

NEXUS™ AORTIC ARCH STENT GRAFT SYSTEM AND THE STABILISE TECHNIQUE TO SUCCESSFULLY TREAT A RESIDUAL TYPE A DISSECTION WITH ANEURYSMAL DEGENERATION



PATIENT INFORMATION

A 60-year-old male consulted for an aneurysmal degeneration of a residual Type A dissection. Past medical history was positive for myocardial infarction treated by coronary stent in 2014 and a chronic Type B aortic dissection that had previously required infra-renal correction in January 2021 by an open aorto-bi-iliac repair. Also, in April 2021, the patient had undergone a hemiarch replacement at HEGP for Type A dissection.



REASON TO TREAT

Rapid aneurysmal degeneration of the descending aorta and a false aneurysm (Figure 1) on the distal suture of the ascending repair at the origin of the brachio-cephalic trunk (BCT).

After multidisciplinary consultation, a branched endoprosthesis for the aortic arch appeared to be the best option to achieve proximal sealing, completed by the STABILISE technique down to the infra-renal level to achieve distal sealing of the false lumen.



DEBRANCHING

An inter-carotid bypass and left subclavian revascularization was done one-month prior to NEXUS™ in order to limit the neurological risks.



NEXUS™ IMPLANTATION

The endovascular procedure, preceded by cerebrospinal fluid (CSF) drainage, was successfully performed by implanting NEXUS™ allowing coverage of the proximal entry tear.



STABILISE DISTAL SEALING

Treatment was completed on the same operative time by placing an aortic stent-graft (Gore CTAG 37/150 mm) distally into the descending thoracic aorta, extended by an uncovered aortic dissection stent (Cook ZDES Dissection 36/180 mm) down to the level of the previous infrarenal surgical prosthesis. A self-expanding stent was implanted through the aortic dissection stent mesh in order to ensure good patency of the right renal artery, which was being perfused from the false lumen.



PROCEDURAL OUTCOME

Post-operative course was uneventful, and the patient could be discharged at day 4 after 2 days of CSF drainage surveillance in ICU. Pre-discharge control computed tomography confirmed optimal positioning of NEXUS™ in relation to a kink in the proximal ascending aorta surgical prosthesis, exclusion of proximal entry tear and a satisfying result of the STABILISE technique (Figure 2).



COMMENTS

Endovascular branched devices seem to find more and more indications in cases of residual Type A dissections, thanks to their lower neurological complication rates compared to atherosclerotic aneurysm repair. Performing supra-aortic debranching as a first staged procedure is probably also a good way to avoid cumulative problems and may also decrease stroke rates of the whole treatment.

It also allows a more ergonomic installation of the patient in the Hybrid room during the second staged endovascular procedure, since there is no need for a retrograde branch insertion through the supra-aortic trunks.

Figure 1.

A: Computed tomography angiogram illustrates the aneurysmal degeneration and false aneurysm.

B: 3-D reconstruction illustrates the narrow true lumen and extent of the chronic Type B dissection distally to the infra-renal level.

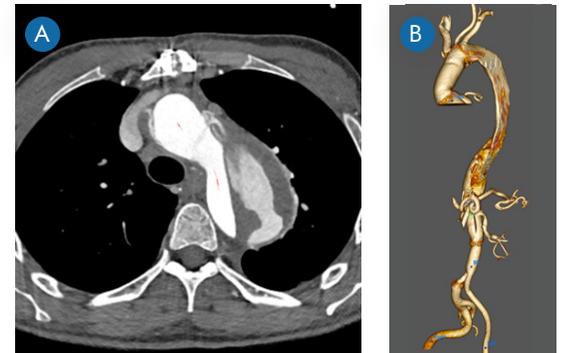
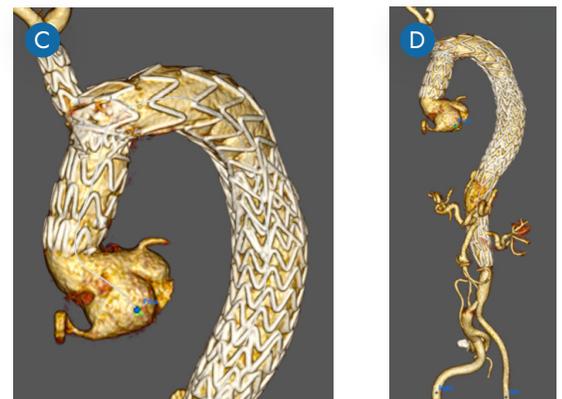


Figure 2.

3-D reconstruction generated from the pre-discharge control computed tomography angiography illustrating (C) optimal placement of NEXUS™ in relation to the kinked surgical ascending prosthesis, and with completed STABILISE technique (D).



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