

The Role of Interventional Radiology in Acute Haemorrhage

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Consultant Interventional Radiologist

GI Haemorrhage

PPH

Variceal
Haemorrhage

Neuro

IR in Acute
Haemorrhage

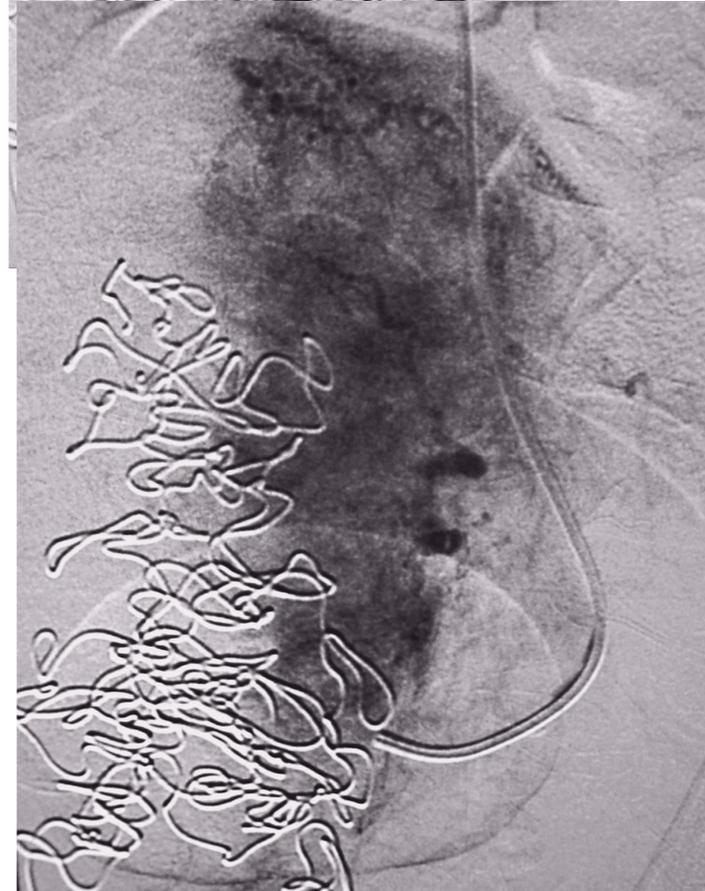
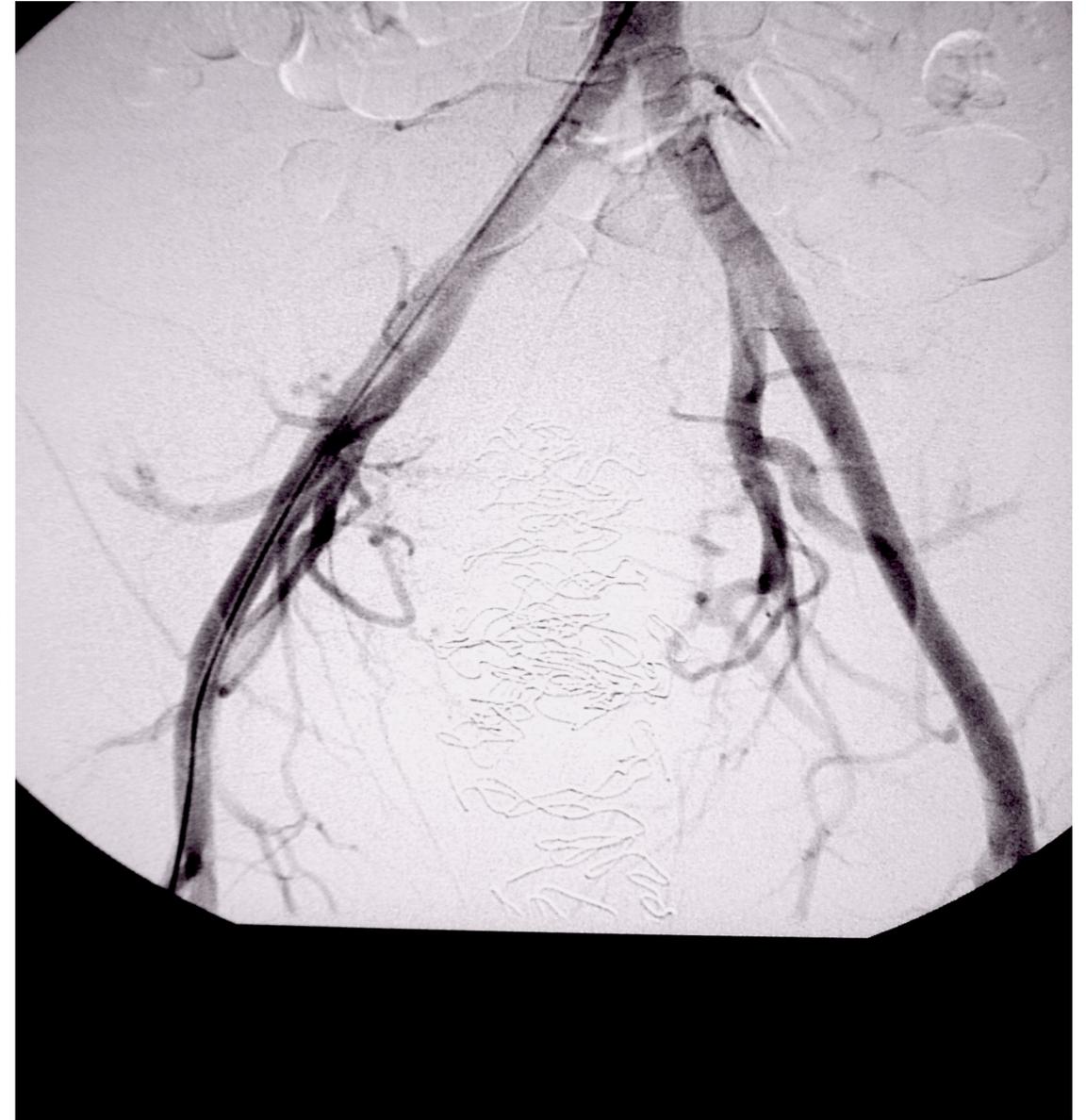
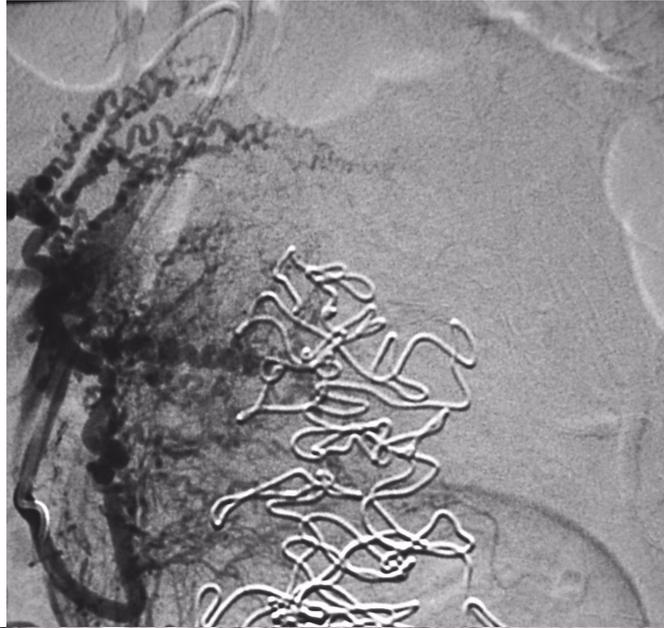
Iatrogenic

Aortic Rupture

Trauma



PPH - first performed in late 1970s



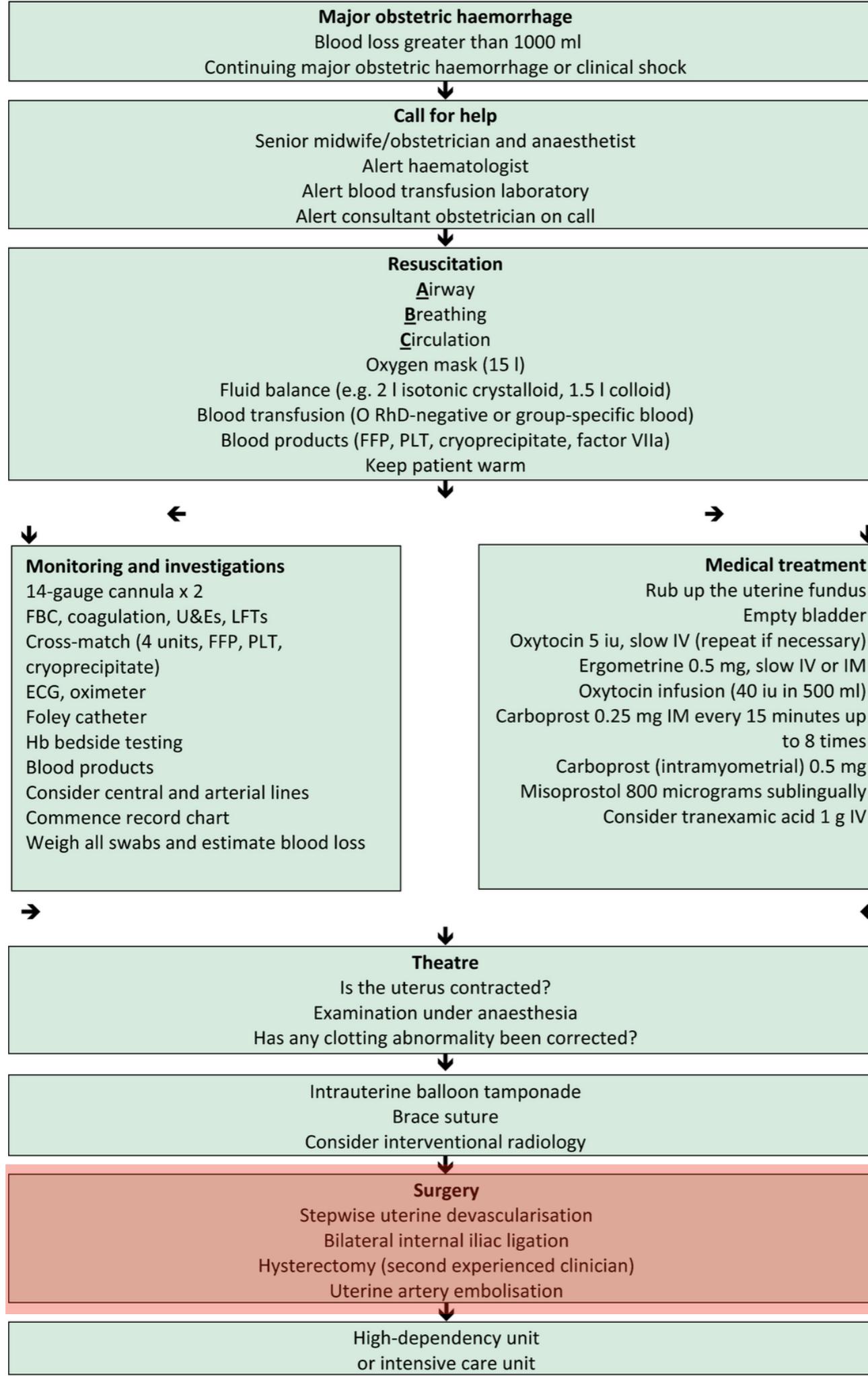
Results for IR embolisation of PPH

Author	Year	No.Patients	Cessation of Haemorrhage	TAH
Ganguli	2011	66	95%	5%
Kirby	2009	43	79%	6%
Ratnam	2009	19	79%	5%
Massen	2009	11	82%	9%
Boulleret	2004	35	100%	0%
Tsang	2004	12	100%	0%
Hong	2004	10	100%	0%
Tourne	2003	12	92%	8%

Post Partum Haemorrhage

“ Given the potential (of IR) to save lives of patients with catastrophic post natal bleeding, trusts with delivery units should discuss *the formation of networks with the aim to provide emergency IR* responsive to patients needs, wherever and whenever they arise”

Investigation into 10 maternal deaths at Northwick Park Hospital between April 2002 and 2005 - Healthcare Commission 2006



Royal College of O&G Guidelines 2016

Hepatic Injury

- Unstable
 - CT Grade IV/V injury
 -  Theatre and packing
 - Ongoing bleeding  IR
- Stable with IV support
 - CT arterial bleed  IR



Multidisciplinary Approach

- Improved mortality
 - complex hepatic trauma
 - 12% mortality with IR
 - 36% mortality without IR
- Trend towards NOM of blunt injury

Asensio 2007

42 year old - Horse kick - Transfer to Royal Free

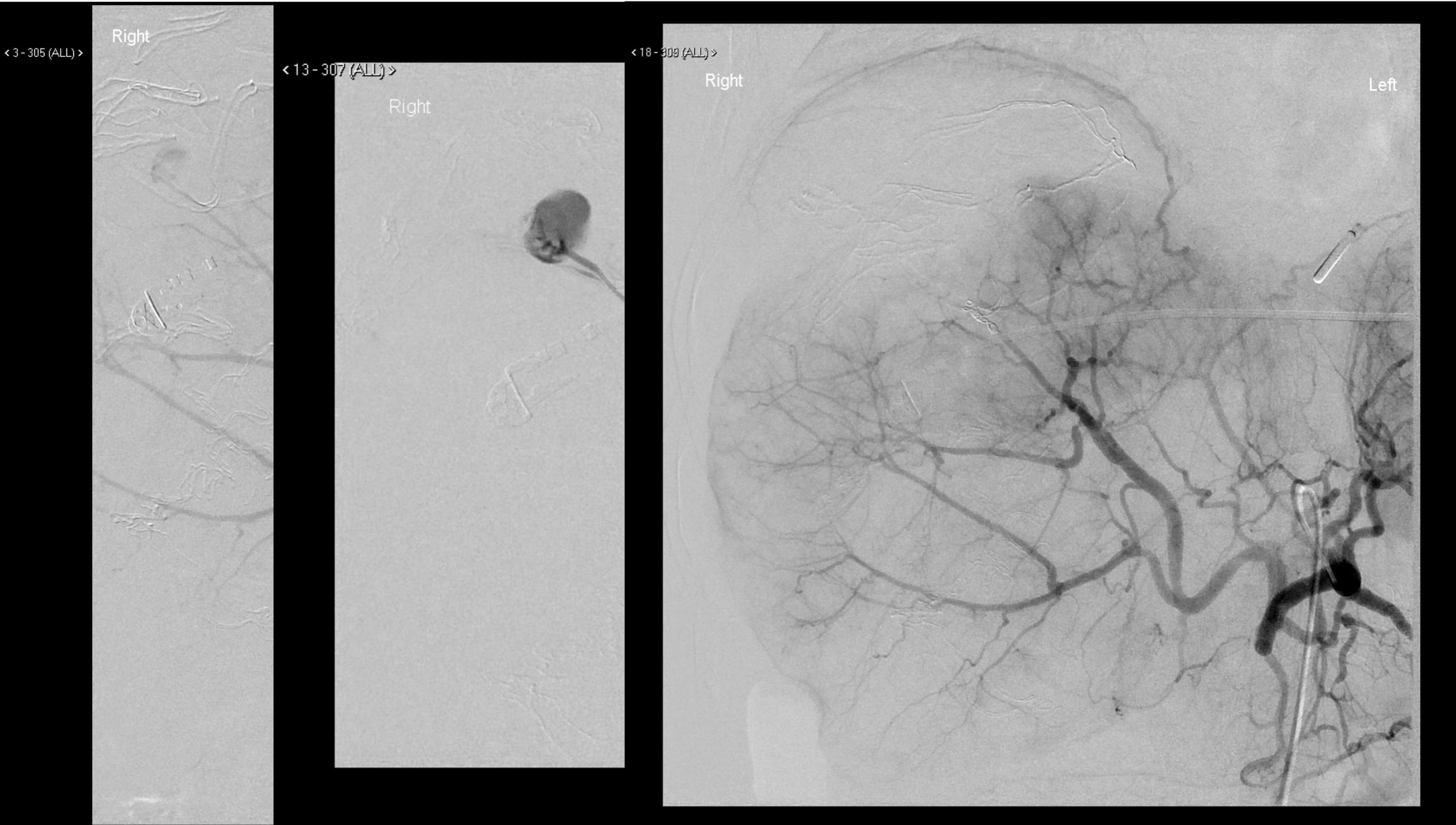


Angiogram - 06:35 - vessels in spasm



Angiogram

Repeat CT at 72 hours



Splenic Haemorrhage

- Unstable
 - Surgery
- Stable (or assisted)
 - IR - grade IV or V (delayed splenic rupture in 25%)
 - proximal versus distal

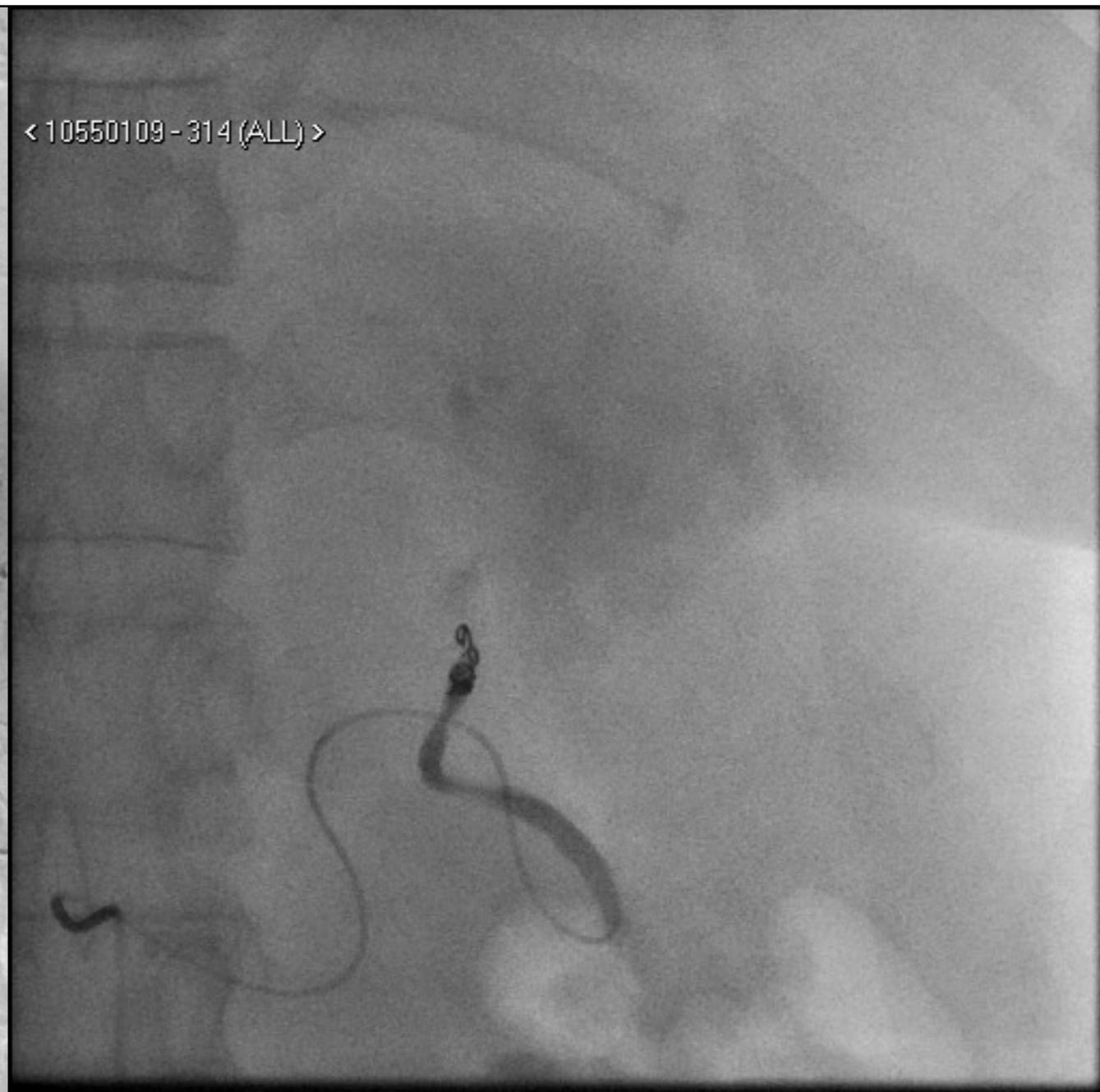
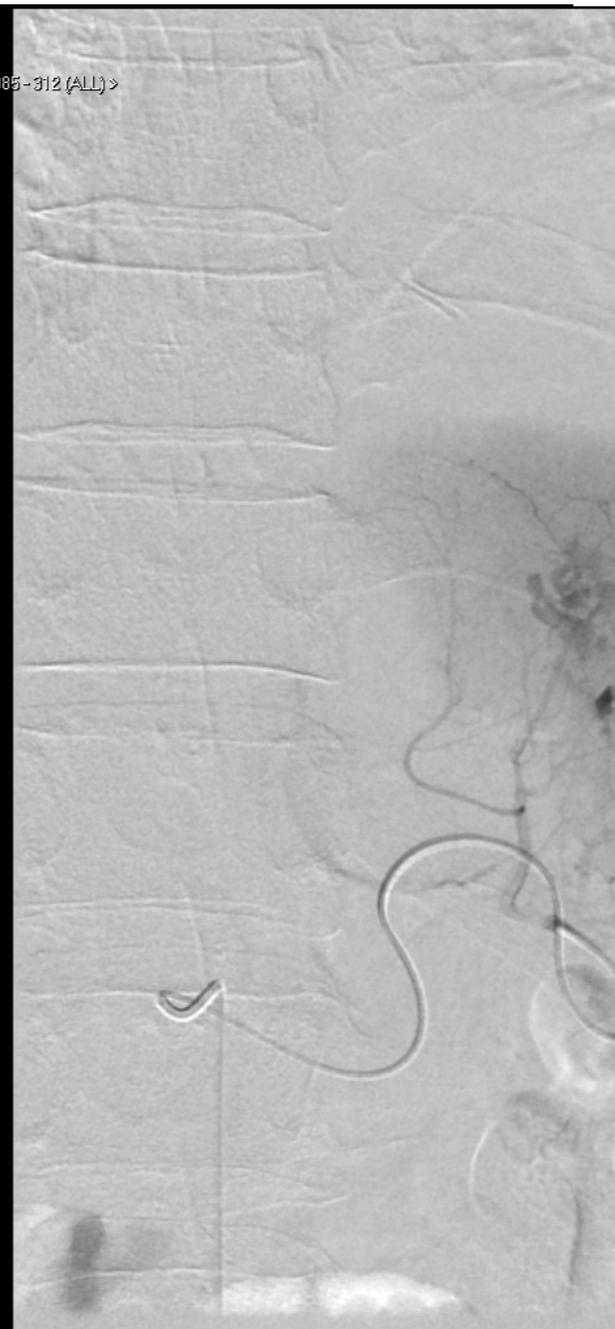
Repeat CT at 72 hours - 95% delayed bleeds occur in first 72 hours

64 year old - Amyloid - Spontaneous bleed



Angiogram.

2 hours 5 mins



Peritoneal dialysis - spontaneous bleed

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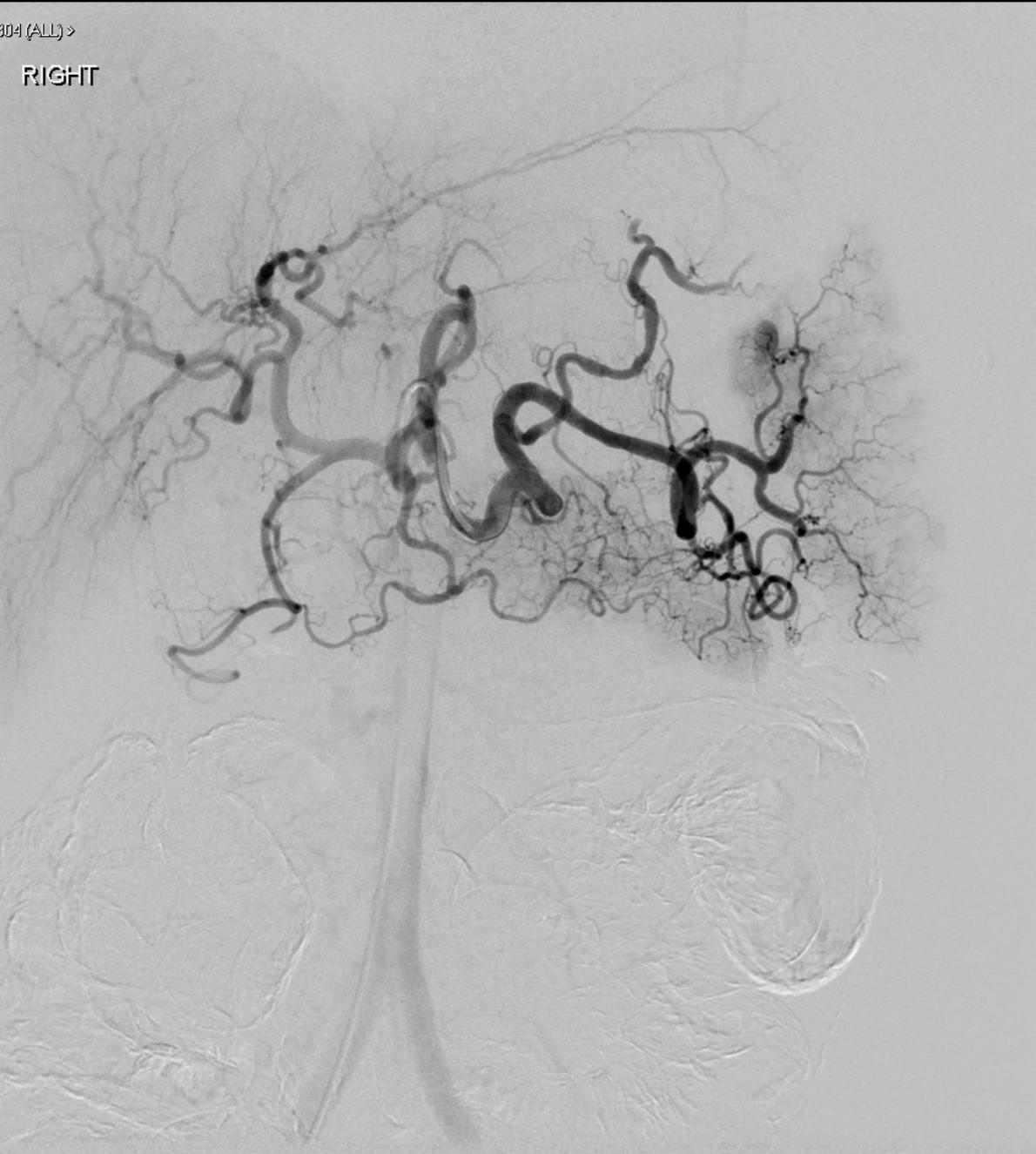


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Angiogram

1 hour 45 mins - to complete embolisation !



Pelvic Trauma

- 23 % of pelvic fracture bleeds are arterial.
 - 50% mortality
- Venous bleeds 90%
 - Surgical stabilisation of pelvis

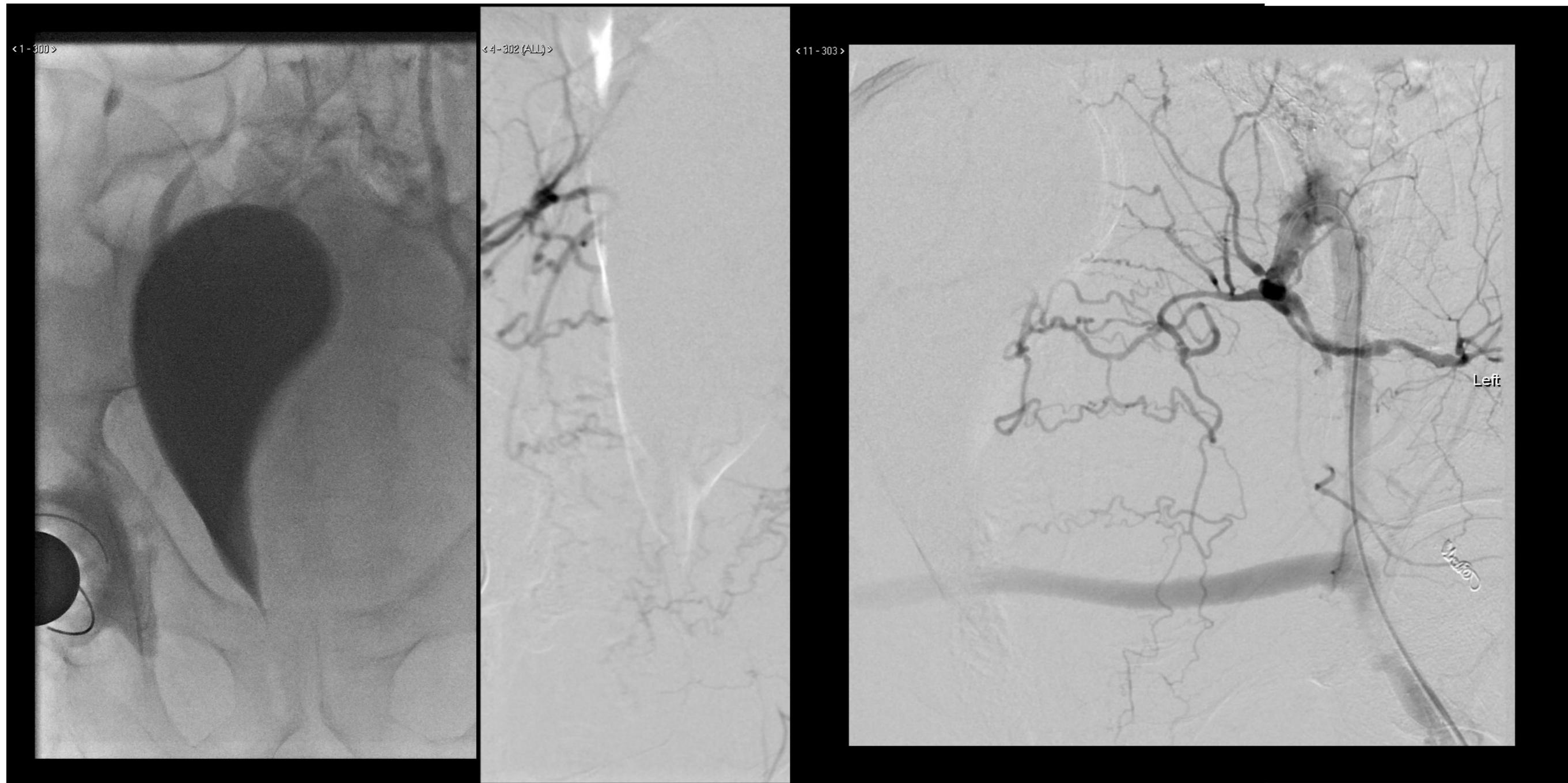
77 year old - trip in street - x-ray at 19:13



CT - 22:03 - 2hrs 50 mins



Angiogram - 01:40 - 6 hrs 27 mins



Renal Trauma

- Trauma
 - Blunt or penetrating
 - Iatrogenic 1-2 % (Biopsy / PCNL)

- Grading
 - I - III conservative management.
 - IV - IV non-conservative management.

52 year old - RTA - CT 19:36



Angiogram

2 hours 5 mins

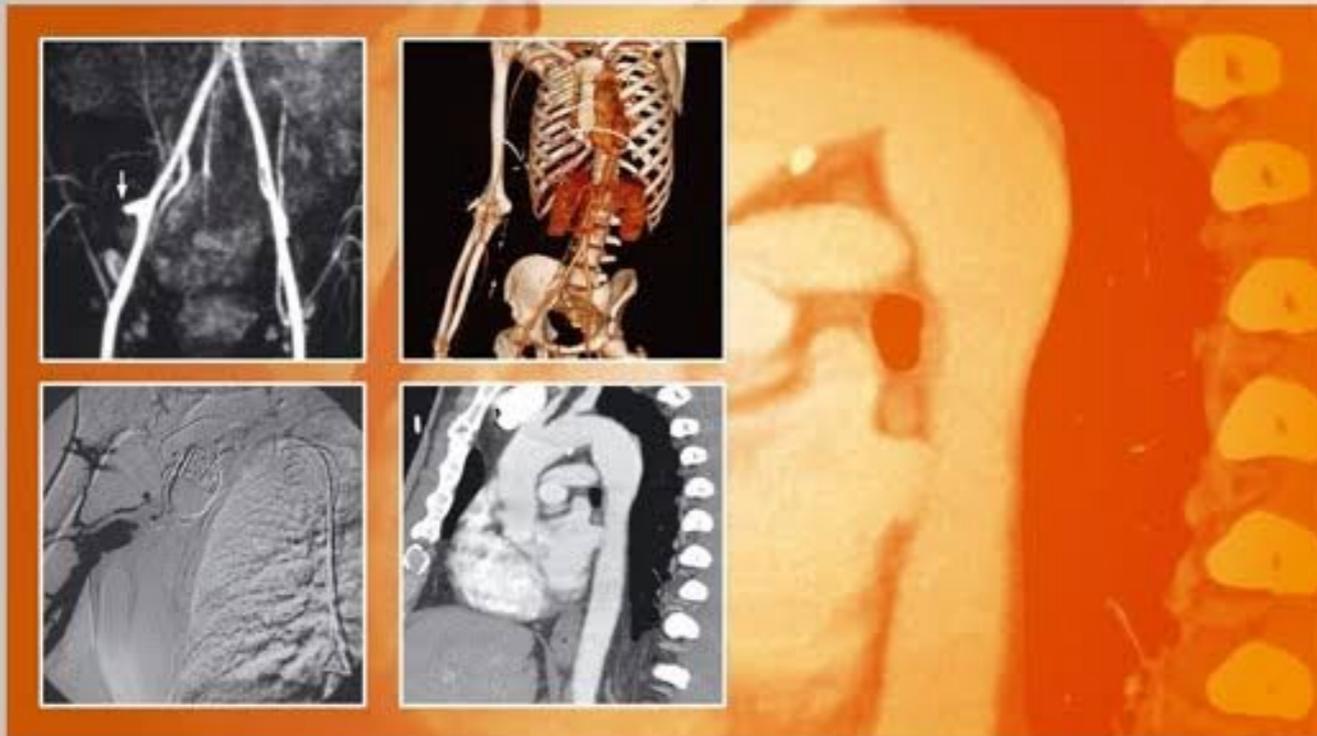


Trauma

- Anaesthetist
- Trauma surgeon
- Haematologist
- Radiologist /IR

Interventional Radiology in Trauma Management

Jaime Tisnado
Rao R. Ivatury



 Thieme

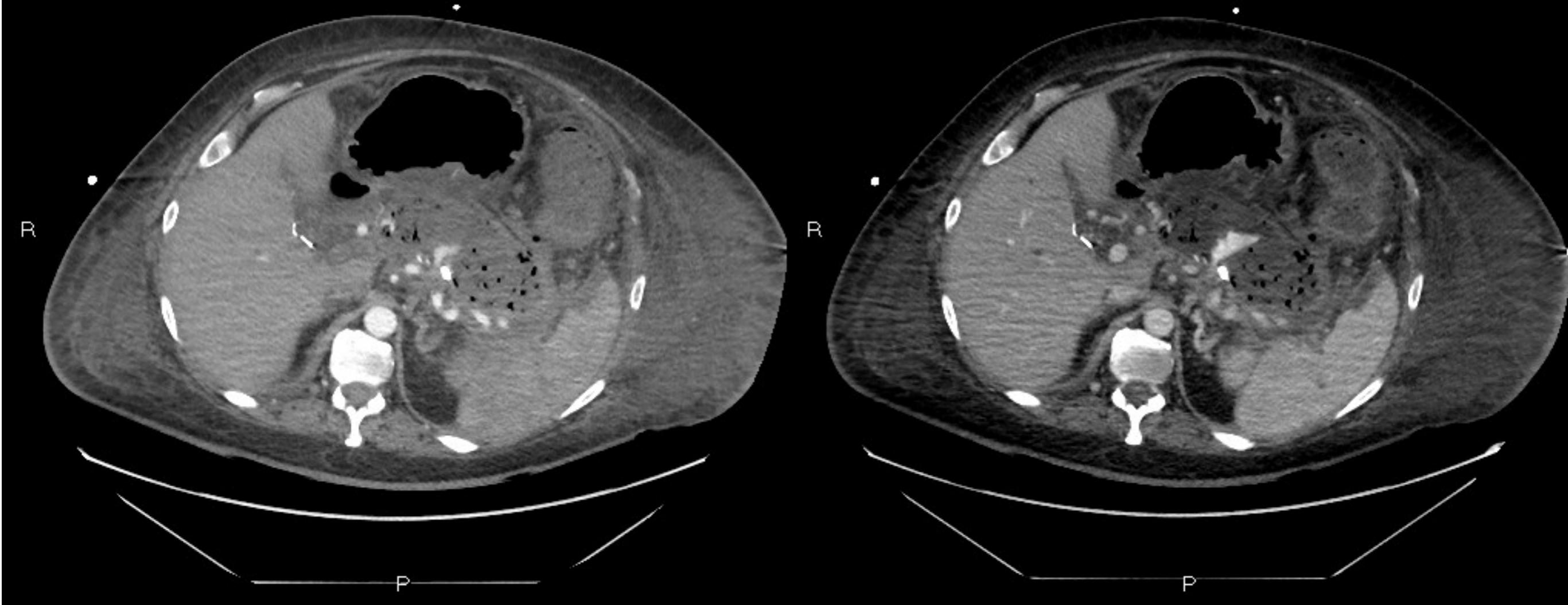
Royal Free London 
NHS Foundation Trust

Where else?

45 year old - pancreatitis - on ITU - sudden drop in pressure

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17:58



Angiogram - embolised splenic artery



Post renal biopsy - CT - 14:43



Angiogram

3 hours 18 mins

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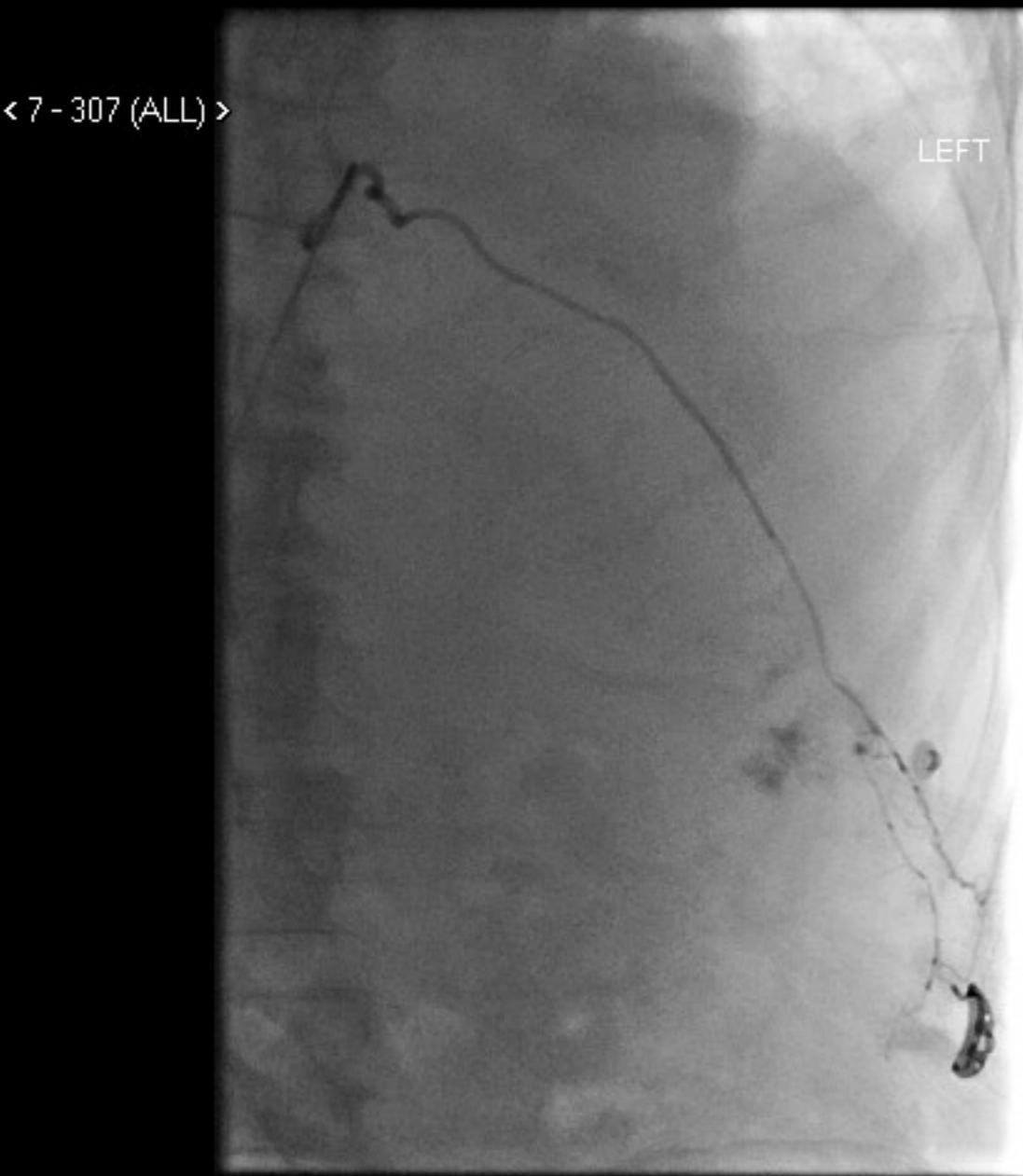


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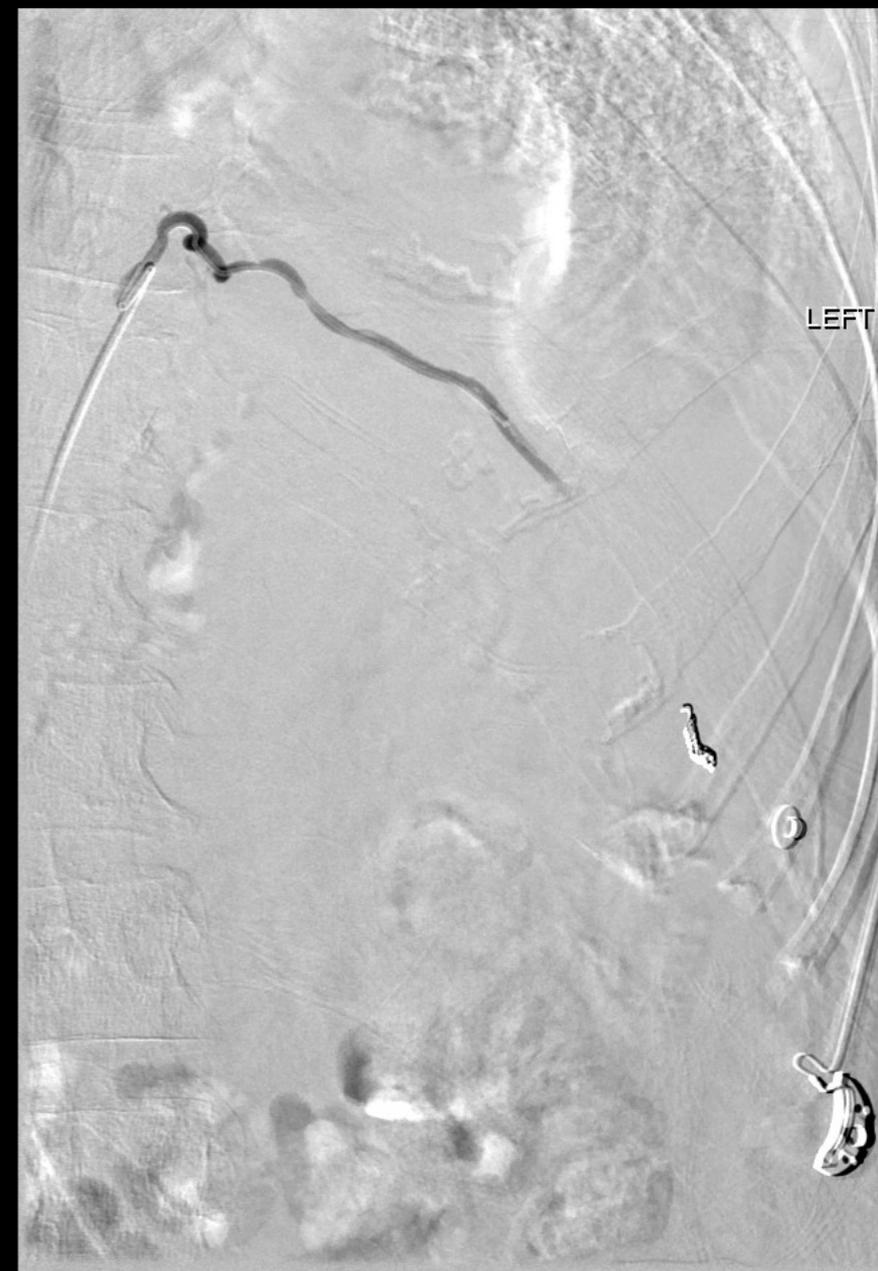
67 year old , lymphoma, post renal biopsy

11th intercostal artery



9 hours

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35 year old - post islet cell Tx - CT 05:45

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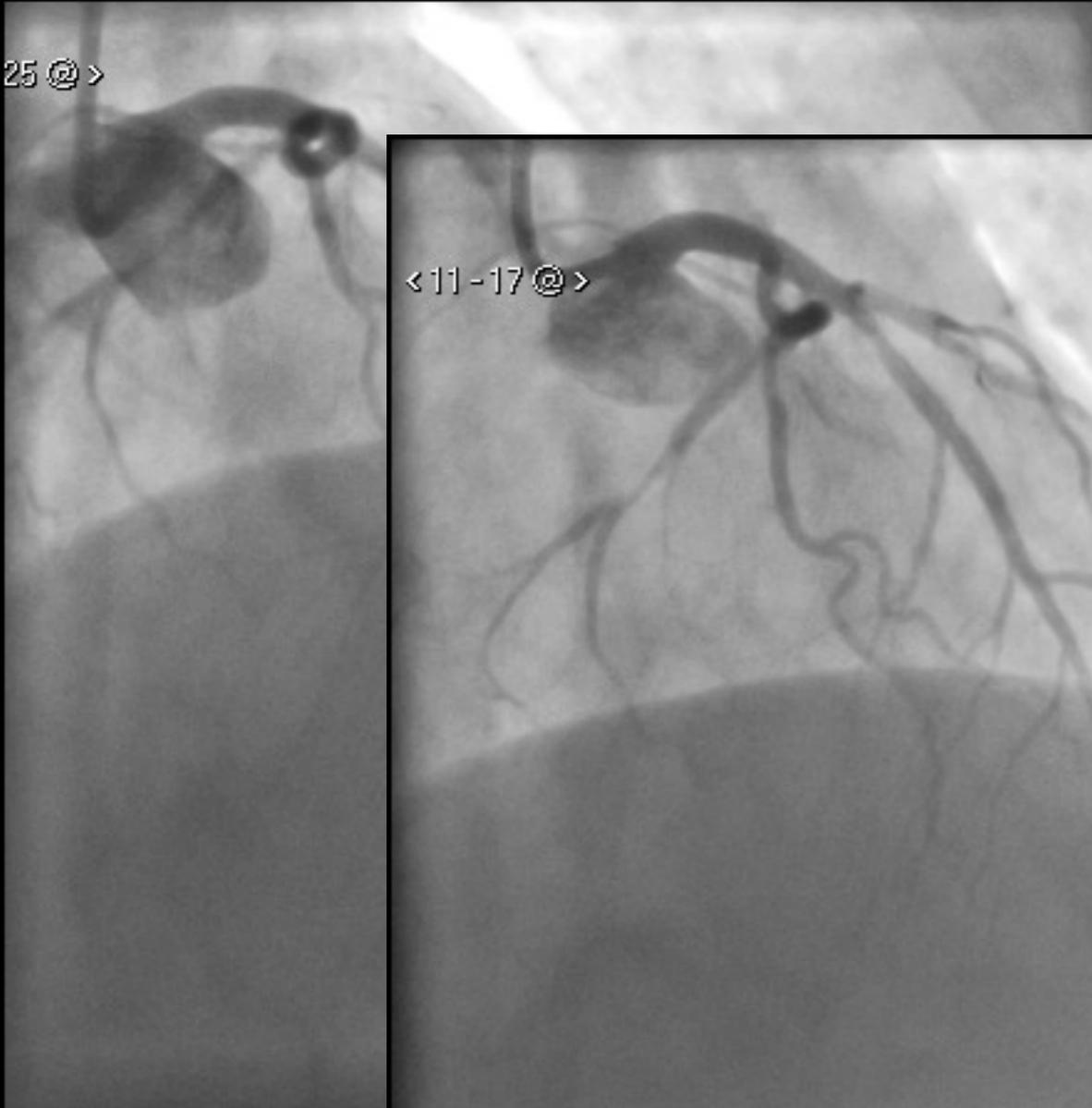


Internal mammary branch bleed.

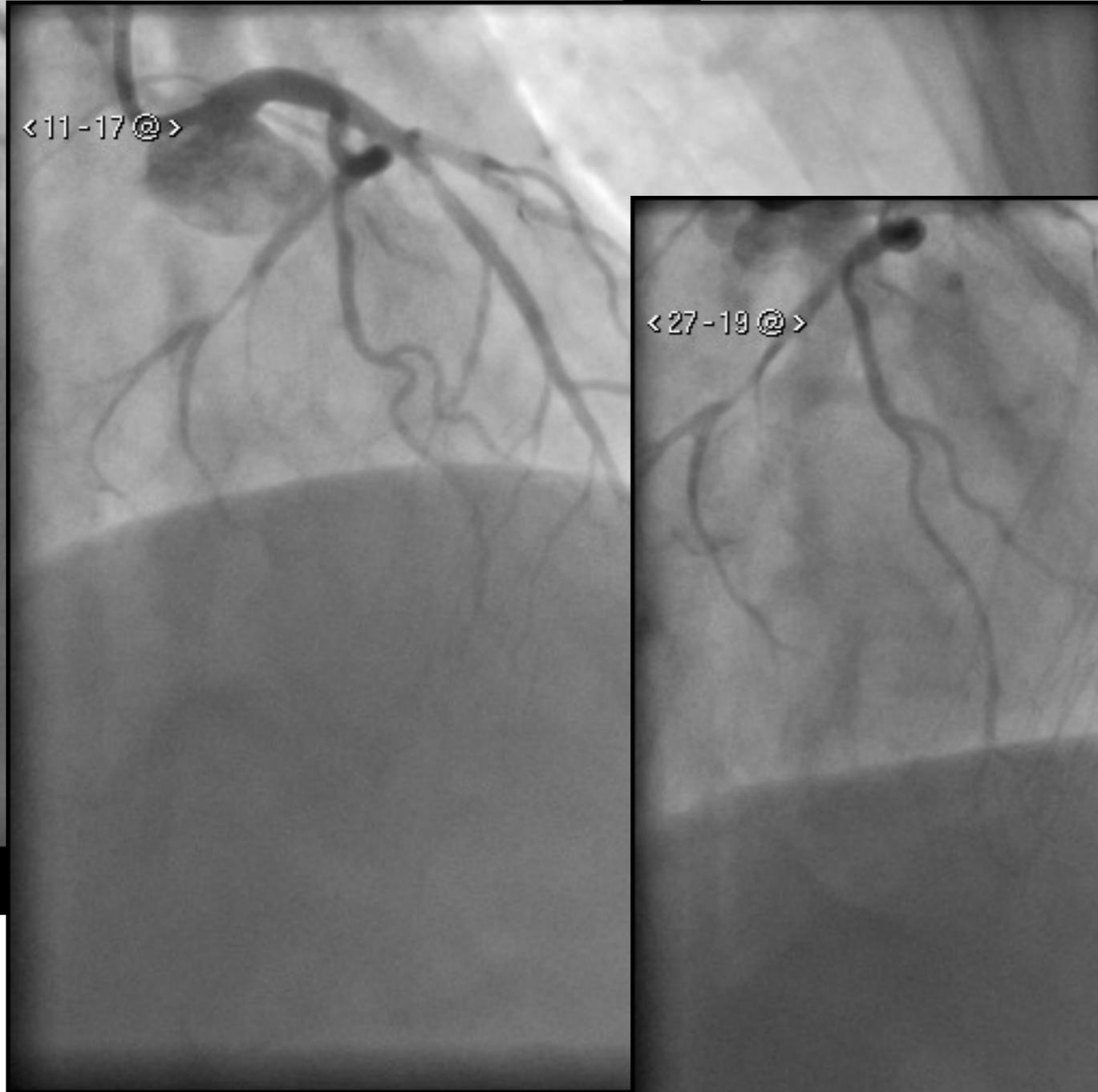


Cardiology

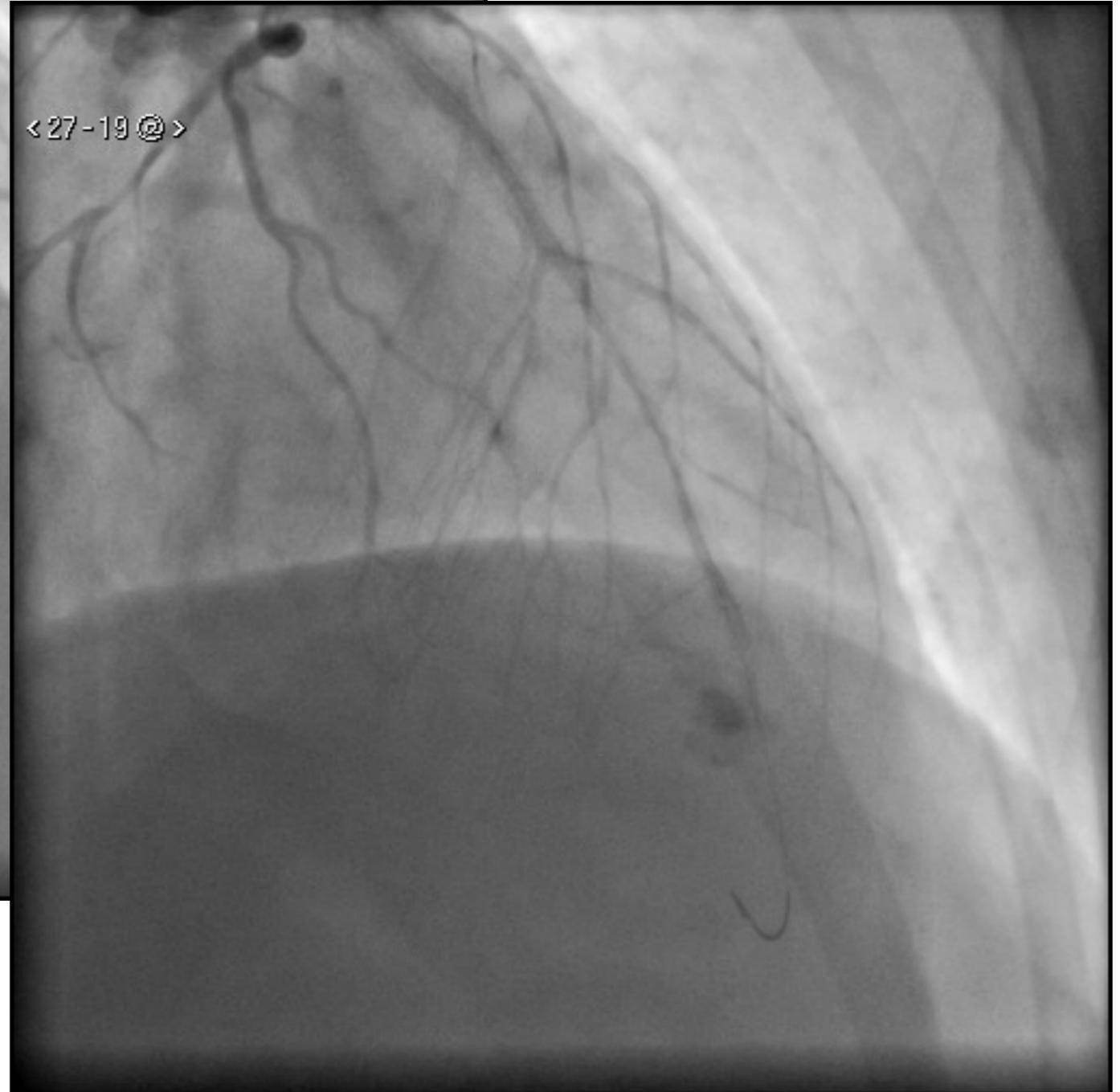
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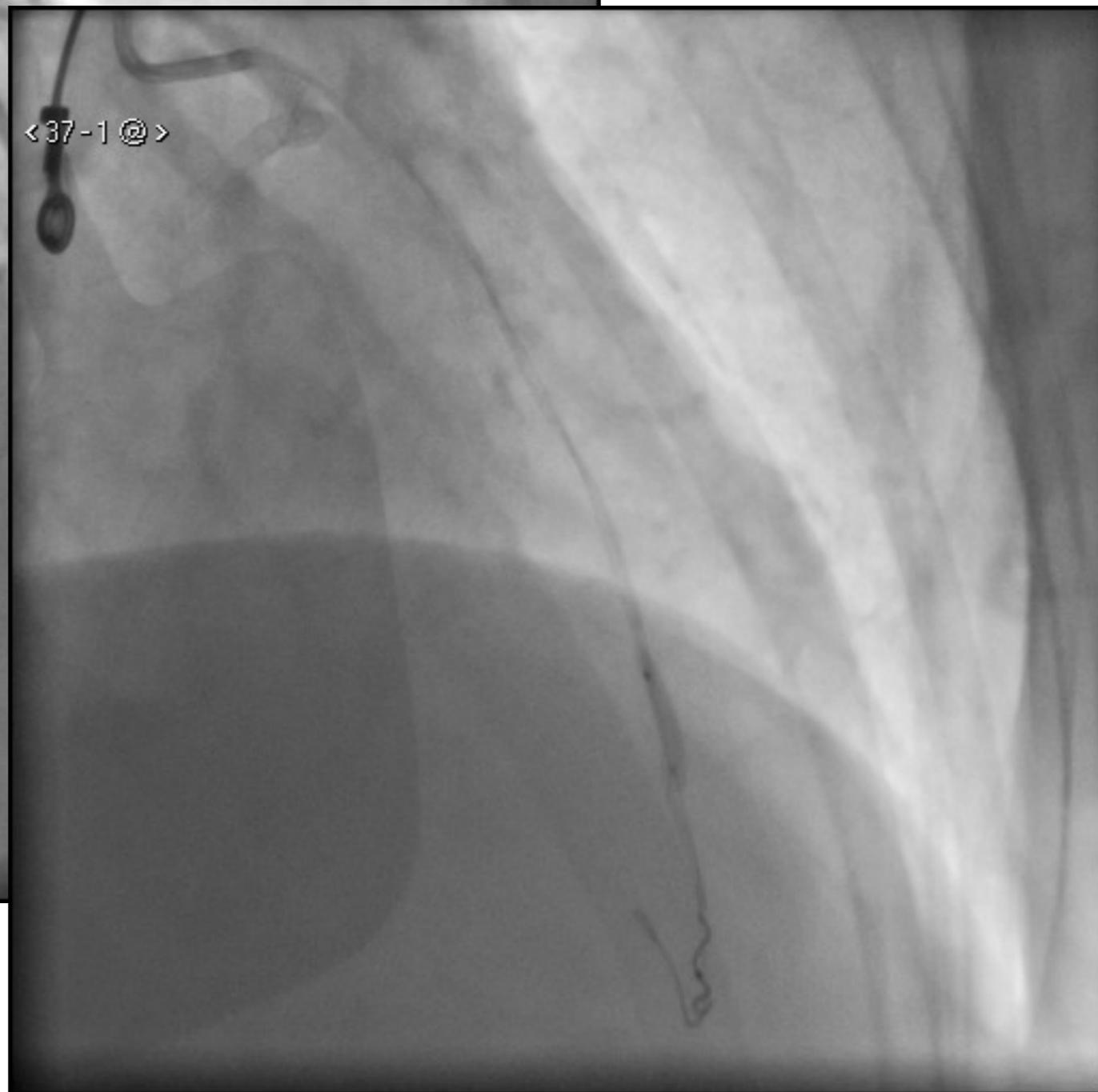
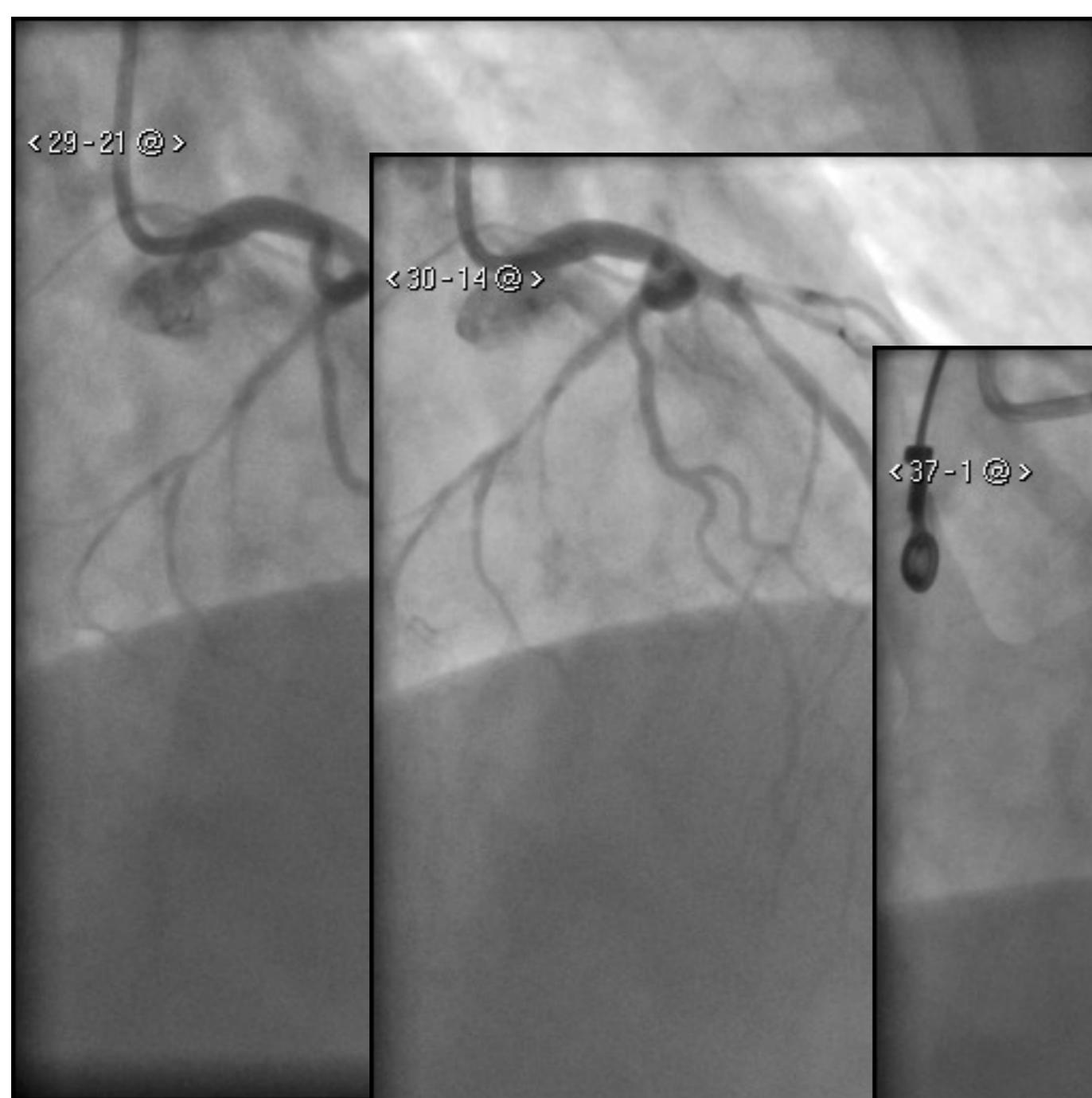


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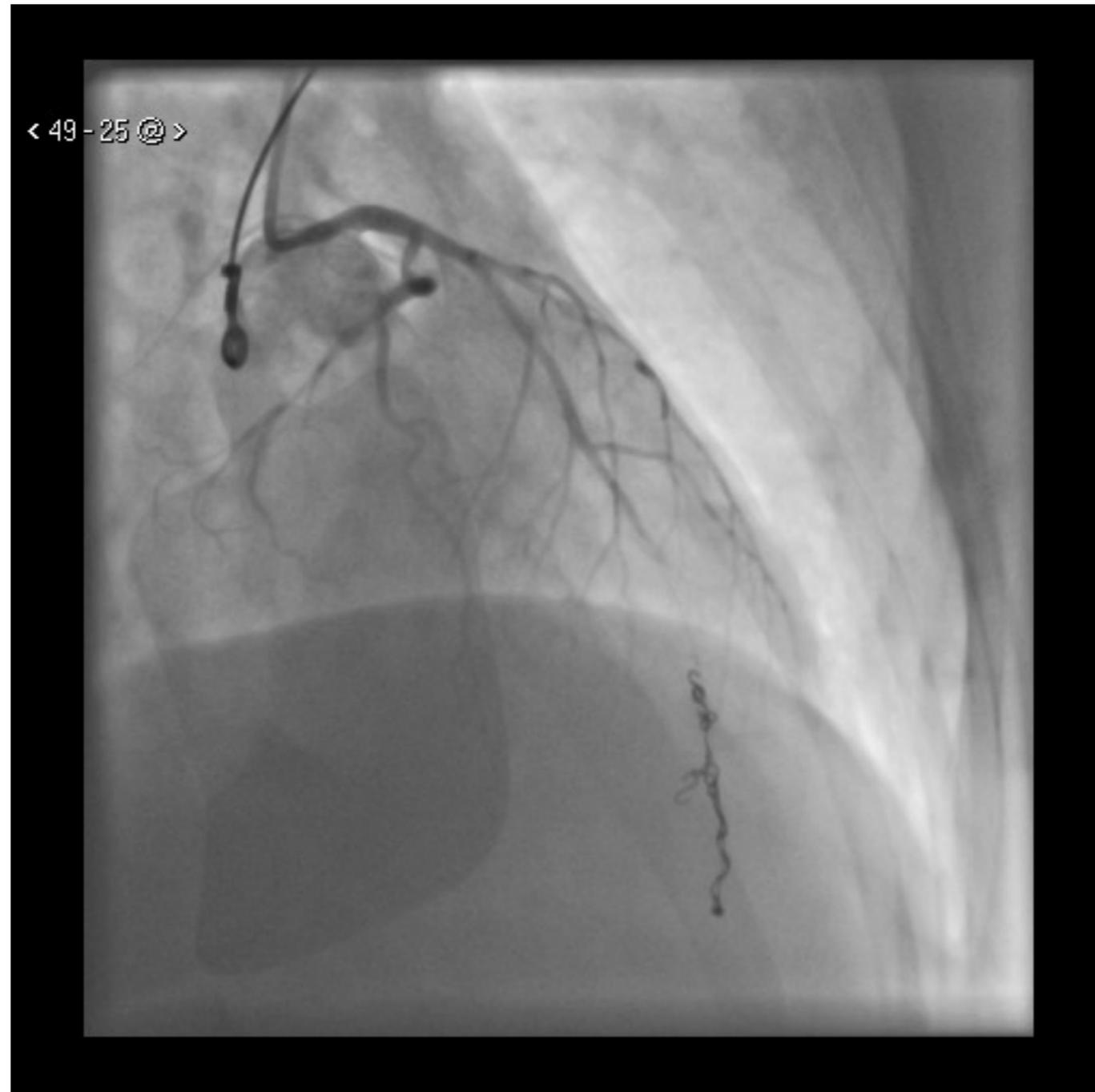


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Embolised LAD



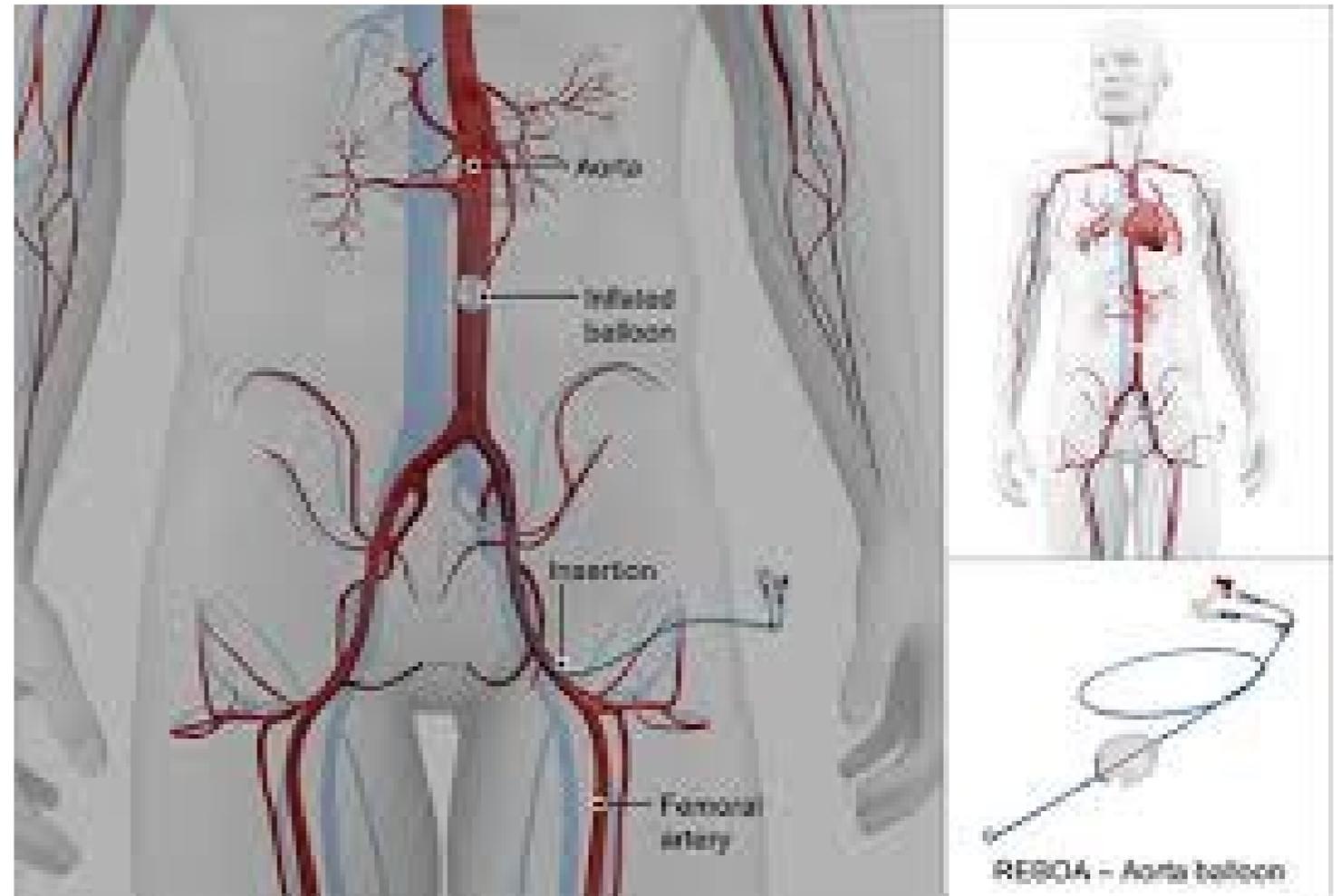
Current



Reboa - Resuscitative Endovascular Balloon Occlusion of the Aorta

Complications:

- Ischaemia
- Thrombosis
- Dissection



7 Fr Sheath

Future





KEEP
CALM
AND LOVE

Interventional
Radiology