

INTRODUCTION

- Abdominal aortic aneurysms (AAA) are commonly treated with Endovascular Aortic Aneurysm Repair (EVAR)
- Post-EVAR surveillance and follow up is important to identify an endoleak
- Persistent endoleaks are a known complication of EVAR that often require additional intervention
- There are multiple types of endoleak (Figure 1)**
 - Type 1 endoleaks denote leaks due to inadequate seal, and are divided further into 1A (proximal seal zone) and 1B (distal seal zone)
 - Type II are due to branch vessel (lumbar artery, inferior mesenteric artery)
 - Type III endoleaks are due to disconnect between portions of the graft component
 - Type IV are due to porosity of graft
 - Type V are due to endotension
- We present the case of a patient with endoleak post-EVAR.

CASE PRESENTATION

- Elderly male with history of EVAR at outlying facility presented to clinic with enlarging iliac artery aneurysm
- Computed tomography angiogram(CTA):** 5 cm aneurysm of the right common iliac artery, likely due to a Type 1B endoleak in the distal portion of the stent (**Figure 2a**)
- Operative Plan:** Due to the existing aortic endograft with a high flow divider, this required a combined axillary and femoral artery approach (**Figure 3**)
- The patient underwent placement of iliac branch endoprosthesis (IBE) at the right common iliac artery bifurcation with limb extension into both the external iliac and hypogastric arteries
- Completion angiogram:** preserved right hypogastric artery and no endoleak (**Figure 2b**)

IMAGES

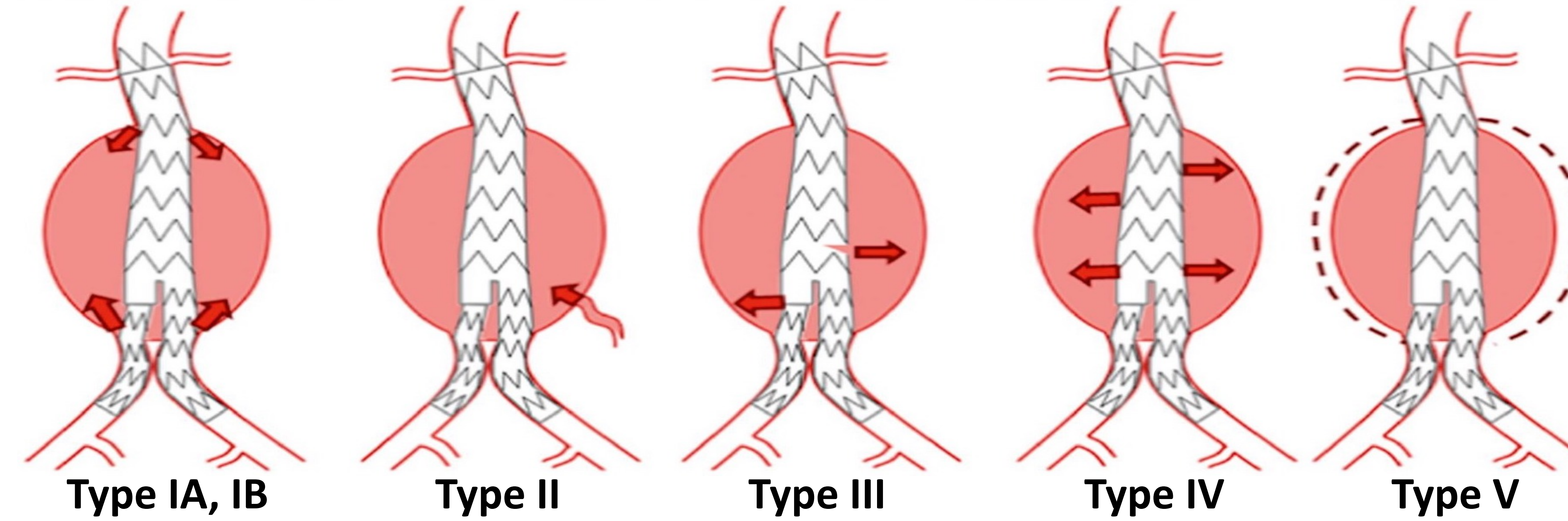


Figure 1. Types of Endoleak

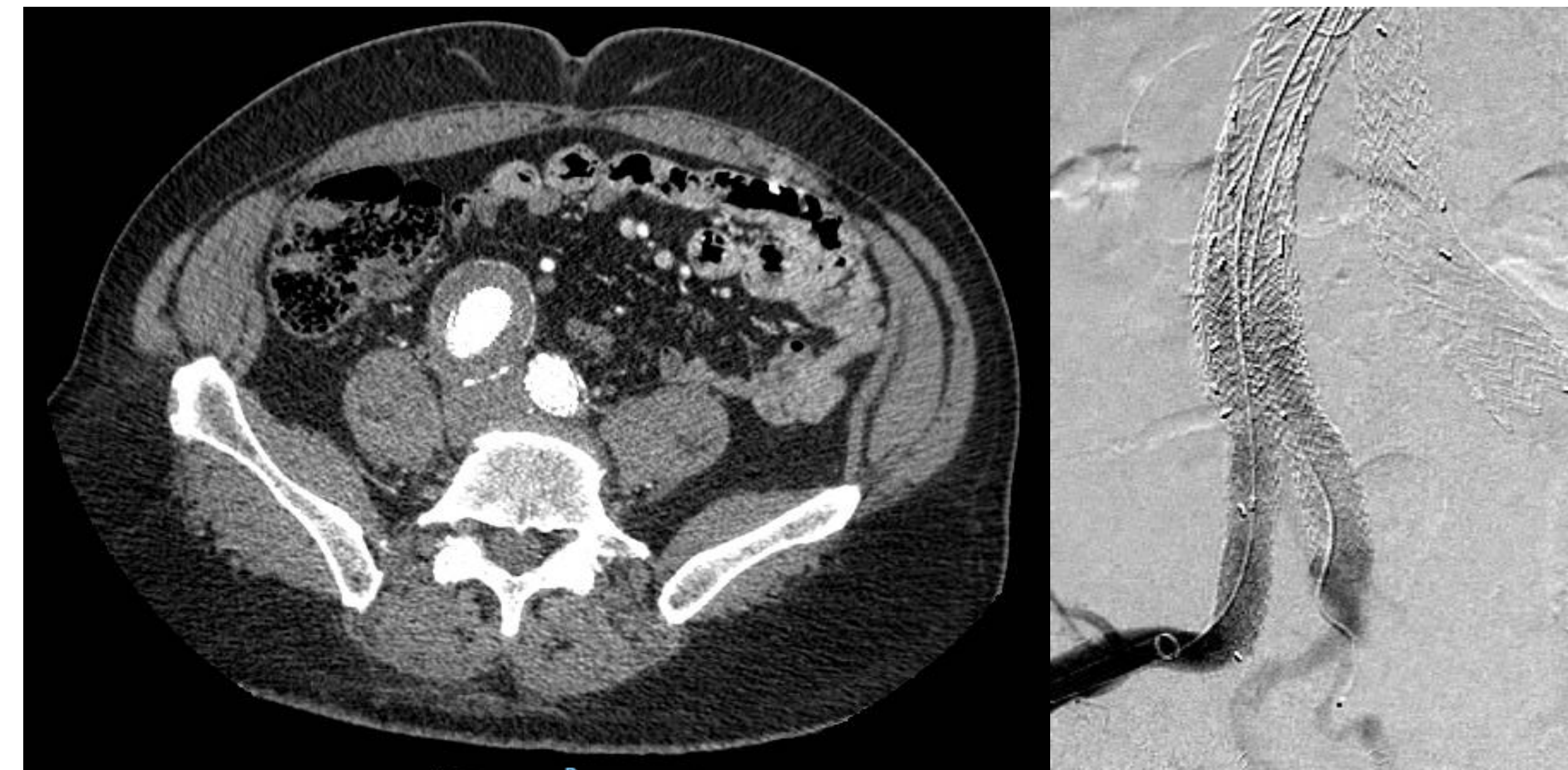


Figure 2a and 2b. Pre-op CTA of 5 cm right common iliac artery aneurysm and completion angiogram of IBE with repaired endoleak and patent right hypogastric artery.



Figure 4a and 4b. IBE device with illustration of the device in place.

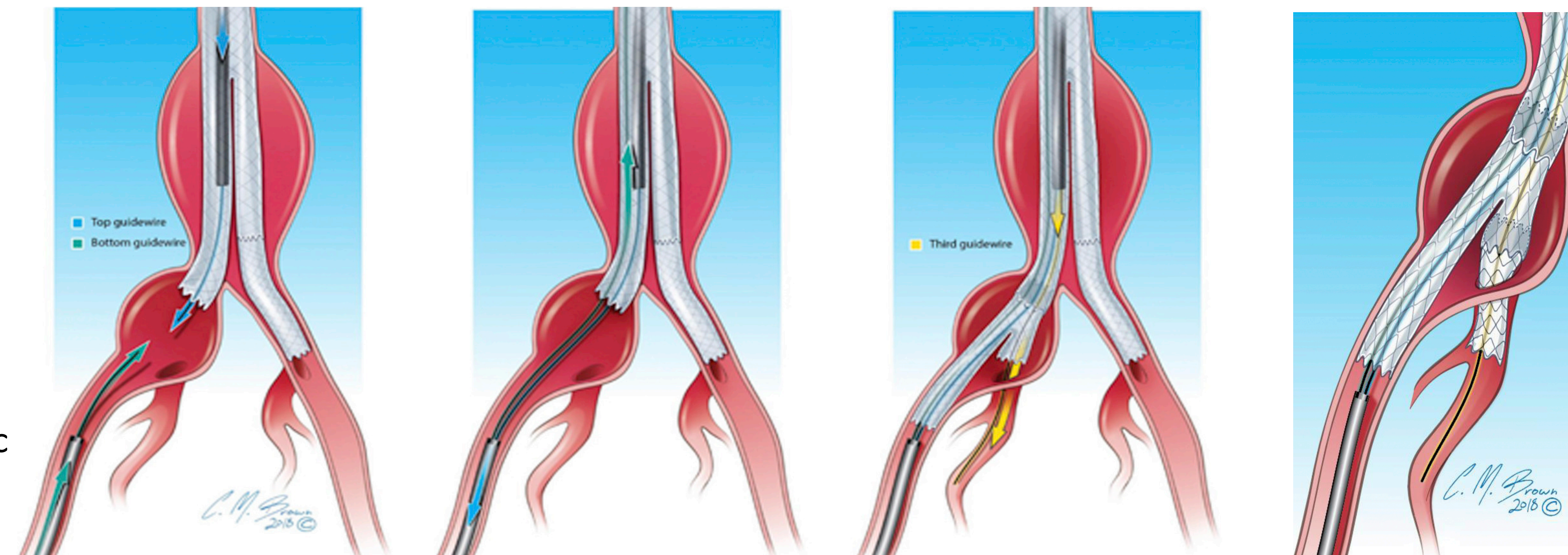


Figure 3. Illustration demonstrating extension of IBE with combined axillary and femoral artery approach.

DISCUSSION

- Endoleaks are a known complication of EVAR and frequently require intervention
- Diagnosis of endoleak is challenging, often requiring an angiogram with imaging in multiple angles
- Management is based on the type of leak
- Our patient had a type IB, due to leakage around the distal right common iliac limb which was managed with placement of an IBE device (**Figure 4a**)
- Relining the endograft with placement of an IBE device and extension of the stents into the external iliac and hypogastric arteries ensured development of adequate seal while preserving blood flow distally (**Figure 4b**)

CONCLUSION

- With extensive pre-operative case planning and an intricate knowledge of the vascular anatomy, the modern vascular surgeon is equipped to provide advanced endovascular treatment options for complex vascular conditions