Open Thoracoabdominal Aortic Repair Following A Fenestrated Endovascular Aortic Repair (FEVAR)

Objective: Endovascular aortic interventions have become increasingly common. However, the feasibility of subsequent open repair has not been clear. We aim to showcase an open thoracoabdominal aortic repair following a fenestrated endovascular aortic repair (FEVAR).

Video Case Summary: After the left thoracoabdominal incision in the left sixth intercostal space extending towards the umbilicus, the left heart bypass was initiated with the left inferior pulmonary vein and femoral artery cannulations. The proximal descending thoracic aorta was then mobilized. An epiaortic ultrasound was utilized to visualise the underlying FEVAR stent. Serial aortic cross-clamping technique was applied throughout the procedure to isolate the segment of the aorta being operated. The proximal descending thoracic aorta was incised to expose the FEVAR. The proximal aortic anastomosis was performed with a straight Dacron graft. The distal descending thoracic aorta was then opened to mobilise the FEVAR. The superior mesenteric and left renal artery stent grafts were mobilised and prepared for individual Dacron graft anastomoses. Perfusion to these visceral branches was maintained with two separate perfusion cannulae. Custodiol HTK solution (histidine-tryptophan-ketoglutarate) was used for renal protection. The coeliac trunk and the right renal artery were thrombosed, hence, they were not reimplanted. The distal end of the FEVAR was cut and trimmed, and the distal aortic stump was anastomosed to the Dacron graft. The individual visceral Dacron grafts were then anastomosed separately to the main Dacron graft in an end-to-side fashion. Finally, the cross-clamps were released and the left heart bypass was discontinued.

Conclusions: Open thoracoabdominal aortic repair after FEVAR is feasible and can be performed safely in experienced hands.

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