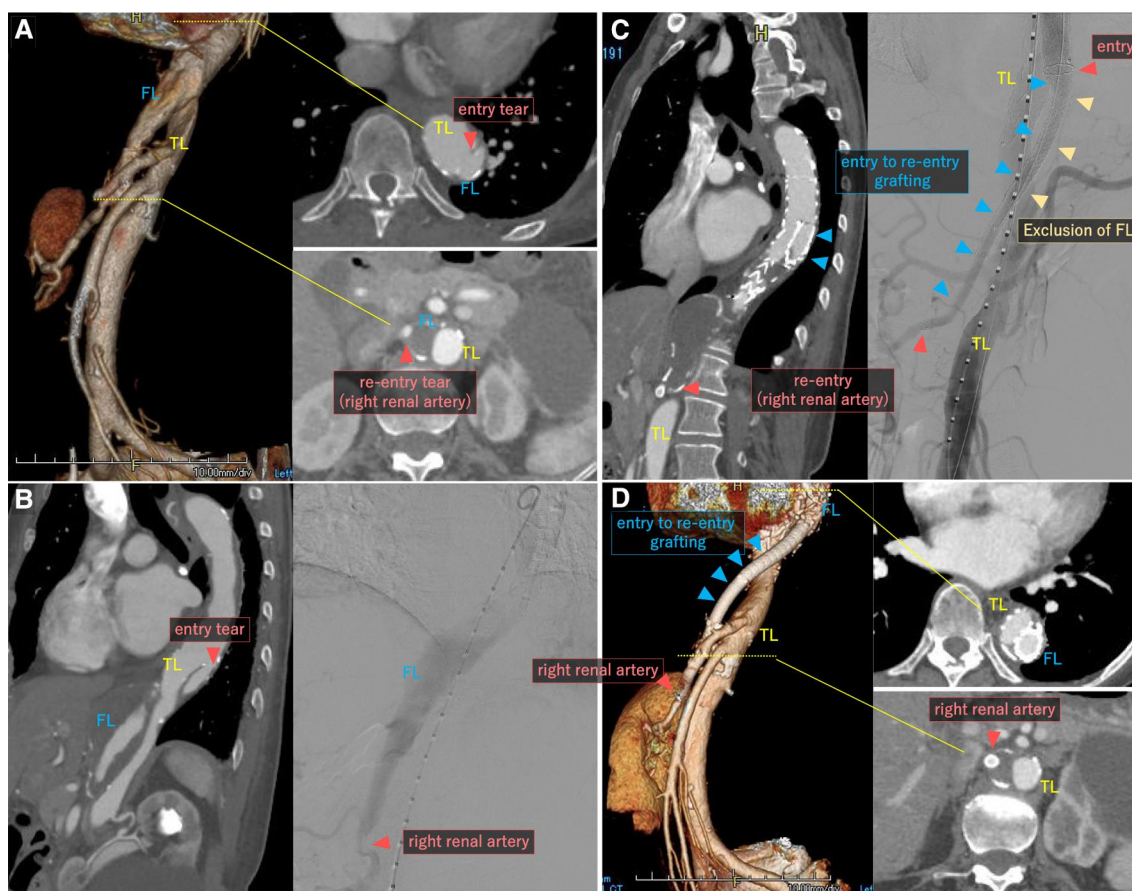


# Novel technique of entry to re-entry stent grafting enables not only to exclude false lumen but also to perfuse renal artery in patients with chronic Type B aortic dissection

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## Case

We present the case of a 67-year-old woman diagnosed with dissecting thoracoabdominal aneurysm and a history of Type B aortic dissection. Computed tomography revealed an entry tear located in the proximal portion of the descending aorta and a distal re-entry tear located at the right renal artery ostia. The maximum diameter of the aneurysm was measured at 52 × 46 mm. Additionally, the right renal artery originated from the false lumen (*Panels A and B*), and the left kidney showed a renal cyst and suspected sub-clinical renal dysfunction. Our surgical approach aimed to not only exclude the false lumen but also to perfuse the right renal artery. We inserted a Y-shaped stent graft (Endurant 28-16-124) through the right common femoral artery, deploying it to seal the proximal entry tear of the thoracic aorta. Next, we cannulated the right renal artery via the false lumen and connected the entry and re-entry tears using covered stents (Viabhan 6 × 100, 7 × 10, VBX 8 × 79) to exclude the false lumen and restore perfusion to the right renal artery (*Panels C and D*). At the 6-month post-operative follow up, the false lumen was effectively excluded, the maximum aneurysm diameter had decreased to 52 × 42 mm, and the renal function was within normal limits.

While previous reports have shown that entry sealing and false lumen exclusion through thoracic endovascular aortic repair improve survival and slow disease progression in patients with Type B aortic

dissection, the anatomical differences between entry and re-entry tears remain a significant challenge. In our case, we encountered the dilemma of addressing both the exclusion of the false lumen and the perfusion of the right renal artery arising from the false lumen. Our innovative approach involved connecting the entry and re-entry tears using a covered stent graft through the false lumen. This novel concept of false lumen exclusion shows promise in improving therapeutic outcomes for patients with Type B aortic dissection.

**Consent:** The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient's family in line with Committee on Publication Ethics guidance.

**Conflict of interest:** None declared.

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## Data availability

The data that support the findings of this study are available from the corresponding author, Takaaki Samura, upon reasonable request.

**Pre-registered clinical trial number:** The pre-registered clinical trial number is 4065-1.