

## Conclusion

Complete neck vessels preservation during TEVAR using the Najuta fenestrated stent graft appears to be a safe and effective treatment. This strategy also decreases need for branch vessel bypass.



# Case Report

*Japan Experience* **Case.02**

## Complete neck vessels preservation during TEVAR using Kawasumi Najuta fenestrated stent graft for the treatment of dissecting arch aneurysm:

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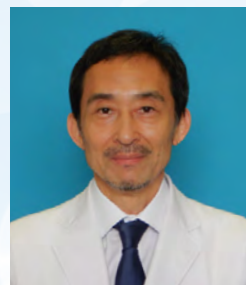
**Naoki Toya, MD., PhD.**



## Introduction

In the case of a dissecting aneurysm of the aortic arch, the TEVAR procedure is complicated because it is necessary to close the entry existing in most case just distal to the left subclavian artery (LSA) and preserved the neck branch vessel. Successful TEVAR requires adequate stability at the proximal sealing zone. Debranching TEVAR and in situ fenestration are often considered. We report the case of complete neck vessels preservation during TEVAR using Kawasumi Najuta fenestrated stent graft for the treatment of dissecting arch aneurysm, and its clinical usefulness.

## Author Introduction



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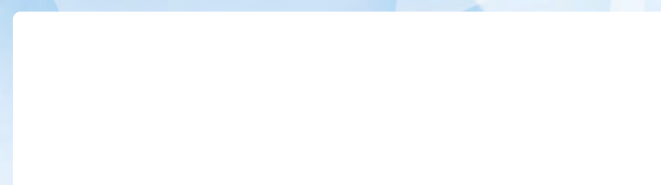
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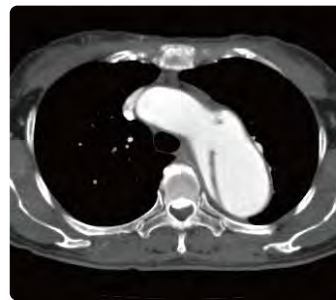
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## Case

A 60-year-old woman presented with a dissecting aneurysm of aortic arch. Diagnosis was incidentally found after a CT-scan was performed at another hospital. Approximately 6 months prior to the first consultation, she complained of back pain.

Contrast CT revealed a type B dissecting aneurysm with patent false lumen. A large entry tear located in distal position of the LSA, and the maximum diameter of distal arch was 55 mm (Fig. 1-A, Fig. 2-B). We planned fenestrated TEVAR using the Najuta stent graft.



**Fig. 1-A** A large entry was located in distal portion of the LSA.



**Fig. 1-B** CT showed narrowing of the true lumen and enlargement of the false lumen were confirmed.

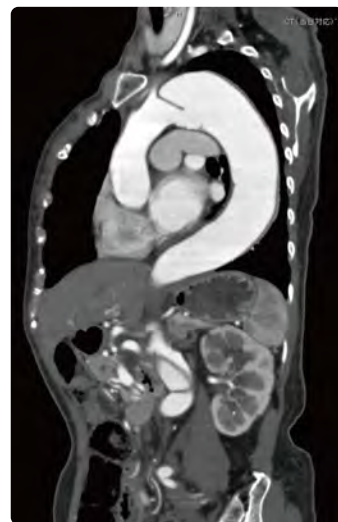
## Operation Strategy

This case was of bovine arch (left common carotid artery originating from the brachiocephalic trunk). A large entry was located in distal portion of the LSA and narrowing true lumen was found in the distal descending aorta (Fig. 1-B, Fig. 2-A). A tapered distal stent graft was initially placed to cover the entry, and the Najuta stent graft was placed proximally to achieve a long proximal sealing zone.

The distance from the LSA to the entry was relatively long, 20.3 mm. We planned complete neck vessels preservation during TEVAR using the Najuta fenestrated stent graft. In patients with a bovine arch, zone 0 landing may also reduce the risk of late type 1a endoleak and migration.



**Fig. 2-A** The dissection extended to the level of the abdominal branches. Bovine arch was noticed.



**Fig. 2-B** The maximum diameter at the distal arch aorta is 55 mm.

## TEVAR

Right femoral access and right brachial access were achieved by a cutdown. A 7F twin sheath (double-lumen introducer sheath) was introduced from the right brachial artery, and a 4F pigtail catheter was advanced over a guidewire to the ascending aorta.

A sheath was also inserted into the left brachial artery for a temporary balloon occlusion of the LSA to prevent cerebral infarction through the left vertebral artery during stent graft insertion.

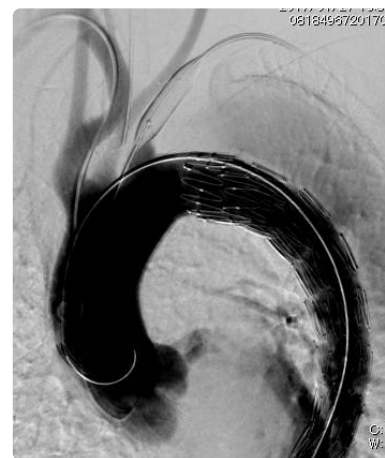
Preoperative imaging was performed with a Pigtail catheter. (Fig. 3-A) An 8 mm diameter balloon was inserted from the left brachial artery sheath and occluded at the origin of the LSA.

The TX2 tapered stent graft (Cook Medical) was initially delivered into position of zone 3 over the Lunderquist wire.

At the time of imaging, type 1a endoleak was still recognized because the proximal sealing length was insufficient (Fig. 3-B).



**Fig. 3-A** Preoperative angiogram

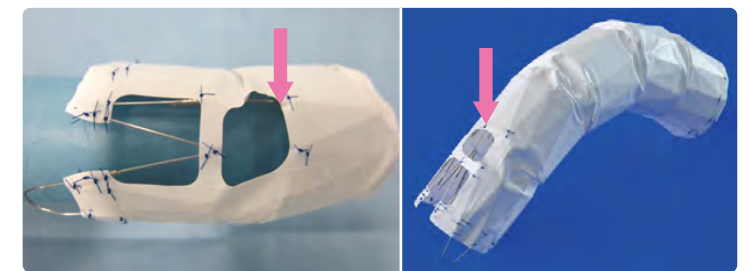


**Fig. 3-B** After TX2 deployment. Angiogram still demonstrates false lumen in early phase due to Type 1a endoleak.

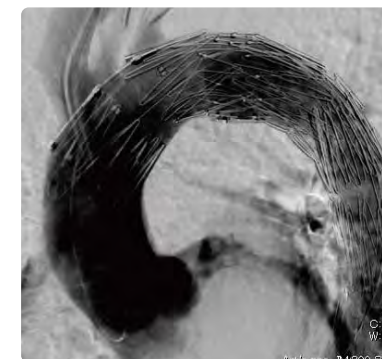
The guidewire was exchanged for a 0.035-inch Radifocus wire, which was then pulled through the right brachial artery to the femoral artery.

The Najuta stent graft was delivered with a 23F J-shaped sheath maintained under continuous strain by traction at both wire ends (body floss technique). Subsequently, it was delivered and deployed at the zone 0 proximal site with delicate positional adjustment of the fenestration of the Najuta stent graft to the brachiocephalic trunk. (FIG. 5-A).

After endoprosthesis implantation, angiography revealed a patent brachiocephalic trunk and exclusion of the aneurysm (FIG. 5-B). No touch up ballooning was performed after the implantation. The operation time was 124 minutes and the blood loss was 30 ml.



**Fig. 4** Najuta Stent graft. A deployment plan was made that the arrow was aligned with the position that covered 80% of the LSA.



**Fig. 5-A** Immediately after deployment of Najuta. The balloon at the origin of the LSA is still inflated.

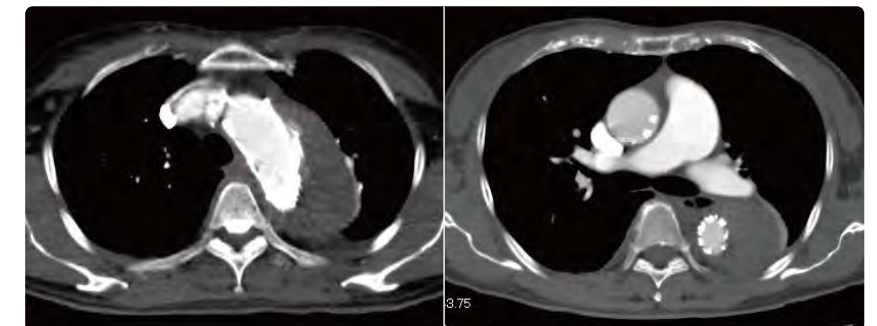


**Fig. 5-B** Final imaging. All neck vessels were preserved and no endoleak was revealed.

## Postoperative progress

No cerebral infarction or paraplegia was observed. Postoperative CT revealed no endoleak.

False lumen is completely thrombosed on CT at 3 days after fenestrated TEVAR. (FIGS. 6 and 7). The patient made an uneventful postoperative recovery, being discharged from hospital 5 days after TEVAR.



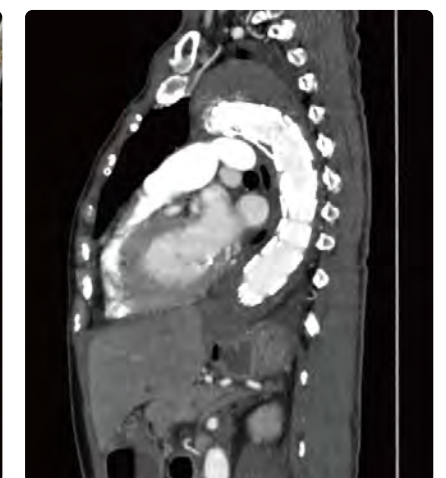
**Fig. 6** No endoleak was revealed. Thrombosis of false lumen was found from the distal arch to the descending aorta.

## Consideration

Successful TEVAR requires adequate stability at the proximal sealing zone for the treatment of the aortic arch. The Najuta stent graft repair is a safe and effective treatment option, because it can preserve blood flow of the neck vessel by fenestrations. We planned complete neck vessels preservation during TEVAR using the Najuta fenestrated stent graft for dissecting aneurysm. Although careful follow-up is required, postoperative CT shows good remodeling.



**Fig. 7-A** Najuta's fitting in the aortic arch was good.



**Fig. 7-B** The true lumen was enlarged and thrombosis of the false lumen was found.