

# Endovascular Repair of Type I Endoleak after TEVAR with Laser in Situ Fenestration of Left Subclavian Artery

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## Introduction

85F who presented with 5.6cm thoracic aortic aneurysm (TAA). Patient underwent thoracic endovascular aneurysm repair (TEVAR). She presented one month postoperatively with back pain and was found to have Type I Endoleak on CT Angiogram. She was admitted, medically managed with strict blood pressure parameters and revision surgery was planned.

In the index procedure, the TAA was treated with placement of the proximal endograft immediately distal to left subclavian artery. Further revision would necessitate covering the left subclavian artery, requiring an open extra-anatomic bypass or advanced endovascular techniques. The patient was high risk for open surgical approach, and therefore laser in situ fenestration to revascularize the left subclavian artery was elected to be performed.

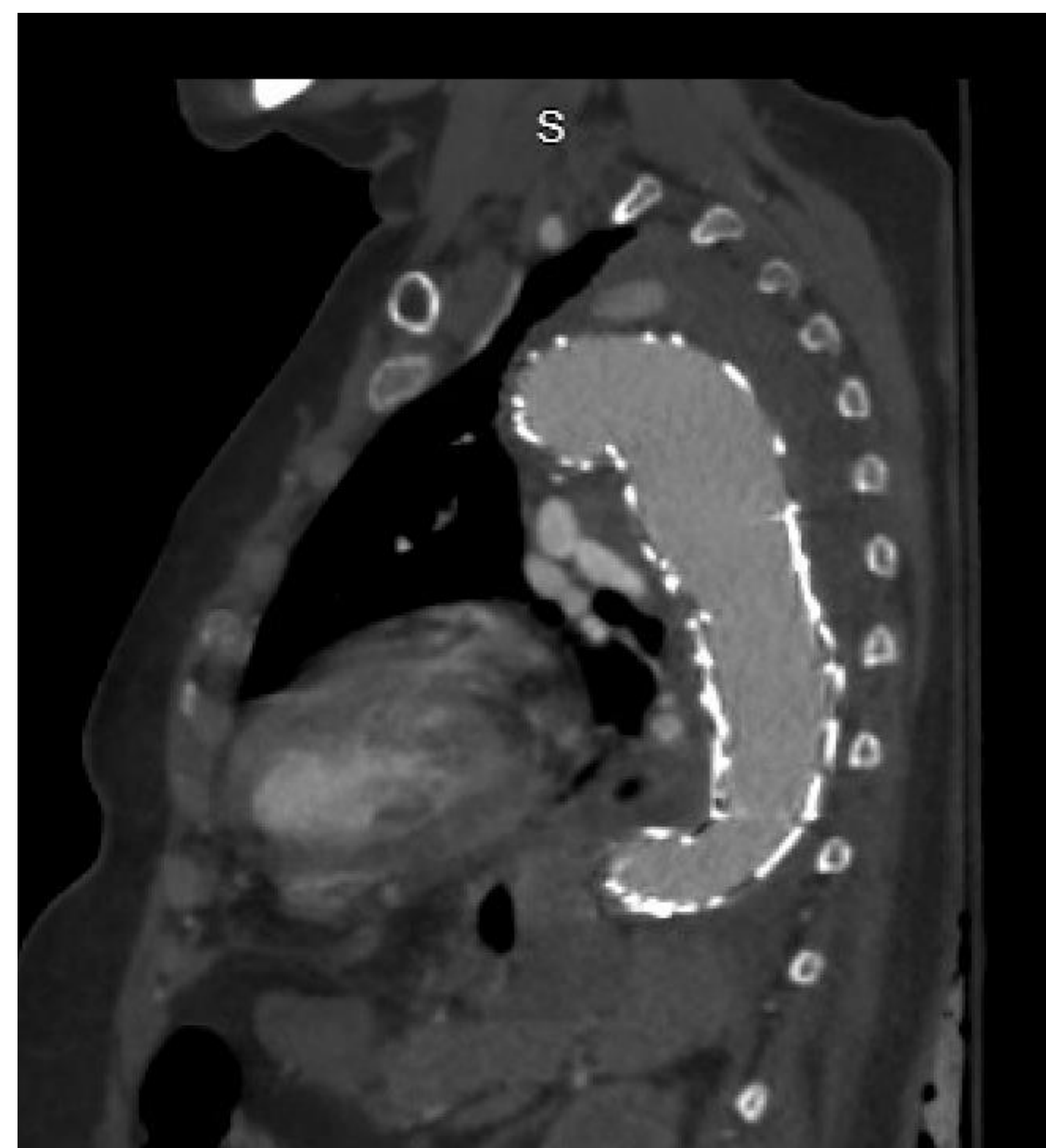


Figure 1:  
Preoperative  
CTA  
demonstrating  
type I endoleak

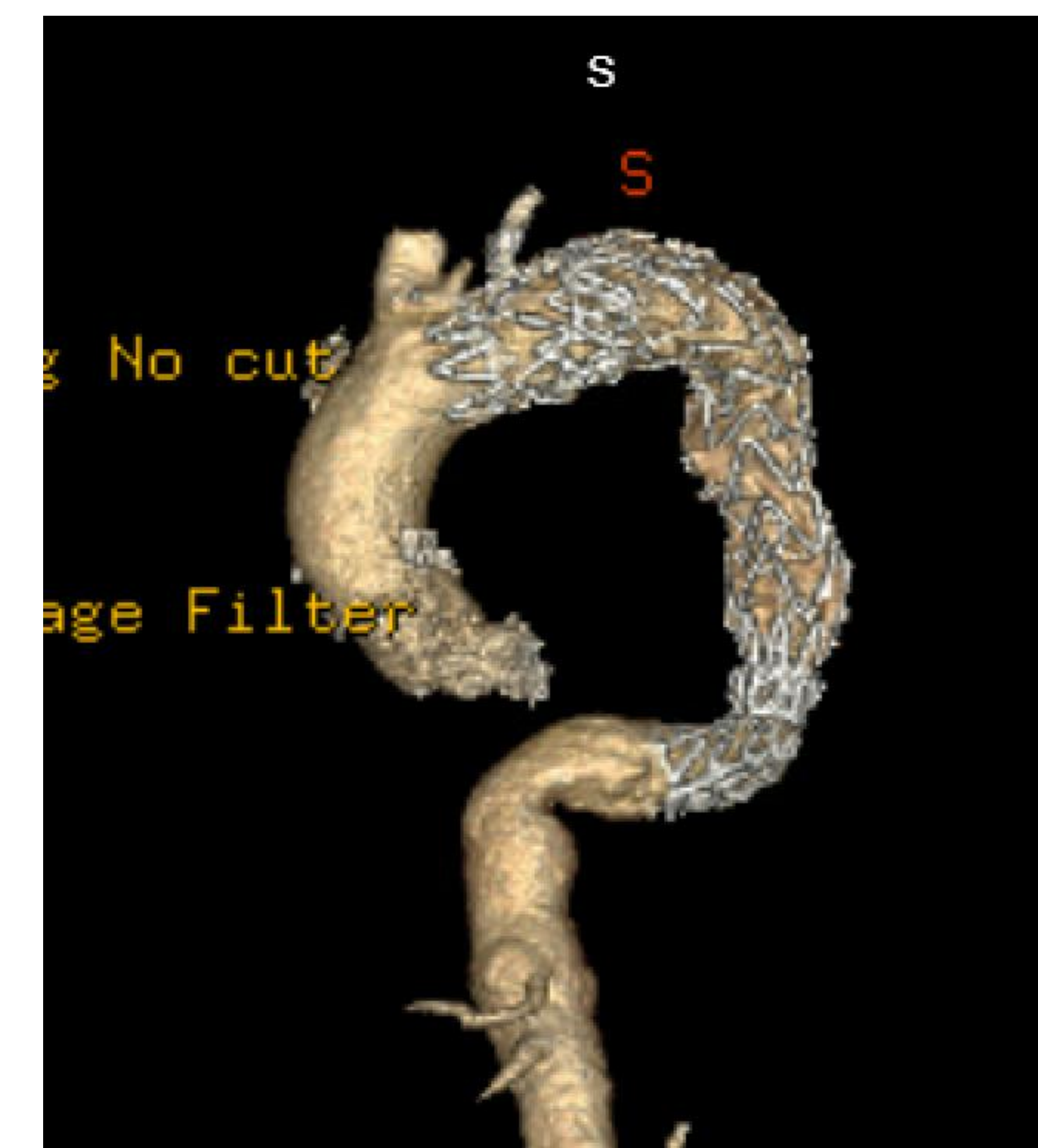


Figure 2:  
Postoperative CTA  
reconstruction. No  
endoleak was identified  
on this follow up CT .

## Operative Case Details

The thoracic endovascular graft (40mm x 150mm) was delivered and positioned to cover the left subclavian artery. The patient had bovine arch anatomy, and the graft was deployed immediately distal to the bovine arch. A left brachial artery cutdown was performed and the laser catheter device was delivered retrograde to the origin left subclavian artery. The laser device was powered to create an opening in the thoracic endograft at the origin of the left subclavian artery. The opening was post dilated with 4mm x 40mm balloon. Left upper extremity angiogram performed to ensure placement of the stent proximal to the vertebral artery origin. An 8mm x 39mm covered stent was then deployed across this opening and into the left subclavian artery. The inner and outer portions of this stent were flared with a 10mm x 20mm balloon. Completion angiogram demonstrated brisk flow through the aortic arch, including through the left subclavian artery, without any endoleak.

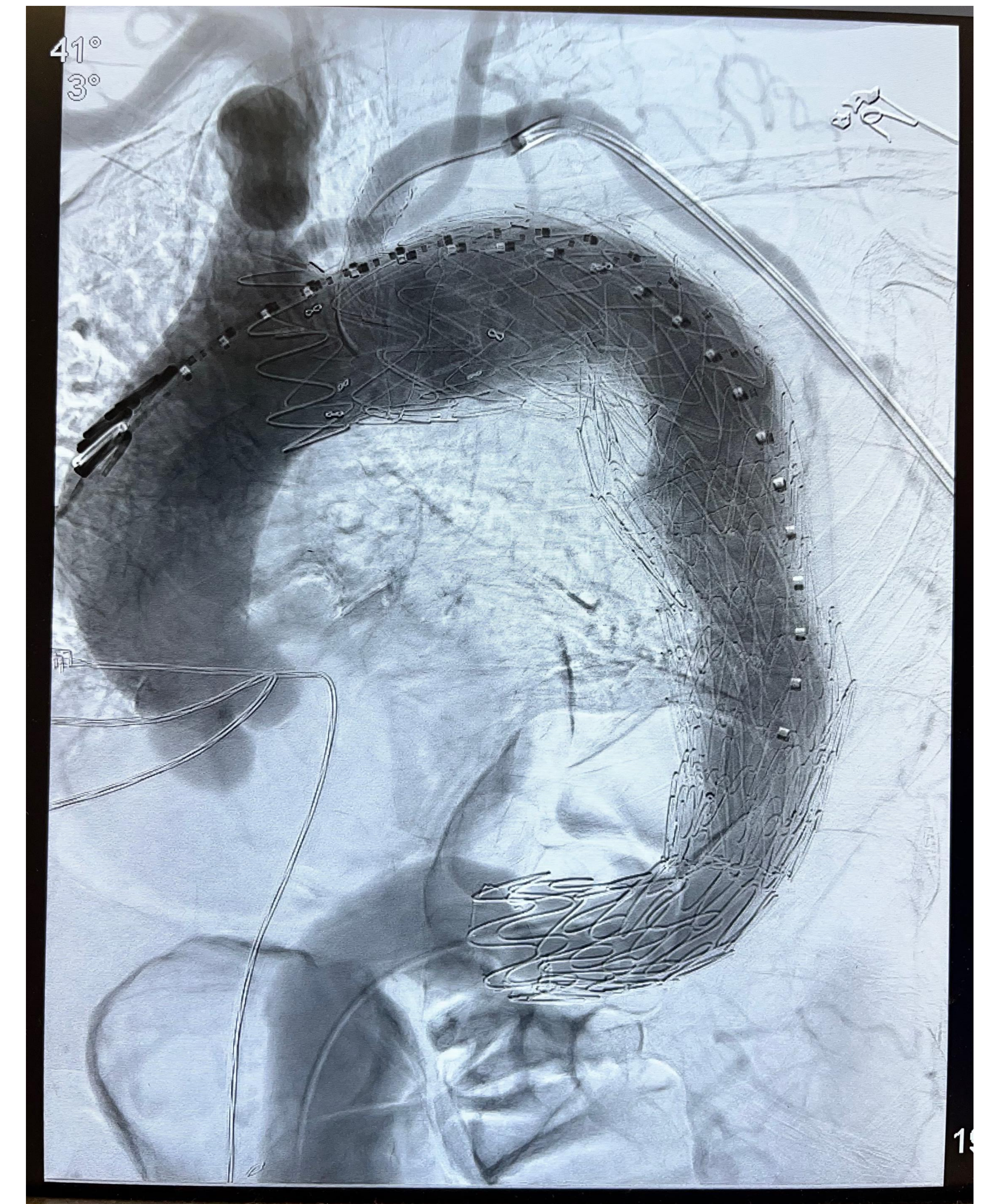


Figure 3:  
Completion Intra-operative Aortogram. Thoracic endograft  
in good position, left subclavian stent in good position,  
patency of great vessels and no endoleak was observed

## Discussion

Successful repair of Type I Endoleak after TEVAR with laser fenestration at the origin of the left subclavian artery and covered stent placement. No endoleak was observed on follow up CT Angiogram. Laser in situ fenestration is an effective technique for revascularization of the left subclavian artery in TEVAR in lieu of open surgery.