CIRA Case of the Week

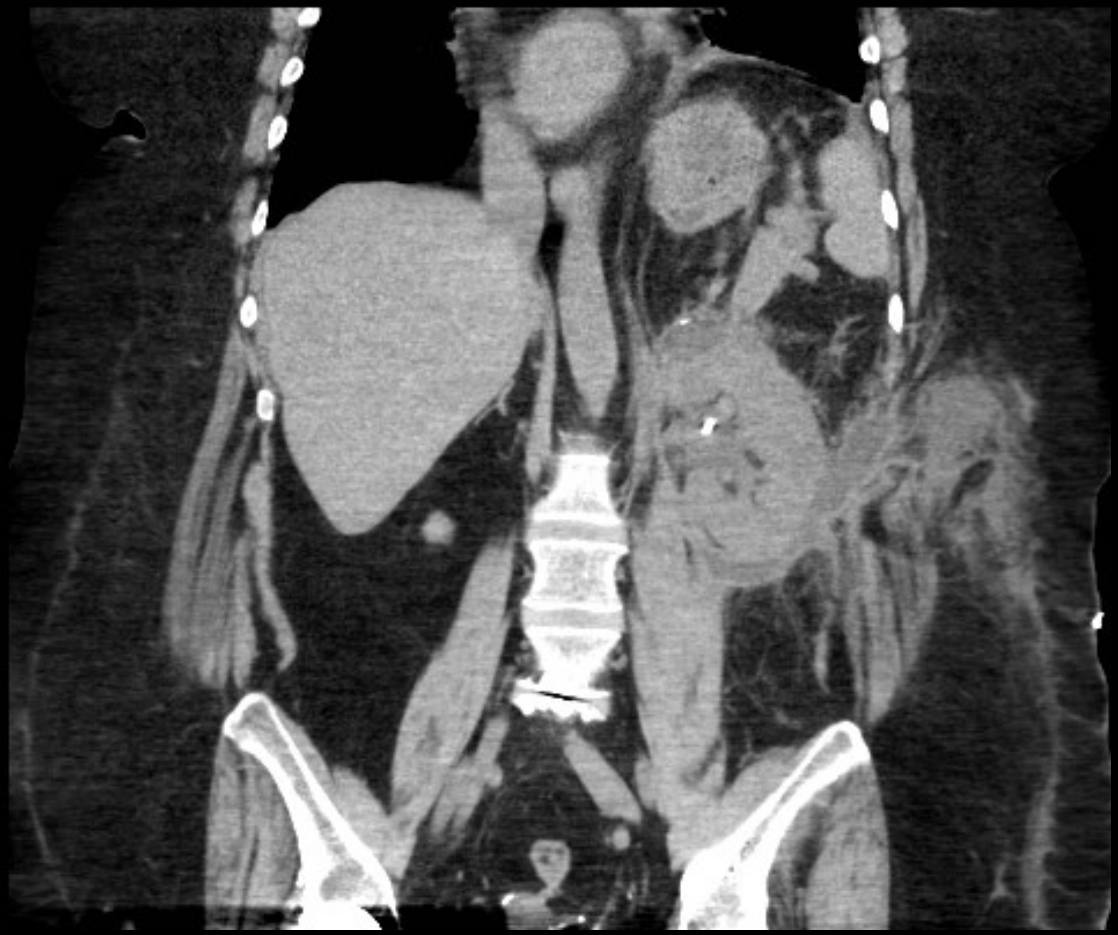
Case Courtesy of Drs. B. Shayegi, F. Bazan and D. McNally

University of Alberta Hospital

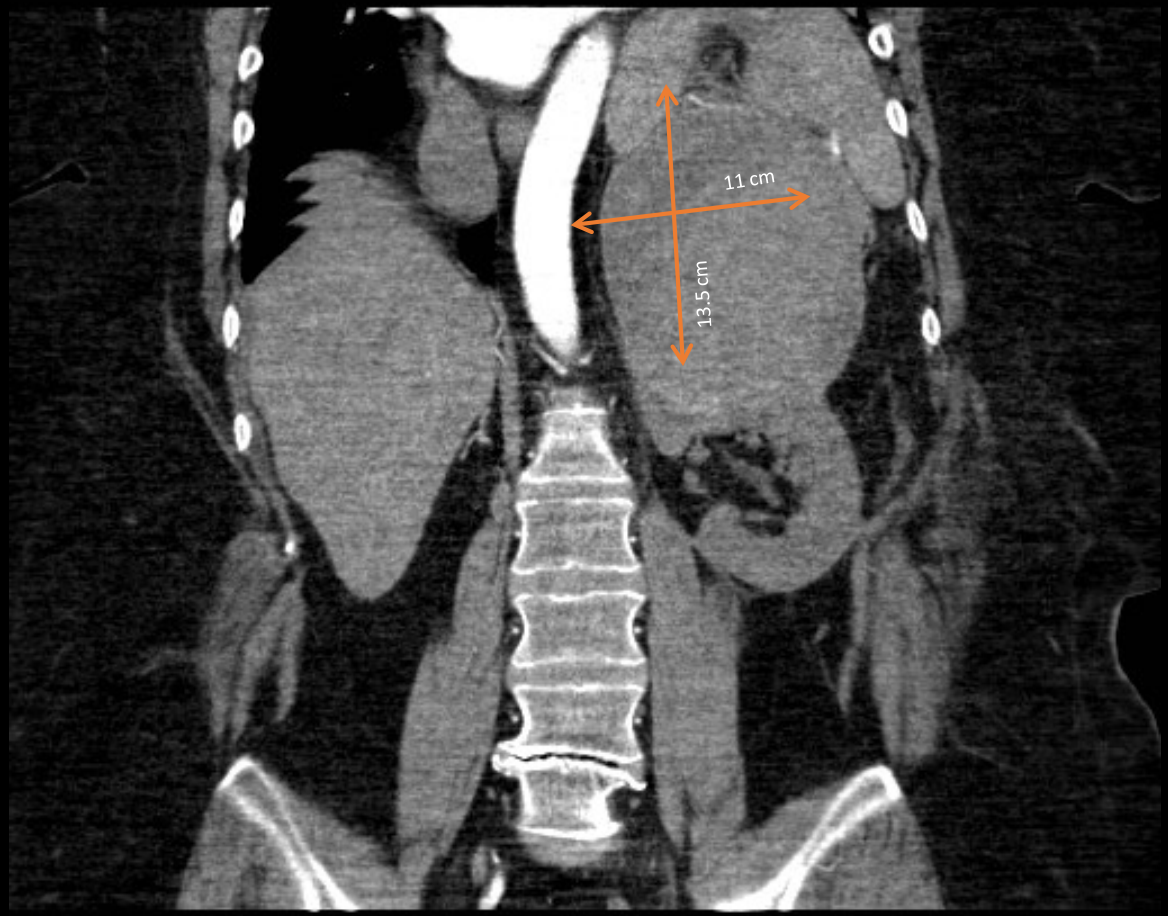
Case presentation:

- 48 year old female
- Presented with fever, refractory hypertension, deteriorating renal function
- History:
  - End-stage renal disease secondary to lupus nephritis
  - Orthotopic renal transplant 2 years previously
  - Perforated diverticulitis 3 years previously
  - Hartmann procedure with ileostomy

CT 2/12 post-transplant



CTA 26/12 post-transplant



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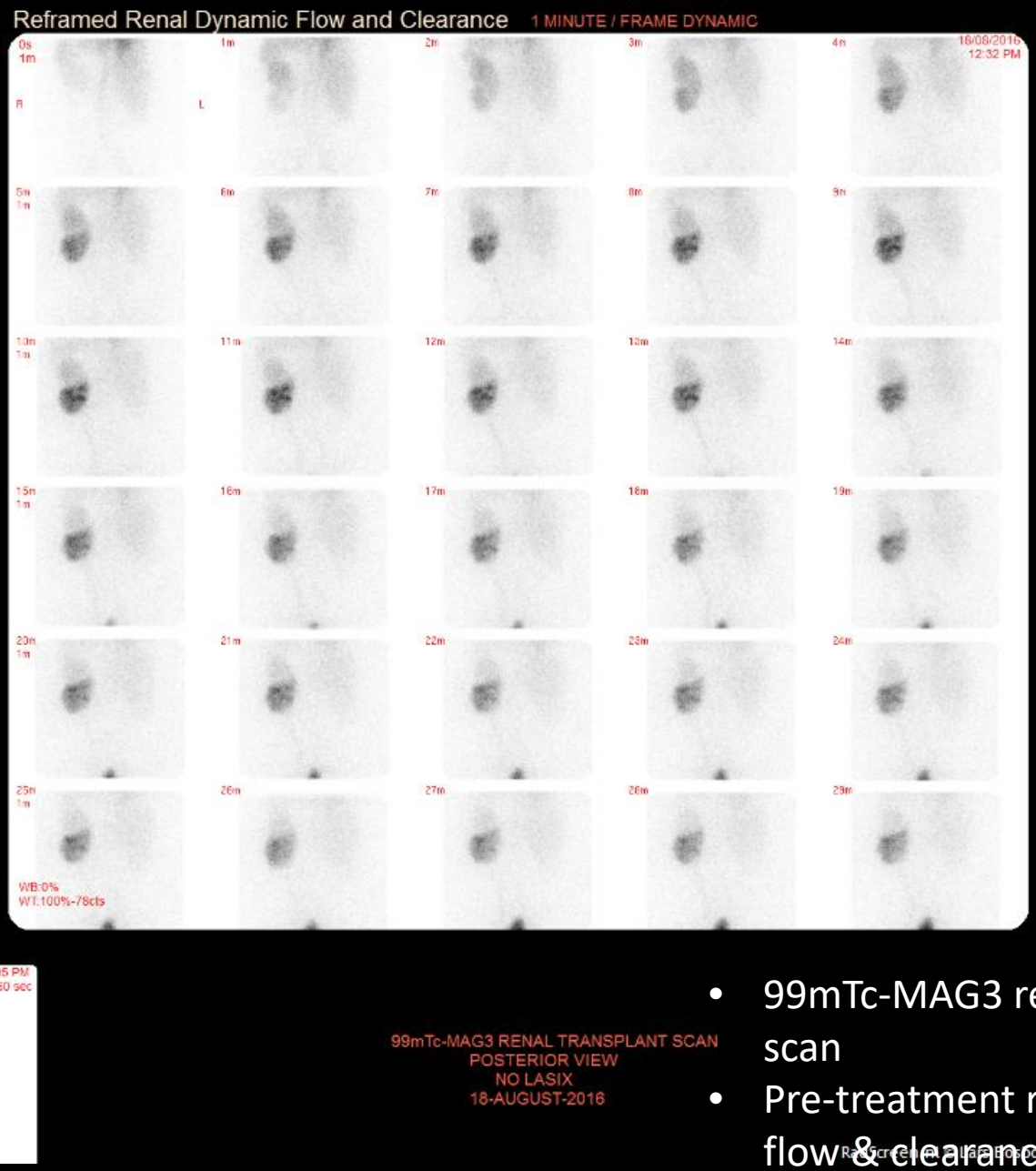
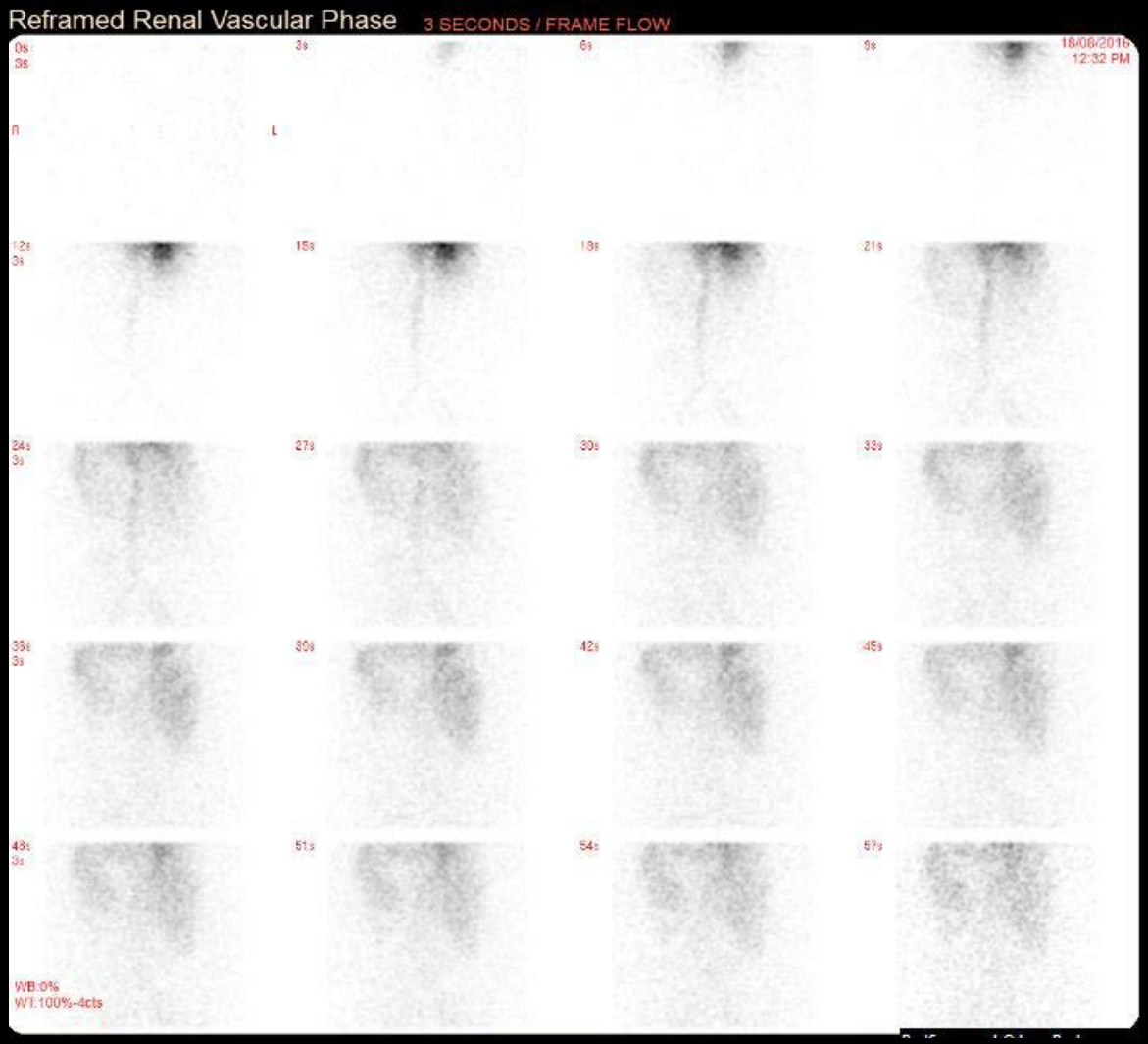


- 99mTc-MAG3 renal transplant scan
- Pre-treatment renal dynamic flow & clearance



- 99mTc-MAG3 renal transplant scan
- Pre-treatment, vascular phase

MDT opted for endovascular treatment:

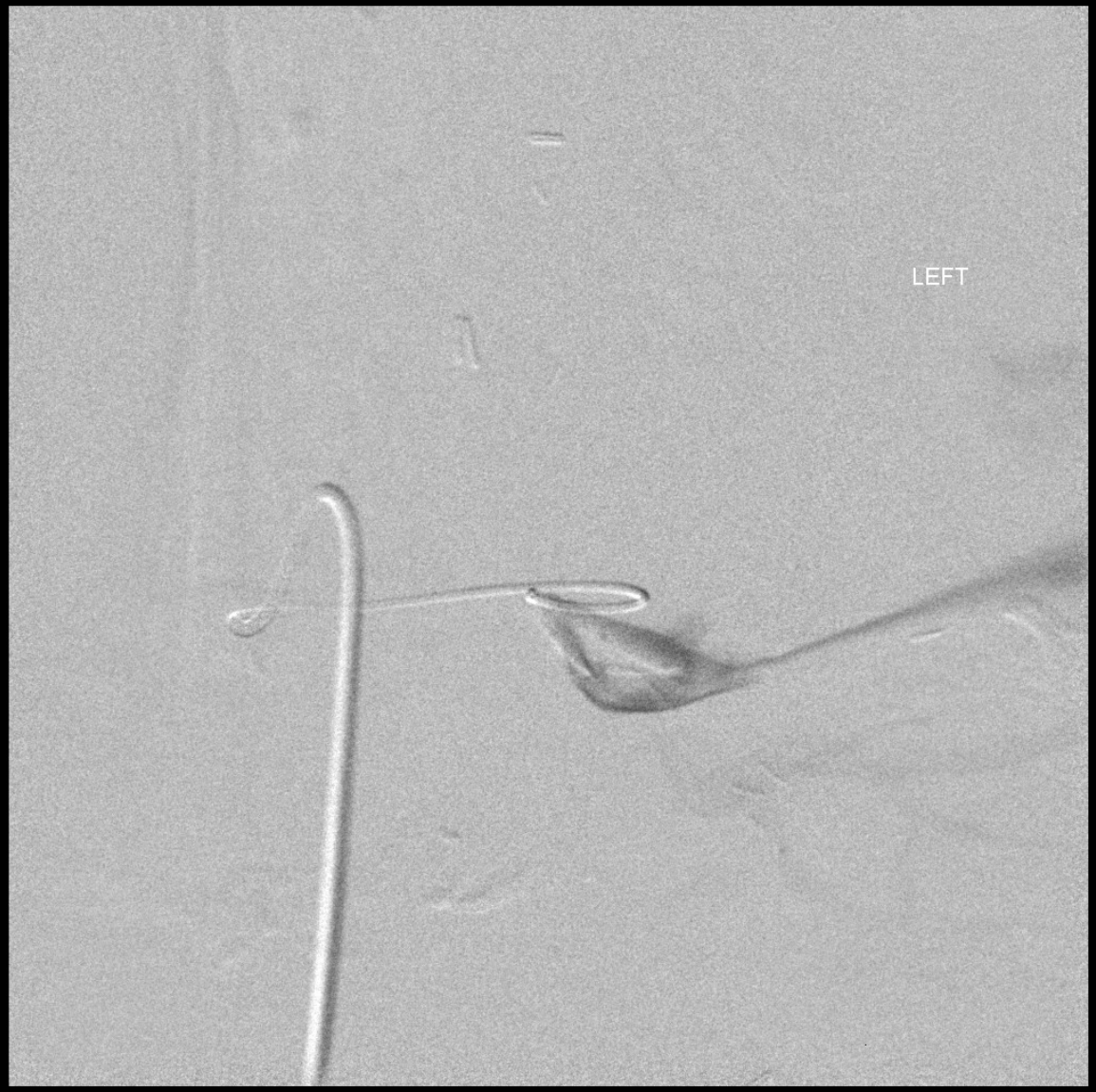
- Under GA
- Right femoral access
- Angiography demonstrated a massive pseudoaneurysm originating from the splenorenal anastomosis

Endovascular treatment 27/12 post-transplant

Endovascular treatment 27/12 post-transplant

Lost in an abyss

Endovascular treatment 27/12 post-transplant



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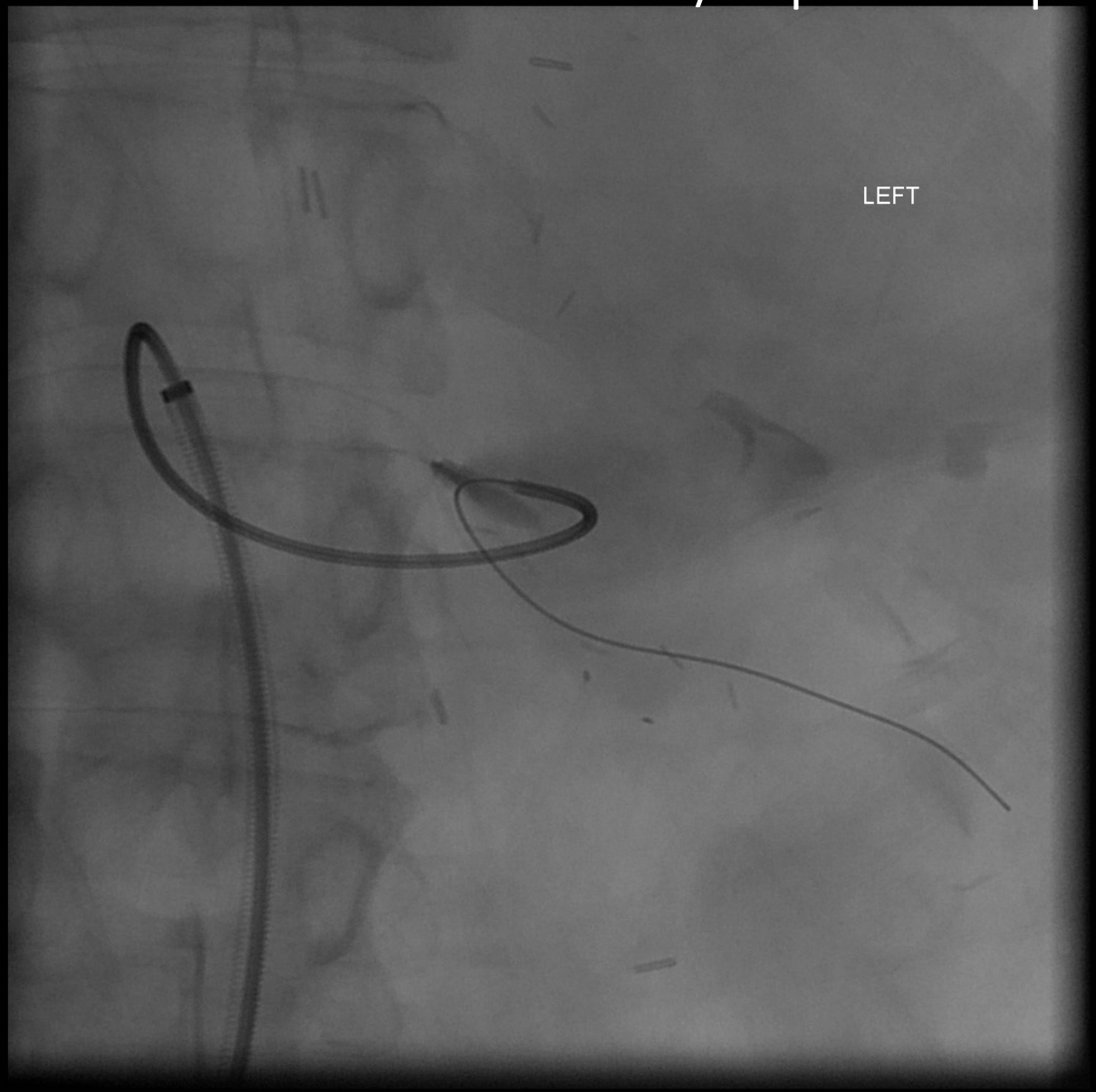
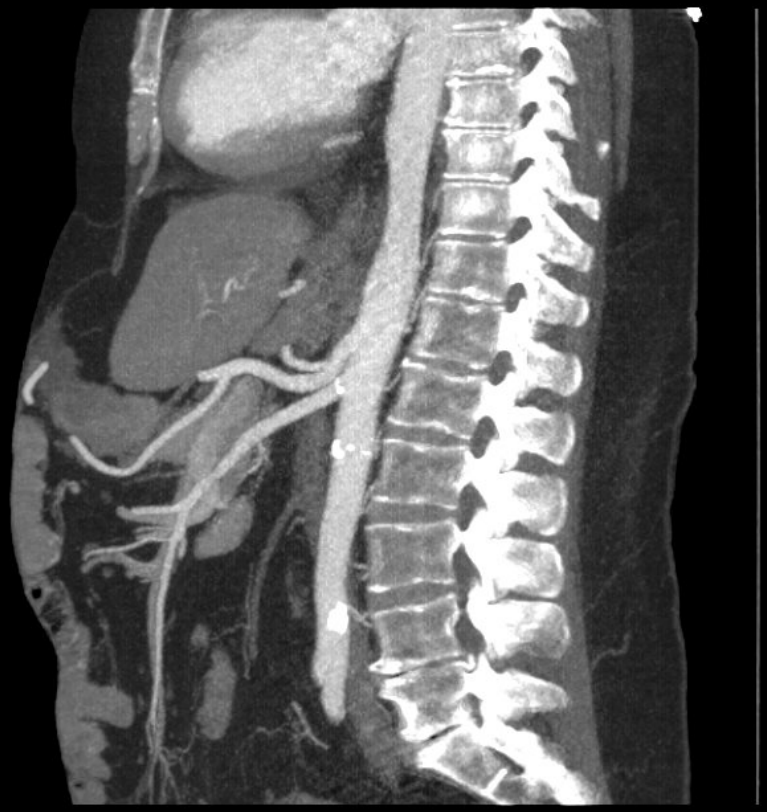


Second attempt 6 weeks later:

- General anesthetic was administered
- Brachial artery approach opted/micropuncture
- 5 French sheath
- 5 French Bernstein for celiac trunk selection
- Residual pseudoaneurysm filling, less pronounced
- Improved visualization of the transplant renal artery

CTA 26/12 post-transplant



2nd Endovascular treatment 28/12 post-transplant

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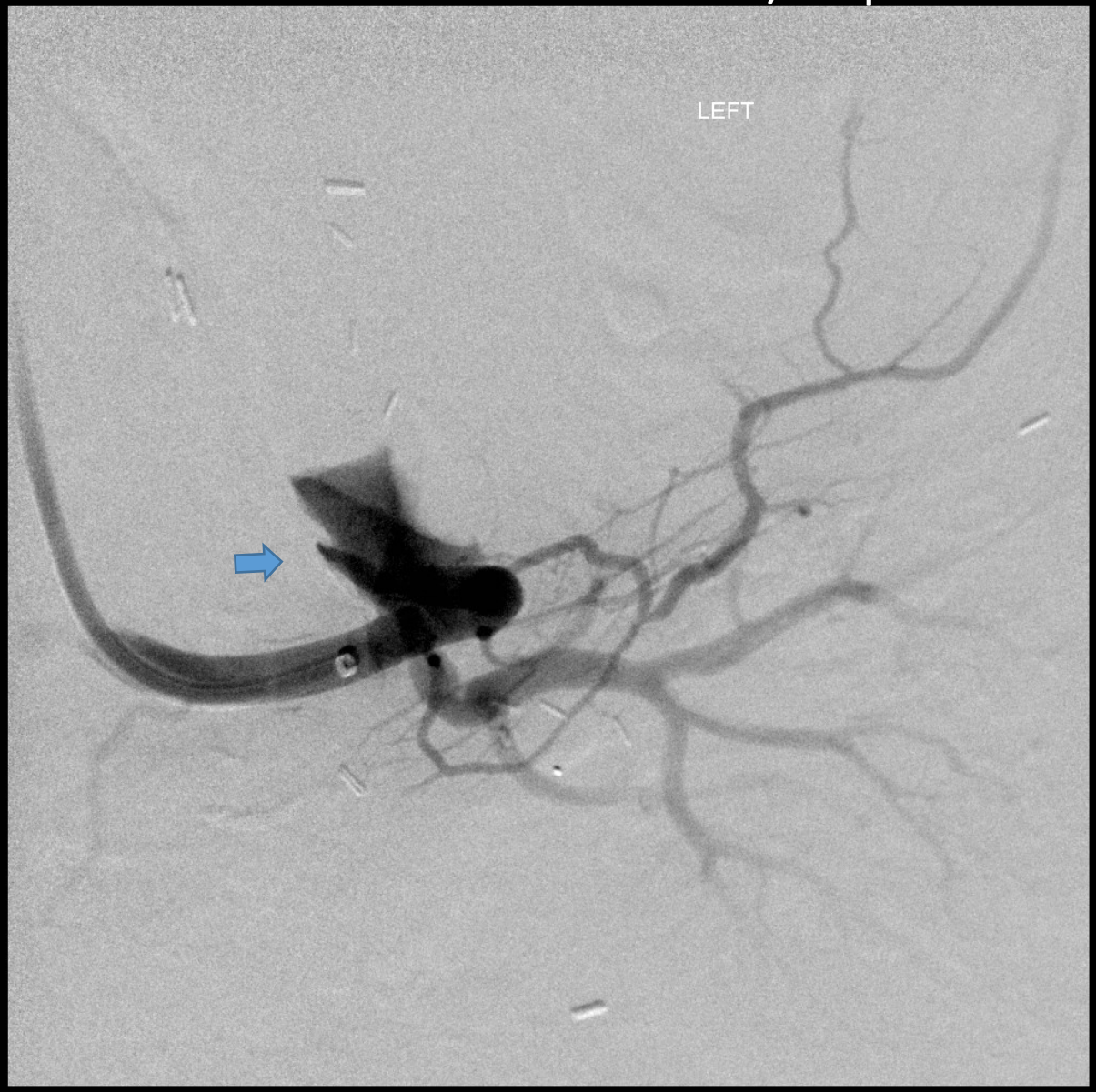
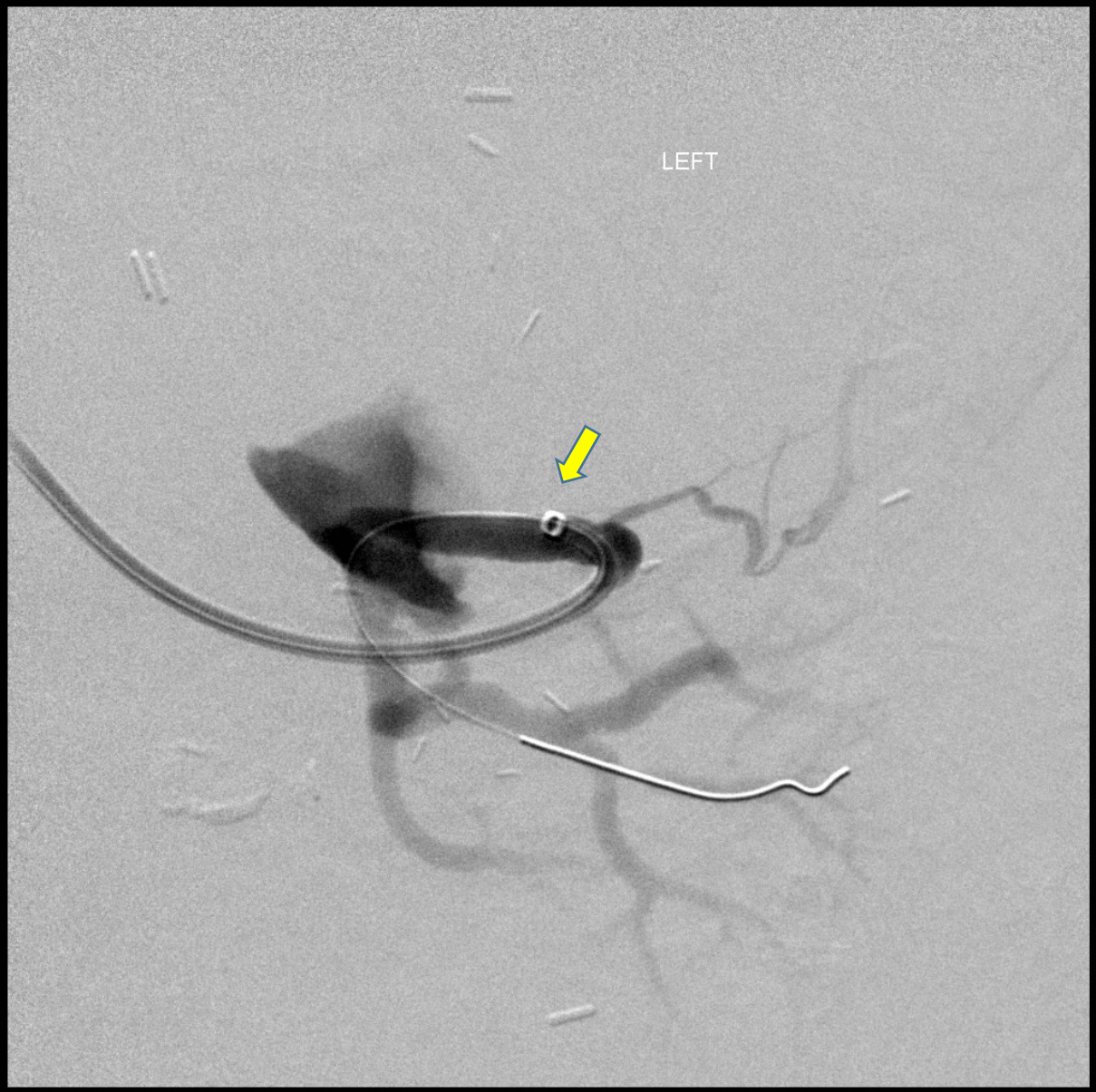


2nd Endovascular treatment 28/12 post-transplant



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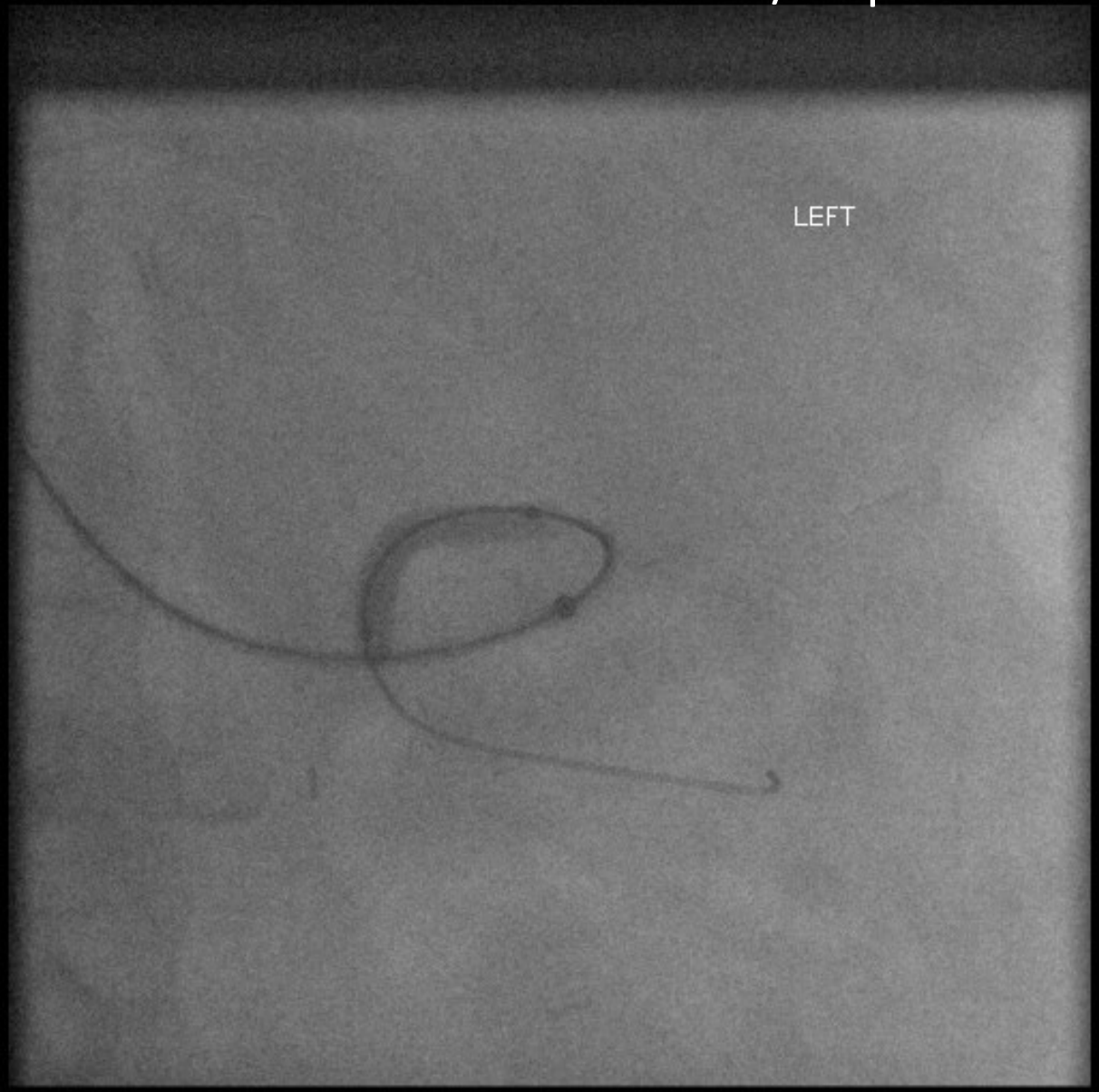

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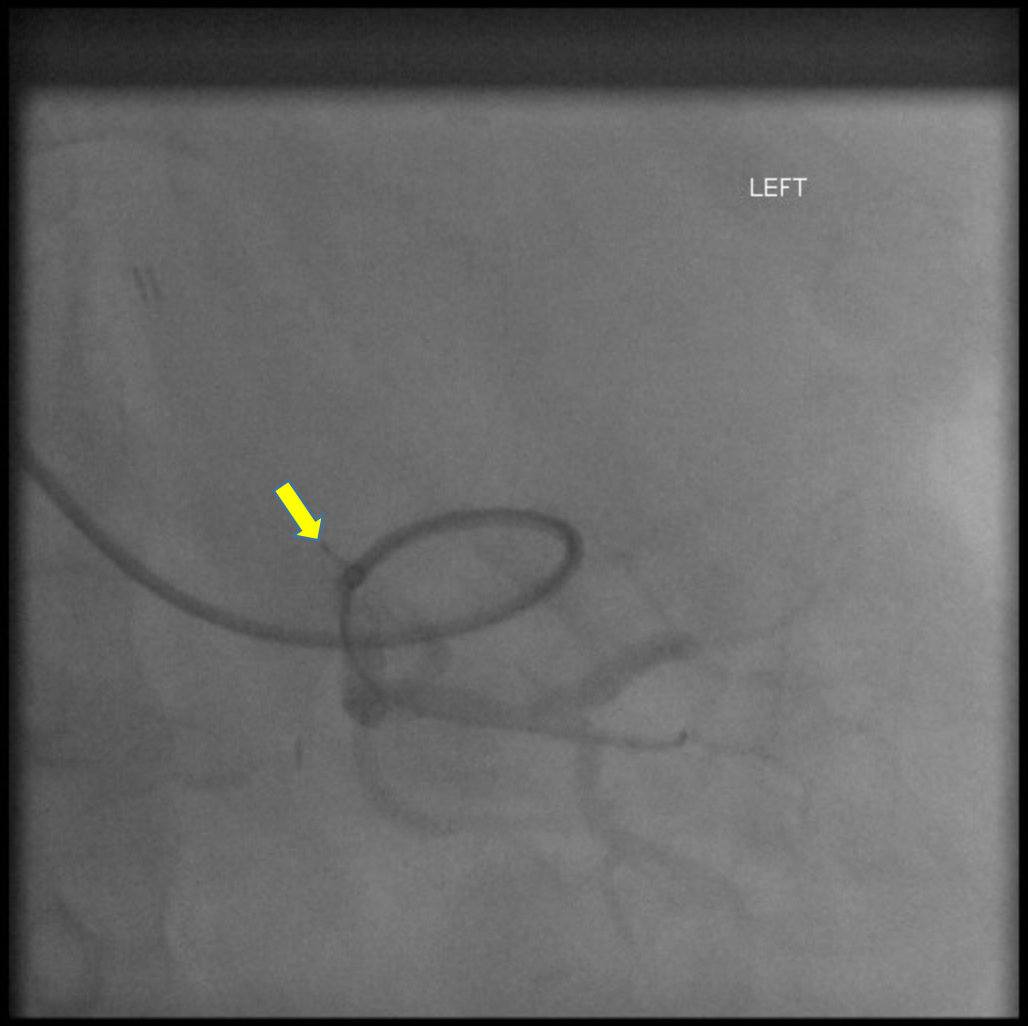

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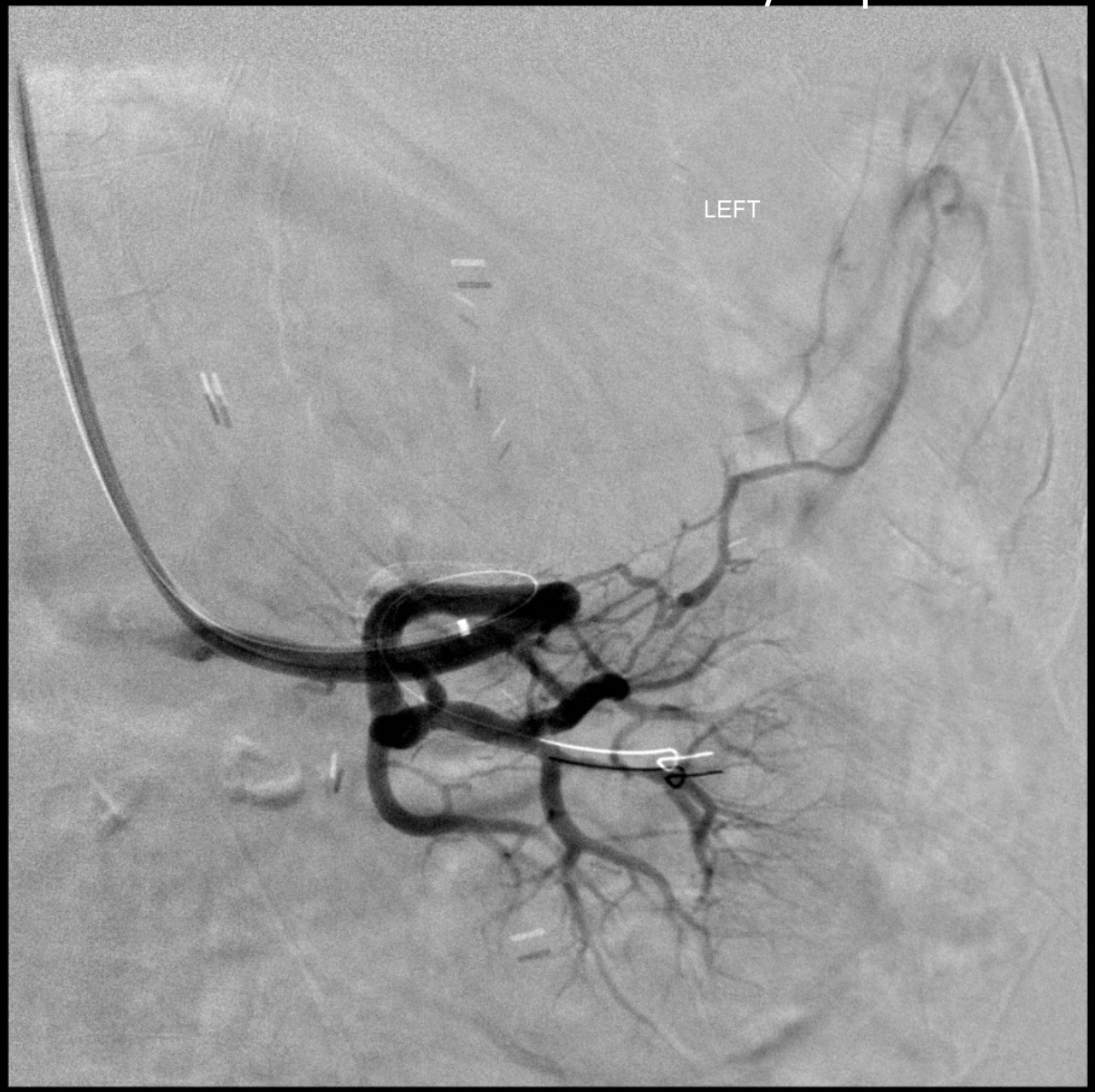

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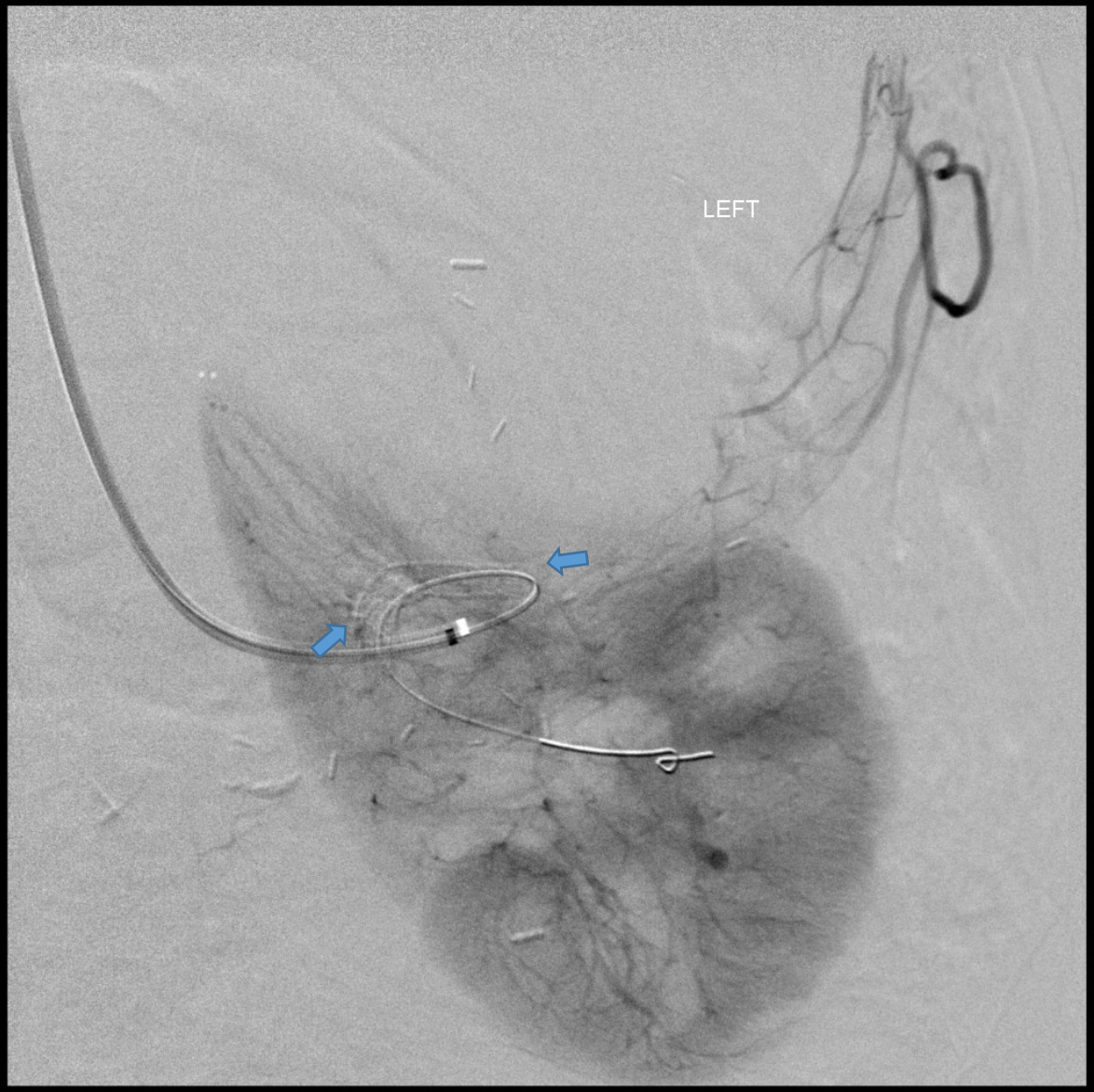
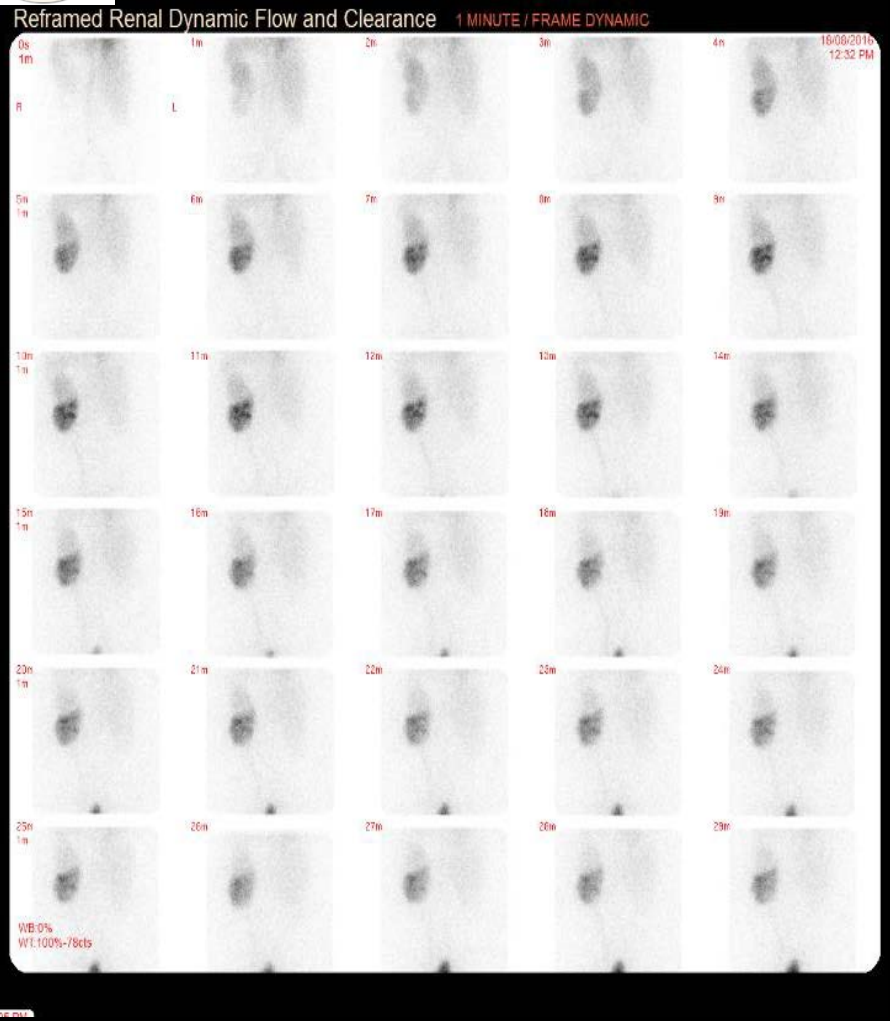


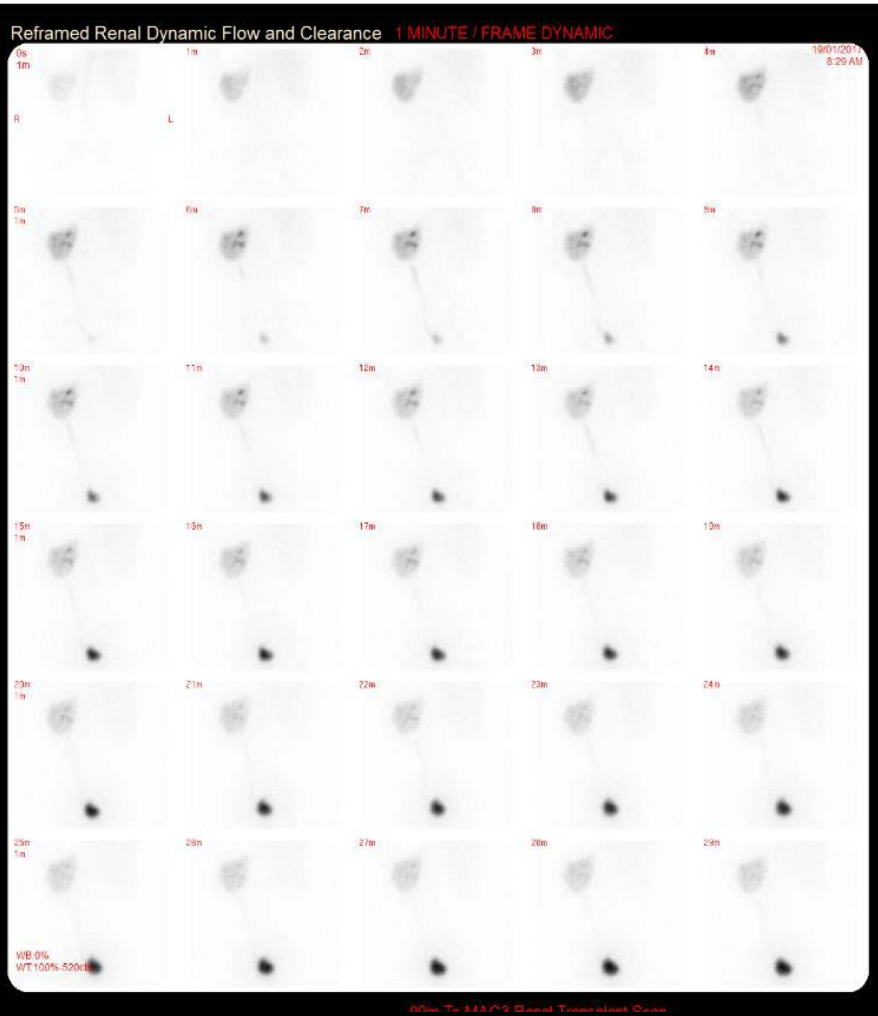
Post stenting

Pre stenting

99mTc-MAG3 Renal Transplant scan

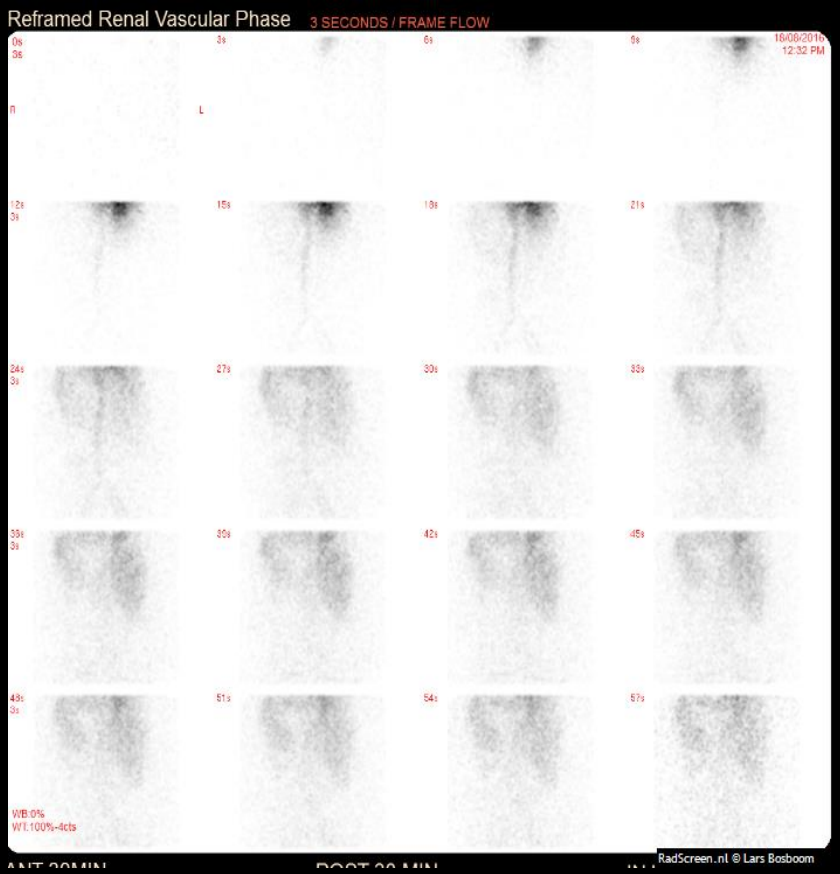


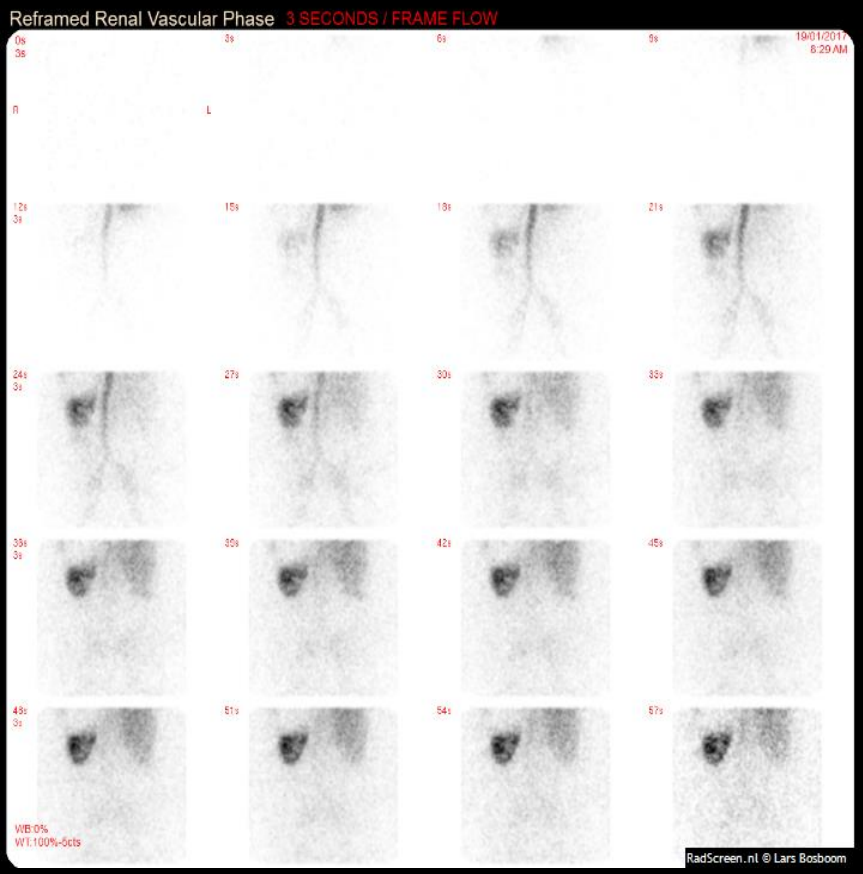
- 99mTc-MAG3 renal transplant scan
- Pre-treatment renal dynamic flow and clearance



- 99mTc-MAG3 renal transplant scan
- Post-treatment renal dynamic flow and clearance

99mTc-MAG3 Renal Transplant scan





- 99mTc-MAG3 renal transplant scan
- Vascular phase pre-treatment

- 99mTc-MAG3 renal transplant scan
- Vascular phase post-treatment

Discussion:

Anastomotic pseudoaneurysm is a rare complication

~ 0.3%

Etiological factors:

- Arterial wall injury
- A defective suture technique
- Infection (Late presentations are mostly 2° mycotic infection)
- Immunological factors

Therapeutic options:

- Small pseudoaneurysms (< 2.5 cm) can be managed conservatively
- Endovascular repair
- Percutaneous thrombin injection
- Open surgical repair (Vascular reconstruction, transplant nephrectomy)

Refrences:

D. Dimitroulis, J. Bokos, G. Zavos, N. Nikiteas, P. Karidis, P. Katsaronis, et al. Vascular complications in renal transplantation: a single-center experience in 1367 renal transplantations and review of the literature, Transplant Proc, 41 (2009), pp. 1609–1614

Poels JAD, Riley PL. Extrarenal transplant artery pseudoaneurysm: a combined therapeutic approach. Cardiovasc Intervent Radiol 2008; 31: 404.

Bracale UM, Santangelo M, Carbone F, et al. Anastomotic pseudoaneurysm complicating renal transplantation: treatment options. Eur J Vasc Endovasc Surg 2010; 39: 565.

C.K. Koo, S. Rodger, G.M. Baxter Extra-renal pseudoaneurysm: an uncommon complication following renal transplantation Clin Radiol, 54 (1999), pp. 755–758