be used for the reconstruction.⁸

The second issue is the use of the endovascular technique for patients with LDS. The use of endovascular therapy, even for great vessels in patients with LDS, is still

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Central Message

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controversial.⁹ Redo procedures after left thoracotomy are indeed a challenge due to dense adhesion. Afifi and colleagues¹⁰ reported their experiences of such redo thoracoabdominal aortic aneurysm repair. They repaired the visceral and intercostal patch aneurysms with open surgical technique. The advance of the technology made the fine therapy of the technique as described by Tenorio and colleagues in this issue possible. However, if new lesion followed at the place of the small stent in future, open conversion would not be possible. Furthermore, the long-term results are entirely unknown. Several reports regarding endovascular therapy for peripheral vessels in patients with LDS have been published. These papers, however, only reported initial success and follow-up data up to around 5 years.^{11,12} Therefore, frequent and long-term postoperative surveillance imaging cannot be overemphasized in this challenging patient population.¹³

I heartily congratulate the authors' success with the exceptional technique in this case. Yet, we should be aware that endovascular therapy is generally not considered as a first-line option for cases with connective tissue diseases including LDS.

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