Intentional preservation of collateral circulation to the artery of Adamkiewicz using axillo-axillary bypass, concomitant with thoracic endovascular aneurysm repair

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A 77-year-old woman with a thoracic aortic aneurysm involving the aortic arch was found to have collateral circulations to the artery of Adamkiewicz via the left internal thoracic artery (Fig. 1). By intentionally preserving the collateral circulation by axillo-axillary bypass, no spinal ischaemic complication occurred after the endovascular aneurysm repair (Fig. 2).

Figure 1: The left anterior lateral view of a volume-rendering image with semi-transparent skeletal system shows that the left seventh intercostal artery (ICA 7), which is the origin of the artery of Adamkiewicz (arrowed), is occluded proximal to the aorta. This image also shows collateral circulation from the left internal thoracic artery (ITA) and muscular branch of the left ninth intercostal artery (ICA 9) to ICA 7.

Figure 2: The left anterior lateral view of a volume-rendering image after the endovascular aneurysm repair shows full continuity from the ITA to the artery of Adamkiewicz (arrowed) via axillo-axillary bypass. Because of the coverage of ICA 9 by the stent graft and the left subclavian artery, axillo-axillary bypass was intentionally performed to preserve collateral circulation. In this case, we performed an axillo-axillary bypass instead of a direct left axillary-left carotid artery bypass or direct anastomosis, owing to concerns over the risk of cerebrovascular events.