

True Lumen Preparation with Endovascular Electrosurgical Septotomy to Facilitate Complex Endovascular Repair of TAAA

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INTRODUCTION

- We present a unique endovascular approach using electrosurgical septotomy for true lumen expansion, followed by a physician-modified fenestrated endovascular repair of a complex TAAA.

CASE PRESENTATION

- A 62-year-old male with a history of DeBakey Type 1 aortic dissection status post open ascending repair and TEVAR in 2013. presented with a chronic Stanford type B dissection and associated thoracoabdominal aortic aneurysm (TAAA).
- Past medical history is significant for COPD on home oxygen and Morbid obesity (BMI 47)
- The aneurysm measured > 6 cm, indicating a need for repair.
- This case presented several unique challenges:
 - The patient was a poor candidate for an open repair.
 - Narrow (6mm) true lumen prohibited fenestrated or branched endovascular repair.
- The aortic repair was performed in two stages.



Figure 1. Preoperative 3D CT Reconstructions

ELECTROSEPTOTOMY

- The patient underwent endovascular electrosurgical septotomy using an .014 Asahi Confianza wire from T11 into distal aorta.

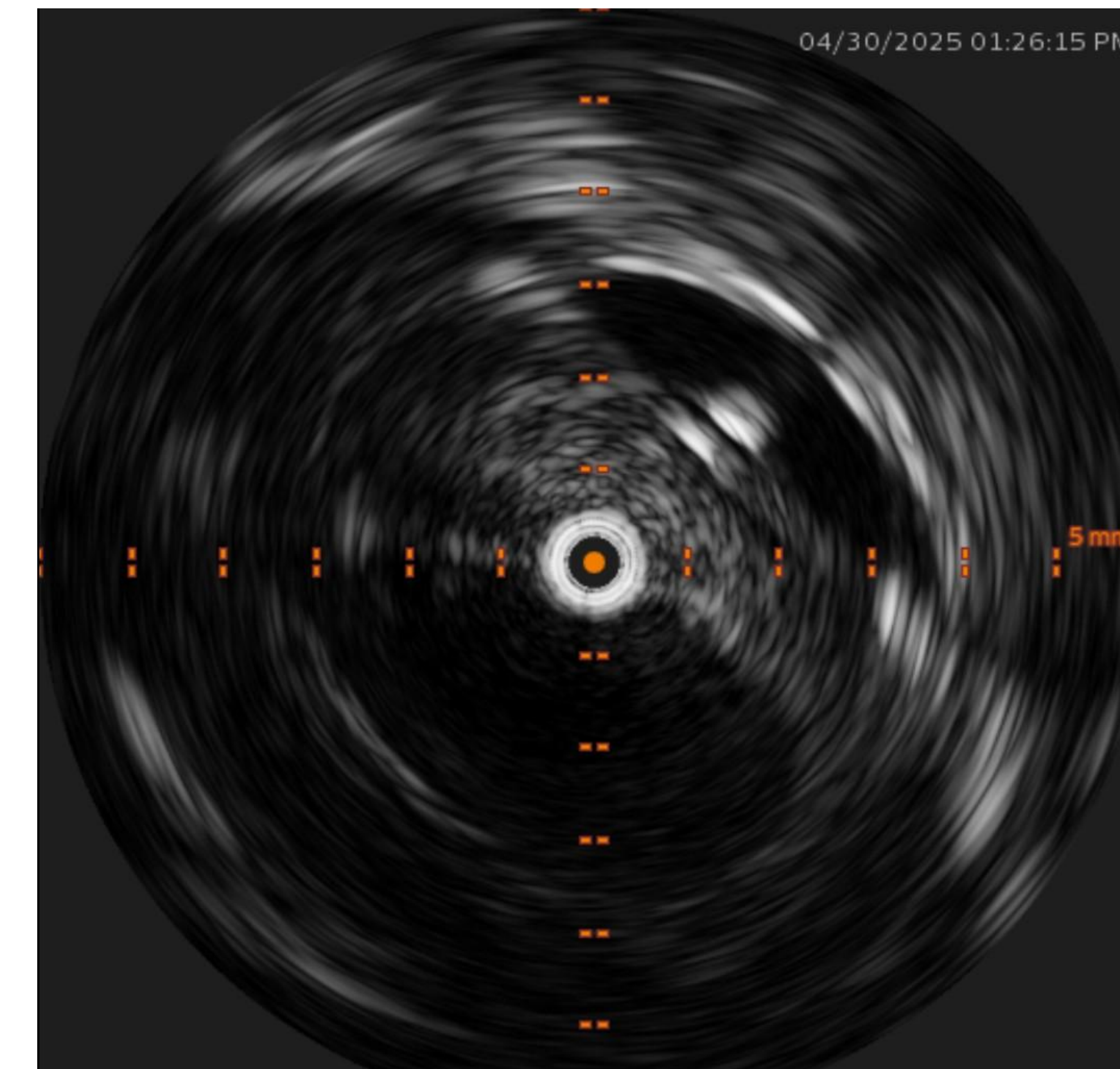


Figure 2. Pre-Septotomy EVUS

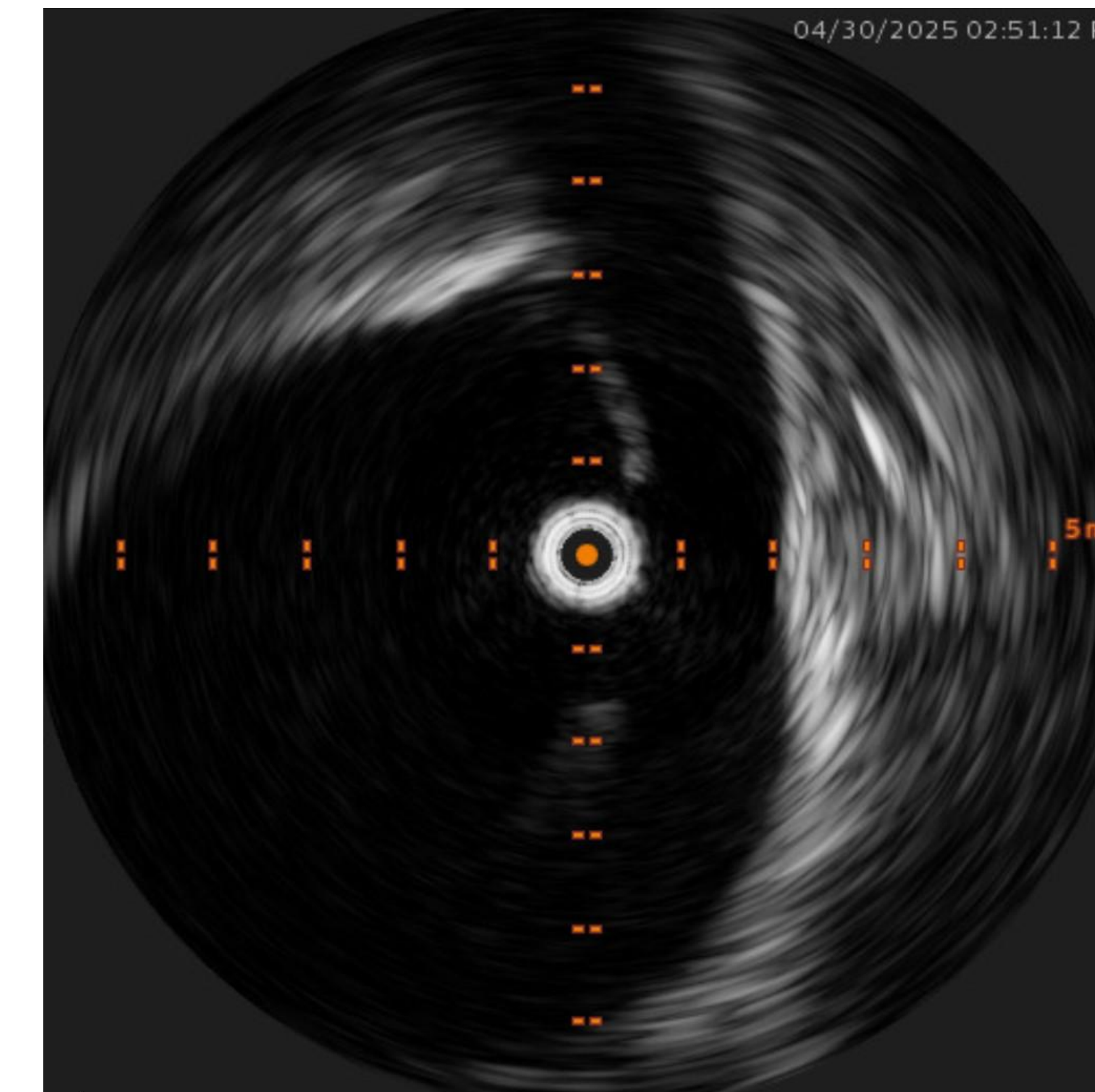


Figure 3. Post-Septotomy EVUS

- TEVAR (34 x 30 x 200 mm Terumo Replay Pro graft) extension and EVAR (33 x 33 x 70 mm Treo abdominal stent graft) were performed.
- A Zenith dissection stent (36 x 180 mm) was placed across the visceral segment to aid expansion of the true lumen.
- Post septotomy intravascular ultrasound shows an expansion and communication of the true lumen with the false lumen.

SECOND STAGE REPAIR

- The patient returned one month later for the physician-modified fenestrated repair.
- We performed a four-vessel fenestration of a Terumo Treo graft (33 x 120 mm) for the celiac artery, superior mesenteric artery, and bilateral renal arteries.
- Fenestrations were stented with Gore BX balloon expandable stents.

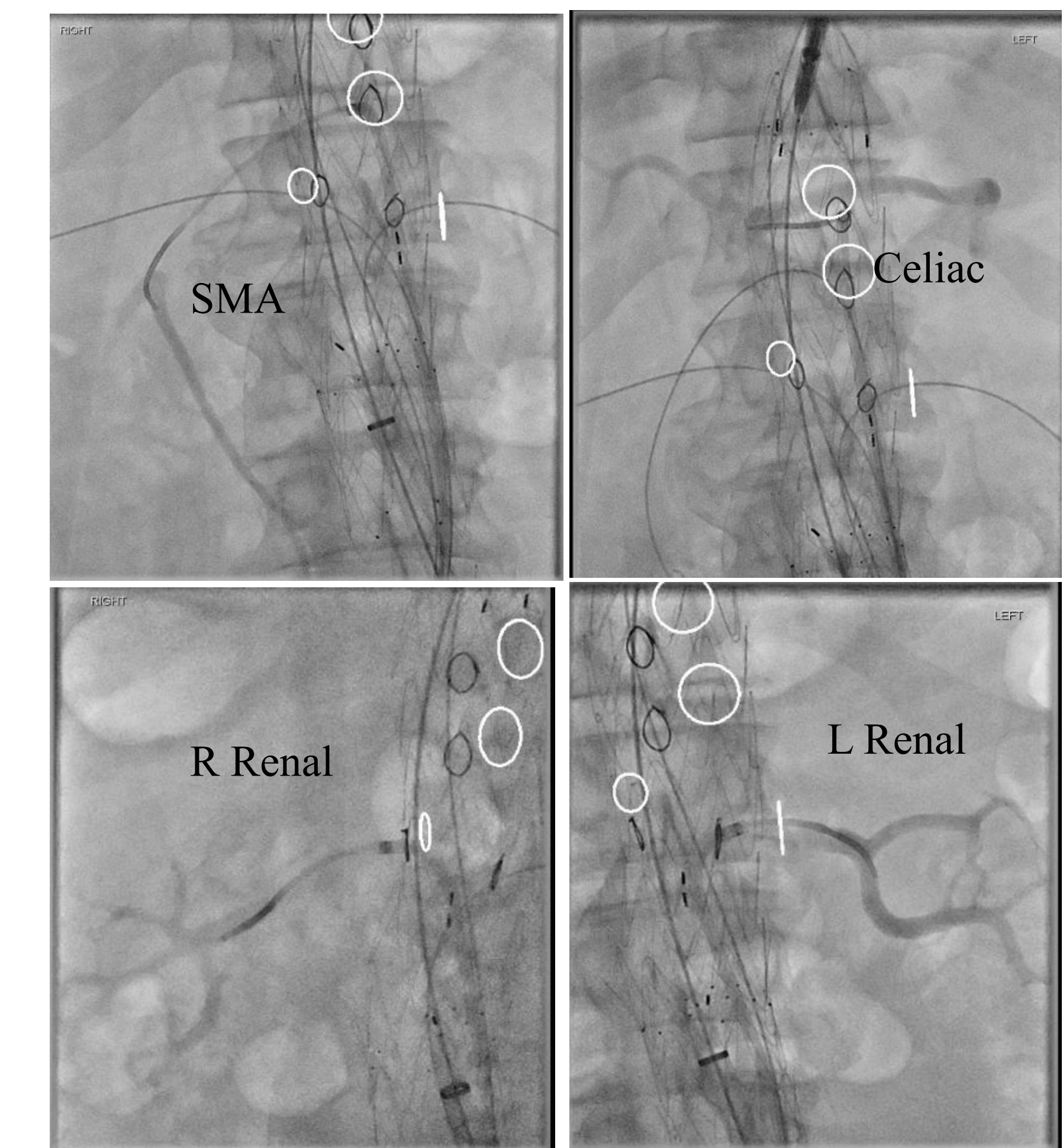


Figure 4. Completion runs after visceral artery stenting

RESULTS

- The patient was discharged on postoperative day 3 following the fenestrated repair.
- Follow-up imaging at 13 months demonstrated patent visceral stents, no endoleak, and aneurysmal sac regression from 7.2 to 6.8 cm.