

Nottingham University Hospital Experience with XperCT



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OBJECTIVE

- * Fenestrated Endovascular Aneurysm Repair
- * Transarterial ChemoEmbolisation (TACE)
- * Prostate Embolisation
- * Radiologically Inserted Gastrostomy

XperCT

Fast, high-resolution cone beam CT during interventions

Having the ability to visualize surrounding anatomical structures can add CT-like soft tissue imaging in the form of Philips XperCT to the interventional arsenal.

With XperCT we can assess soft tissue and bone structure at any time during an intervention, without the need to transport the patient to a separate CT room.

XperCT soft-tissue information is available in the examination room within 90 seconds after acquisition. Complications can be addressed faster and corrective actions taken immediately.

Follow-up XperCT scans assist with post-

interventional validation of procedural success, while the patient is still on the table.

The live, dynamic capabilities of 2D fluoroscopy and cross-sectional or 3D capabilities of CT can combine together in one room, one procedure, for positive results.

Cone beam CT can be performed during a regular angiography or any other intervention in the angiosuite. The body part in the isocenter of the C-arm is imaged during a 180 – 360 degrees rotation.

Just like with standard CT, the images can be viewed in orthogonal planes or in a multiplanar reconstruction. In addition, the images can be fused with fluoroscopy to provide the interventionalist with extra information



Greater insight and confidence in finding and treating the problem

Live Image Guidance supports excellent detection of lesions and feeder vessels for embolization procedures and for accurate needle guided ablations

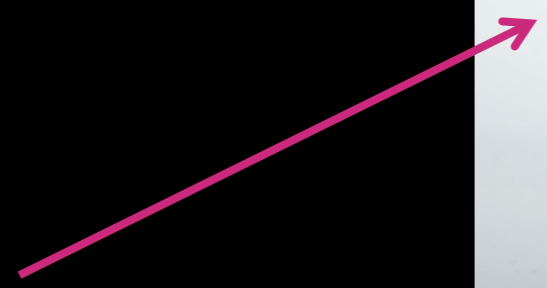
Lower barriers for minimally invasive interventions

Innovative imaging techniques expand scanning options while speeding reconstruction and maintaining low dose

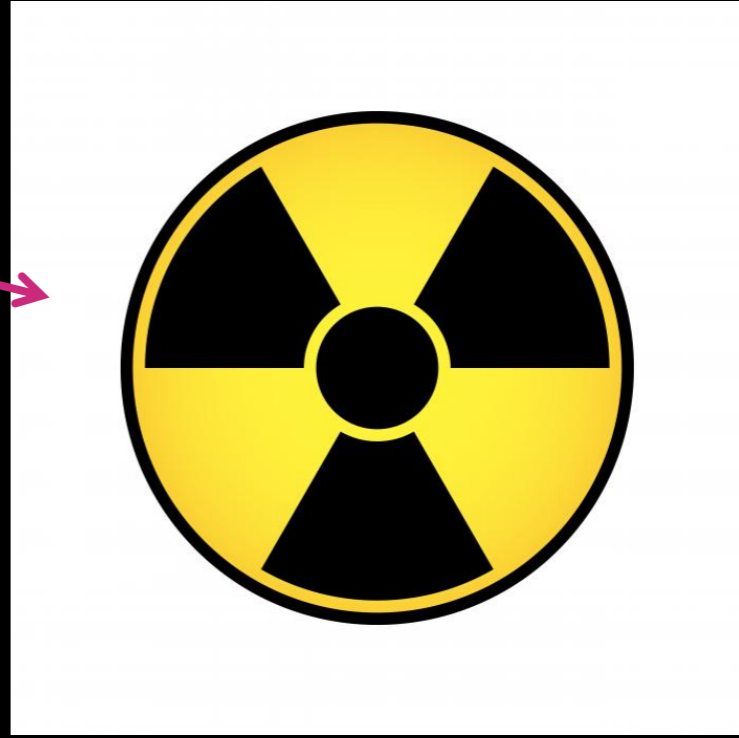
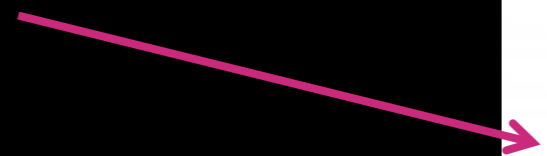
Increased economic value

Opening doors to new procedures and techniques helps increase system utilization to meet your financial goals

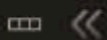
As Low As Reasonably Achievable (ALARA) principles



CONTRAST



RADIATION



AP



Segmentation



Planning



Registration



Live



Recall Planned Angle

Select an angle in the list below, then press ACC button on the X-ray system Table side controls

Angle	Preview
Right renal	
Both renals	

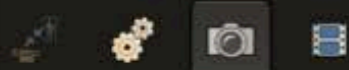
Preview

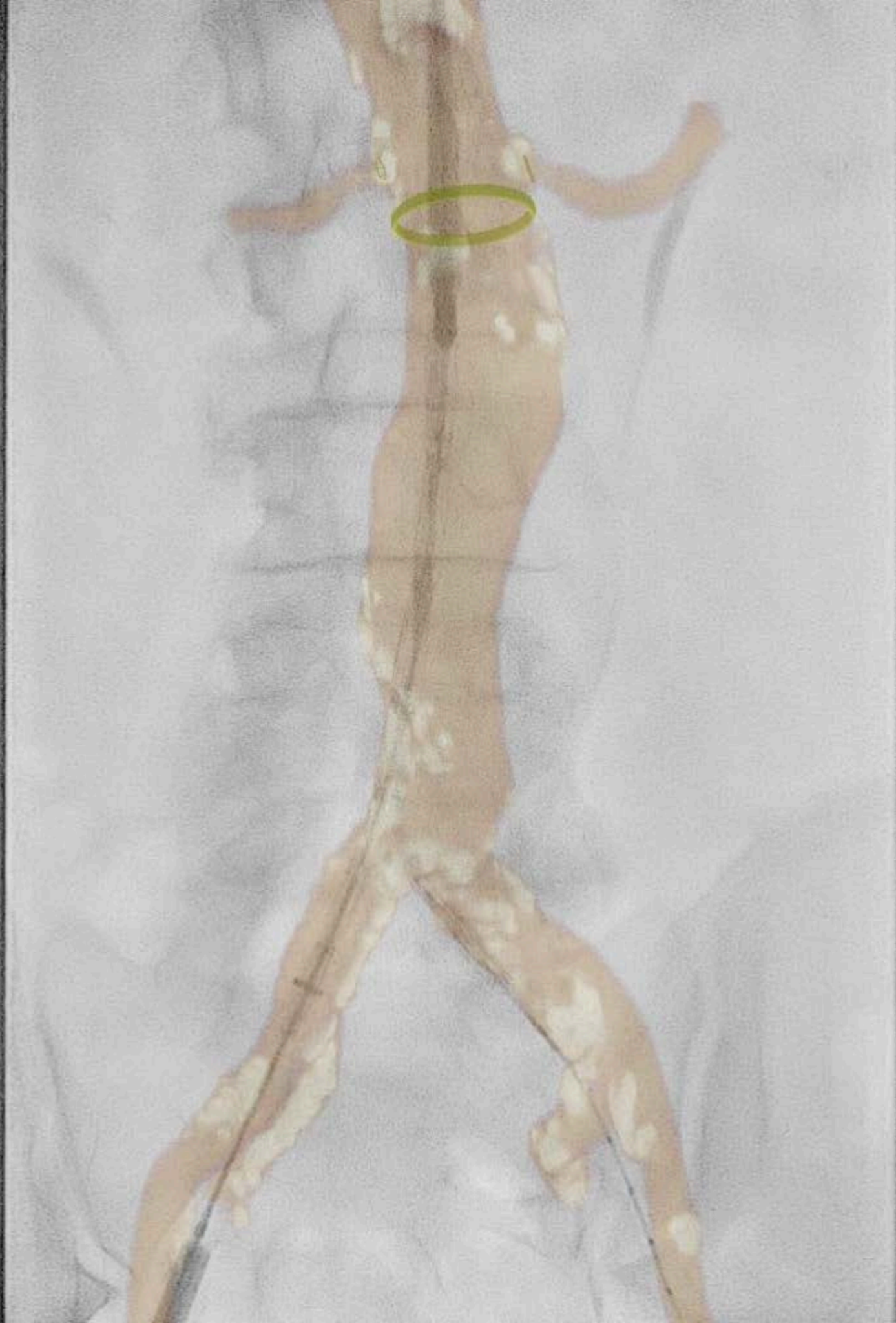


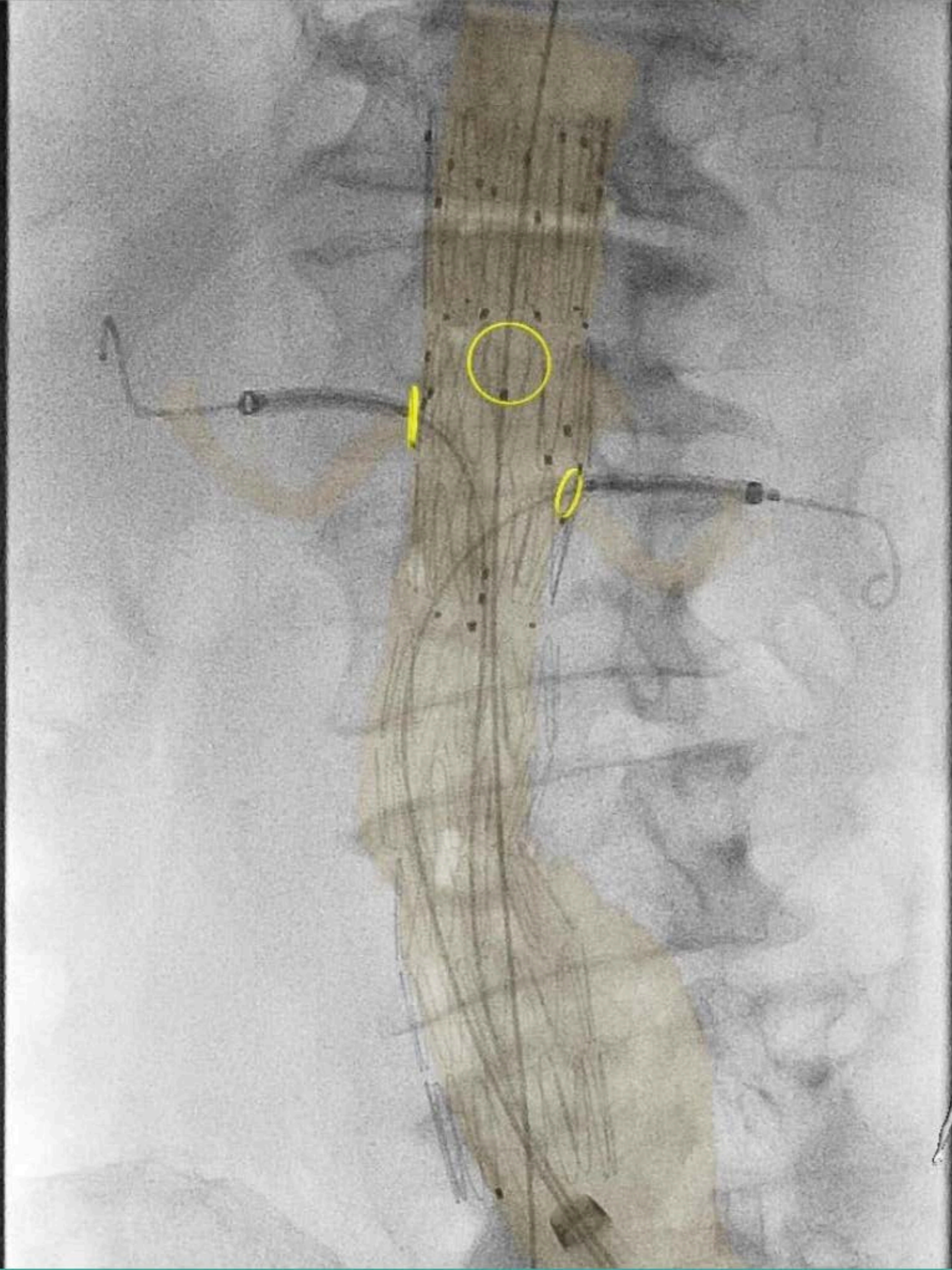
AP

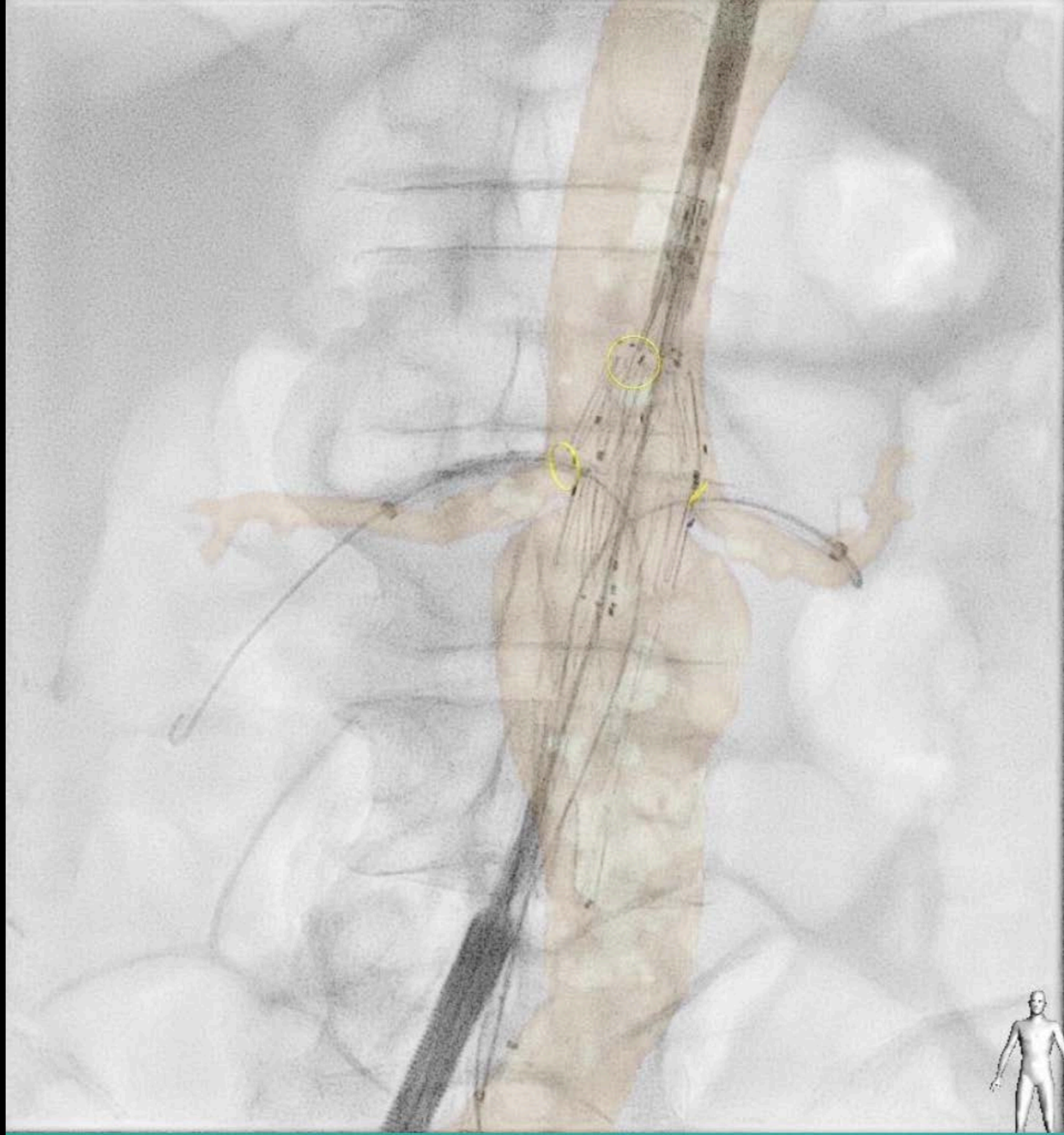
Optimize Visualization

Tissue Presets



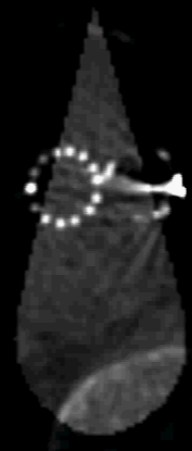






Rot: 0°
Ang: +90°

Head Side



Run Number: 5058
Volume Type: XperCT
Run Date: 2019/01/16
Run Time: 15:54:26
Zoom: 1.8ze: 251.31 x 194.22 x 251.31 mm³



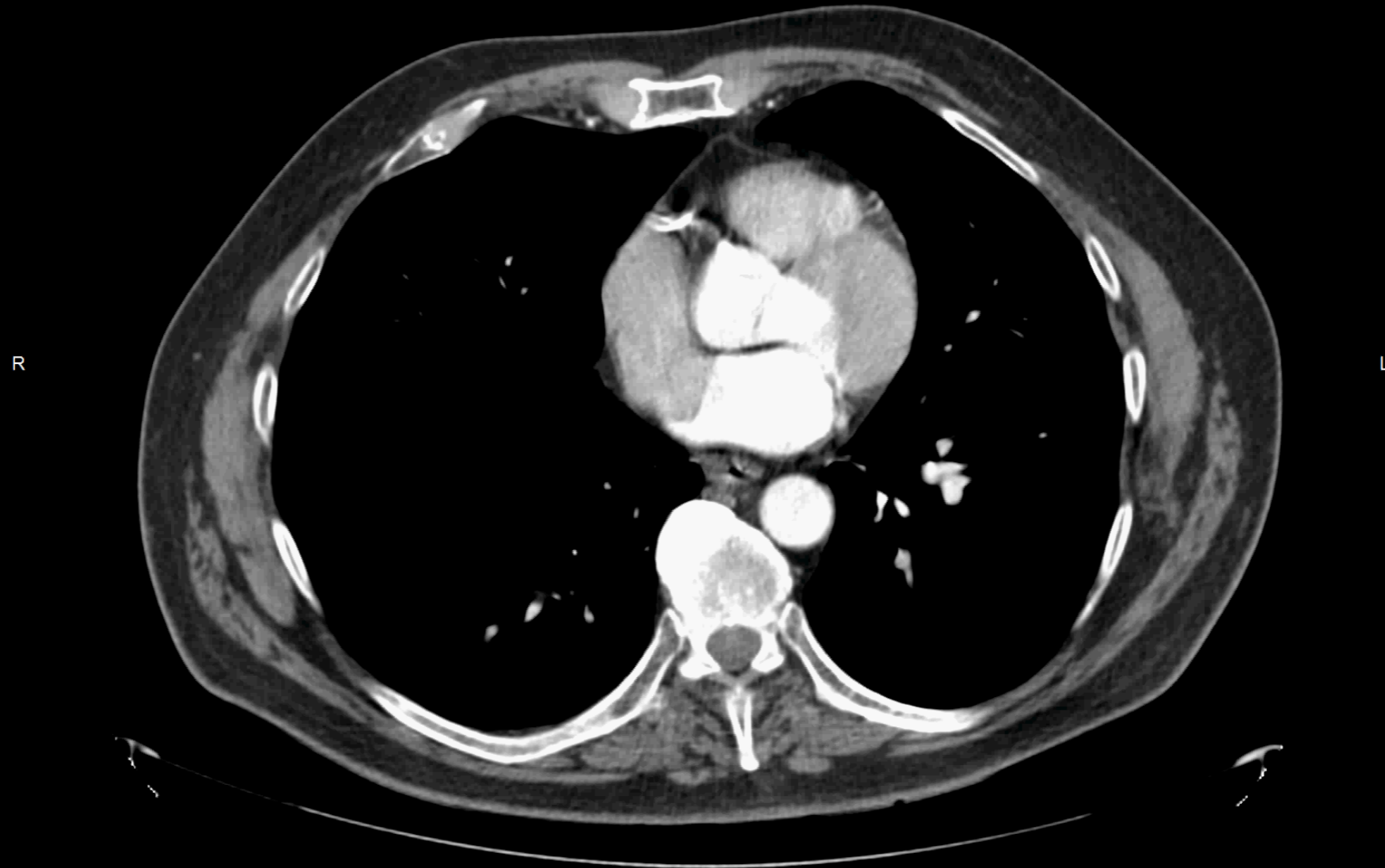
T rans A rterial C hemo E mbolisation

XperCT offers an optimized image acquisition protocol for the use of radiopaque embolic material (Lipiodol and DC Bead LUMI™) - in two ways.

1 - With Live Image Guidance controlling delivery of the beads during the embolization in a hypervascularized tumor, the clinician can see where the beads go, in 3D - targeted delivery.

2 - where the lesion is hypovascular and the radiation oncologist cannot 'see' the lesion to direct external beam stereotactic radiotherapy. We embolise the region of the tumour resulting in what can be seen as a 'lucency' (hole) where the tumour is.

Lipiodol TACE CT pre



Zoom:3.2
BP:-162.3
ST: 2.5
NT CT 01

W:400
C:40

Lipiodol TACE XperCT

Rot: 0°
Ang: +90°

Nurse Side

Run Number: 5012
Volume Type: XperCT
Run Date: 2019/03/29
Run Time: 12:26:39
Zoom: 1.8ze: 251.10 x 194.06 x 251.10 mm³
BP:
ST:0.0
RX1RAANG02
AlluraXper



W:255
C:128



DC Bead LUMI™

- **DC Bead LUMI™**
- DC Bead LUMI™ contains a radiopaque moiety. This allows you to visualise, in real-time, where the embolisation material is being delivered – greater assurance for the operator.
- But more importantly:
 - Allows for real-time adjustments during TACE procedure to guide precise delivery of beads into the whole tumour.

Lumi conventional CT

Im: 21/102

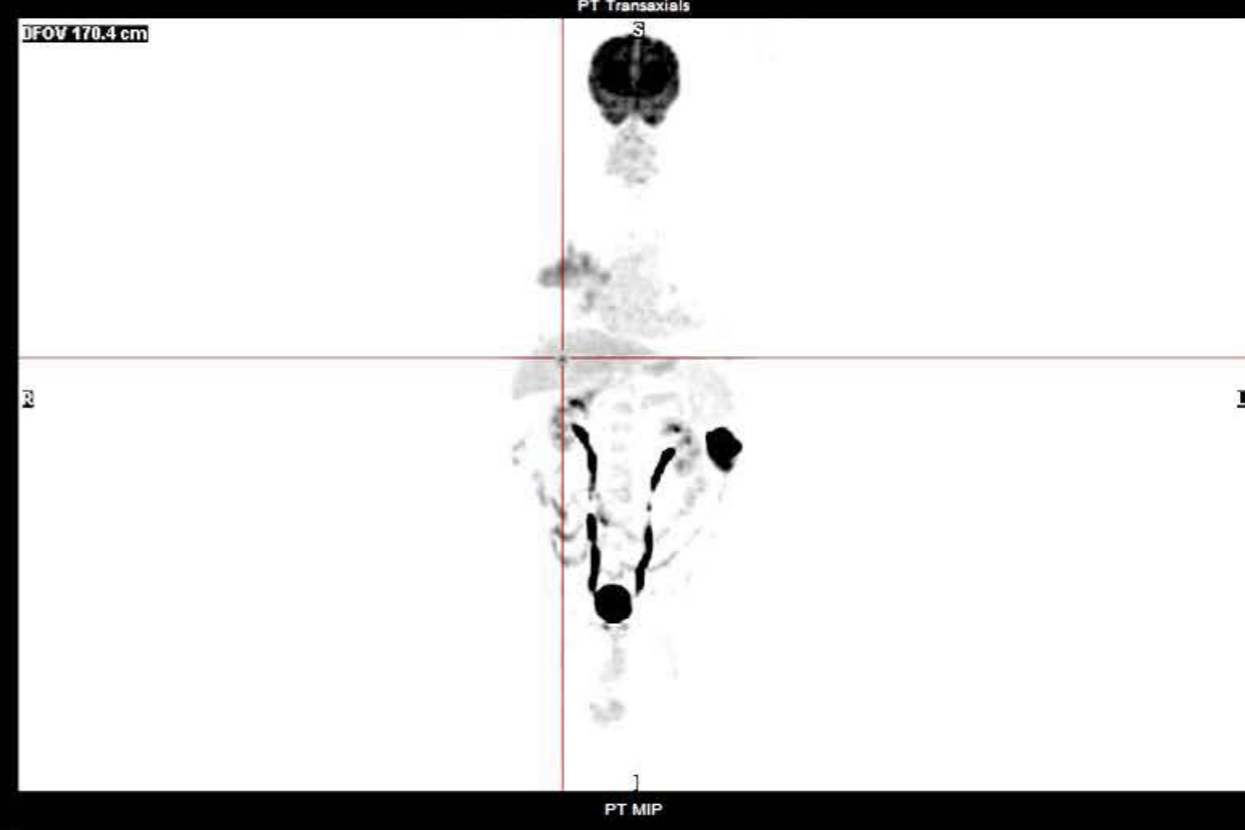
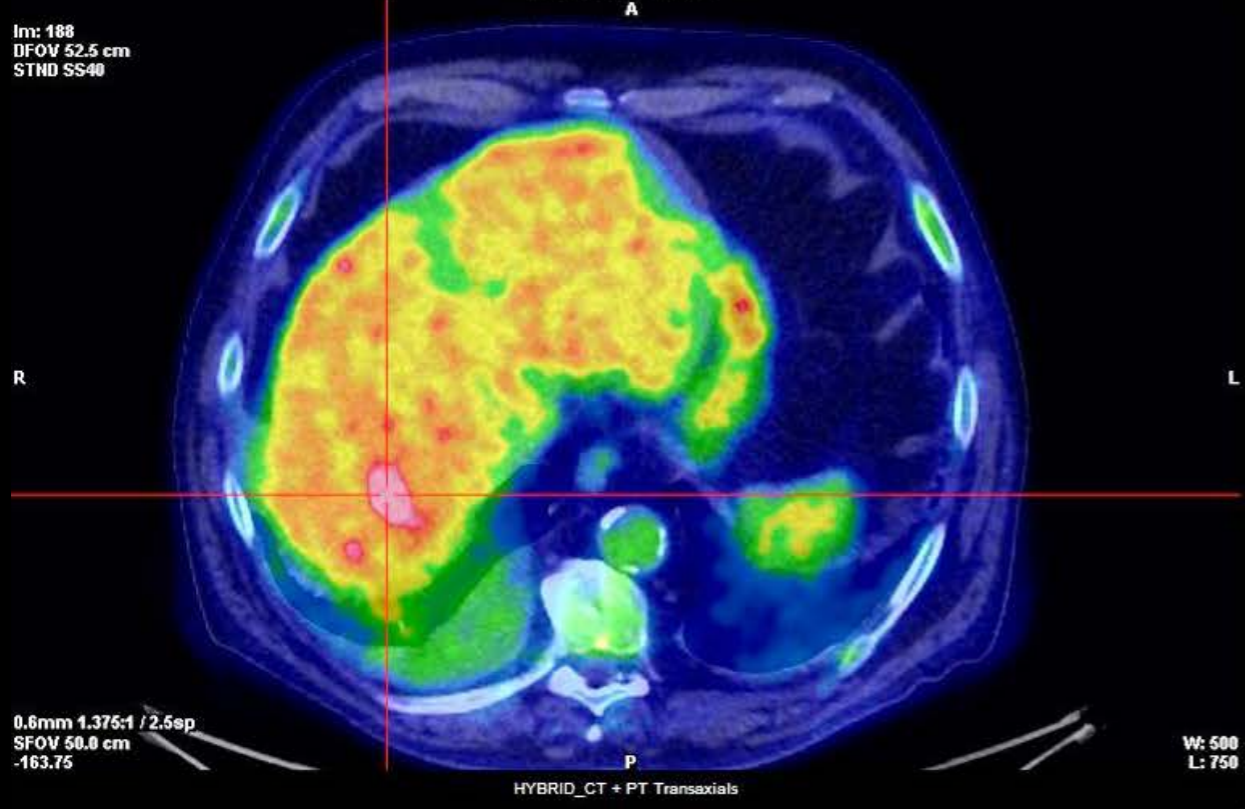
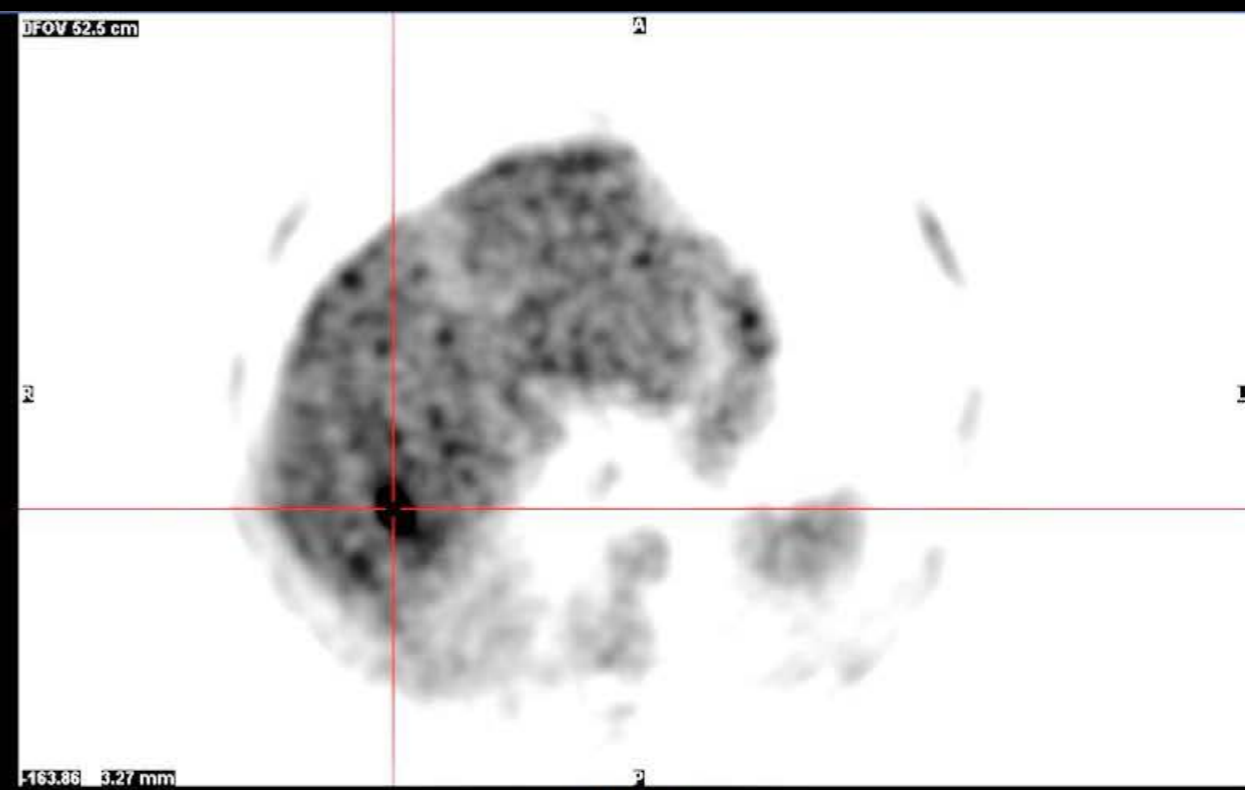


Zoom:3.2
BP:1703.5
ST: 5.0
CT Department
Aquilion

W:400
C:40
DummyStudyDesc!

P

PETCT



Inherently Aligned

Lumi Ang frontal

DummyAcc!

Se: 9 (9)
Im: 1/64



Zoom: 1.6

BP:

ST: 0.0

RX1RAANG02

AlluraXper

W: 1022

C: 511

DummyStudyDesc!

Lumi Ang non

Rot: 0°
Ang: +90°

Nurse Side



Run Number: 5008
Volume Type: XperCT
Run Date: 2019/03/05
Run Time: 13:19:23
Zoom: 1.8ze: 251.10 x 194.06 x 251.10 mm³
BP:
ST:0.0
RX1RAANG02
AlluraXper



W:255
C:128

Lumi Ang lesion

Rot: 0°
Ang: +90°

Nurse Side



Run Number: 5017
Volume Type: XperCT
Run Date: 2019/03/05
Run Time: 13:52:06
Zoom: 1.8ze: 251.31 x 194.22 x 251.31 mm³
BP:
ST:0.0
RX1RAANG02
AlluraXper



W:255
C:128

Study ID: 1001000
Exam Date: 2019/03/05

Rot: 0°
Ang: +90°

Nurse Side



Run Number: 5017
Volume Type: XperCT
Run Date: 2019/03/05
Run Time: 13:52:06
Zoom: 1.8ze: 251.31 x 194.22 x 251.31 mm³
BP:
ST:0.0
RX1RAANG02
AlluraXper

W:255
C:128

PROSTATE Artery Embolisation

Prostate artery embolisation is a non-surgical way of treating an enlarged and troublesome prostate (BPH) by blocking off the arteries that feed the gland resulting in shrinkage.

Prostate artery embolisation works well for men with lower urinary tract symptoms caused by benign prostatic hyperplasia and NICE (National Institute for Health and Care Excellence) has reported on its benefits.

Risk - Non-target embolisation with damage to the bladder and/or rectum.



Zoom:6.4
BP:-20.2
ST: 4.0
NCH-MR

TR:5140.0
TE: 101.0
TI: 0.0
FA: 90.0
W:1720
C:860

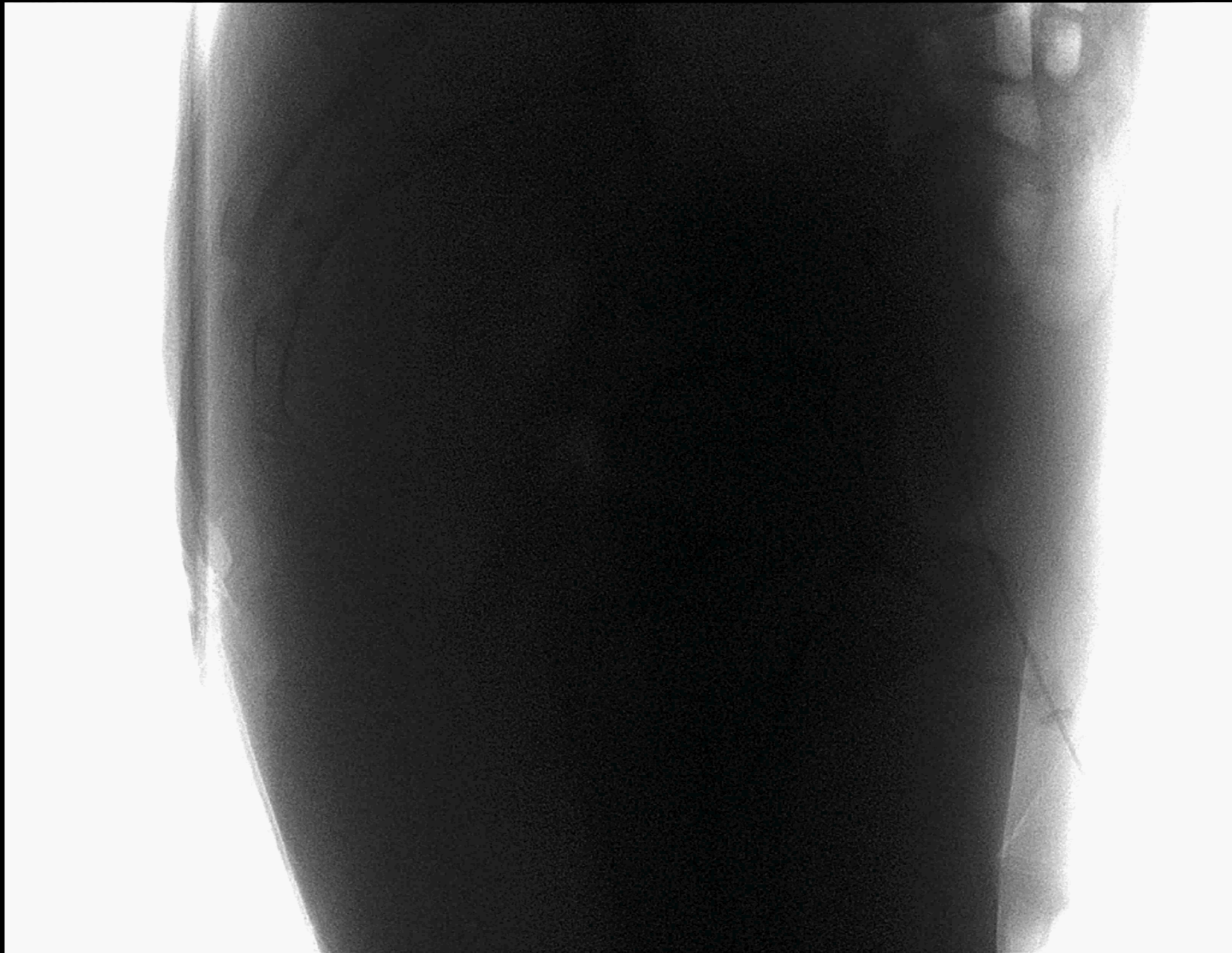


Zoom:3.2
BP:30.2
ST: 3.0
NCH-MR

TR:5560.0
TE: 116.4
TI: 0.0
FA: 90.0
W:1808
C:904

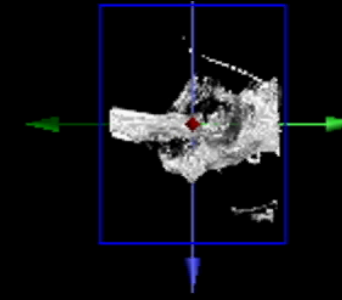


Prostate Rotational Angio



Rot: 0°
Ang: +90°

Nurse Side



Run Number: 5010
Volume Type: XperCT
Run Date: 2019/03/19
Run Time: 11:04:42
Zoom: 1.8: 251.10 x 194.06 x 251.10 mm³
BP:
ST:0.0
LB_XA_06
AlluraXper



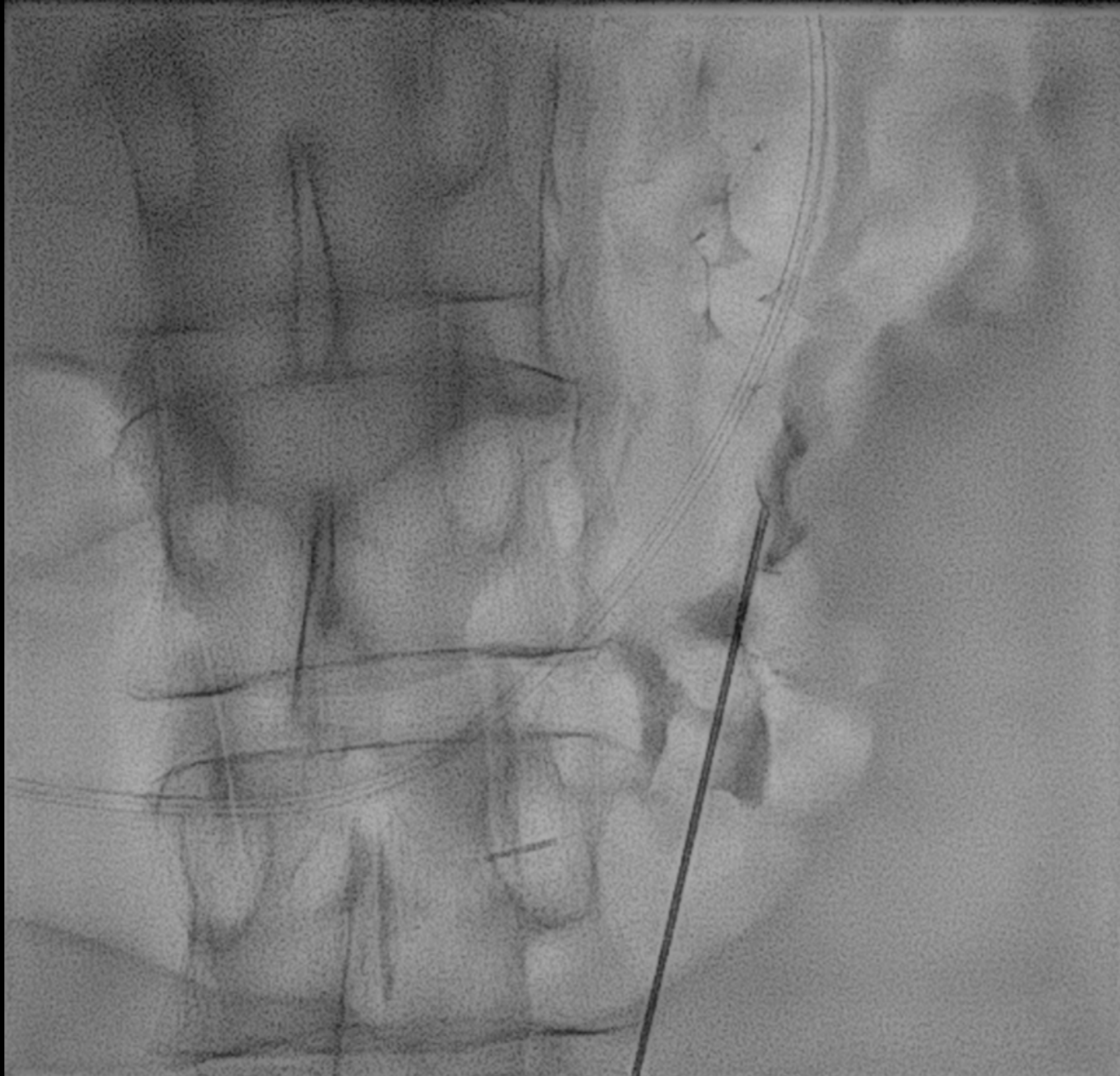
W:255
C:128

RIG Insertion

Indications of Radiologically Inserted Gastrostomy

- Neurogenic dysphagia (high risk of aspiration) Stroke, traumatic brain injury, cerebral palsy
- Head and neck cancer
- Oral/throat surgery
- Endoscopic contraindicated or failed PEG
- Patients requiring additional nutritional supplementation (burns, hydrocephalus, congenital heart disease, anorexia)

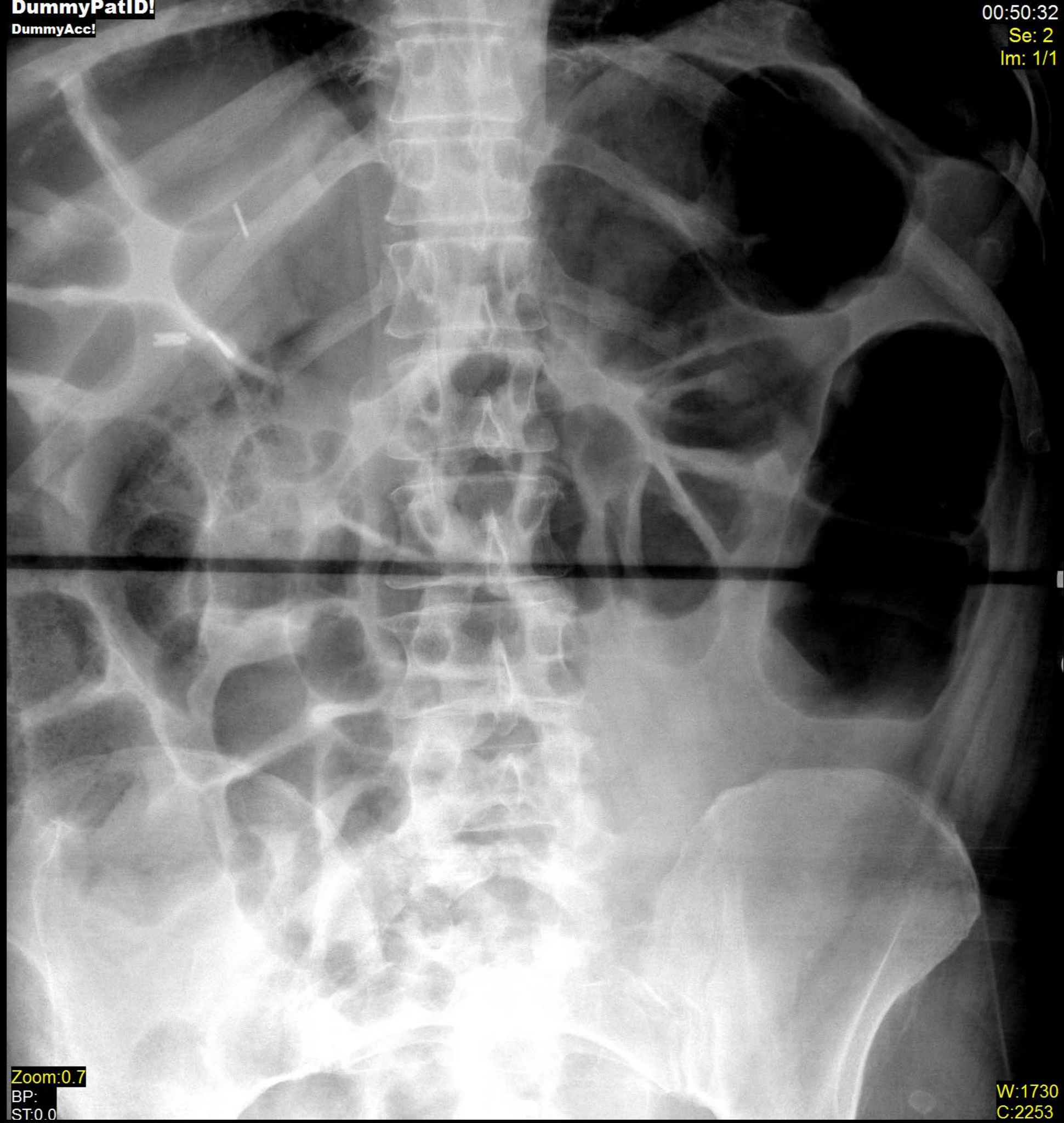
Technique





DummyPatID!
DummyAcc!

00:50:32
Se: 2
Im: 1/1



Zoom:0.7
BP:
ST:0.0

W:1730
C:2253

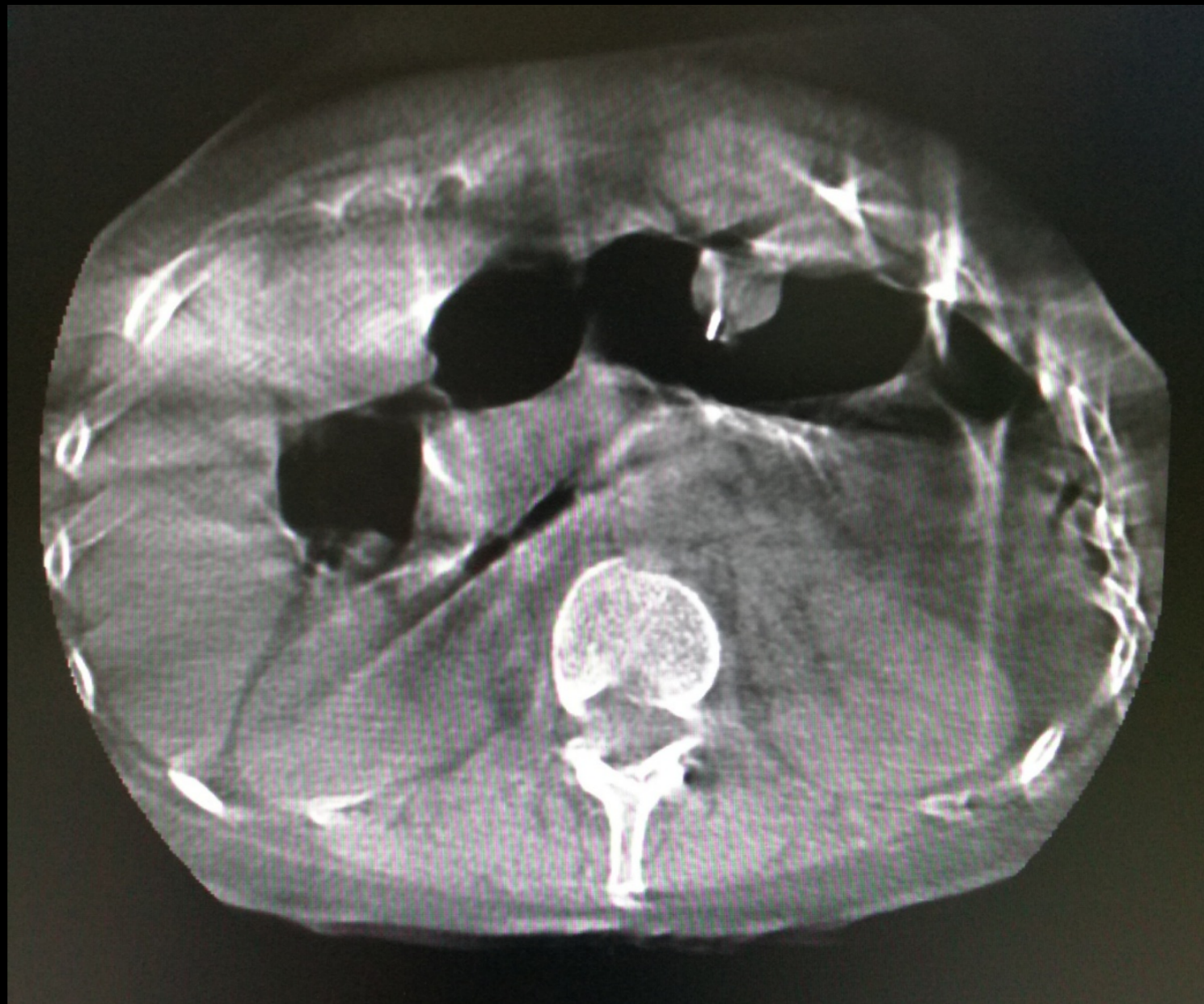


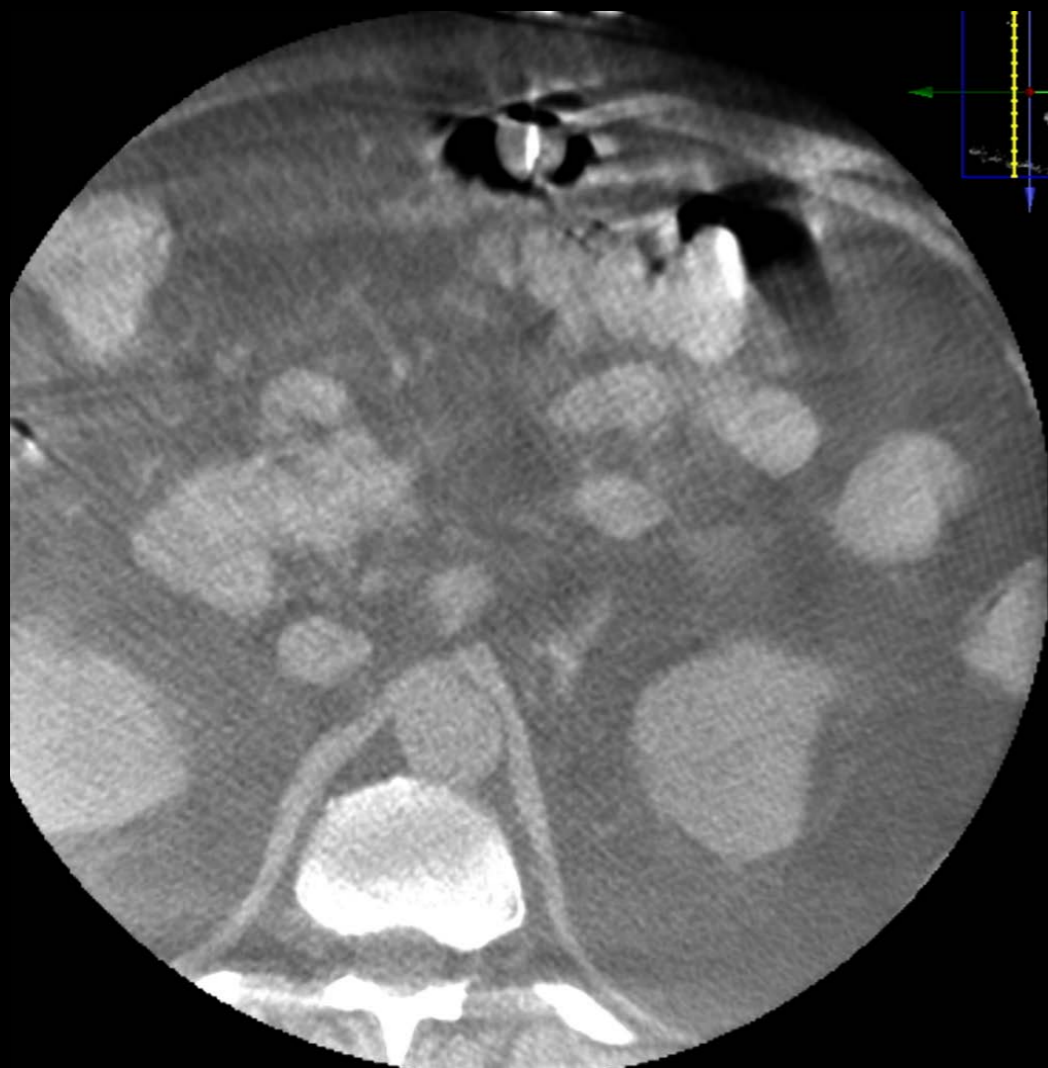
ROLL POSITION

- **PROP POSITION**

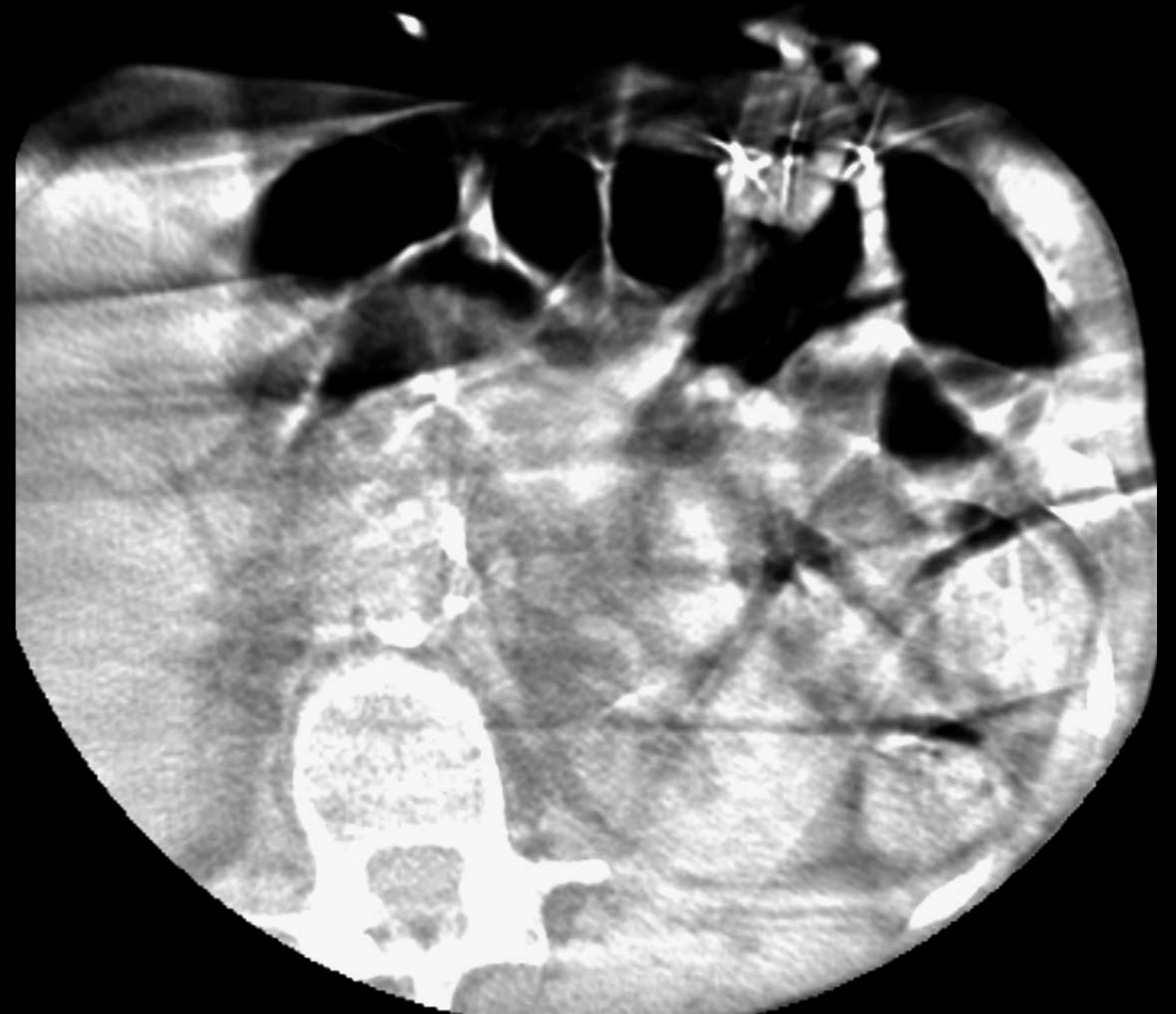


POSITION CHECK AFTER INSERTION





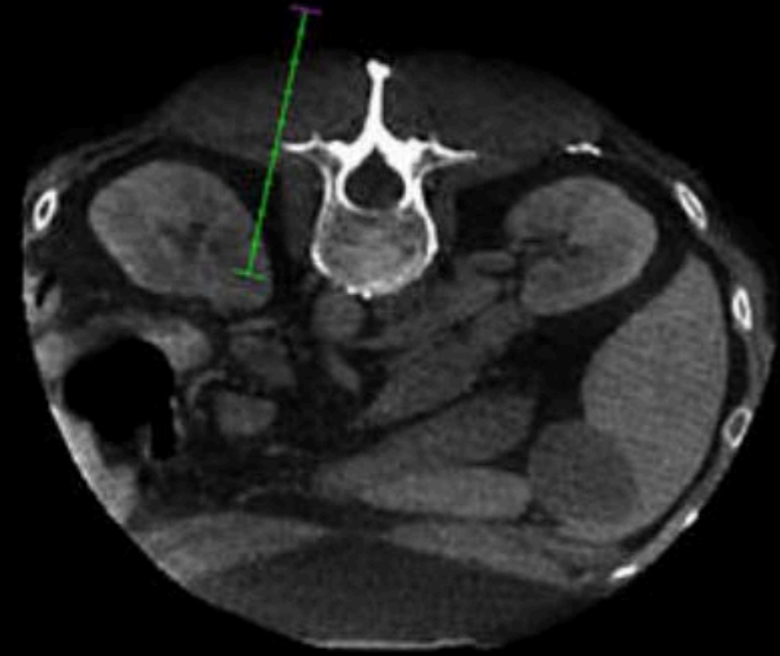
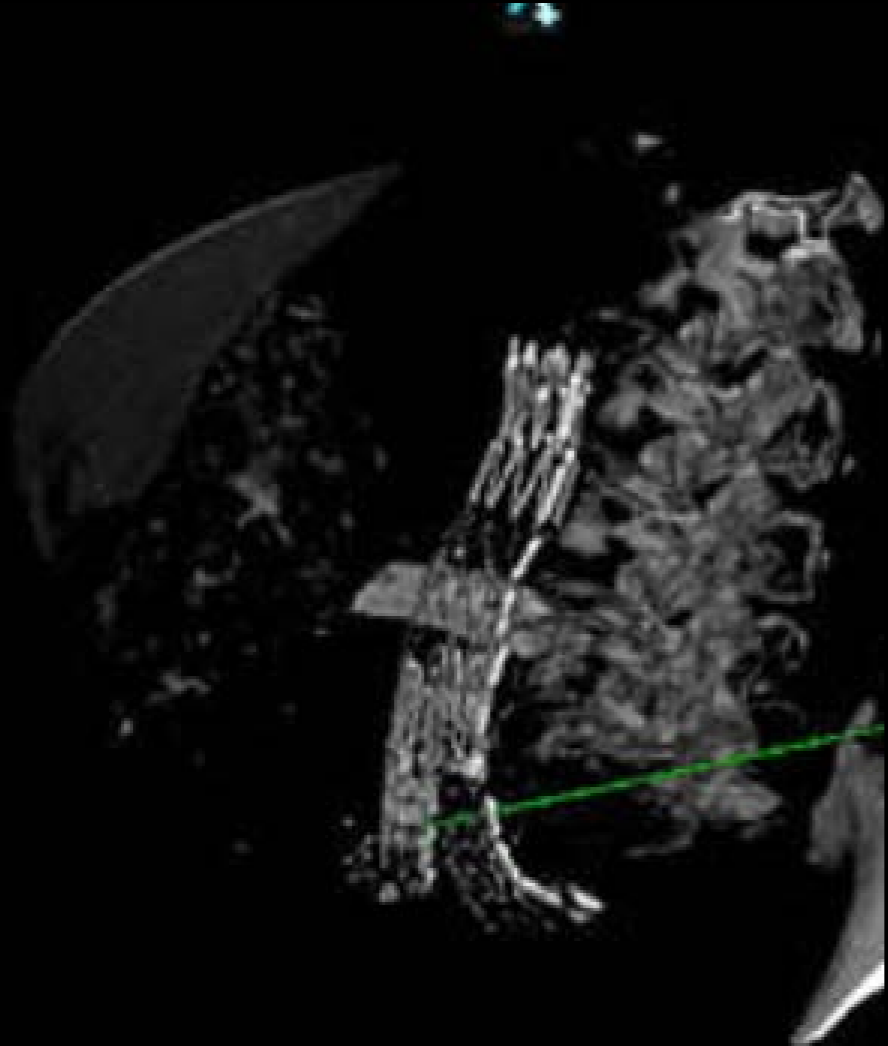
**CT Dose : 23025 (Angio 1),
1 CT, total dose (27398)**



**CT Dose : 5465 (Angio 1), 1
CT, total dose (8203)**

WHAT ELSE?





W 255 : L 127

THANK YOU