CAIR Case of the Month

Case courtesy of Drs. G. Annamalai and S. Bailey

University of Toronto

Clinical Presentation

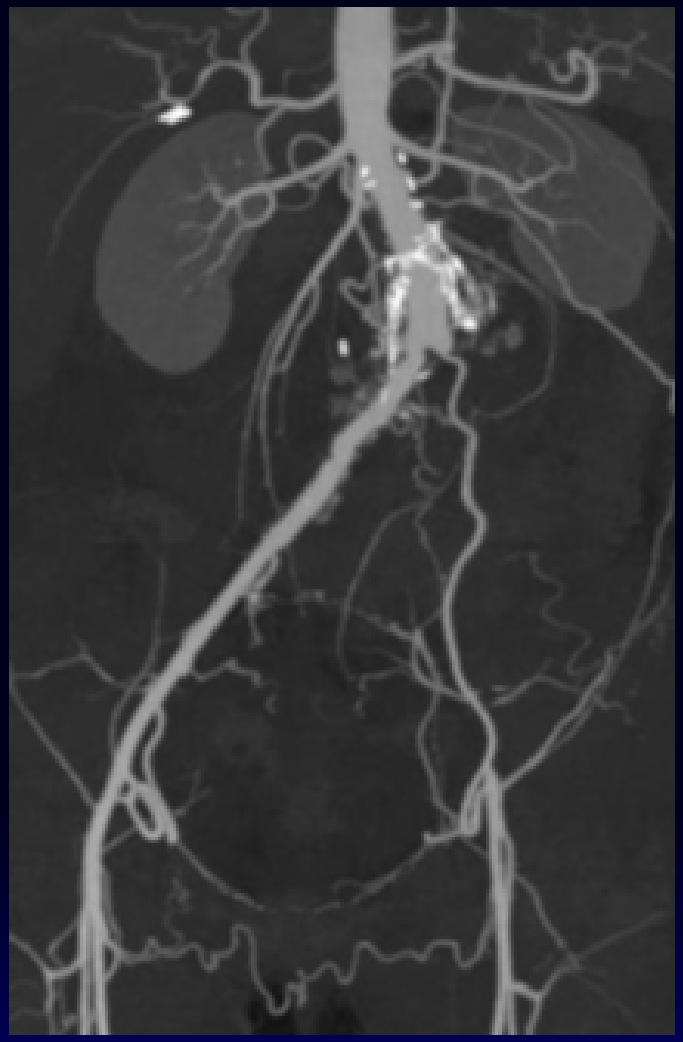
- 51-year-old lady presenting with lower back pain and numbness in right leg

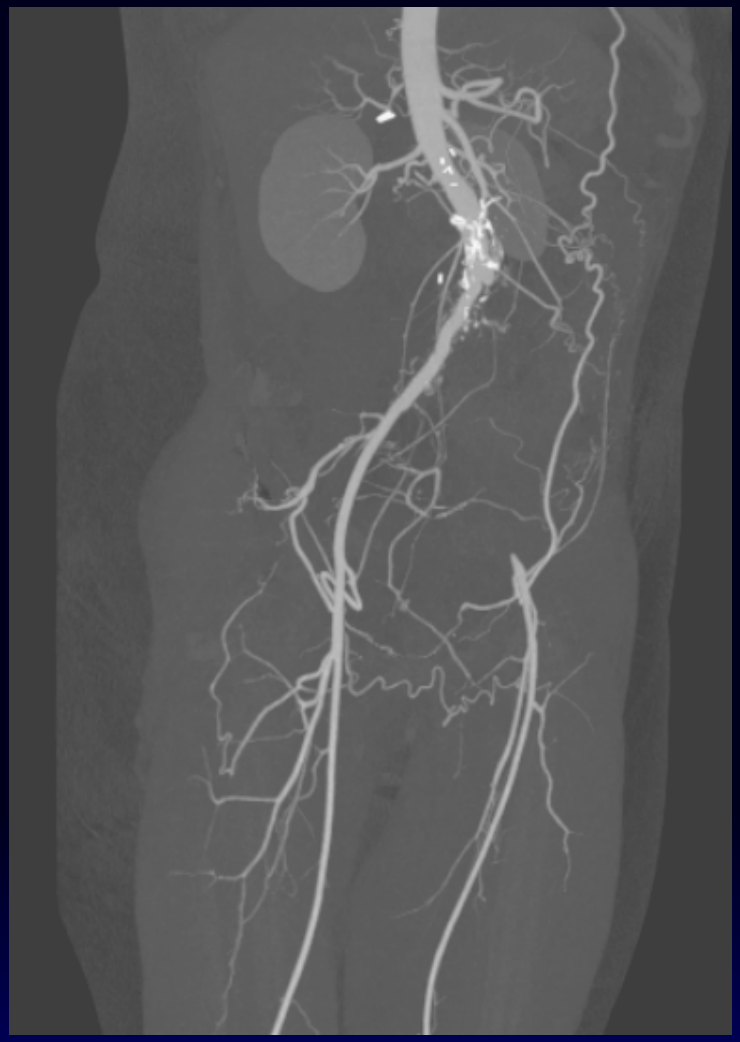
- Significant past medical history
  - Coronary artery disease
  - Granulomatous disease requiring laparotomy
  - At age 36 had iliac aneurysms (unknown etiology) treated with aortobifemoral graft (ABF)
    - Vasculitis screening, CTD, genetic and thrombophilic testing all negative

Clinical Presentation

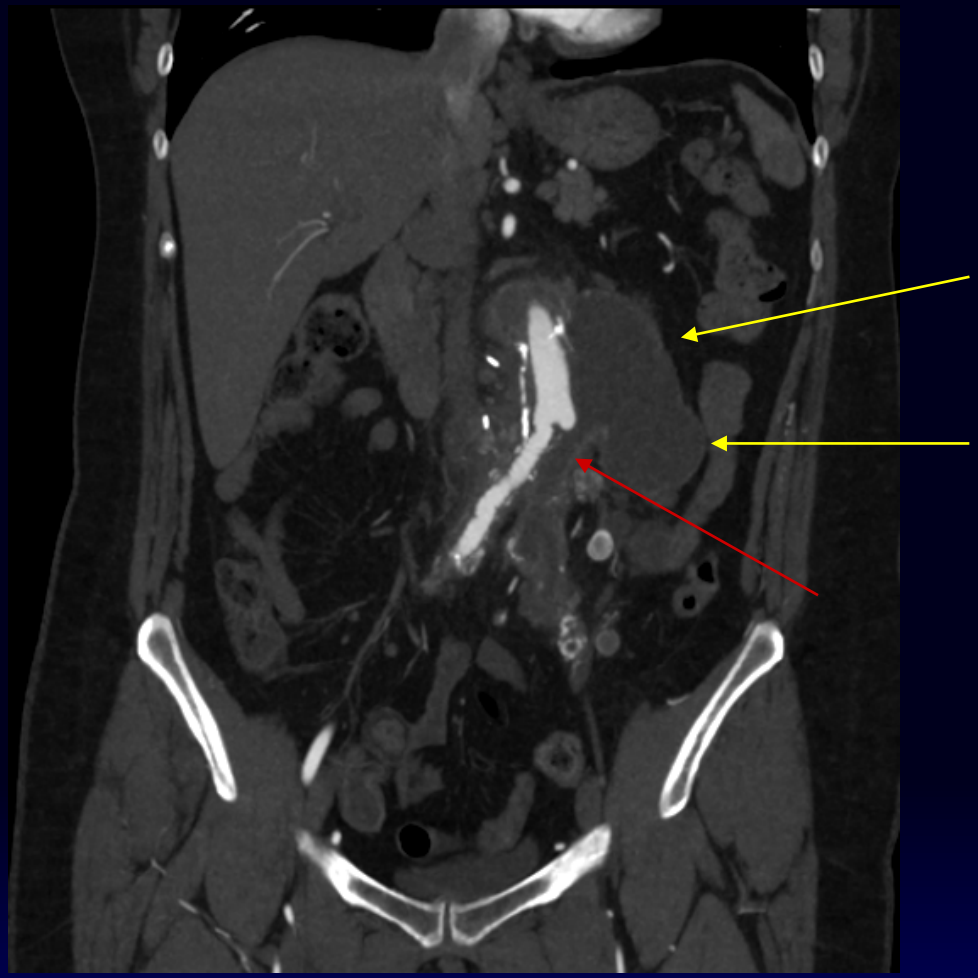
- Complicated post-operative course
  - Heparin-induced thrombocytopenia
  - ABF thrombectomy and revision
  - Development of enlarging chronic abdominal fluid collections (W/U negative; presumed lymphoceles)
  - Ventral hernia mesh repair
  - Chronic occlusion of the left iliac limb

Baseline CTA





Baseline CTA



Clinical Presentation

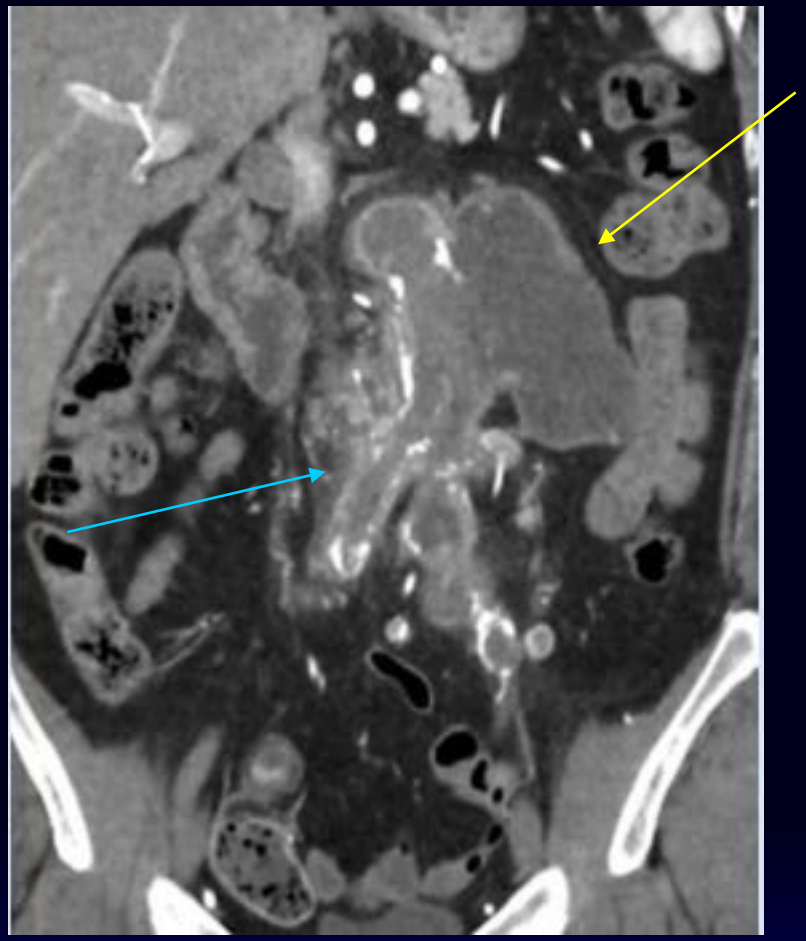
- 51-year-old lady presenting with lower back pain and numbness in right leg

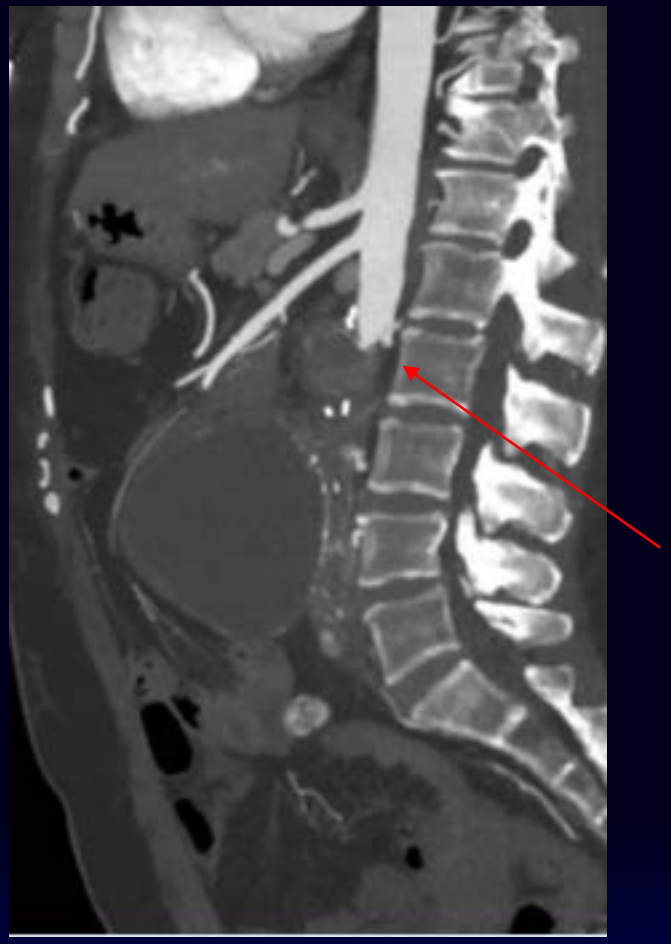
- Labwork
  - CBC and electrolytes normal (Plt: 256)

- Medications
  - Rosuvastatin, Metoprolol, Ramipril

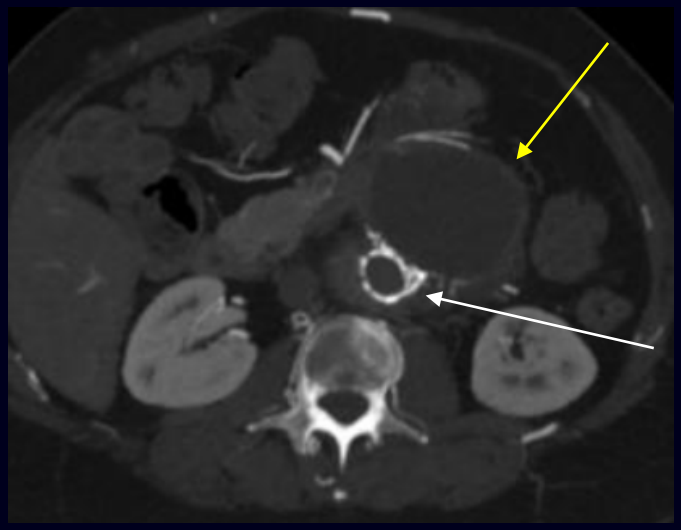
- A CT angiogram of the abdomen/lower limbs was peformed

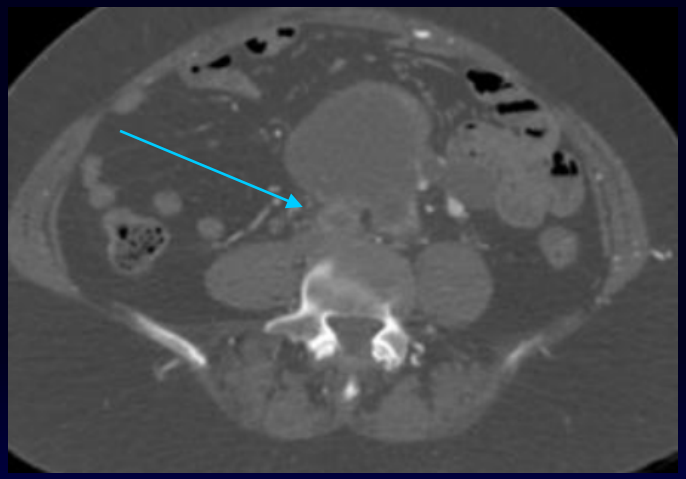
CTA on presentation

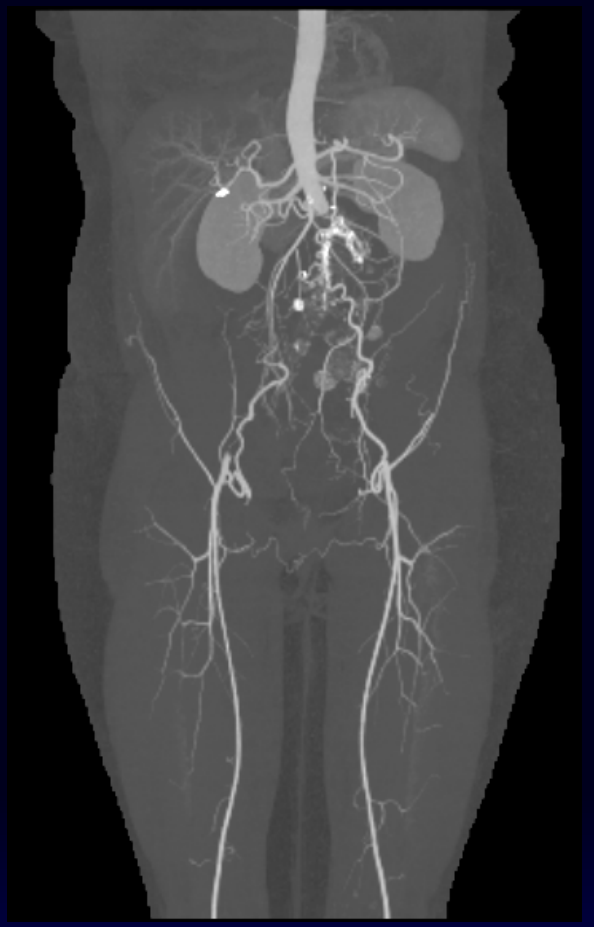




CTA on presentation







CTA Demonstrates

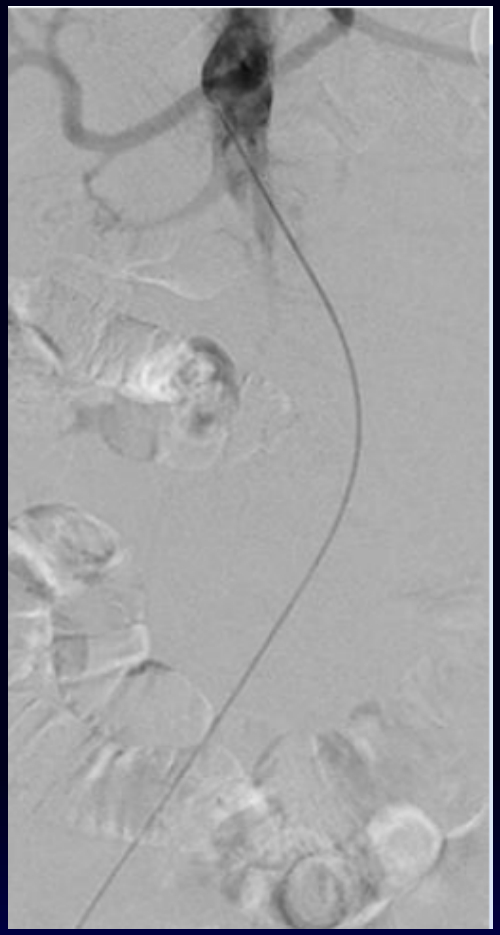
- New occlusion of right side of graft
- New infrarenal aortic occlusion
- Known prior occlusion of left side of the graft
- Stable chronic intrabdominal fluid collections

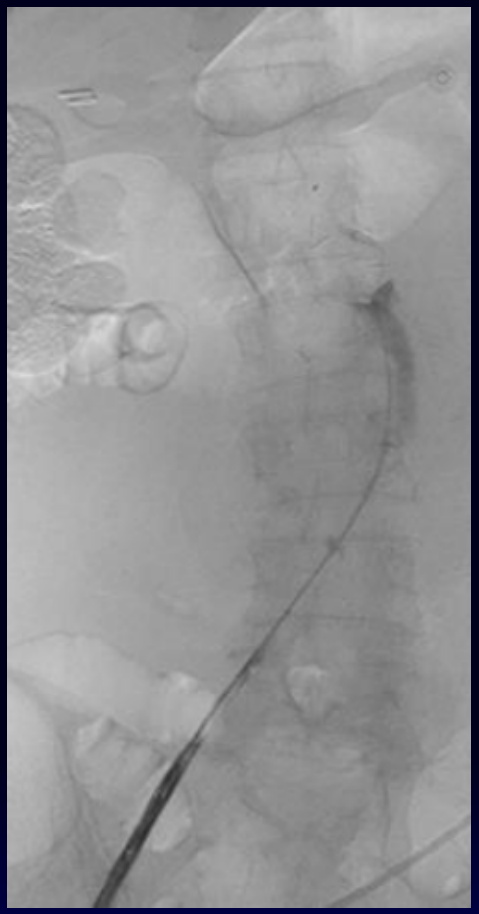
Clinical Course

- Given the multiple prior surgeries, hostile abdomen, as well as patient's disinterest in further surgery; catheter directed thrombolysis was initiated

- The infusion catheter was positioned within the clotted aortic graft with distal tip in the patent infrarenal aorta

Angio Suite – aorta





Procedure

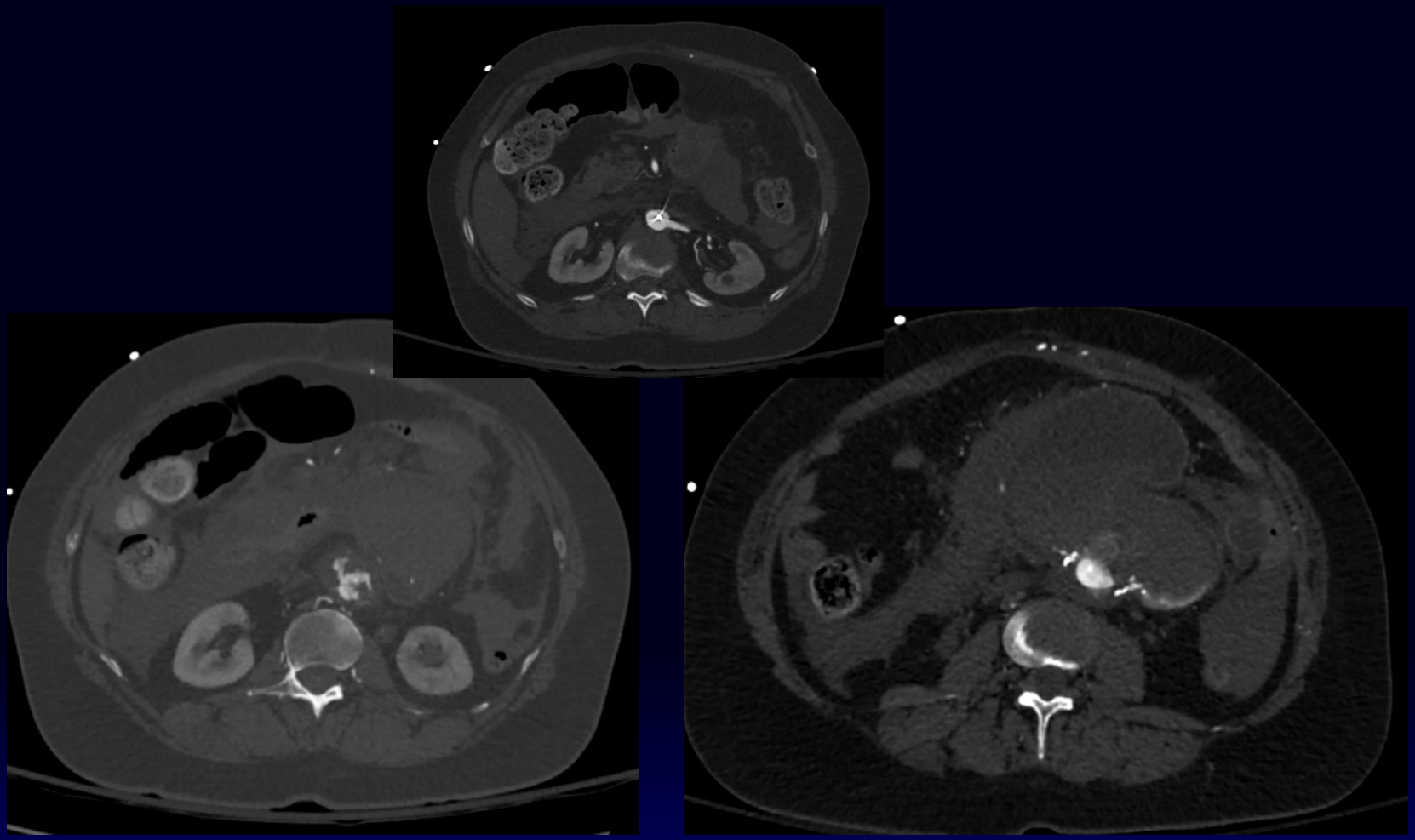
- Right CFA accessed
- ABF was crossed with ease up to the height of L2/3. Here the fibrous top cap was crossed with moderate difficulty
- Angiography confirmed patent suprarenal aorta and origins of the SMA/renal arteries
- ABF was completely occluded
- t-Pa infusion catheter was inserted with its tip just above the proximal end of the occluded aortobifemoral graft

Clinical Course

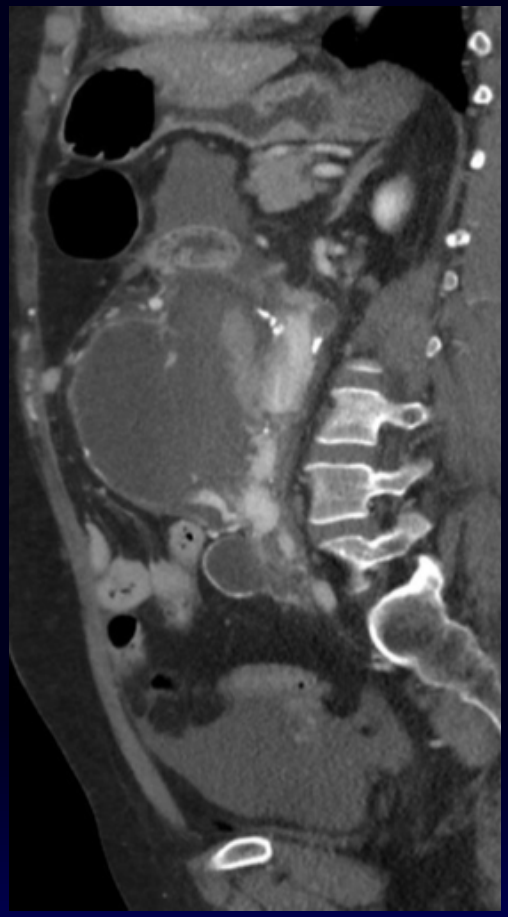
- Approximately 12 hours following initiation of catheter directed thrombolysis, the patient had some improvement in the right leg but was complaining of abdominal pain

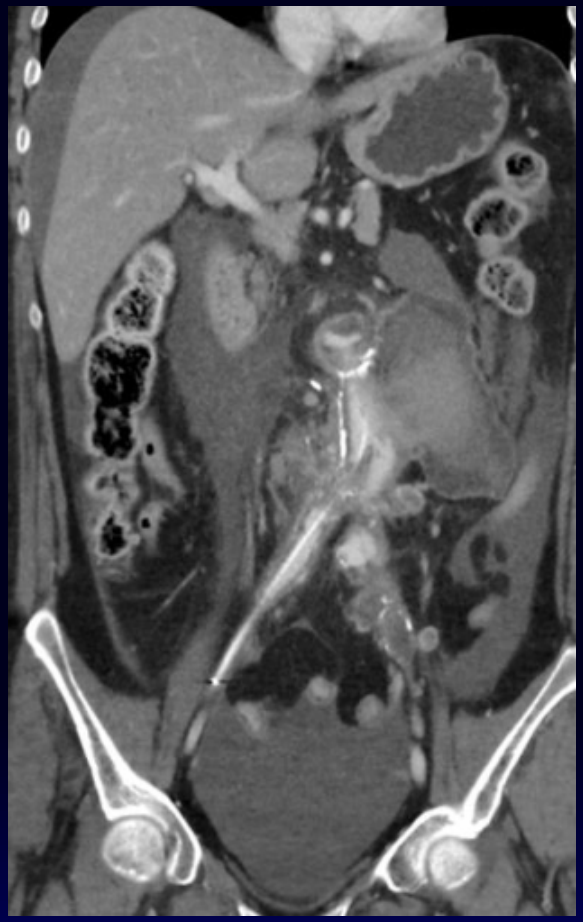
- Repeat CT scan was performed

CT: ~12 hours of thrombolysis



CT: ~12 hours of thrombolysis





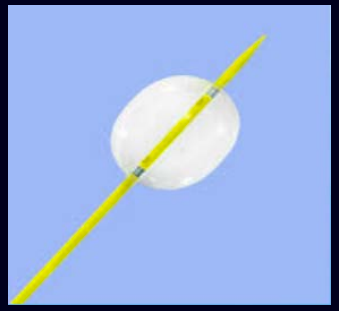
CT Demonstrates

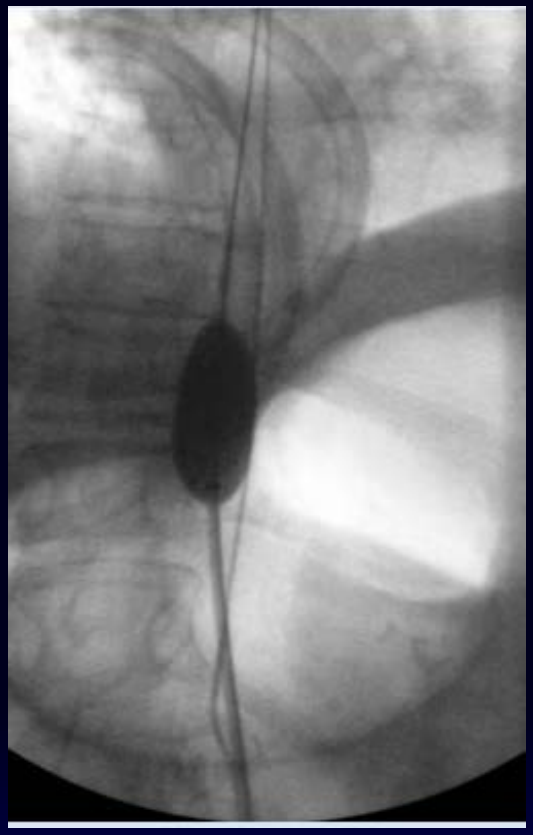
- Pseudoaneurysms at the proximal aortic anastomosis
- Active extravasation into the perigraft cystic lesions
- Retroperitoneal and intraperitoneal hematoma in the subphrenic and pelvic spaces
- No flow down the right leg

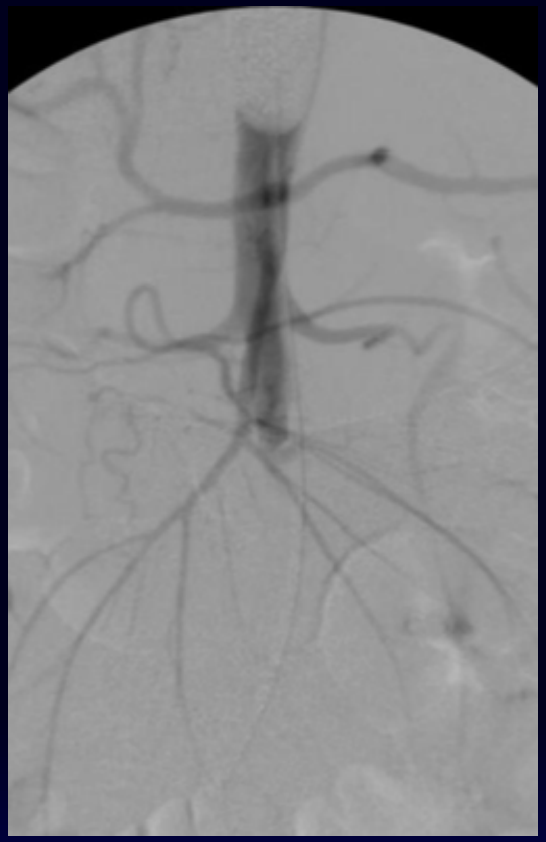
Clinical Course

- Thrombolysis was immediately discontinued but the catheter was left in situ for access
- Shortly after scan, suddenly became unstable and arrested
- Emergently transferred to OR

Angio – aorta





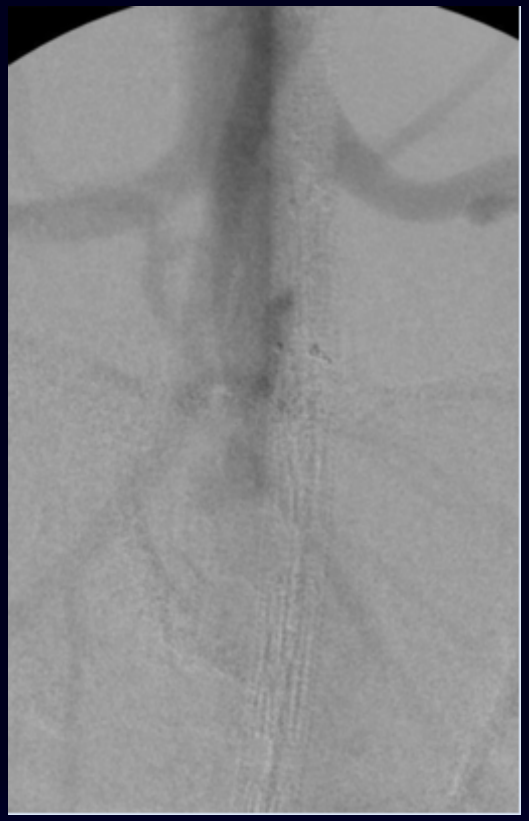


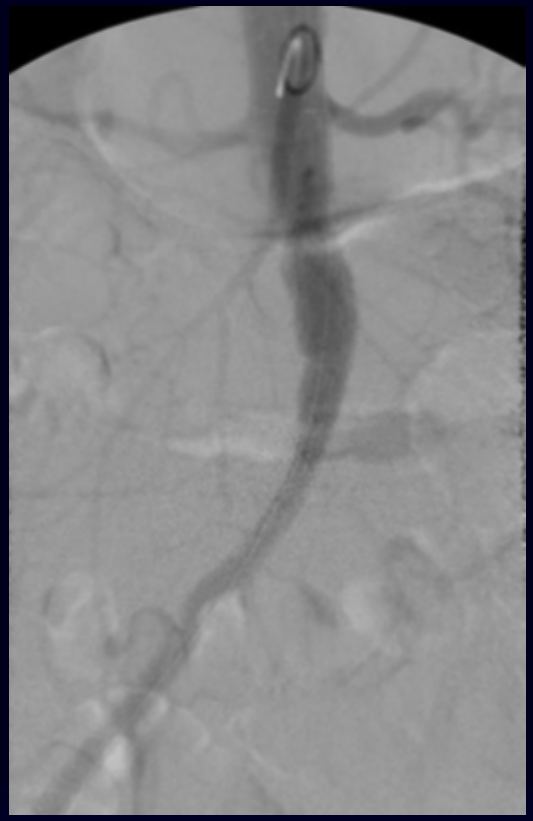
Procedure

- During resuscitation, the infusion catheter was rapidly exchanged for a Coda balloon and supraceliac aortic occlusion achieved

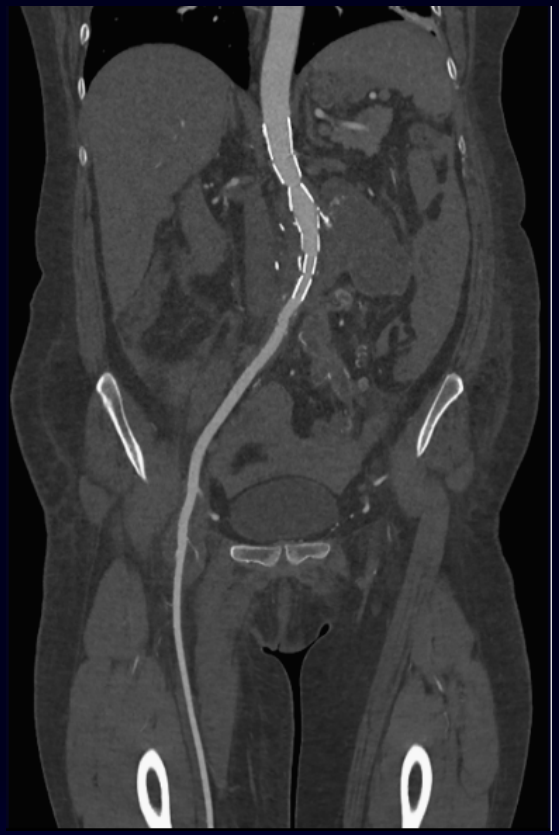
- Definitive management achieved with endovascular repair using aortouniiliac stent graft

Angio Suite – EVAR





CT Post-EVAR



Discussion

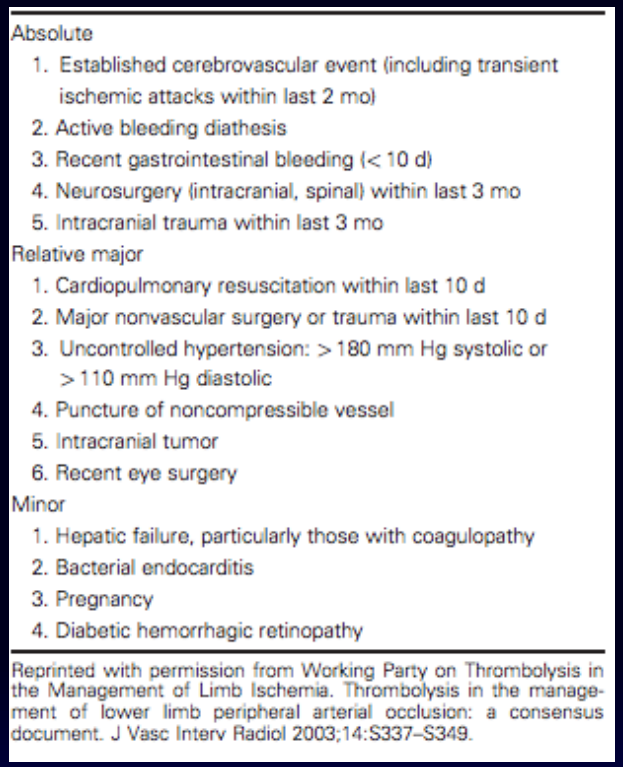
- Management of acute ischemia depends on the clinical status of the affected limb and patient comorbidities

- Catheter-directed thrombolysis (CDT) is the treatment of choice for patients with relatively mild acute limb ischemia with no contraindications to thrombolytic therapy

- CDT should be considered, if the relative risks compared with primary operation are favorable

Discussion

Contraindications:



Absolute

1. Established cerebrovascular event (including transient ischemic attacks within last 2 mo)
2. Active bleeding diathesis
3. Recent gastrointestinal bleeding (< 10 d)
4. Neurosurgery (intracranial, spinal) within last 3 mo
5. Intracranial trauma within last 3 mo

Relative major

1. Cardiopulmonary resuscitation within last 10 d
2. Major nonvascular surgery or trauma within last 10 d
3. Uncontrolled hypertension: > 180 mm Hg systolic or > 110 mm Hg diastolic
4. Puncture of noncompressible vessel
5. Intracranial tumor
6. Recent eye surgery

Minor

1. Hepatic failure, particularly those with coagulopathy
2. Bacterial endocarditis
3. Pregnancy
4. Diabetic hemorrhagic retinopathy

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- CDT Complications:
  - Intracranial hemorrhage: 0 to 2.5%
  - Major bleeding requiring transfusion or surgery: 1 to 20%
  - Compartment syndrome: 1 to 10%
  - Distal embolization: 1 to 5%

Rajan DK, Patel NH, Valji K, et al. Quality improvement guidelines for percutaneous management of acute limb ischemia. J Vasc Interv Radiol 2005;16:585–595

Discussion

- Most bleeding during CDT occurs at the site of arterial puncture. Pericatheter bleeding is usually minor and can be controlled by direct pressure or upsizing the sheath

- CDT is a life- and limb-saving treatment for many patients despite limitations of efficacy and associated complications

Case Learning Points

- Caution when thrombolyzing grafts with chronic perigraft fluid as this may represent chronic infection and potential graft/anastomotic breakdown

- Importance of maintaining access throughout procedures and the value of rapid aortic balloon occlusion which can be lifesaving