



Cape Town
INTERVENTIONAL
RADIOLOGY



Interventional Radiology in GIT Disease

A Multidisciplinary Partnership for Better Outcomes

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Body Interventional Radiologist

Background

- Diagnostic Radiology training at the University of Stellenbosch.
- Interventional Radiology sub-specialization at the University of Calgary in Canada.
- European Board Certification in Interventional Radiology (EBIR) from the Cardiovascular and Interventional Radiology Society of Europe (CIRSE)



Disclosures

- Director of Cape Town Interventional Radiology, a private practice comprised of Fellowship-Trained Subspecialists. Based at UCT Private Hospital in Observatory.
- Head of Interventional Radiology at Groote Schuur Hospital.
- Senior Lecturer at UCT.
- Member of CIRSE Task Force on IR education and examinations.



What is Interventional Radiology (IR)?



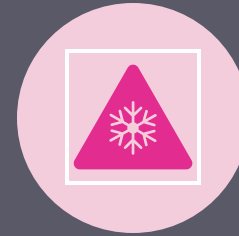
INTERVENTIONAL
RADIOLOGY (IR) =
MINIMALLY INVASIVE,
IMAGE-GUIDED THERAPY



USES FLUOROSCOPY,
ULTRASOUND, CT, AND MRI
FOR PRECISION



TREATS CONDITIONS
WITHOUT OPEN SURGERY



FASTER RECOVERY, LOWER
RISK, AND LESS PAIN FOR
PATIENTS



USED FOR DIAGNOSIS AND
TREATMENT ACROSS
MULTIPLE MEDICAL FIELDS



Why is the Body IR Important?

- Interventional Radiologists are clinical partners in the GIT spectrum of disease.
- The Body IR plays a role in:

Pre-op planning, bridging therapies, salvage procedures, post op complications and palliative care.

- **“ The better your IR, the better you are”**



Colorectal and Upper GI

GI

Physicians

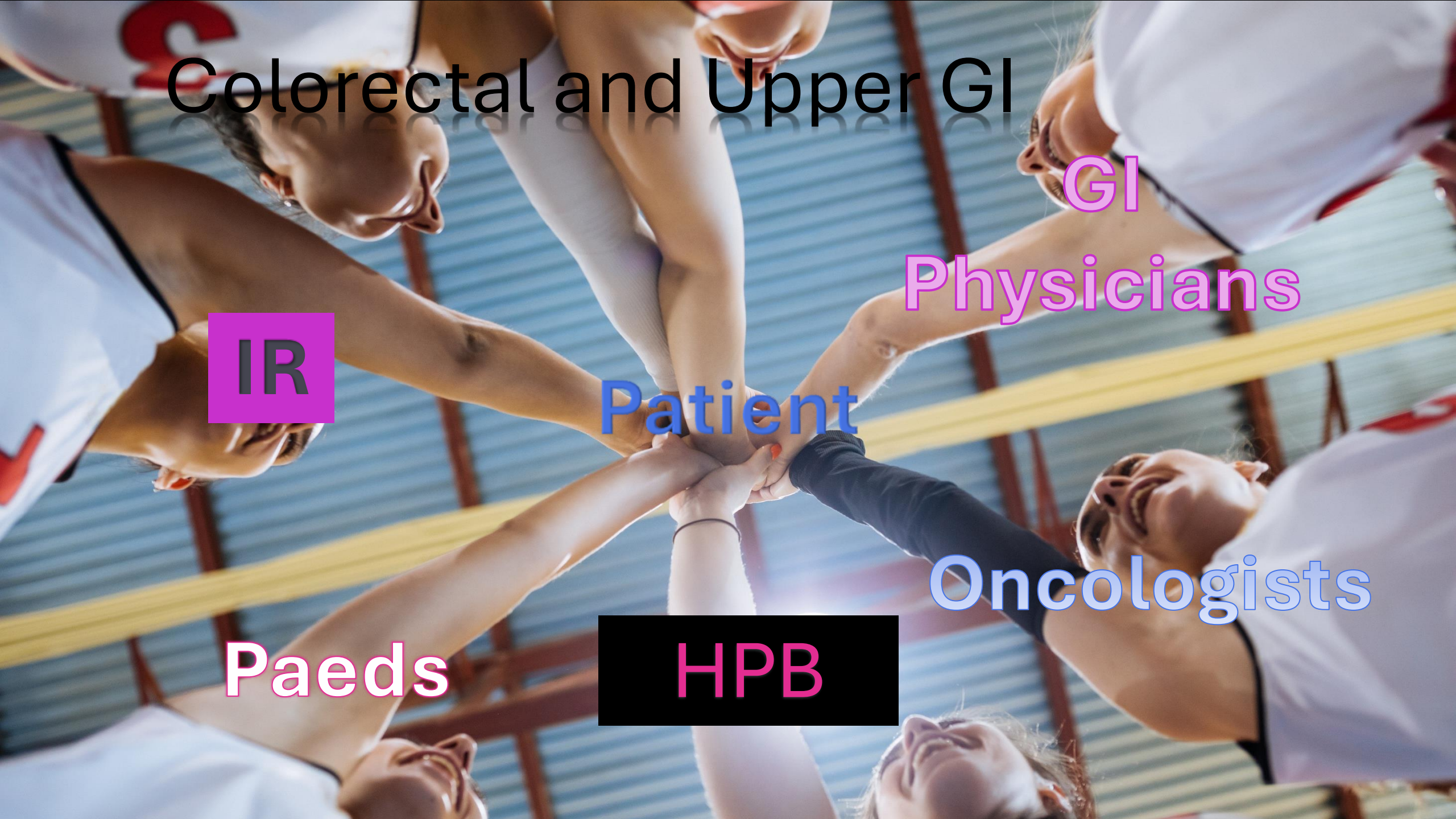
IR

Patient

Oncologists

Paeds

HPB



Applications in HPB Surgery

- **Pre-operative portal vein and right hepatic vein "Double Vein" embolization** to hypertrophy future liver remnant.
 - **Biliary drainage/stenting** (malignant & benign obstruction).
 - **Transarterial embolization** of liver tumours (TACE/TARE).
 - **Ablation (MWA/RFA)** for liver metastases or HCC.
 - IR role in **post-op collections, bile leaks, haemorrhage control.**
- 📌 **Team message:** IR as bridge to surgery, downstaging partner, and safety net post-operatively.



Applications in Upper GI Surgery


- **Oesophageal stenting** in malignant/benign strictures.
 - **Percutaneous feeding tubes** (for unresectable cases or high-risk patients).
 - **Pre-op embolization of GISTs or hyper vascular tumours.**
 - **Embolization** of various causes of Upper GI Bleeding.
 - **IR in post-oesophagectomy complications** (leak drainage, bleeding).
- ✦ **Team message:** IR supports both palliation and procedural preparation; helps reduce open interventions.

Applications in Colorectal Surgery

- **Pelvic abscess drainage** (especially in Crohn's, anastomotic leaks).
 - **Pre-op embolization** for hyper vascular tumours.
 - **Venous access and nutrition support** (PICC, ports).
 - **Control of lower GIT bleeding** (e.g., angiodysplasia embolization).
 - **Tumour ablation or TACE** for metastatic disease.
- 📌 **Team message:** IR complements surgical pathways, especially in inflammatory bowel disease (IBD), recurrent disease, or inoperable scenarios.

Role in Medical GIT

- **GI bleeding** (upper and lower) – emergency embolization.
- **Ascites management** – Permanent tunnelled drains, TIPPS.
- **TIPPS** for refractory variceal bleeding, ascites, and Budd-Chiari.
- **BRTO/CARTO/PARTO** for variceal bleeding or encephalopathy.
- **Biopsies** and image-guided diagnostics.
- **Enteral access** – gastrostomy, jejunostomy.

 **Team message:** IR helps manage complex complications and supports liver and IBD teams.



Applications in Paediatric GIT

- **Biliary interventions** in biliary atresia post-Kasai or transplant.
 - **Drainage of abscesses/collections** (e.g., IBD, post-op).
 - **Vascular access** and feeding tubes.
 - **GI bleeding** in rare syndromes.
 - Potential for **paediatric embolotherapy** (e.g., GAVE – Gastric Antral Vascular Ectasia, AVMs).
- ✚ **Team message:** IR is gentle, precise, and safe in children when working closely with paediatric GIT and surgery.

Interventional Oncology (Shared Across All Subspecialities)

- **Ablation and embolization of liver metastases** (colorectal, neuroendocrine, HCC).
- **Port insertion** for chemo.
- **Palliative stenting**, drainages, and symptom relief.
- ✦ **Team message:** IR works closely with medical oncology, providing non-surgical cancer solutions and bridging therapy.

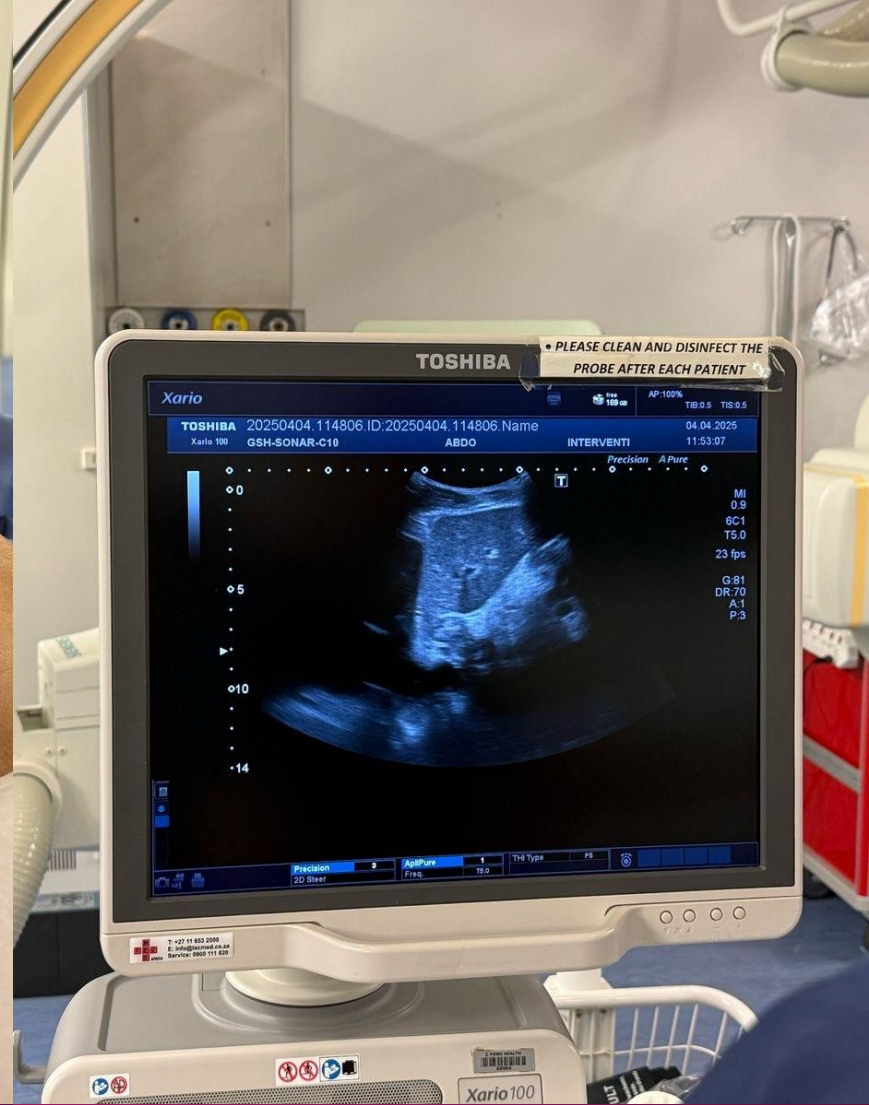




A Peep into the Technicalities of IR




The Radiology Inserted Gastrostomy Tube (RIG)



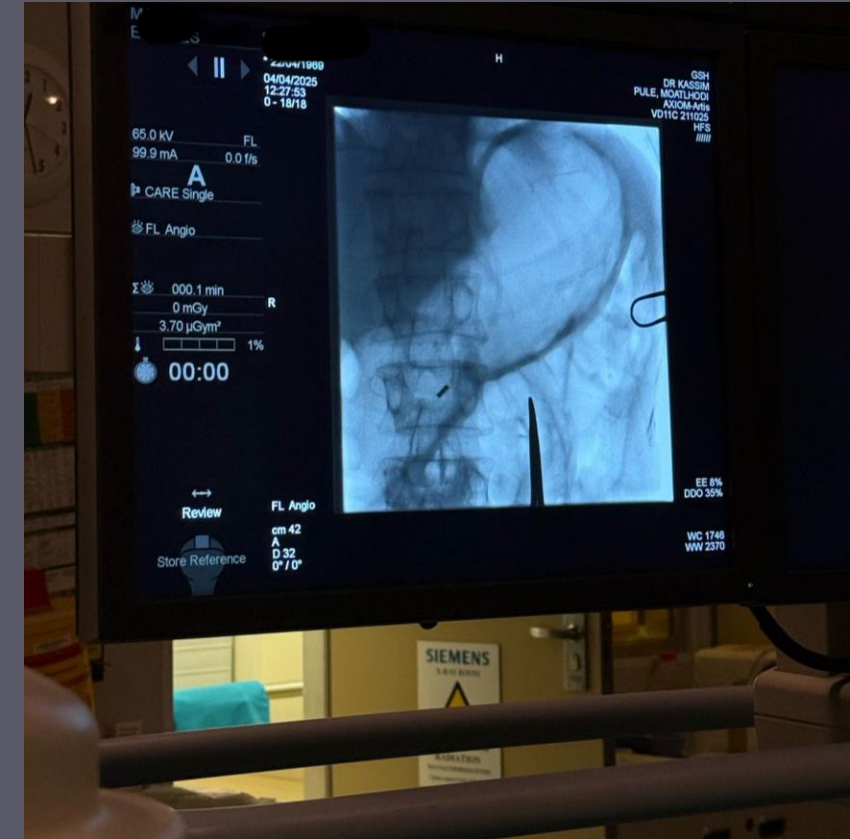
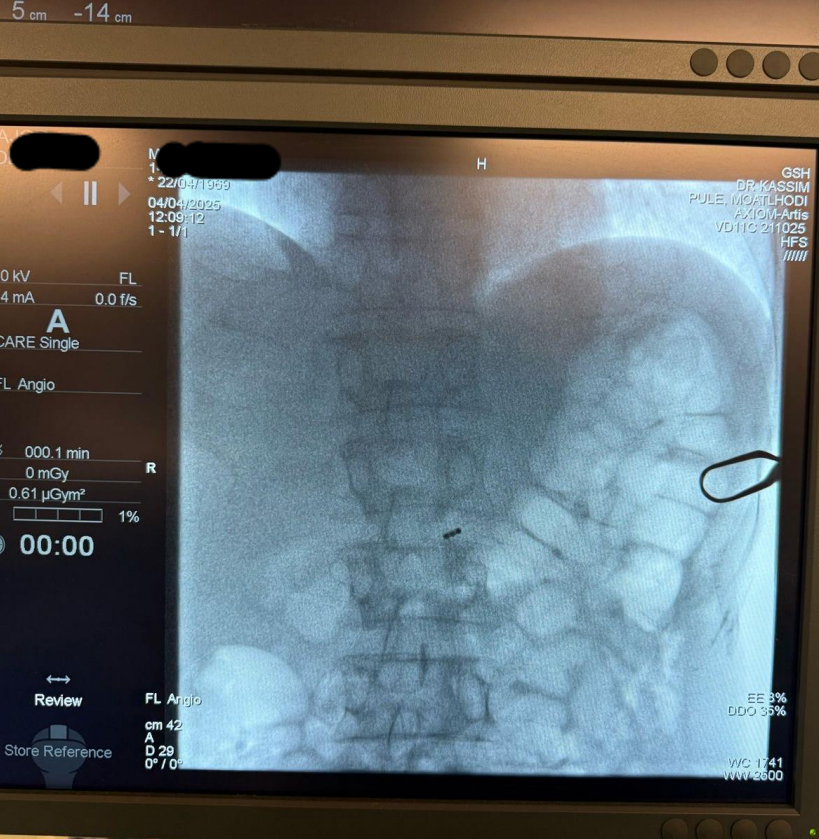
RIG preparation

Preprocedural U/S planning to mark out the liver and costal margins and plan the PEG entry site

An operating room with a patient on a table covered in green drapes. A large medical monitor wall is visible in the background, and a person in a white lab coat is partially visible on the right. The room is dimly lit, with overhead surgical lights.

RIG preparation

Draping



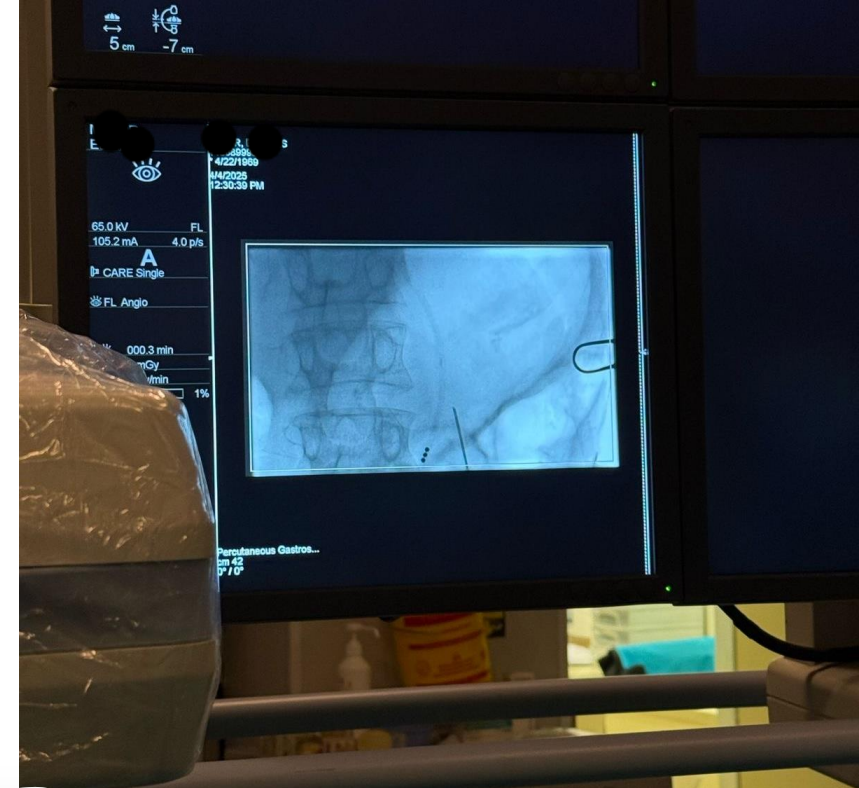
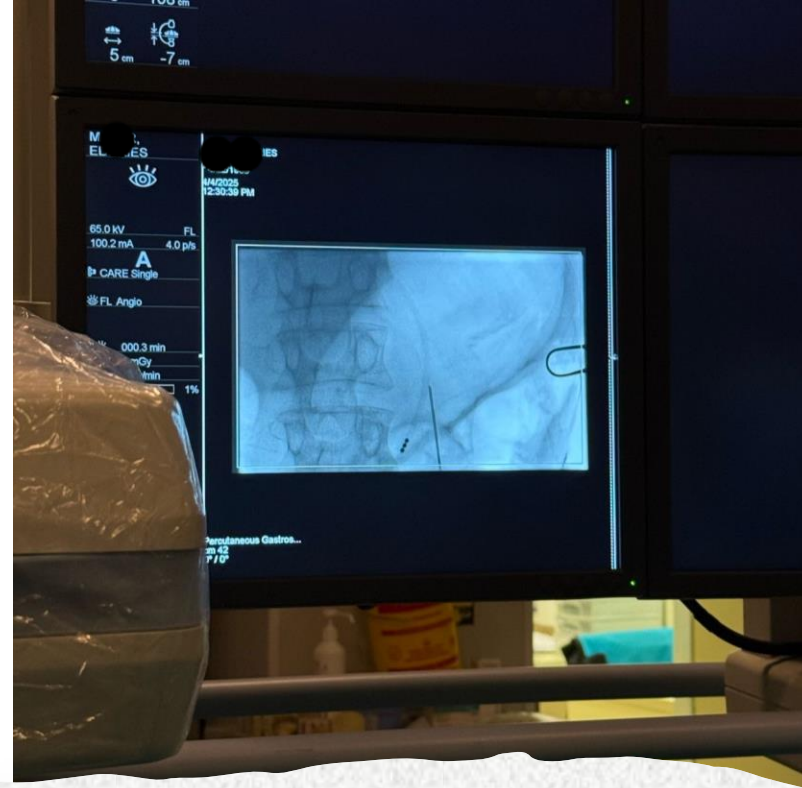
RIG preparation

- Fluoroscopy screening to ensure correct position of the NGT in situ
- Following IV glucagon administration the stomach is inflated with air under fluoroscopic screening
- After sufficient gastric air instillation, the appropriate entry point can be planned



RIG procedure

- Skin infiltrated with local anaesthetic (1% lignocaine)
- Forceps used to grip access needle with contrast-filled short line attached



Gastric access

- Fluoroscopic guidance used to visualize the course of the access needle and tenting of the stomach lining

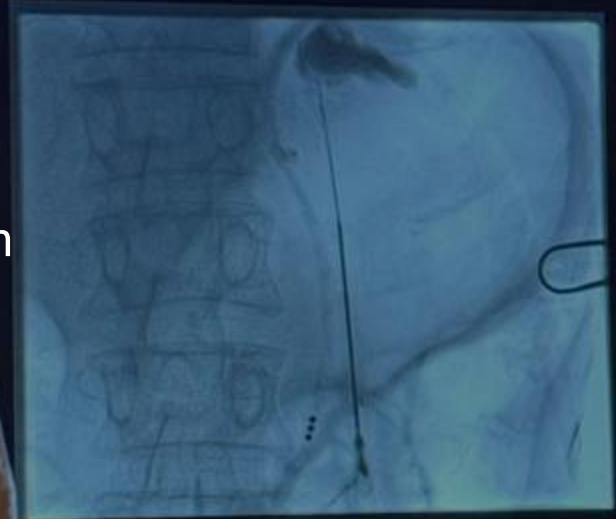
Gastric access

- Contrast check confirms positioning within the gastric lumen
- J-guidewire inserted to secure position

0° 108 cm
5 cm -7 cm

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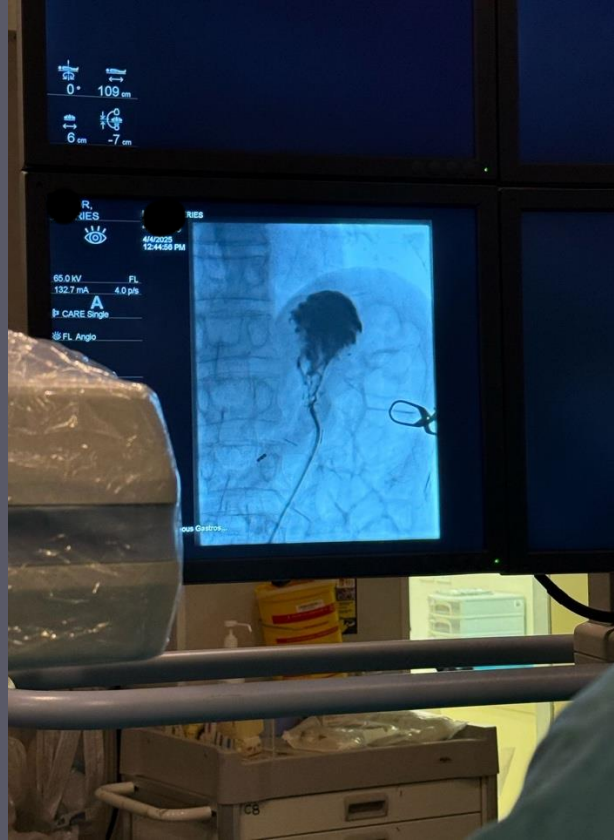


aneous Gastros...

T-fasteners

- T-fasteners inserted under fluoroscopic guidance and buttons are clipped in a triangular configuration around the access site





RIG tube insertion

- Staged dilatation of the entry site
- Peg tube is inserted through a peel-away sheath
- PEG tube balloon is instilled with 5ml of **STERILE WATER**
- Inflated balloon is drawn back to fit snug beneath the entry site and the flange is advanced flush to the skin
- Dry dressings applied

RIG protocol

Ensure NPO for 12 hours post PEG insertion, thereafter for feeds to commence via the PEG with dietician consult

Pain control and adequate mx

Post-procedural PEG check performed by a member of the IR team the following morning, even on weekends/public holidays



Who wants to be a Fellow-naire?



Indications for TACE

Hepatocellular Carcinoma (HCC)

- **Intermediate-stage (BCLC B):**
 - Multinodular, unresectable HCC
 - Preserved liver function (Child-Pugh A or early B)
 - No vascular invasion or extrahepatic spread
- 2. **Bridging to Liver Transplantation**
 - To control tumour progression while on transplant waiting list (within Milan or UCSF criteria)
- 3. **Downstaging for Liver Transplant**
 - In patients with tumours beyond transplant criteria, with the goal of shrinking disease to bring them within eligibility criteria
- 4. **Palliative Treatment**
 - For symptom control or tumour burden reduction in unresectable cases not suitable for systemic therapy
- 5. **Recurrent HCC**
 - After surgery or ablation if the recurrence is localized



Indications For TIPSS

1. Refractory Variceal Bleeding

- **Acute variceal hemorrhage** not controlled with endoscopy + medical therapy
- **Early TIPSS** (within 72 hours) is recommended for high-risk patients:
 - Child-Pugh C < 14
 - Child-Pugh B with active bleeding

2. Refractory Ascites

- Not responding to maximal diuretic therapy and repeated large-volume paracenteses

3. Hepatic Hydrothorax

- Massive pleural effusions secondary to portal hypertension, refractory to medical management

4. Budd-Chiari Syndrome

- As a second-line treatment if anticoagulation and thrombolysis/stenting are insufficient
- TIPSS decompresses hepatic venous outflow

5. Portal Vein Thrombosis (PVT)

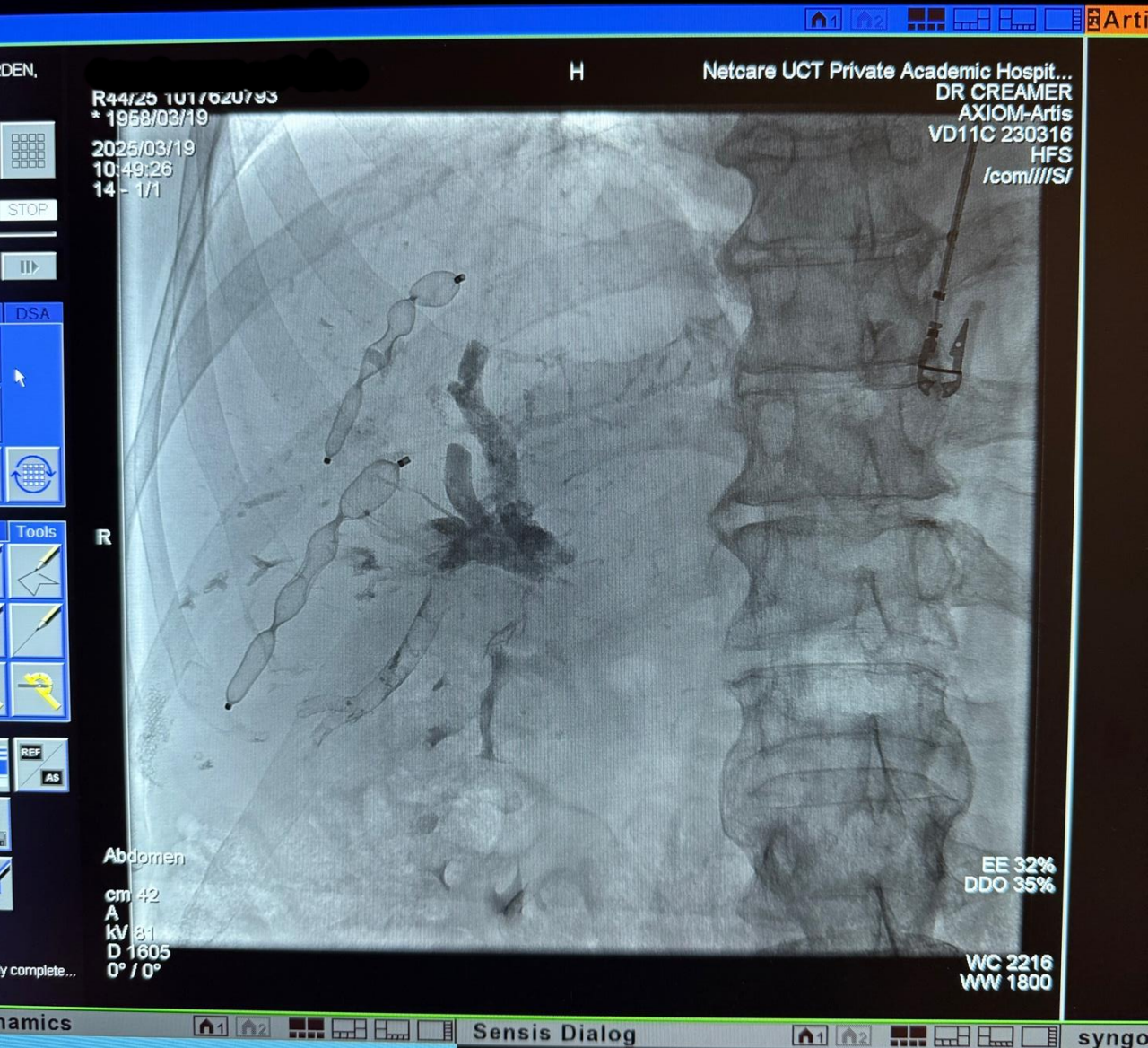
- Selected cases, especially with cavernous transformation or when restoring portal flow is necessary (e.g. transplant planning)

6. Pre-transplant Optimization

- In select cases of portal hypertension complications before liver transplant

7. Hepatorenal Syndrome (HRS) – Type 1

- Considered in select patients with poor response to medical therapy and ongoing portal hypertension (rare indication)



Indications for DVE

1. Inadequate Future Liver Remnant (FLR)

- When the FLR volume is too small to support post-resection liver function:
 - <20–25% in healthy livers
 - <30–40% in chemotherapy-exposed or steatotic livers
 - <40–50% in cirrhotic livers

2. Preparation for Major Hepatectomy in Liver Tumours

- Especially when large-volume resection is required:
 - Colorectal liver metastases
 - Hepatocellular carcinoma (HCC)
 - Cholangiocarcinoma
 - Neuroendocrine liver metastases

3. Failure or Suboptimal Response to Prior PVE

- If PVE has been done but FLR did not hypertrophy adequately within expected time frame

4. Need for Faster Hypertrophy

- When surgical timelines are tight and rapid liver regeneration is required (e.g. tumor progression risk)

5. Alternative to ALPPS (Associating Liver Partition and Portal vein ligation for Staged hepatectomy)

- DVE may be used in place of ALPPS in patients who are not suitable for or wish to avoid surgical two-stage hepatectomy





Thank you