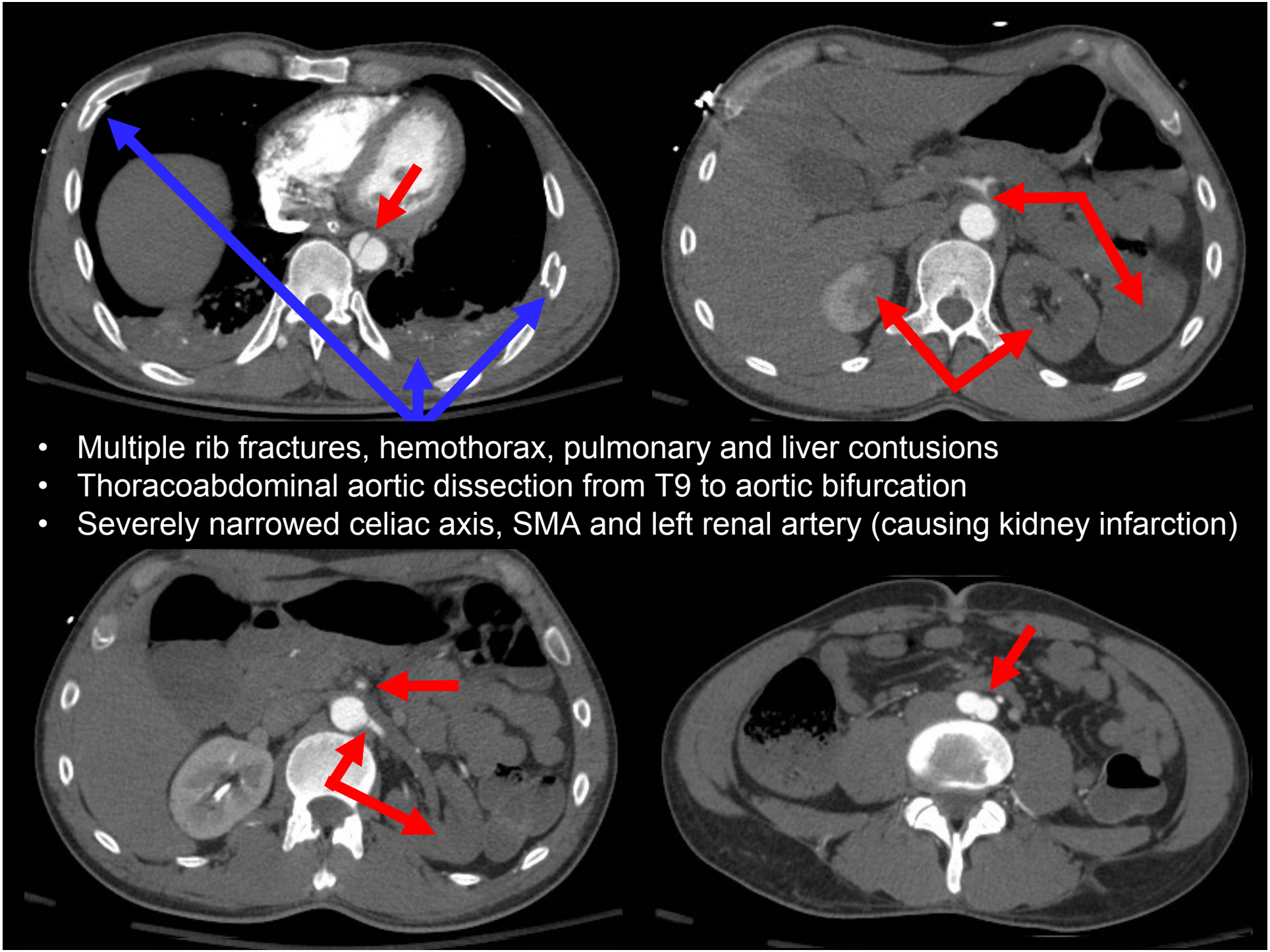
CIRA Case of the Week December 2015

Case Courtesy of Drs. Yuri Gupta and Richard Owen

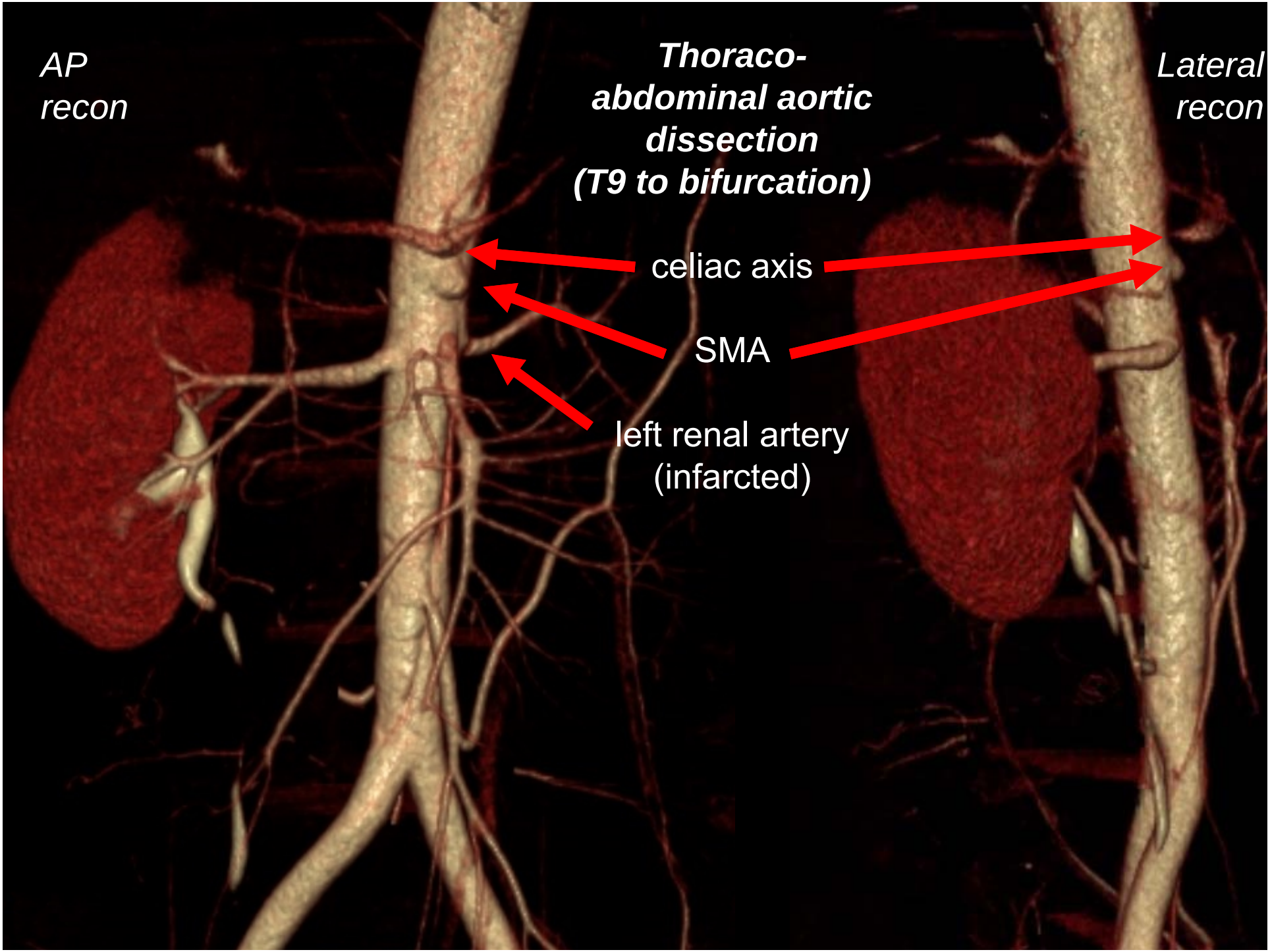
University of Alberta

Case history

- 32 year old man, unknown medical history
- Found on side of road at 3 am after being hit by motor vehicle
- Admitted to emergency with severe crush injuries
- Hemodynamically stable
- Blood work – elevated lactate, troponin, ALT, AST, CK
- CT chest, abdomen, pelvis was performed

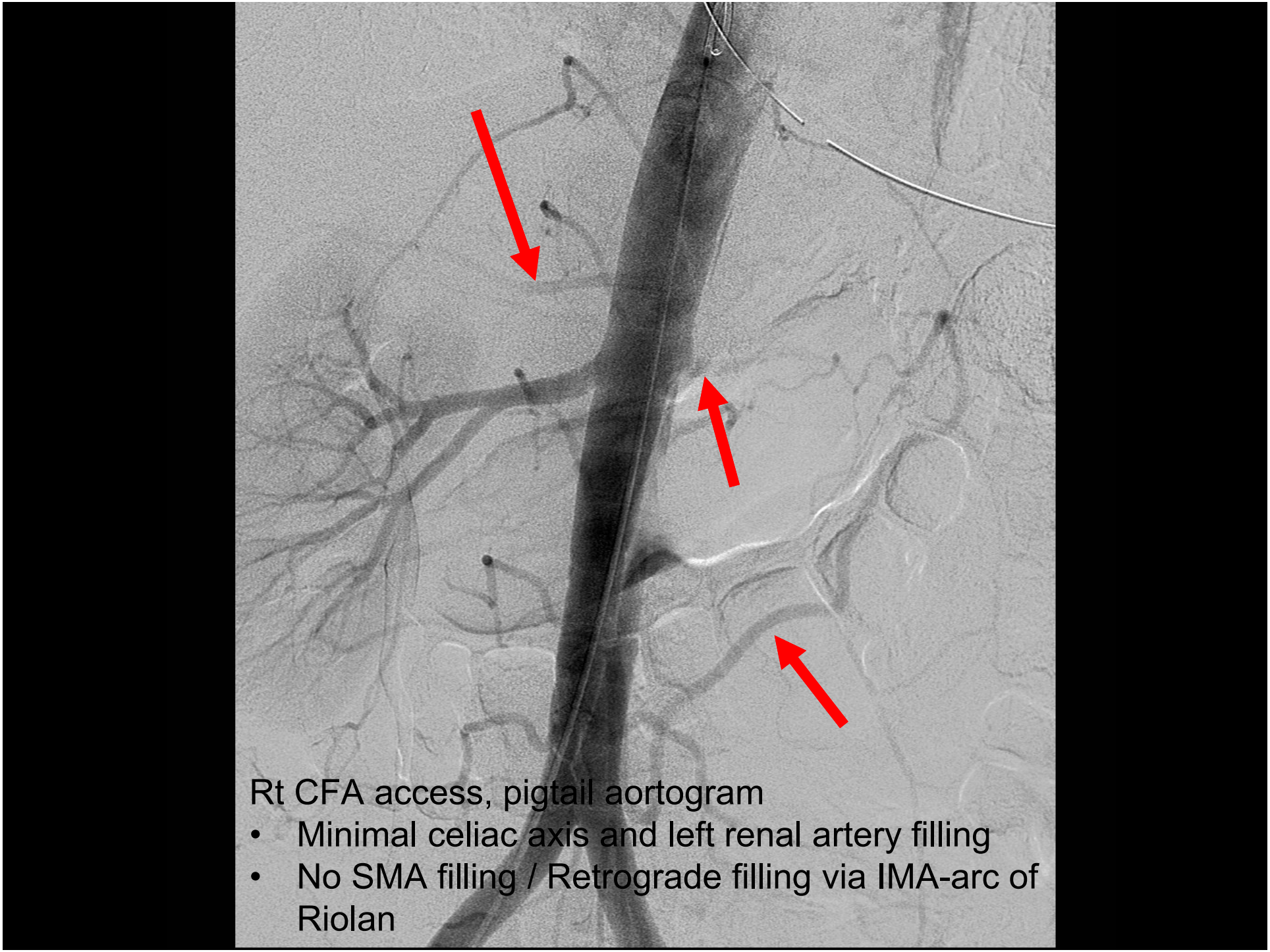


- Multiple rib fractures, hemothorax, pulmonary and liver contusions
- Thoracoabdominal aortic dissection from T9 to aortic bifurcation
- Severely narrowed celiac axis, SMA and left renal artery (causing kidney infarction)


AP
recon
Thoraco-
abdominal aortic
dissection
(T9 to bifurcation)
Lateral
recon
celiac axis
SMA
left renal artery
(infarcted)

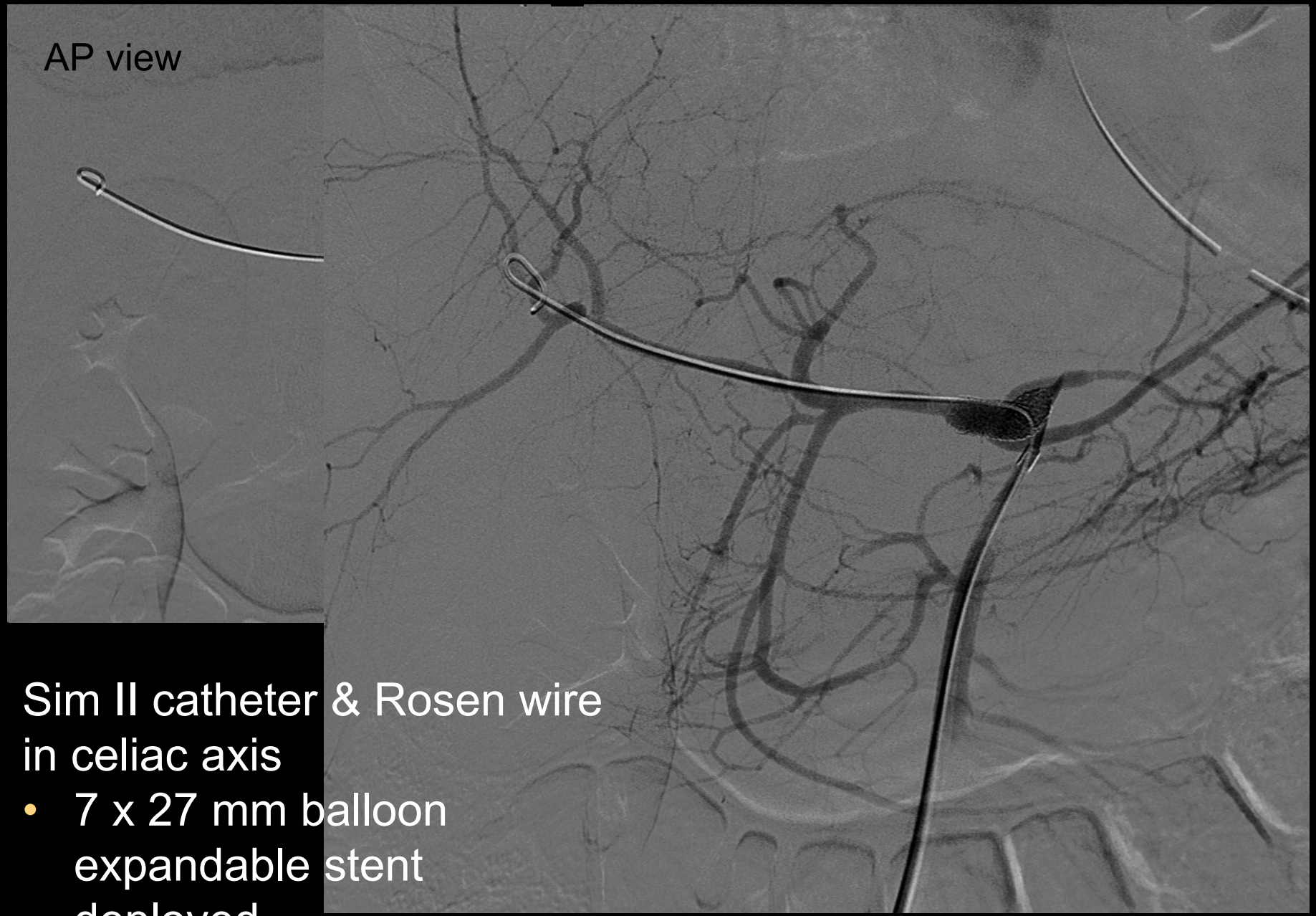
Case history

- Resuscitated and transferred to ICU
- Persistently elevated serum lactate
  → prompts referral for endovascular intervention



Rt CFA access, pigtail aortogram

- Minimal celiac axis and left renal artery filling
- No SMA filling / Retrograde filling via IMA-arc of Riolan

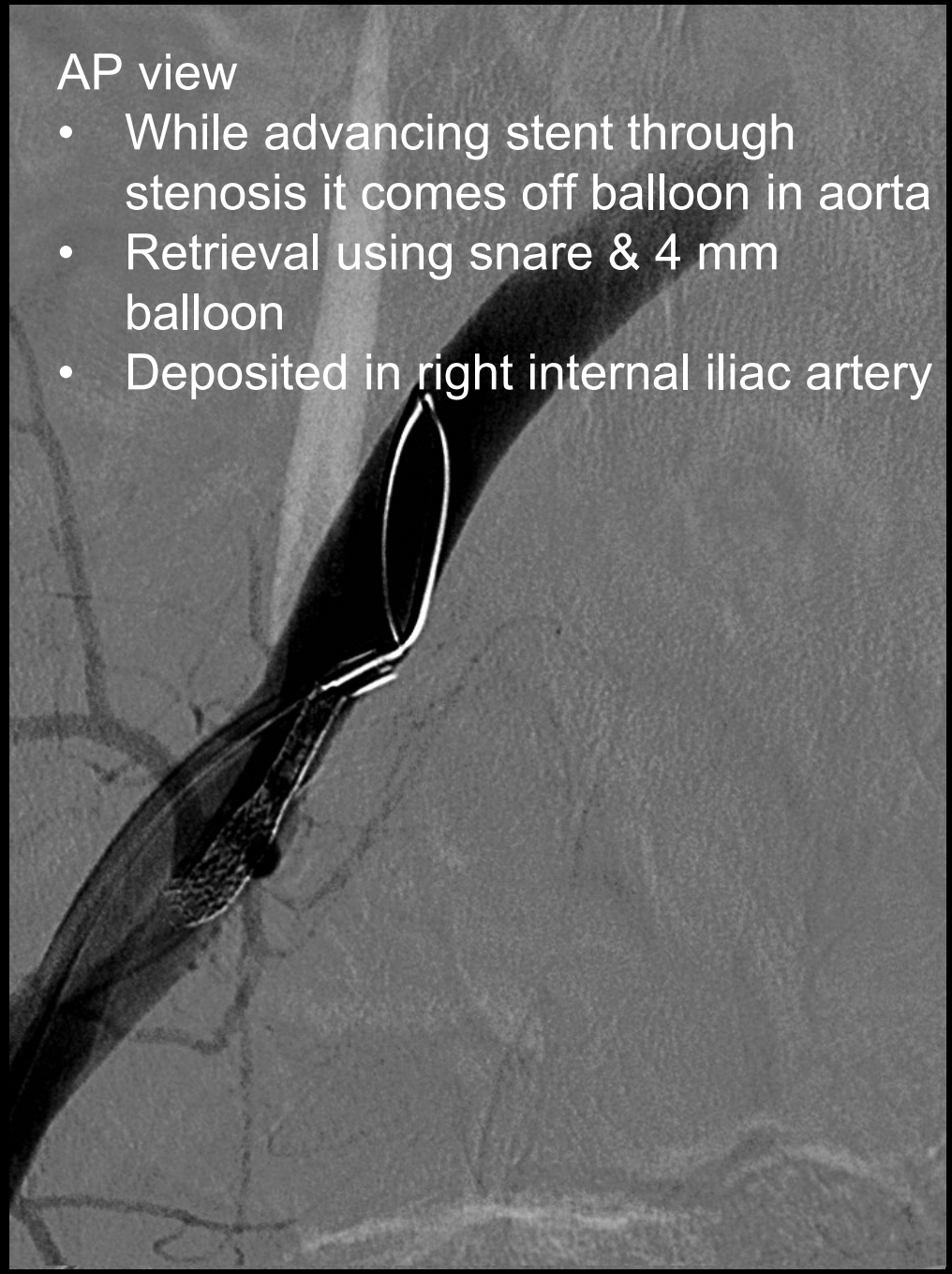


Sim II catheter & Rosen wire in celiac axis

- 7 x 27 mm balloon expandable stent deployed

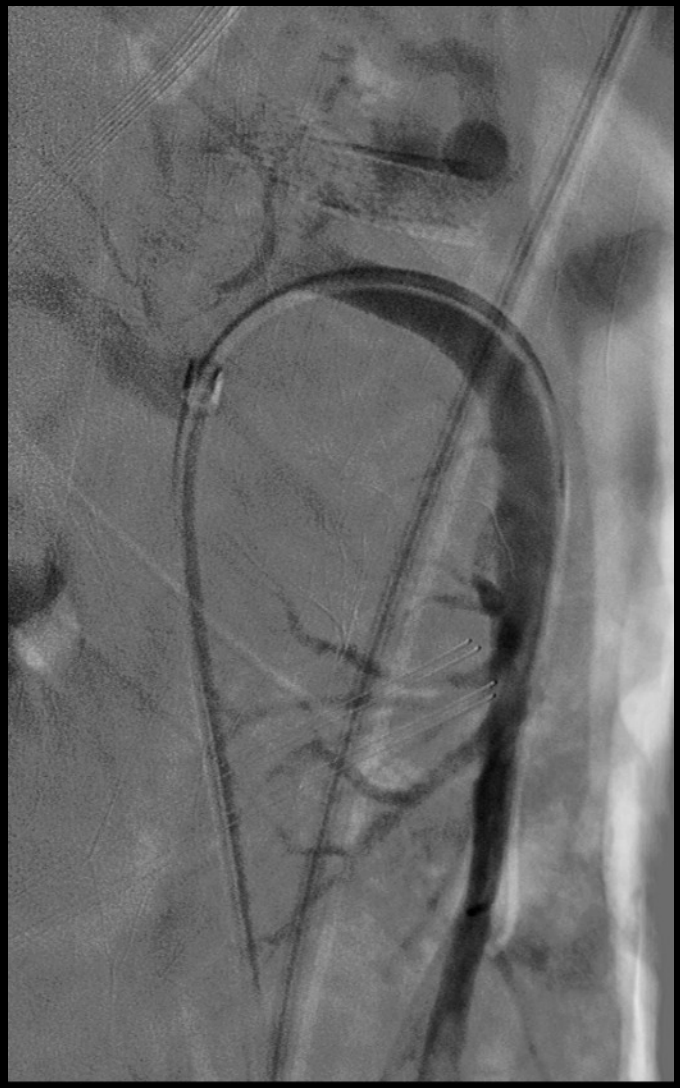
Right lateral view

- Sim catheter & Rosen wire engaged in SMA



AP view

- While advancing stent through stenosis it comes off balloon in aorta
- Retrieval using snare & 4 mm balloon
- Deposited in right internal iliac artery



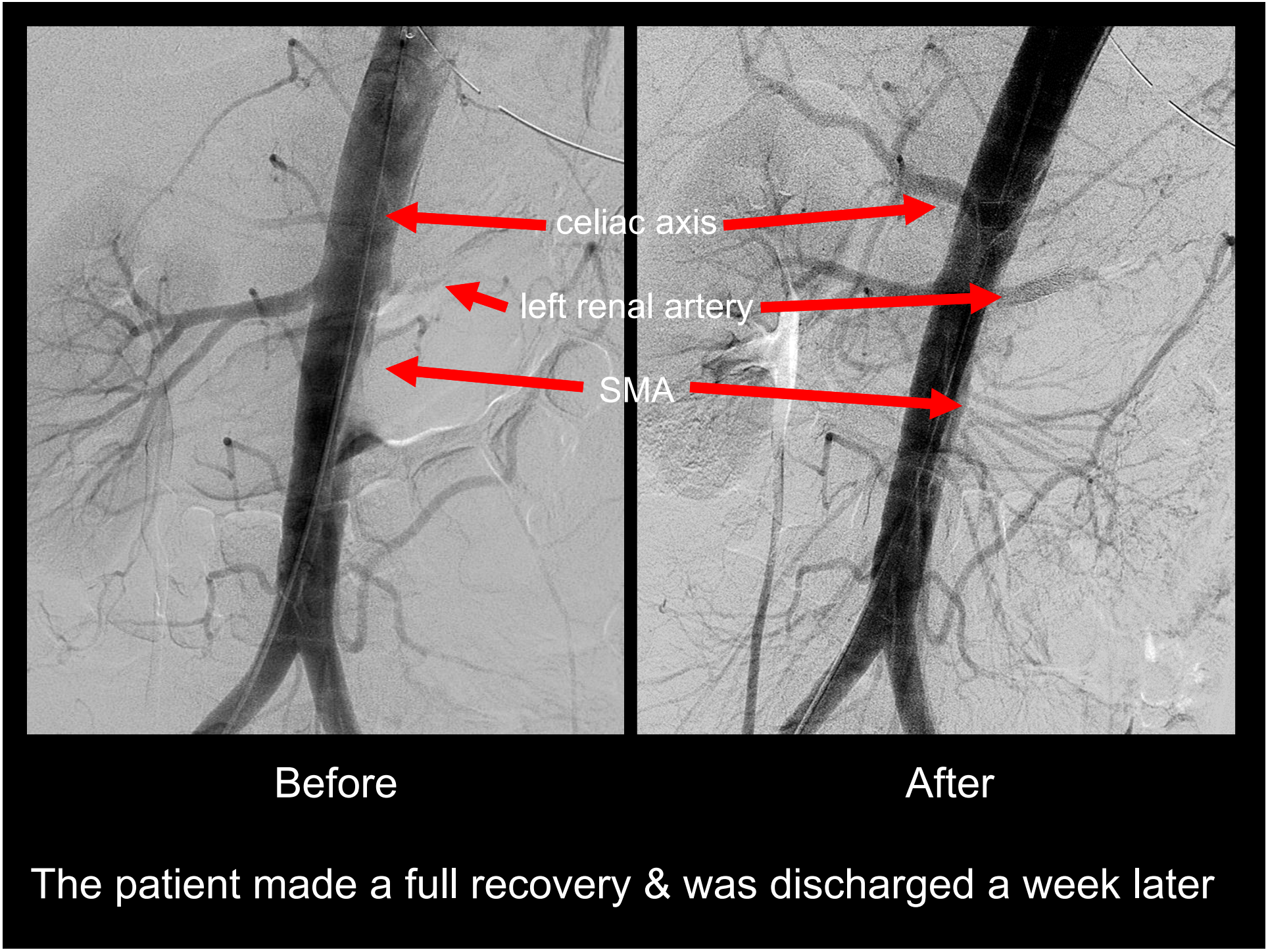
Right lateral view

- SMA then re-engaged
- 7 x 18 mm balloon expandable stent successfully deployed

- Left renal artery engaged with C2 catheter & Amplatz wire
- Two overlapping 6 x 15 mm balloon expandable stents deployed
- Improved flow, but mildly compromised by aortic dissection flap at origin

AP view

- Lt CFA access
- Undeployed right internal iliac artery stent engaged with guidewire
- Stent deployed in Rt IIA (7 x 27 mm balloon expandable stent, dilated to 6 mm)
- Good IIA flow post stent



The patient made a full recovery & was discharged a week later

Discussion

This is the first description of multiple visceral artery compromise after blunt trauma, and its treatment with stenting

Traumatic visceral artery injury

- Rare after blunt trauma
- Celiac axis injury is unusual (<15 published cases)
- Managed conservatively (anticoagulation) / Surgery / IR
- Treatment should be tailored to clinical picture + imaging
- Symptoms are often mild/vague – maintain a high index of suspicion

This case highlights the importance of prompt recognition and the technical challenges of treatment

References

- J Vasc Surg. 2007 Sep;46(3):576-80. Celiac dissection after blunt abdominal trauma complicated by acute hepatic failure: case report and review of literature. Kirchhoff C1, Stegmaier J, Krotz M, Muetzel Rauch E, Mutschler W, Kanz KG, Heindl B

- AJR Am J Roentgenol. 2007 Dec;189(6):W373-4. Traumatic isolated dissection of the celiac artery. Suchak AA1, Reich D, Ritchie W

- Br J Radiol. 2012 Jul; 85(1015): 1025–1026. An uncommon cause of abdominal pain following blunt abdominal trauma. P F Laeseke, MD, PhD and G Gayer, MD