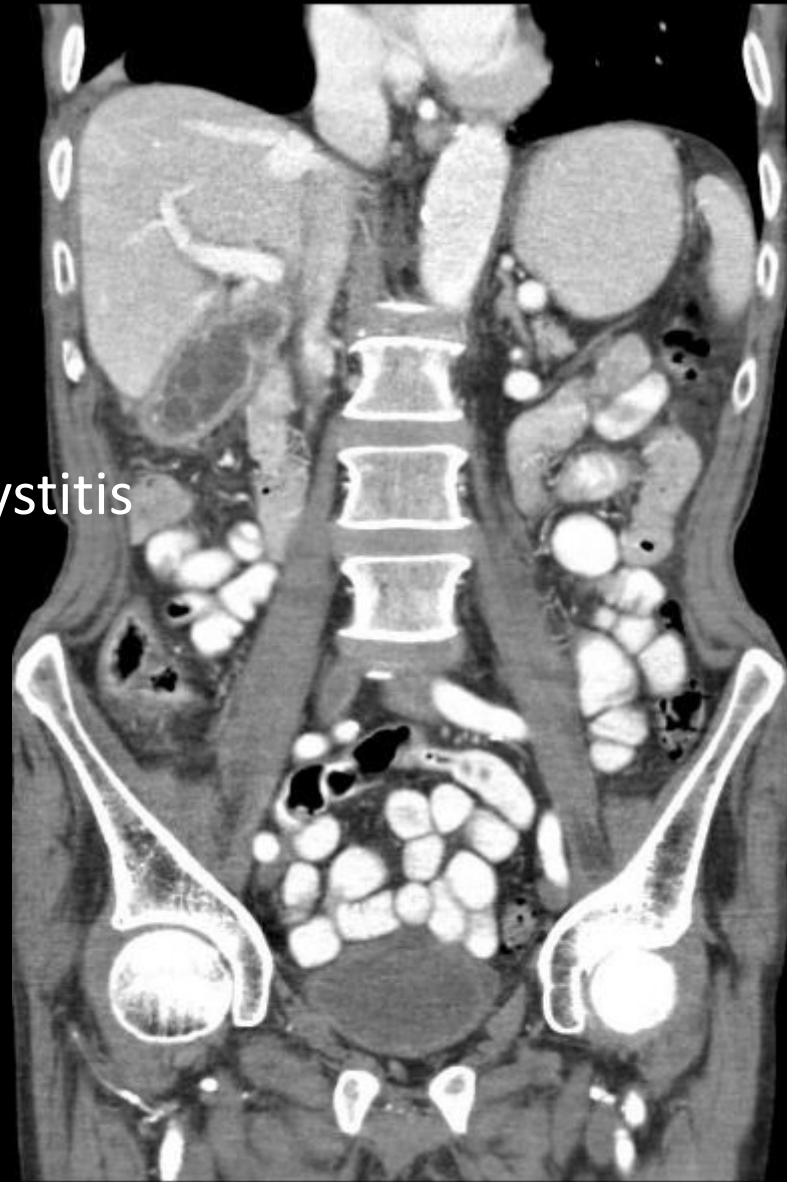


CAIR Case of the Month

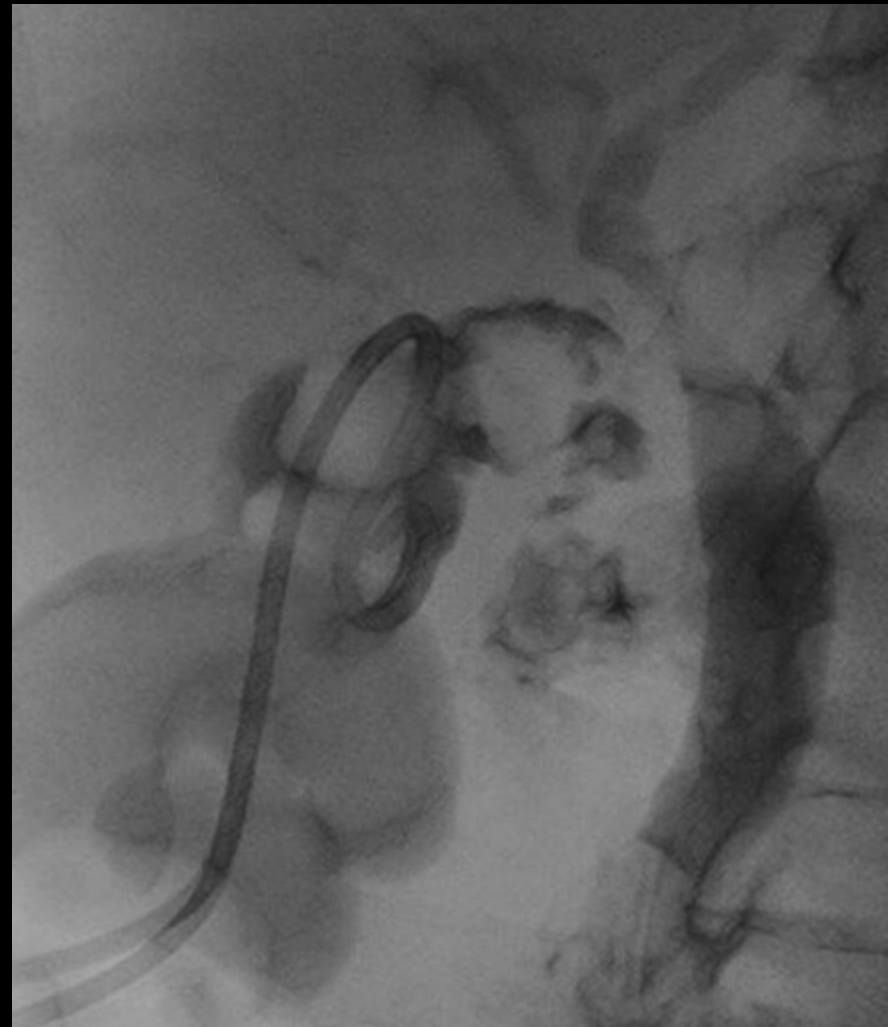
Case Courtesy of Drs. S. Mafeld and E. Shlomovitz
University of Toronto

Mr. X

- 89 year-old male
- Longstanding abdominal pain
 - Episodes of acute on chronic cholecystitis
- Frail
- Multiple comorbidities
 - B-Cell Lymphoma
 - Crohn's disease
 - Hypothyroidism
 - Colocutaneous fistula



- Failed attempted cholecystectomy
 - Multiple adhesions and unclear anatomy at laparoscopy
- Managed with long-term cholecystostomy tube



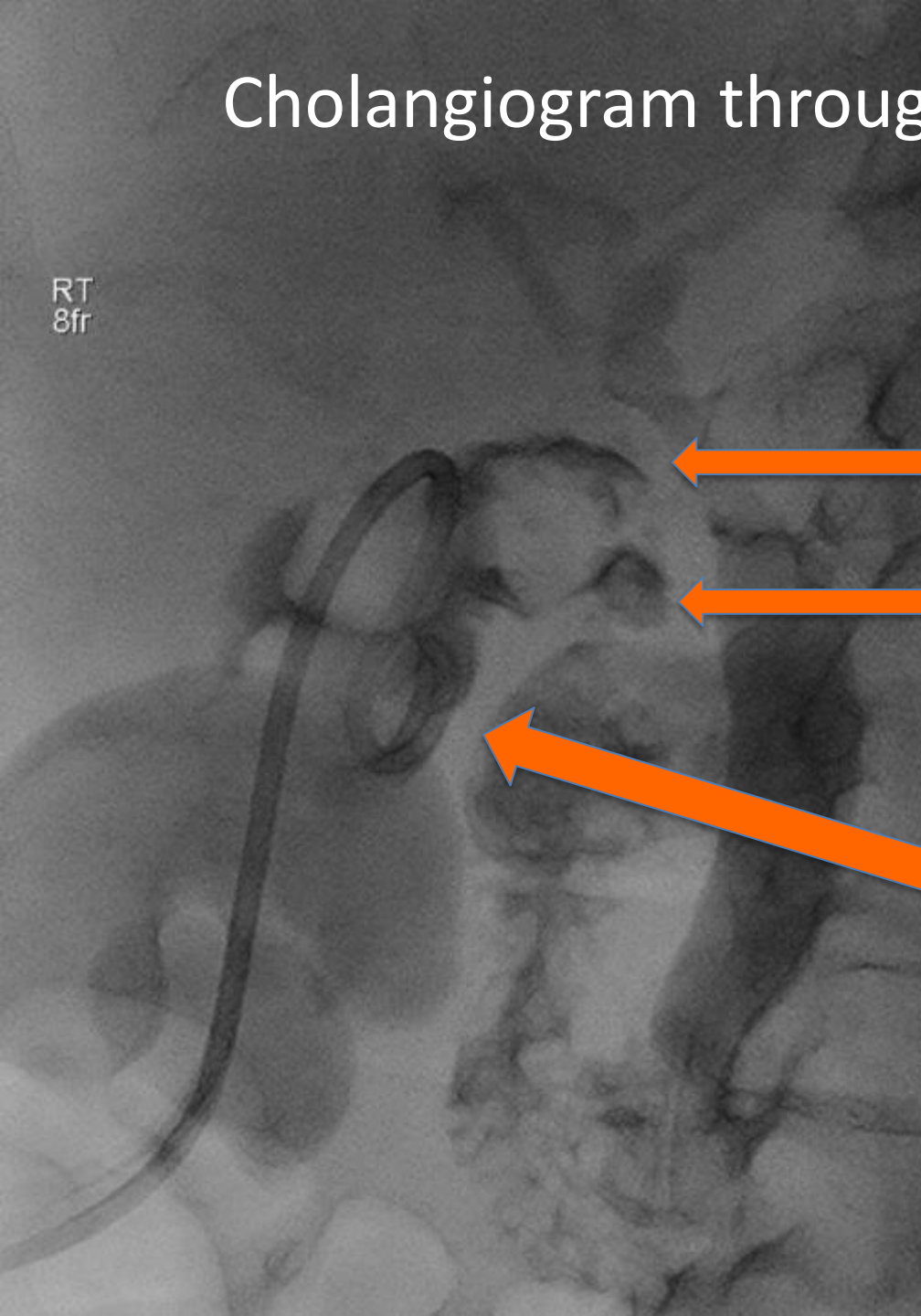
Living with the cholecystostomy

- Multiple tube displacements
- Failed trial without tube
- Ongoing skin infection around tube exit site



Cholangiogram through Cholecystostomy

RT
8fr



Drainage via cystic duct

Cholecysto-duodenal
fistula

Cholecystostomy in
gallbladder surrounded by
multiple stones



Emerg: “we have a guy with a longterm cholecystostomy that has fallen out, can you put it back in?”

IR: “sure” (immediate reaction)

Problems so far

- Not tolerating the cholecystostomy – multiple displacements
- Skin infection
- Failed trial without cholecystostomy (recurrent symptoms)
- Not able to have cholecystectomy
- Multiple co-morbidities
- Reduced quality of life with cholecystostomy

What to do?

- Immediate reaction
 - Replace tube, better securing mechanism, treat infection and hope for the best?
- Might work – but realistically it won't and tube will fall out again
- Never-ending cycle → tube falls out – replace it

PLAN

- Attempt stenting of the cholecystoduodenal fistula to promote internal drainage
- Remove cholecystostomy
- Result: **Completely internalize biliary drainage**



Percutaneous Lumen-Apposing Cholecystoduodenal Stent Insertion through a Pre-existing Fistula for Internal Drainage of the Gallbladder in the Setting of Calculous Cholecystitis

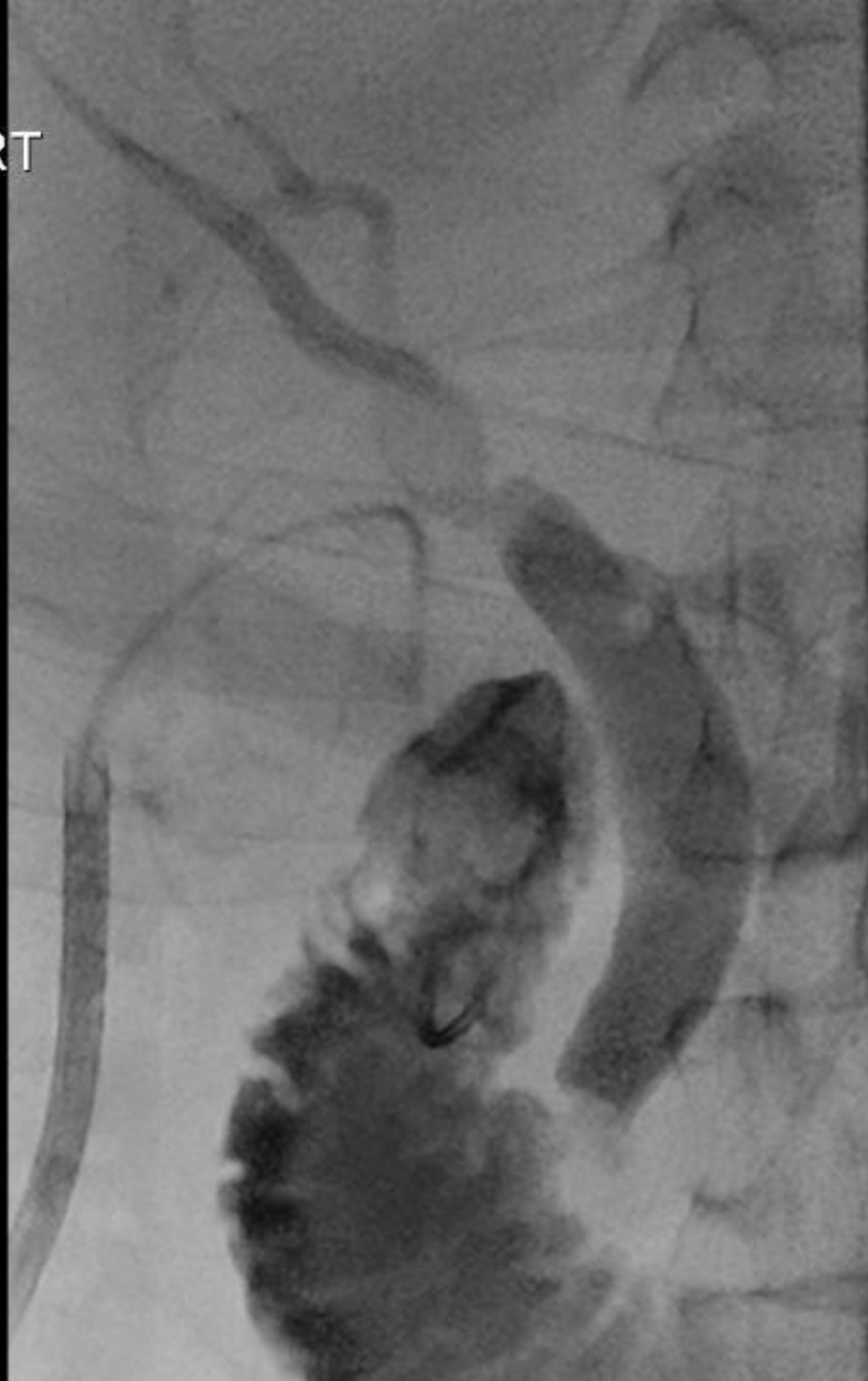
Rebecca Zener, MD, FRCPC, Maxime Noel-Lamy, MD, FRCPC,
and Eran Shlomovitz, MD, FRCPC, FRCSC

Previous proof of concept



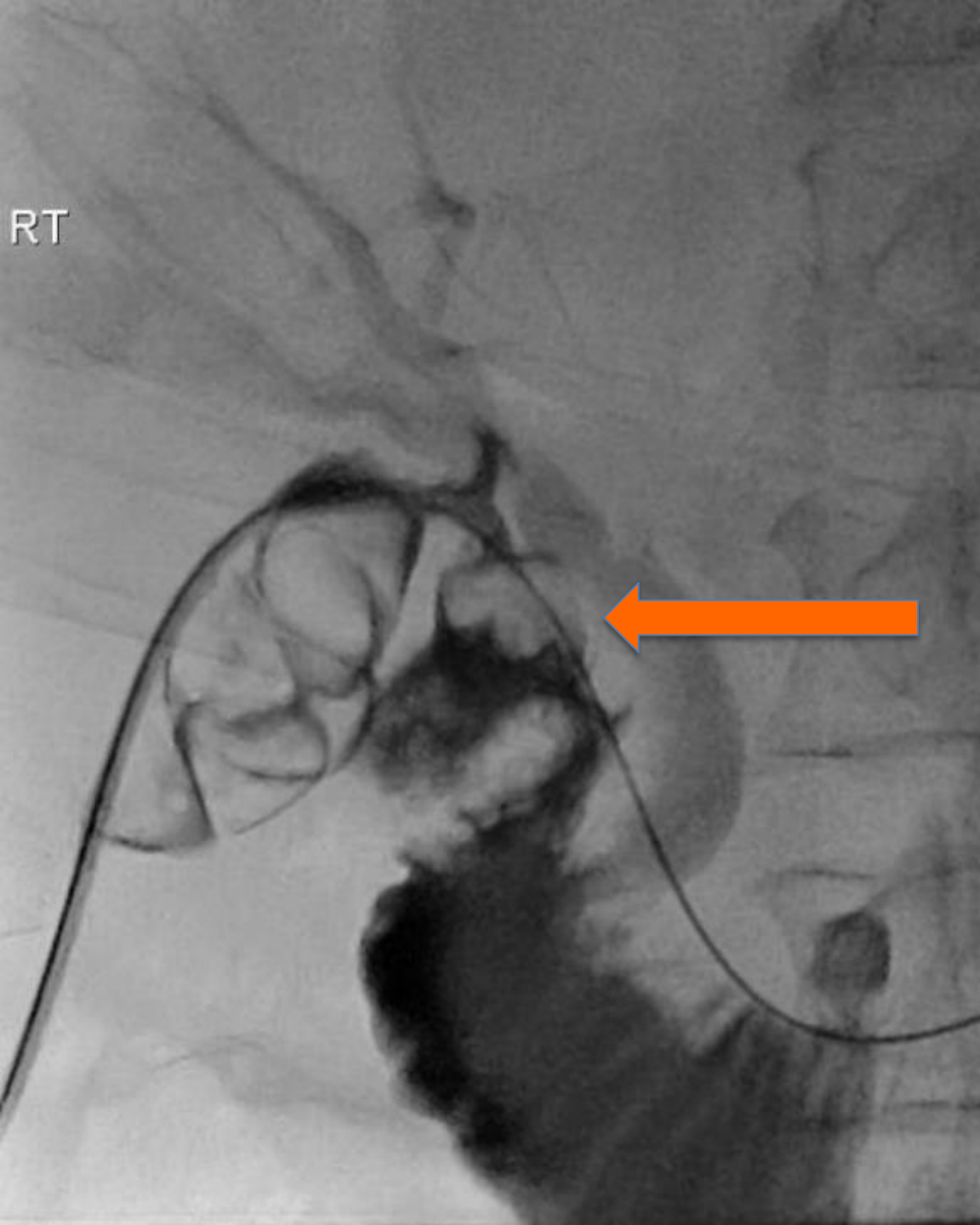
Target for
stenting

RT



Steps

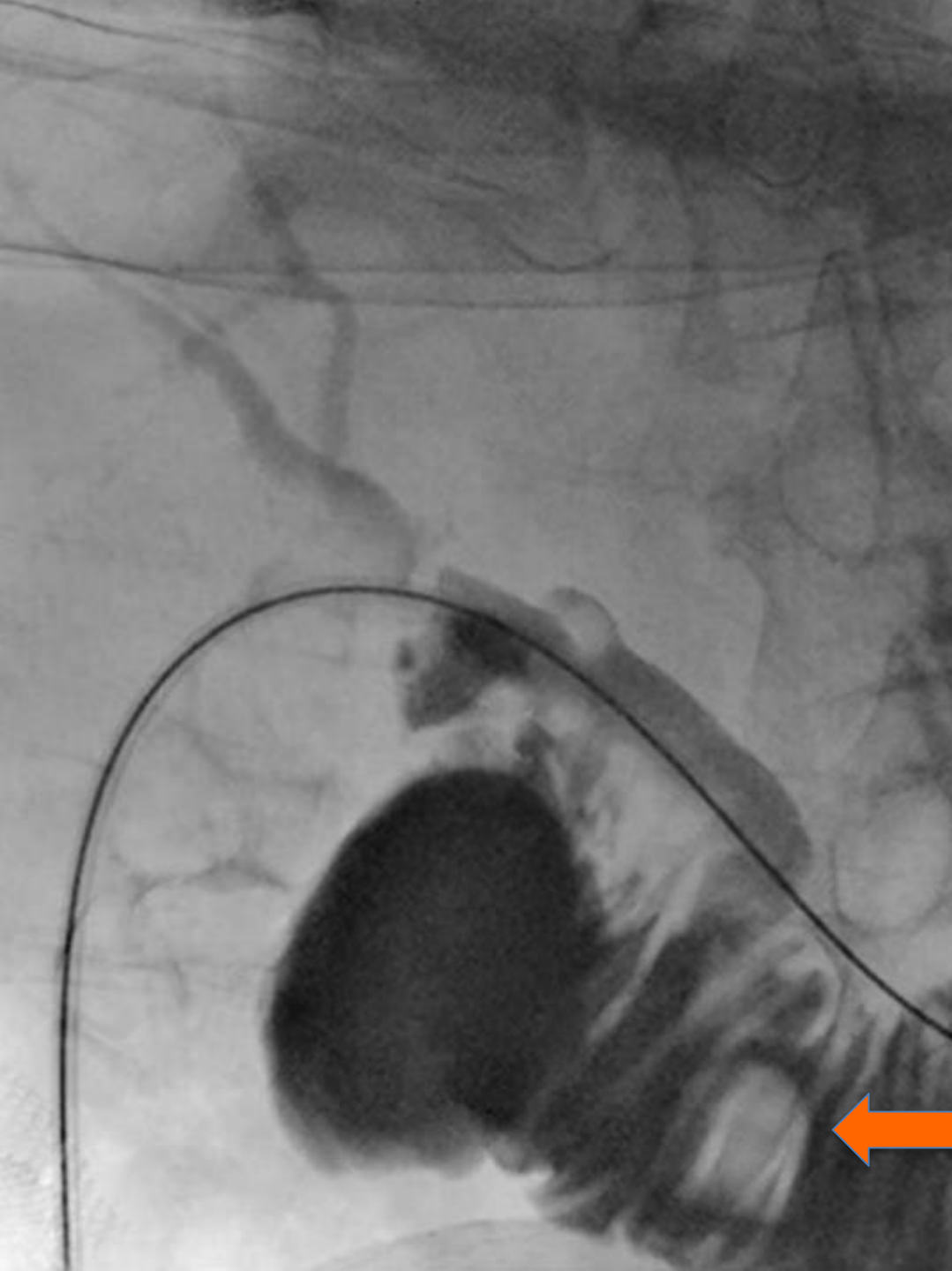
1. 10 Fr sheath into gallbladder
2. Kumpe catheter and guidewire navigated through fistula into duodenum



Steps

3. Repeat cholangiogram confirms patent fistula with multiple gallstones in gallbladder and stone present in fistulous tract (arrow)

4. Stiff guidewire (Amplatz) across fistula



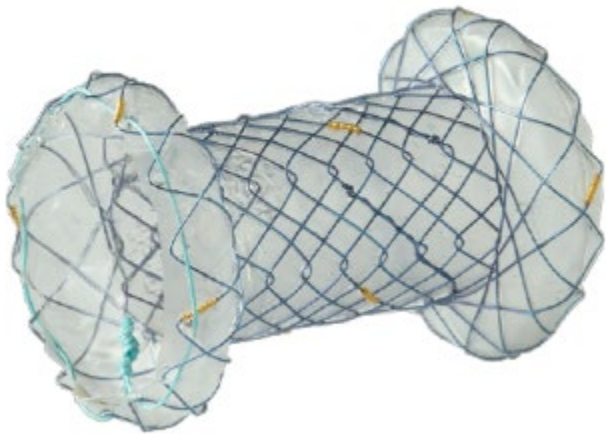
Steps

A 7 Fr over the wire Fogarty used to “push” the gallstone in the fistula into the bowel

Displaced
gallstone

Stent Considerations

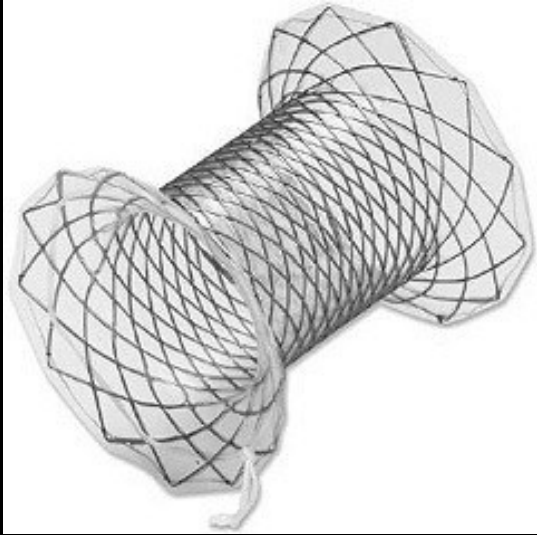
- ‘Ideal’ stent for this fistula
 - Large luminal diameter (better bile flow)
 - Mechanism to prevent stent migration
 - Covered



Hanarostent BCF (M.I. Tech, Korea)

- Luminal diameter 12-16 mm
- Flange either side (24mm) “Diabolo” shape to prevent migration
- Covered with silicone

Other Stent Options



Taewoong Medical
“NAGI”



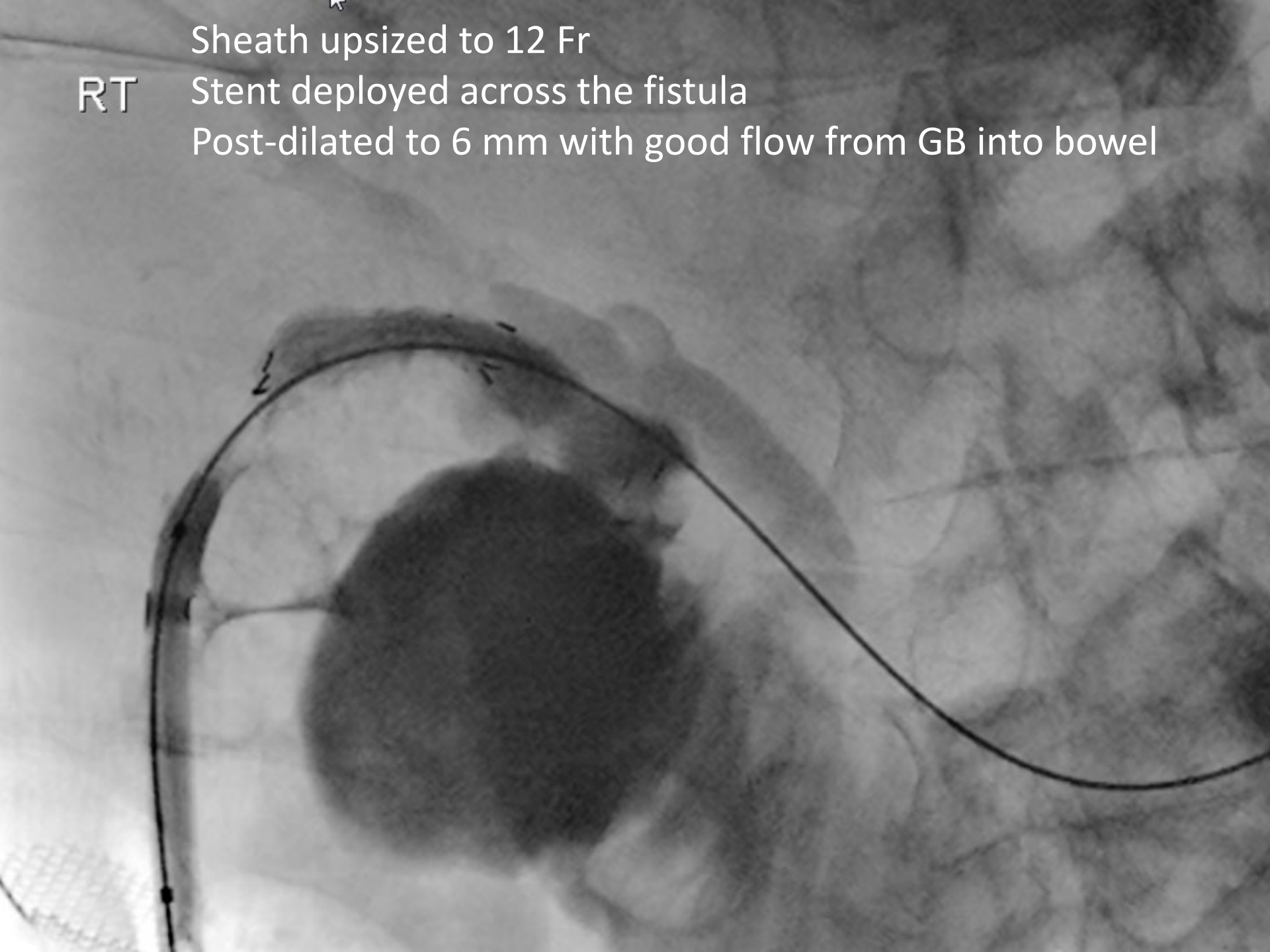
Boston Scientific
“Axios”

Sheath upsized to 12 Fr

RT

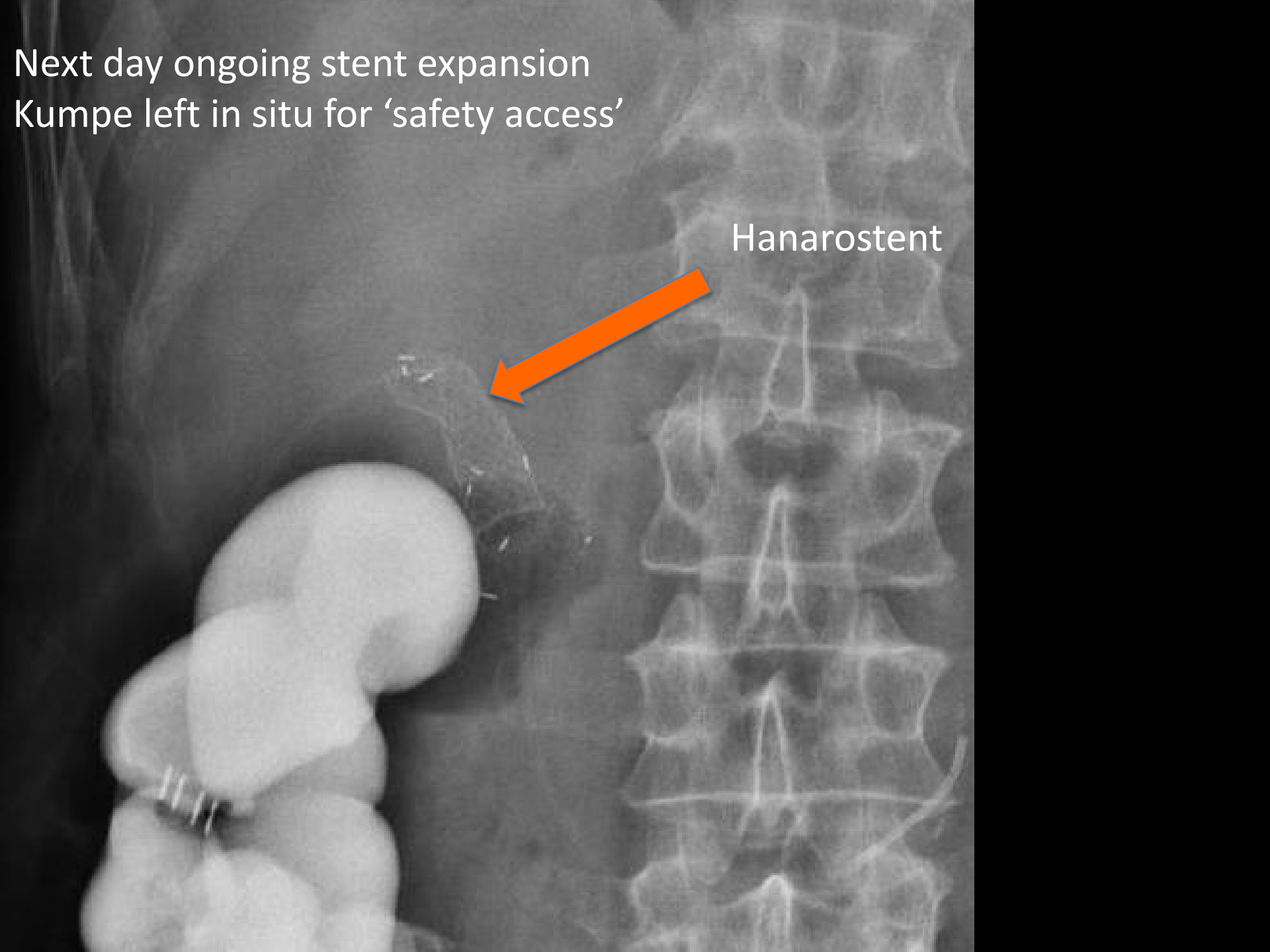
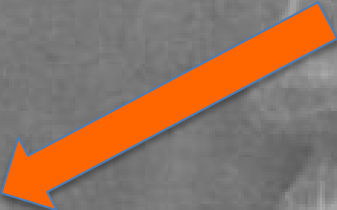
Stent deployed across the fistula

Post-dilated to 6 mm with good flow from GB into bowel



Next day ongoing stent expansion
Kumpe left in situ for 'safety access'

Hanarostent





Two weeks later

Better stent expansion

Kumpe removed



JANUARY



FEBRUARY



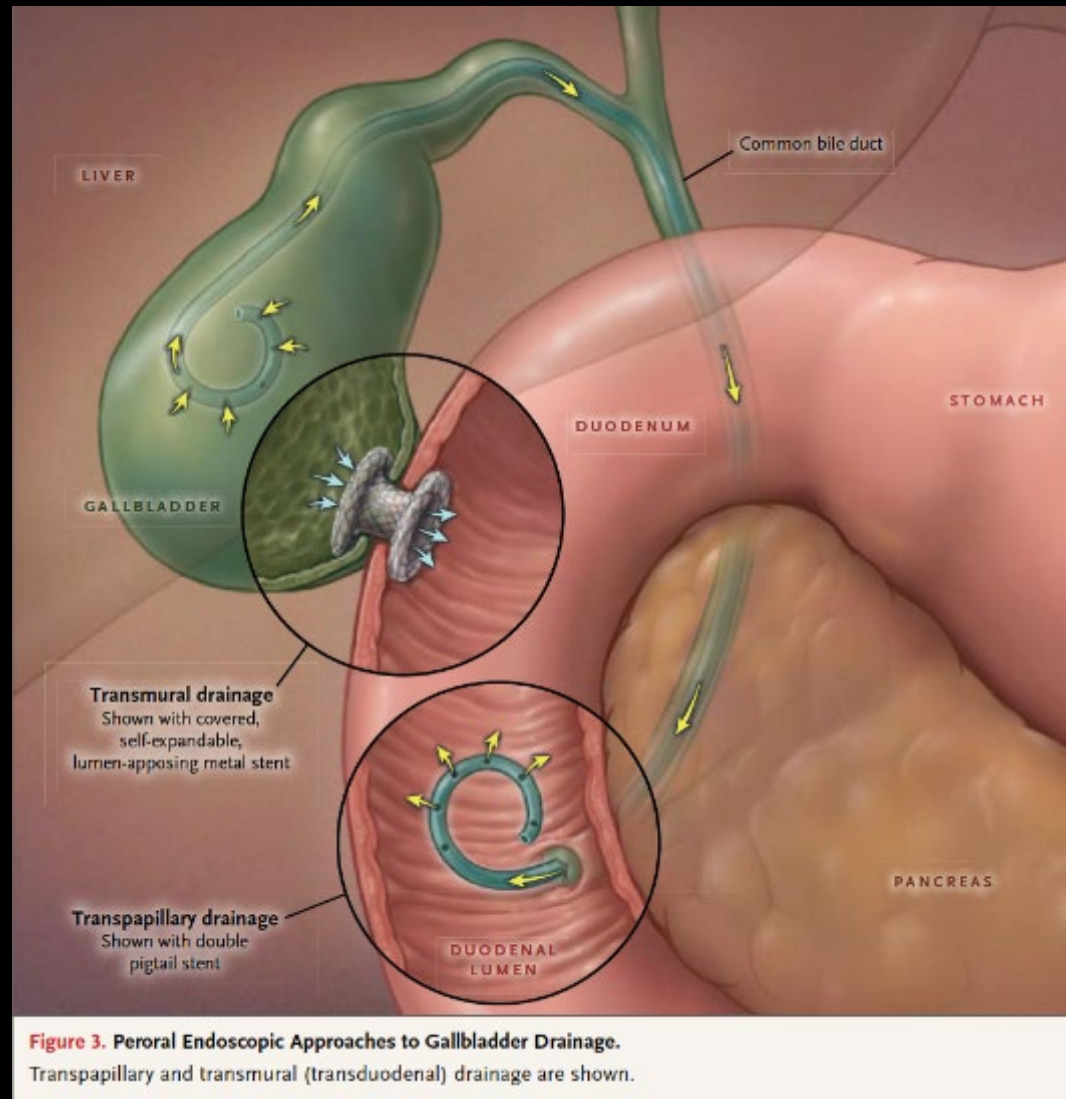
APRIL

Good skin healing
Tube-free
No further episodes cholecystitis
Happy Patient!

Evidence

- Limited evidence for percutaneous internalization options in cholecystitis
 - Zener R, Noel-Lamy M, Shlomovitz E. *J Vasc Interv Radiol*. 2017;28(8):1154–5.
- But... growing evidence for novel endoscopic approaches to gallbladder disease using stents
 - Takagi W, Ogura T, Sano T, Onda S, Okuda A, Masuda D, et al. *Therap Adv Gastroenterol*. 2016 Jan;9(1):19–25.
 - Súbtíl JC, Betes M, Muñoz-Navas M. *World J Gastrointest Endosc*. 2010 Jun 16;2(6):203–9.
 - Law R, Grimm IS, Stavas JM, Baron TH. *Clin Gastroenterol Hepatol*. 2016 Mar;14(3):476–80.
 - Ge N, Sun S, Sun S, Wang S, Liu X, Wang G.. *BMC Gastroenterol [Internet]*. 2016 Jan

Novel Endoscopic Approaches to Cholecystitis Being Developed



If endoscopic procedures work, so should percutaneous IR guided approaches!!!

Read This Article

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Edward W. Campion, M.D., *Editor*

Interventional Approaches to Gallbladder Disease

Todd H. Baron, M.D., Ian S. Grimm, M.D., and Lee L. Swanstrom, M.D.

A Paradigm shift in gallbladder disease is coming

We can do better for our patients than cholecystostomy tubes

IR has the chance to be at the forefront of this evolution