Percutaneous imaging guided techniques of PV patency and integrity management - catheter directed local thrombolysis, stenting, endoluminal RFA&angioplasty or endoluminal RFA&stenting

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Material:

- 20 patients with PV patency problem in total;
- 15 underwent percutaneous recanalization using a novel endovascular bipolar radiofrequency device; RFA was followed

  a) by balloon angioplasty in 7 cases (6 - HCC, 1- retroperitoneal sarcoma)

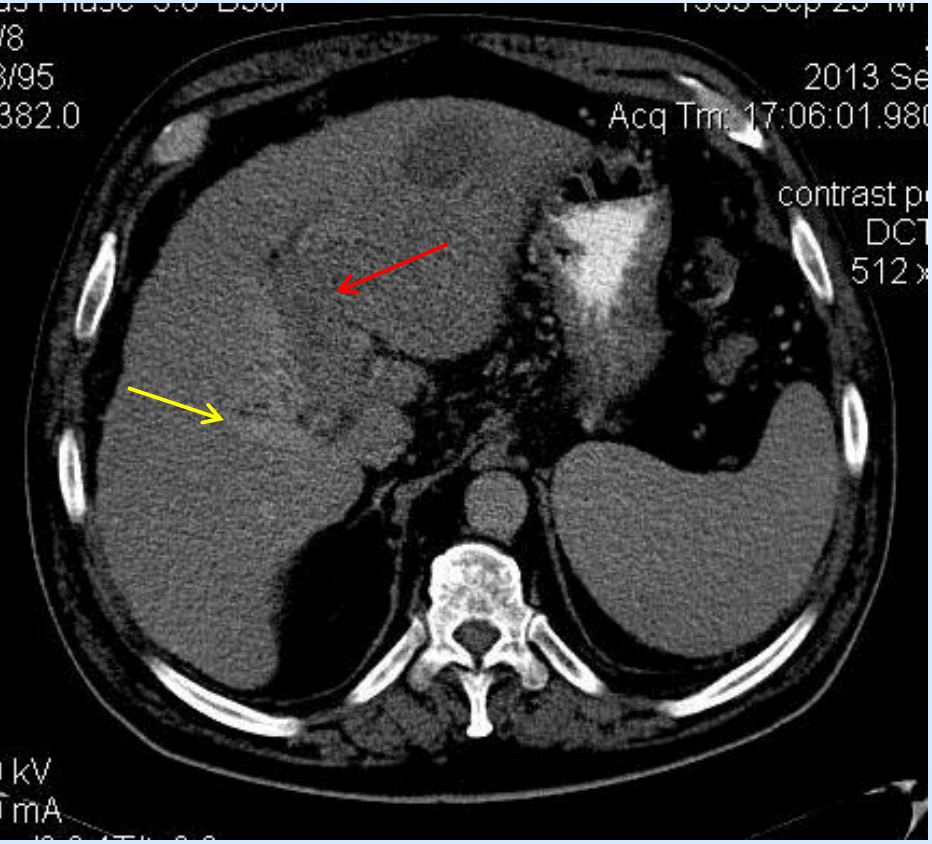
  b) vascular stent placement in 8 cases (7 - HCC, 1 - liver cirrhosis).
- In 3 cases PV percutaneous recanalization was performed by stent placement to pancreatitis induced PV thrombosis/stricture; in one of them the stent placement the same time was used to restore PV integrity also (porto-biliary fistula was documented).
- In 2 cases PV percutaneous recanalization was performed by catheter directed local thrombolysis (clinically manifested fresh PV thrombosis, caused by thrombophylia and HCC).

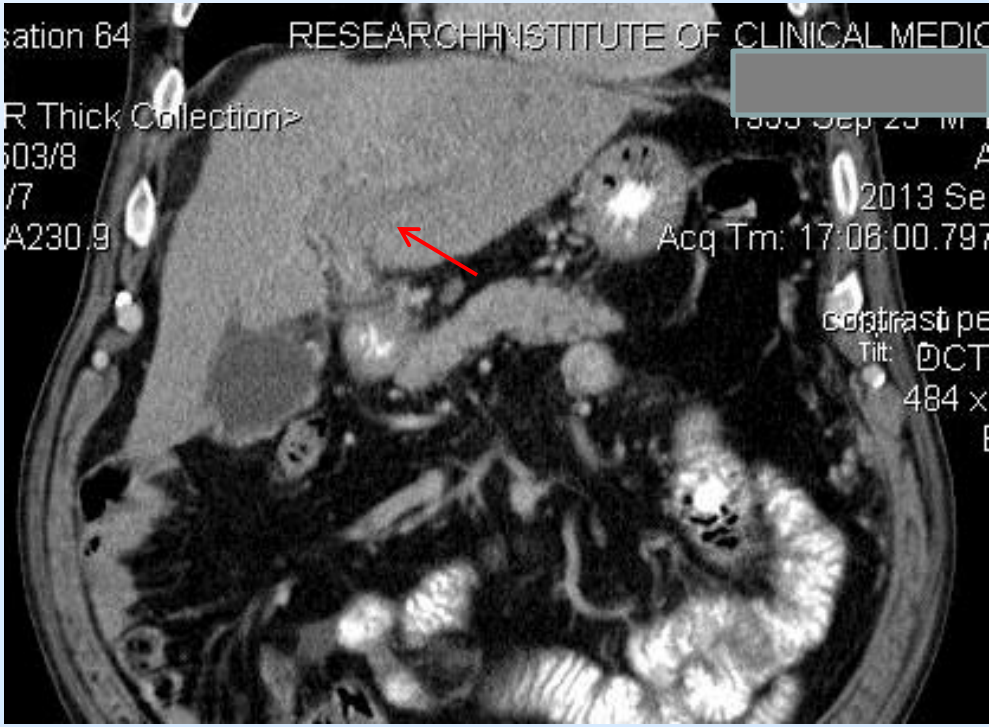
Technique:

- **The PV tributary was percutaneously accessed under US guidance and 5Fr guiding catheter was manipulated through the block using guidewire technique under DSA guidance.**
- **In case of thrombolysis thrombolytic agent was injected directly below the thrombus**
- **For RFA processing the endoluminal radiofrequency device was inserted into the thrombus; procedure was completed by immediate balloon angioplasty or stenting.**
- **The stenting procedure was completed by self-expanding vascular stent placement**

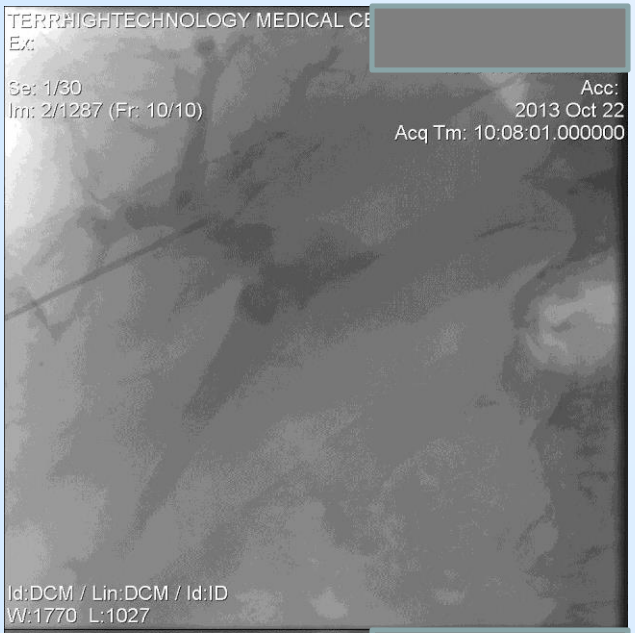
Portal Vein Tumor thrombus recanalization

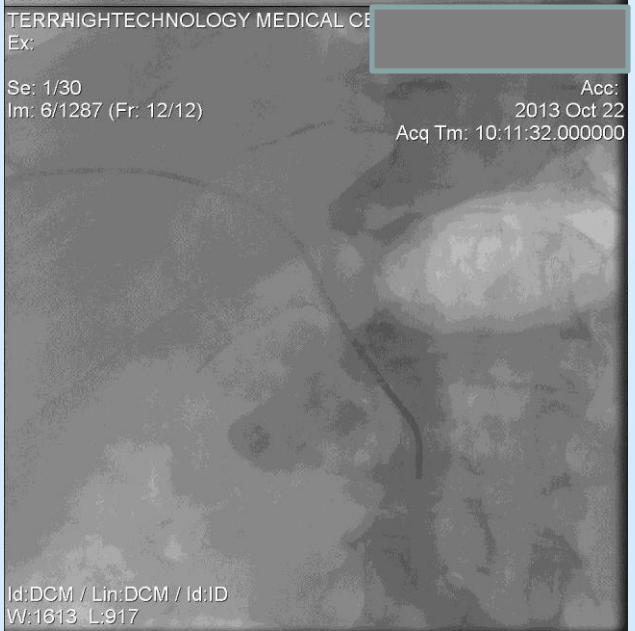
Pre-procedure CT. PVT- patent branch of RPV-yellow, completely obliterated LPV - red



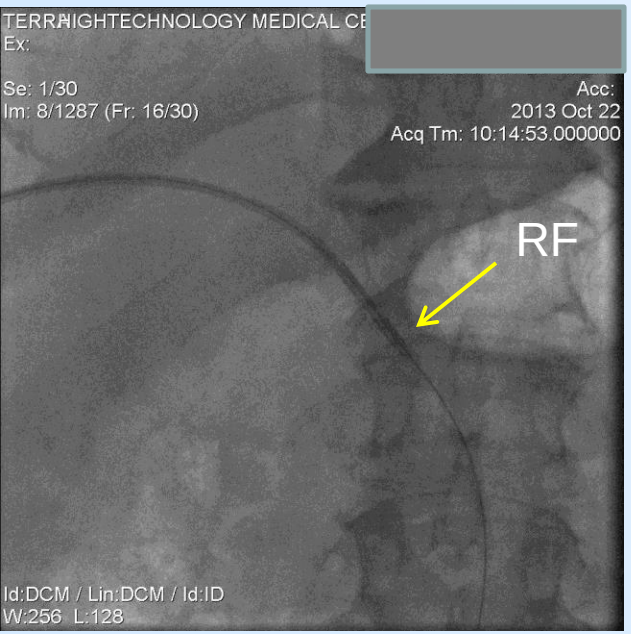


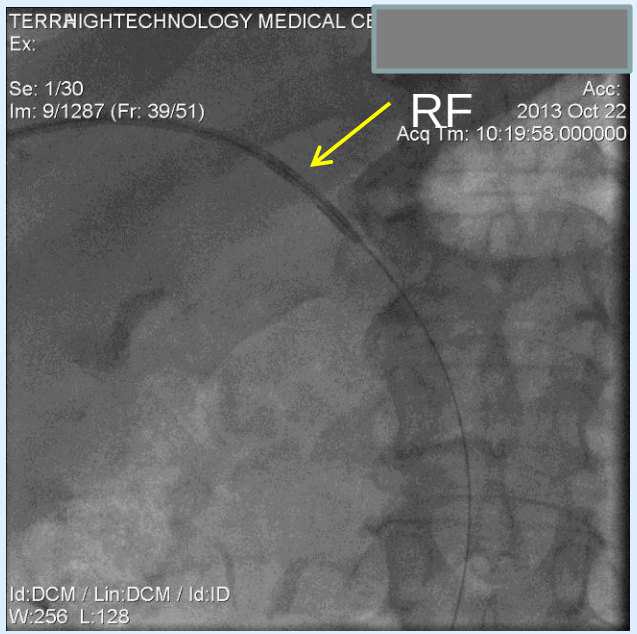
VesOpen procedure

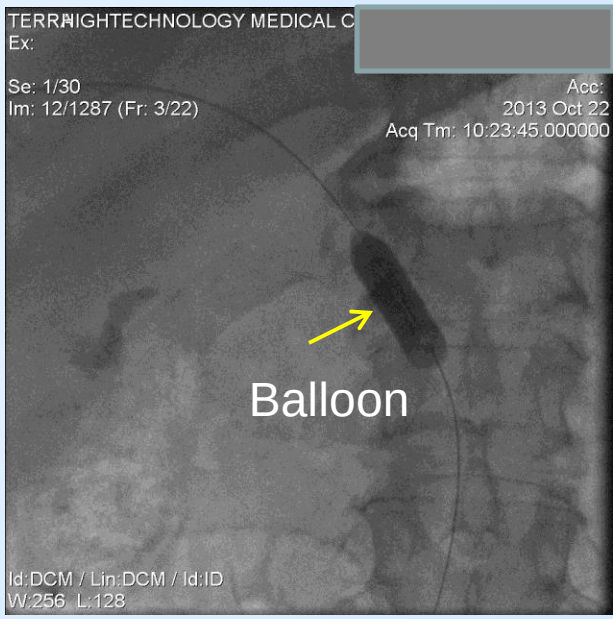


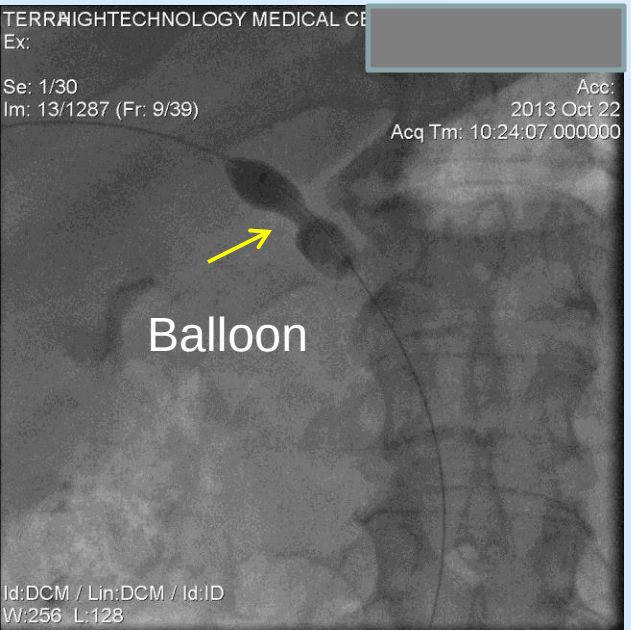


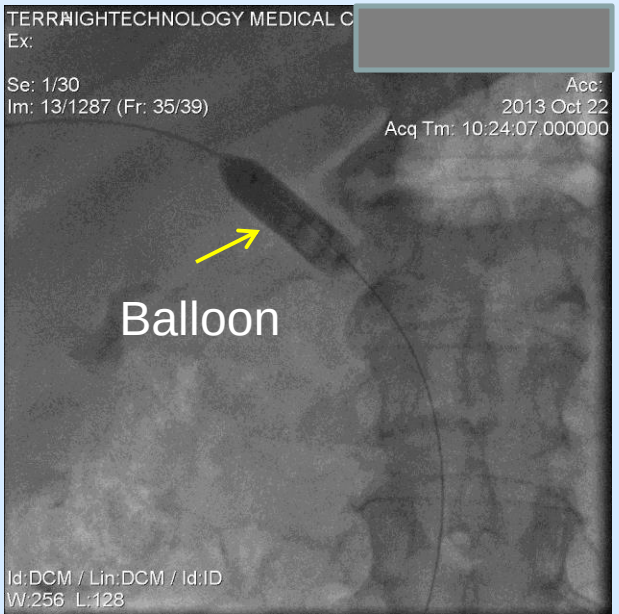
VesOpen procedure – 2 RFA sessions has been performed before stent positioning

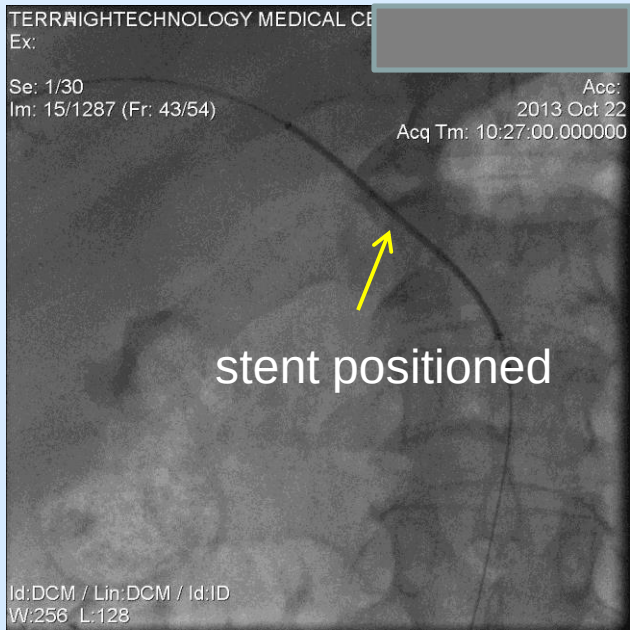




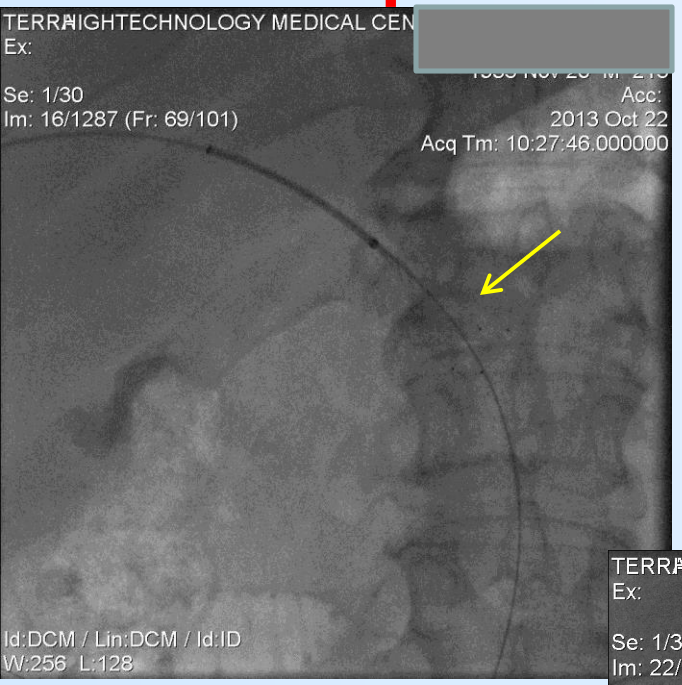


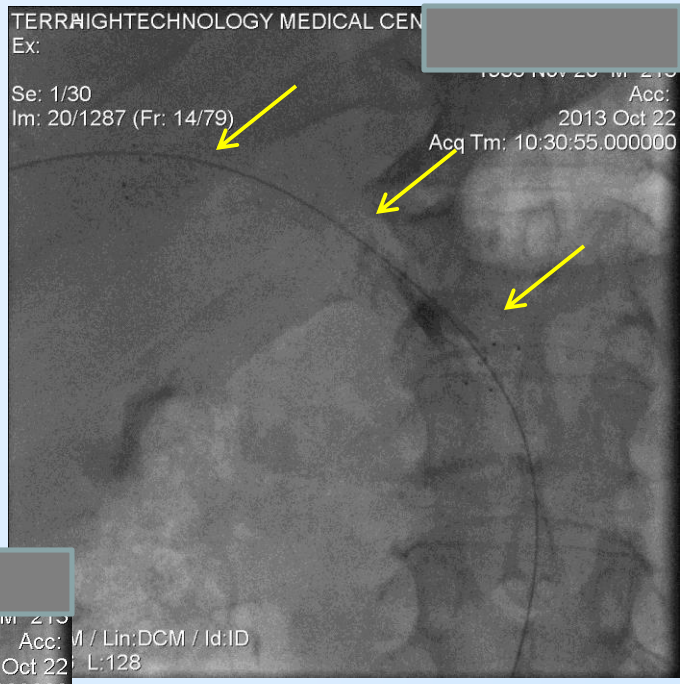


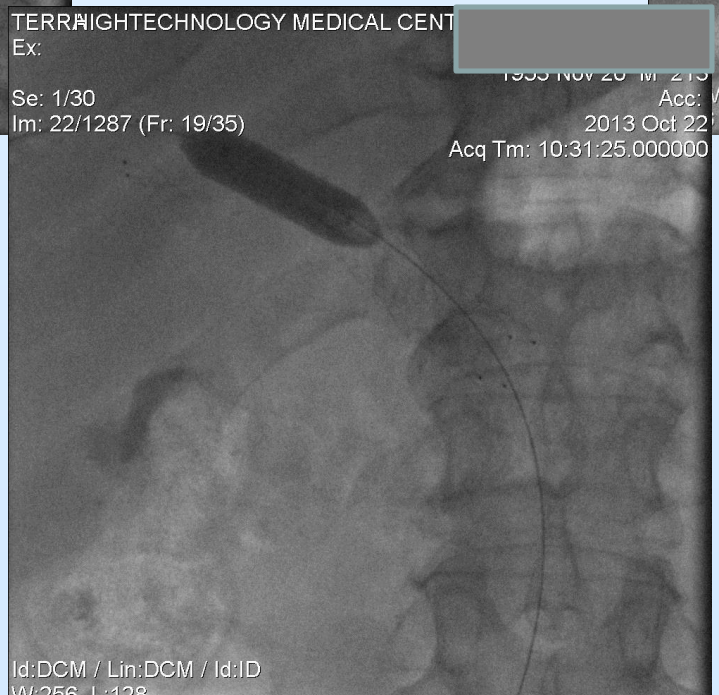




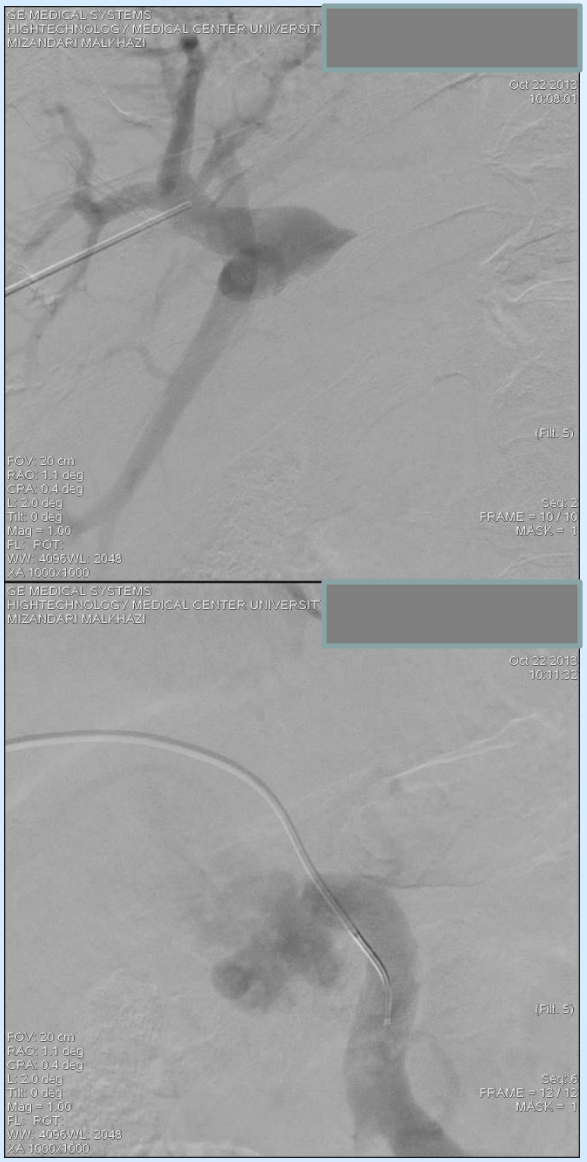
VesOpen procedure - stent is released, balloon postdilation has been performed







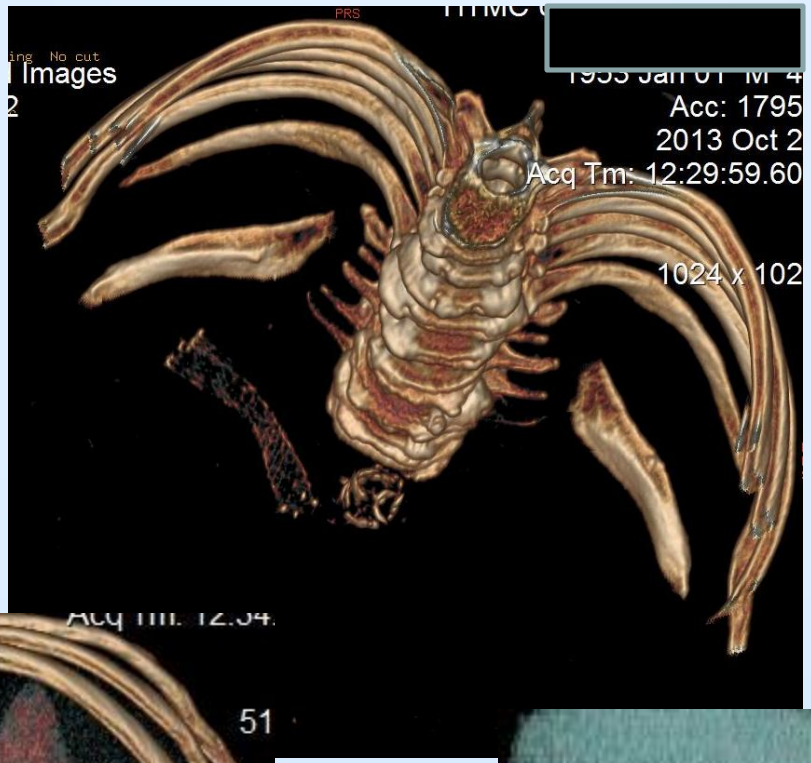
VesOpen procedure – restored blood flow from PV confluence the the RPV has been documented

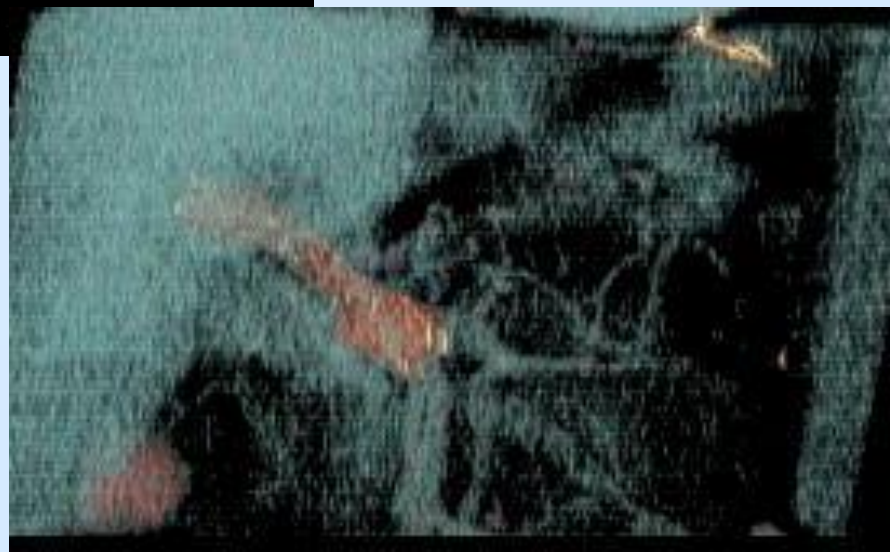


Before VesOPen

After VesOpen

CT after VesOpen





Results:

- **The technical success rate was 85.0%; in 3 cases (15.0%) wire conduction through the organized thrombus was impossible.**
- **Posprocedure portography documented significantly improved portal vein blood flow in all patients, to whom the procedure was completed.**
- **Porto-biliary fistula was successfully managed by percutaneous stenting.**
- **Patients tolerated the procedure easily; no intraprocedural complications were detected.**
- **In 1 case serious postprocedure bleeding was documented, which led to polyorganic failure and death.**

Conclusions:

- **The percutaneous management of PV patency and integrity problems by percutaneous stenting and endoluminal RFA is an effective technique**
- **It should be suggested as a treatment option for otherwise incurable patients and might be used as a bridge for further treatment.**
- **Post-procedure intraperitoneal bleeding is a possible life-threatening complication which should be prevented by procedure track ablation or embolization.**
- **A larger study is needed to assess the usefulness and long-term impact of PV percutaneous intervention on patient outcome**

Thanks!

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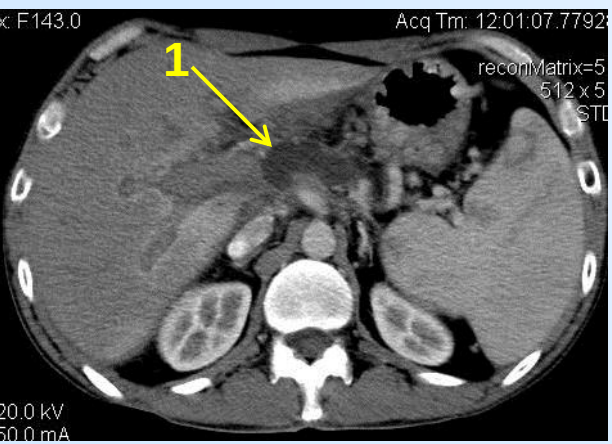
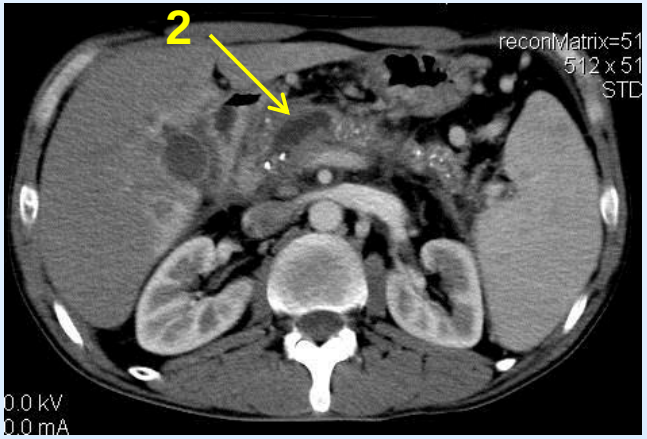
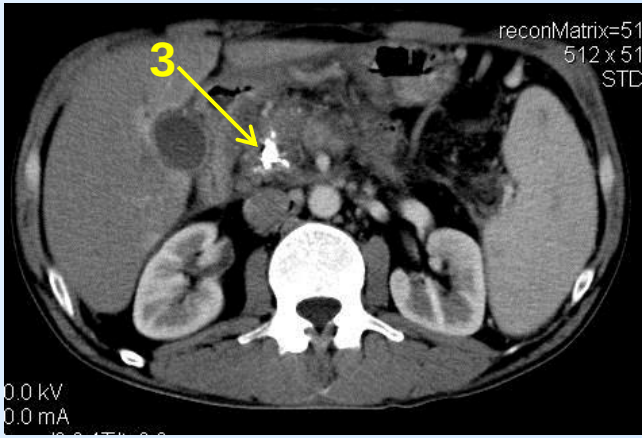
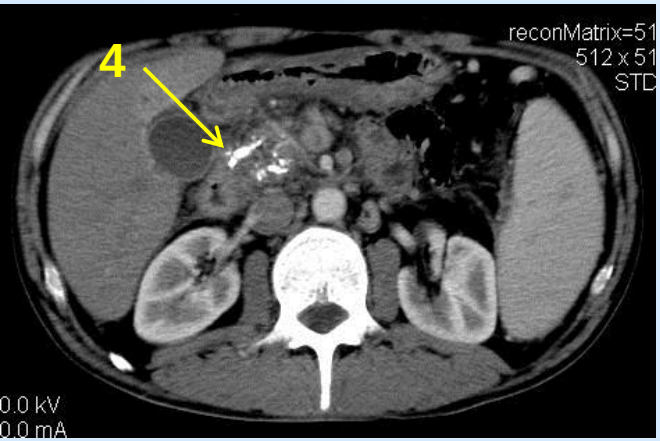
PV stenting in case of pancreatitis induced PV patency problem

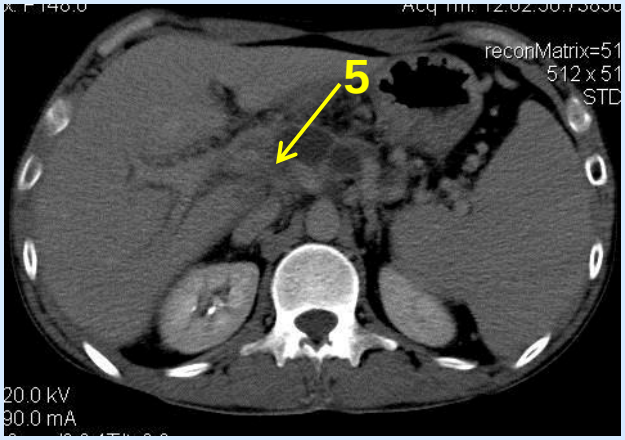
We suggest pancreas divisum; 1- pseudocyst, 2 – dilated PD, 3 – stones in Wirsung, 4 – stones in Santorini, 5 – obstructed PV (pancreatitis induced thrombosis)



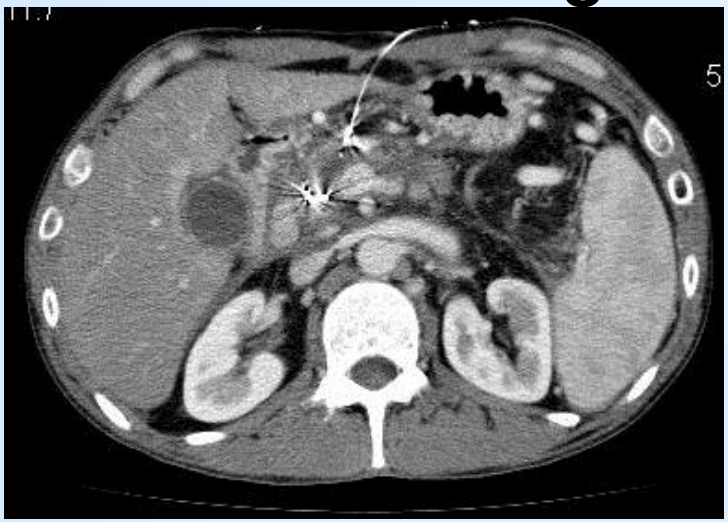


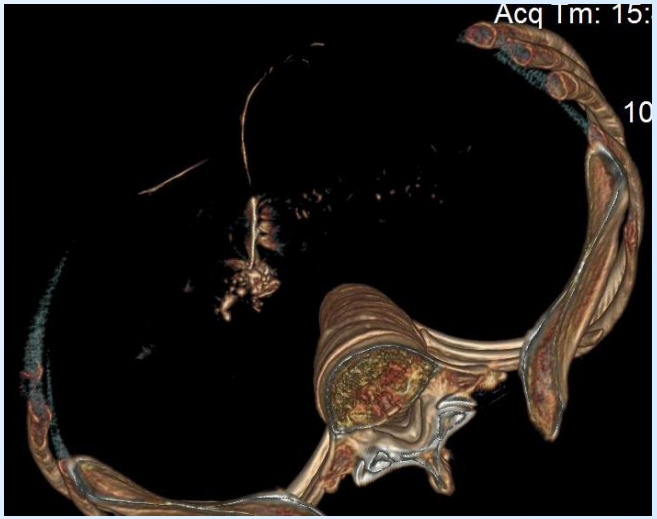






Pancreatic psedocyst drainage under CT guidance

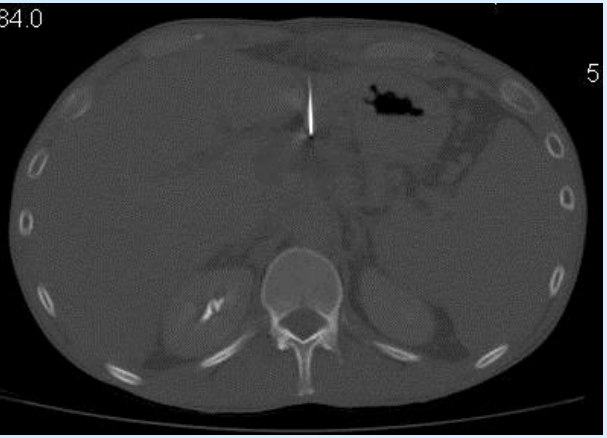


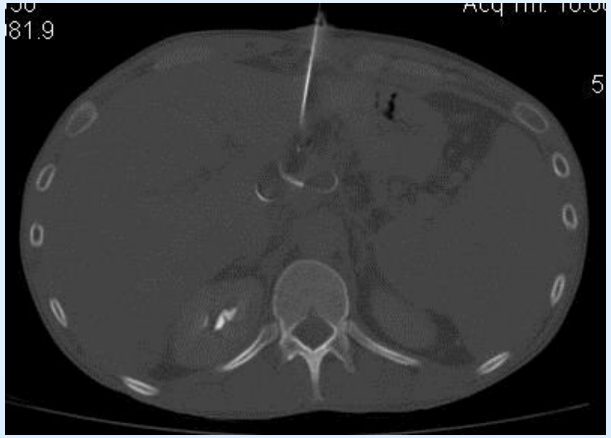


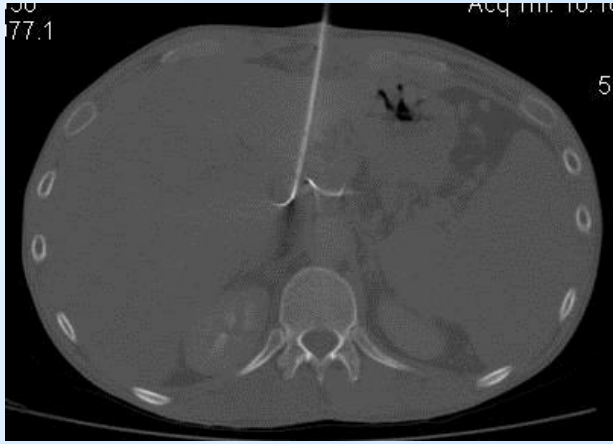
Wire is adequately positioned in PD

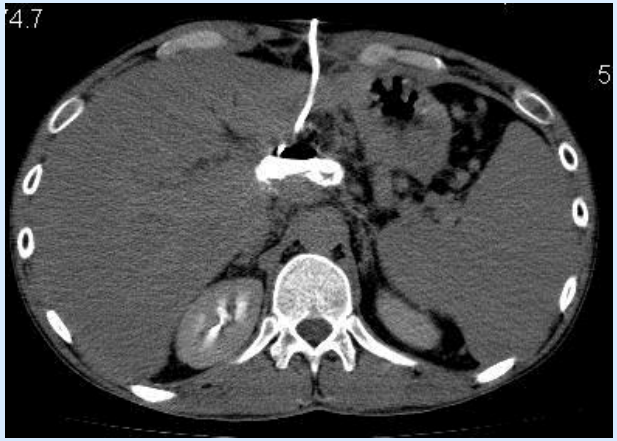
Drainage “target” – pancreatic pseudocyst

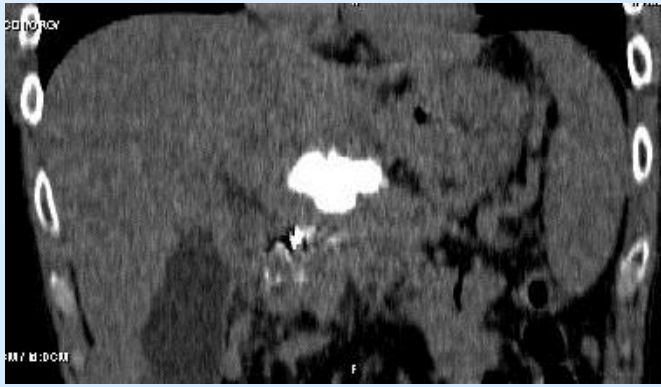
Pseudocyst drainage under CT guidance (Jan.17,2015)



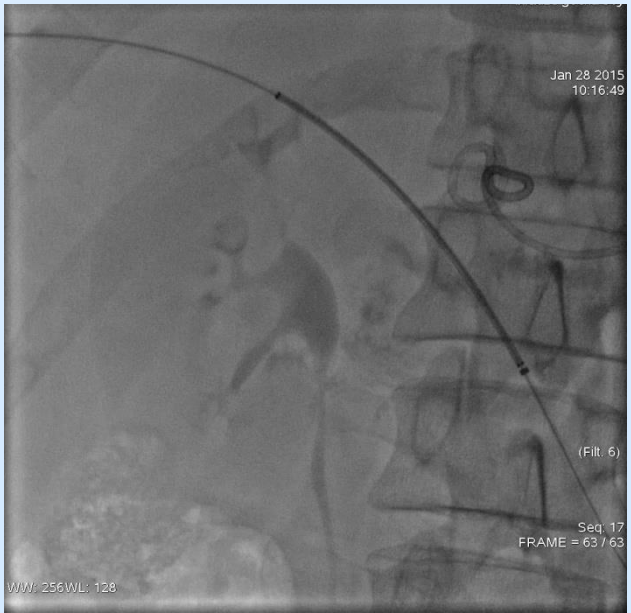


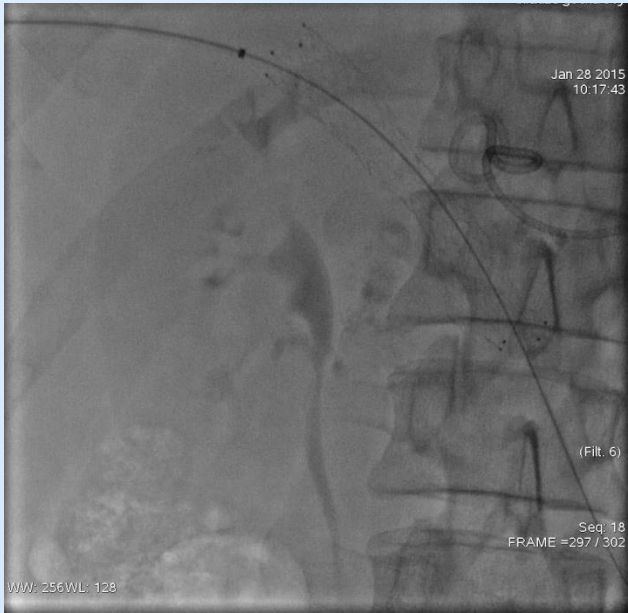




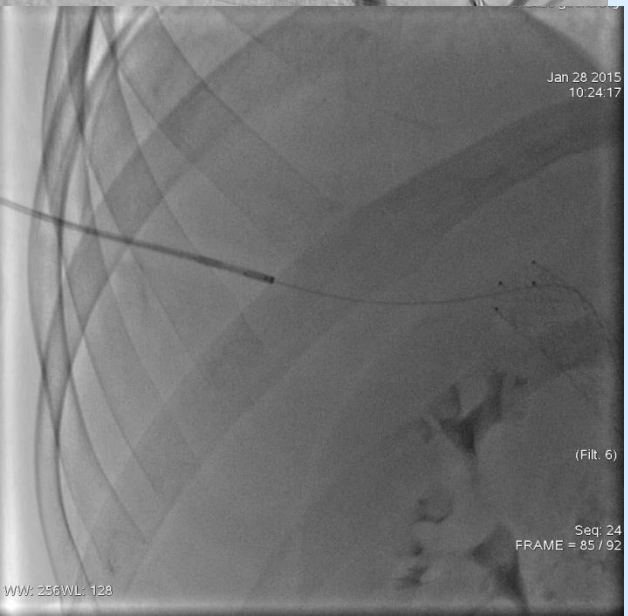


PV recanalization by stenting

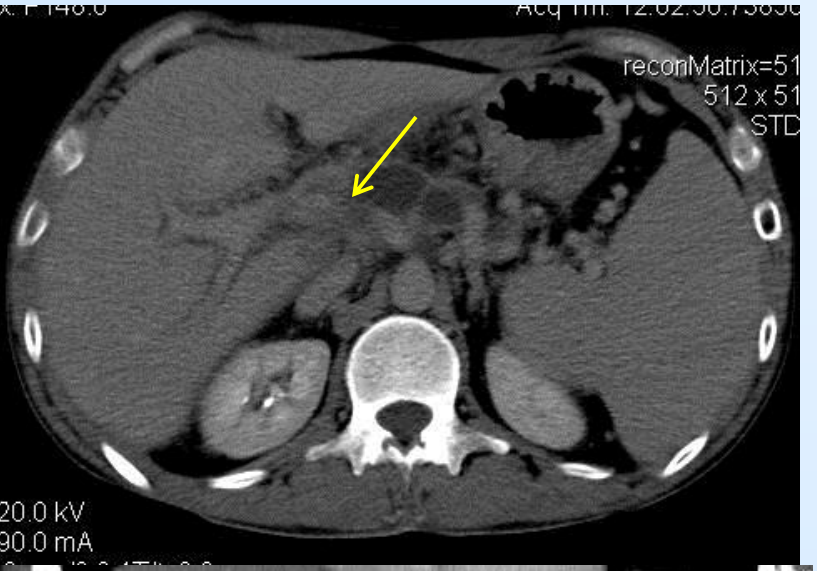


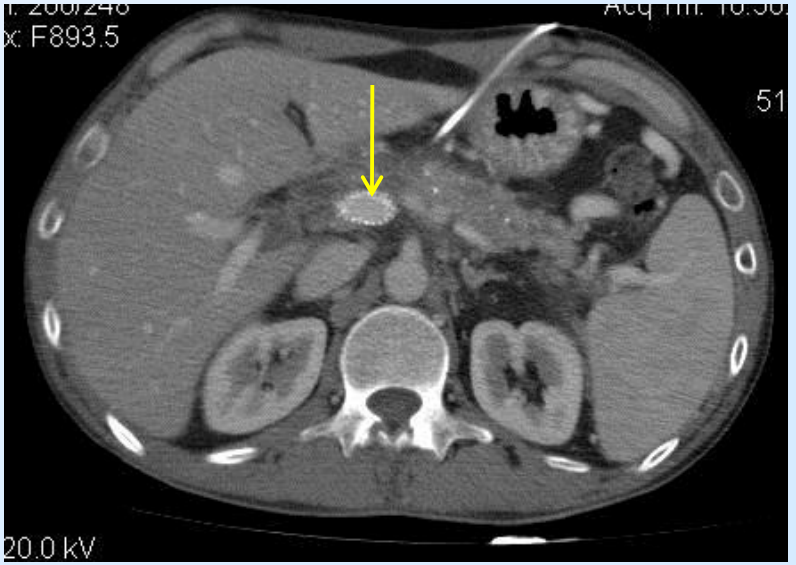


PV recanalization by stenting – restored patency and track ablation by 5 FR endoluminal RF device in order to prevent the bleeding



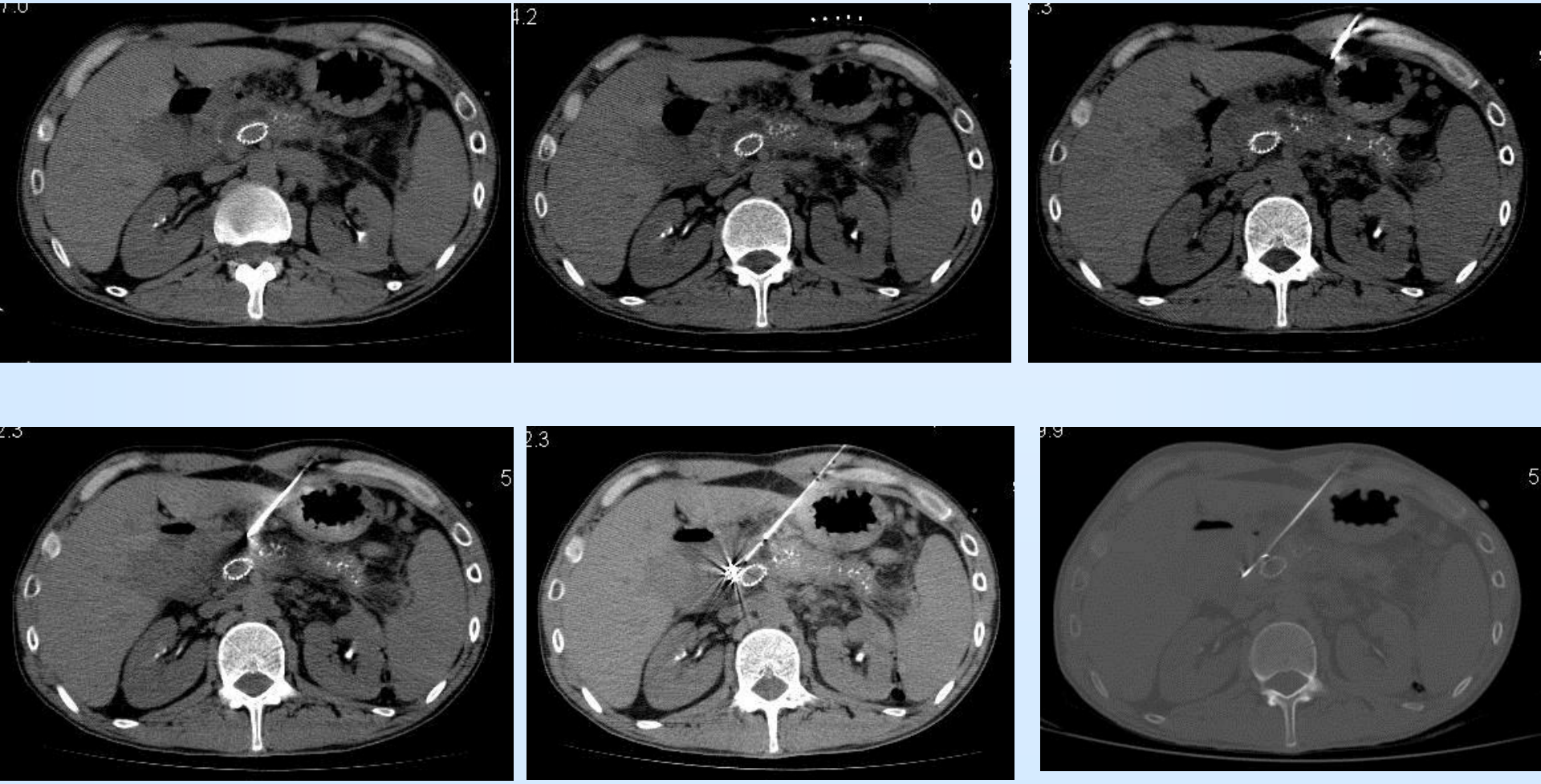
PV patency has been restored – CT before and after PV stent placement



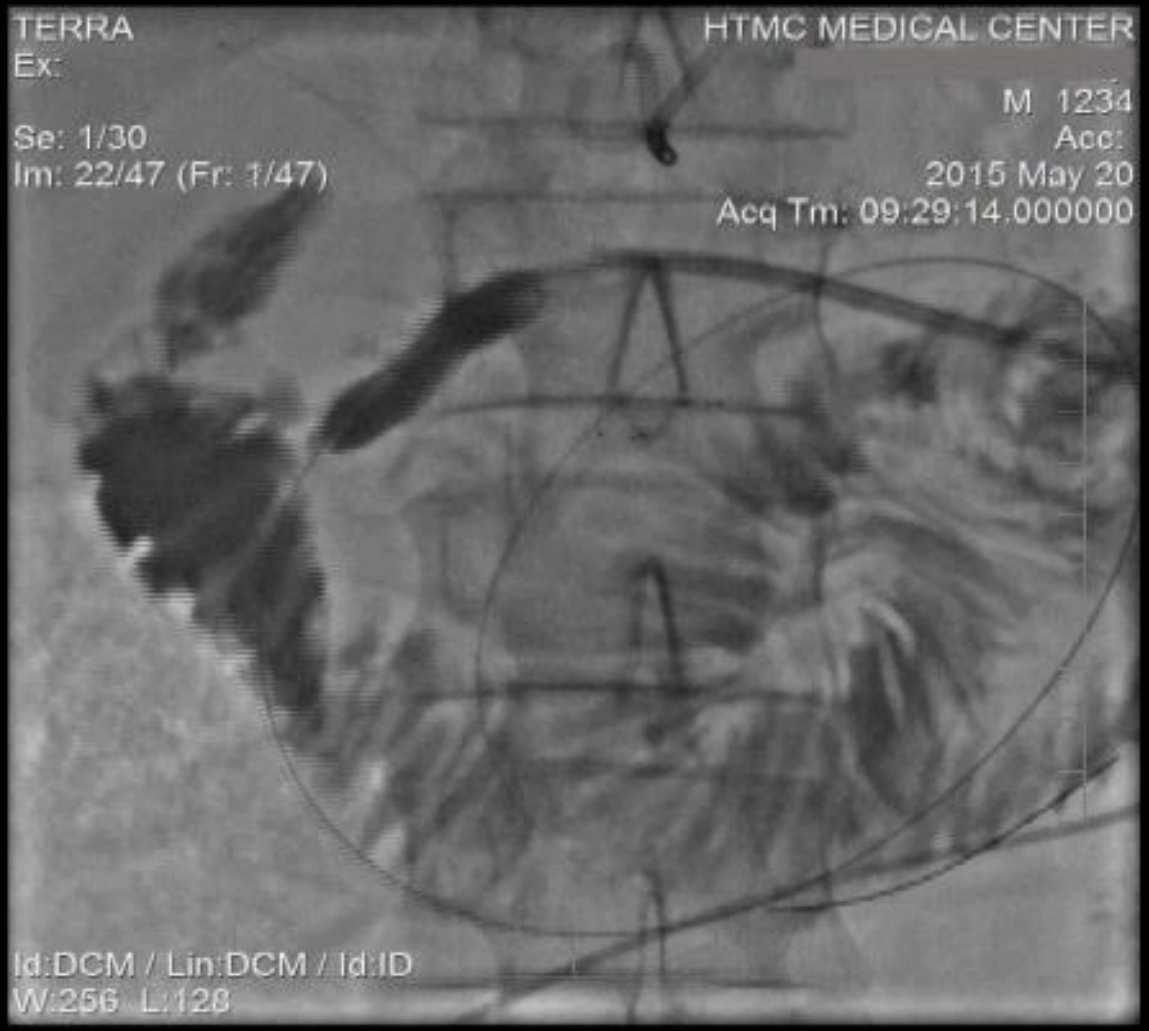


Stent in situ; SMV connection with intrahepatic PV is completely restored. Huge collaterals arising from spleen hilum identify the SV patency problem, which is not clinically important, causing just the spleen enlargement

CT and fluoroscopy guided PD drainage



BAPDL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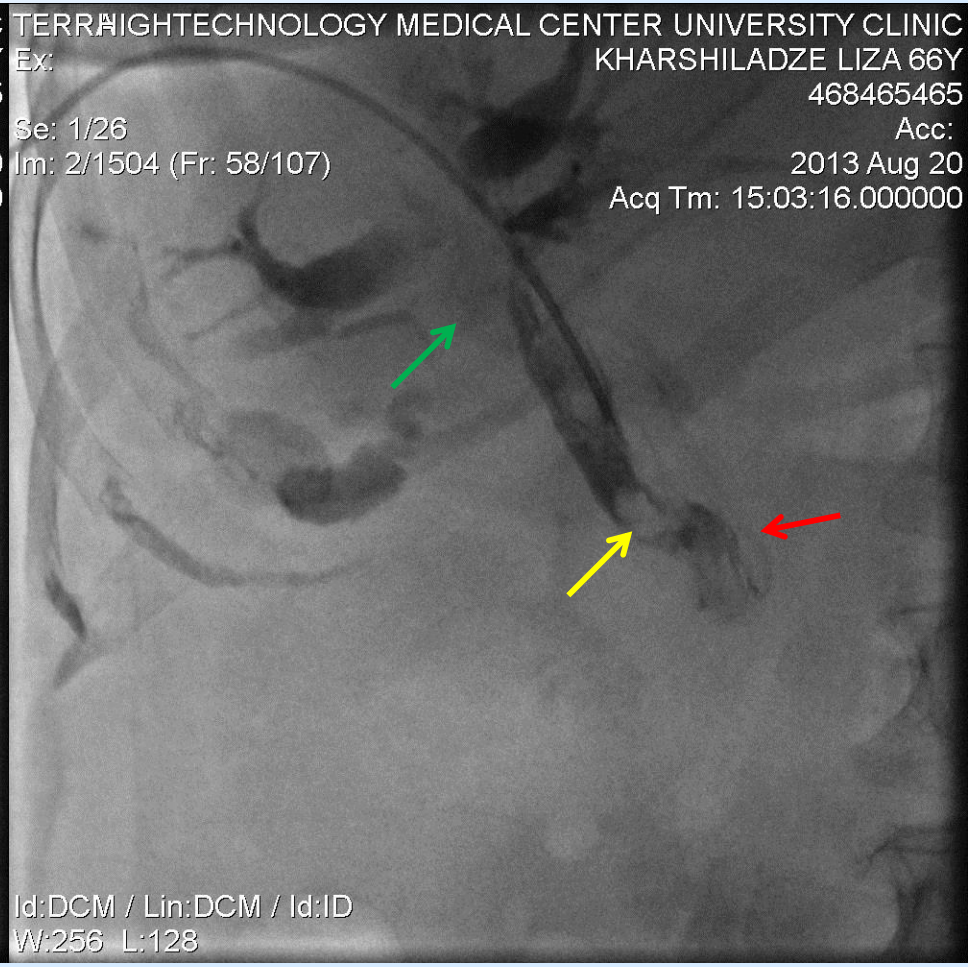
Fistulography after BAPDL

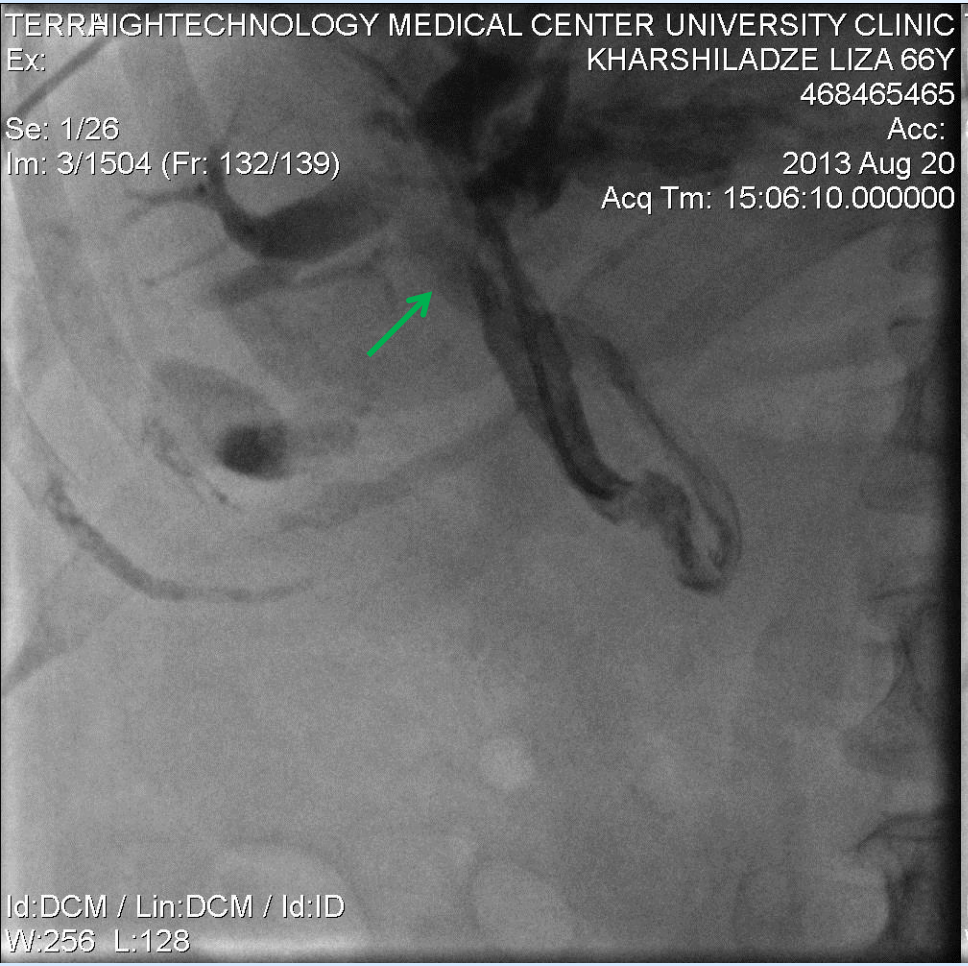
Percutaneal management of pancreatitis induced bilio-portal fistula

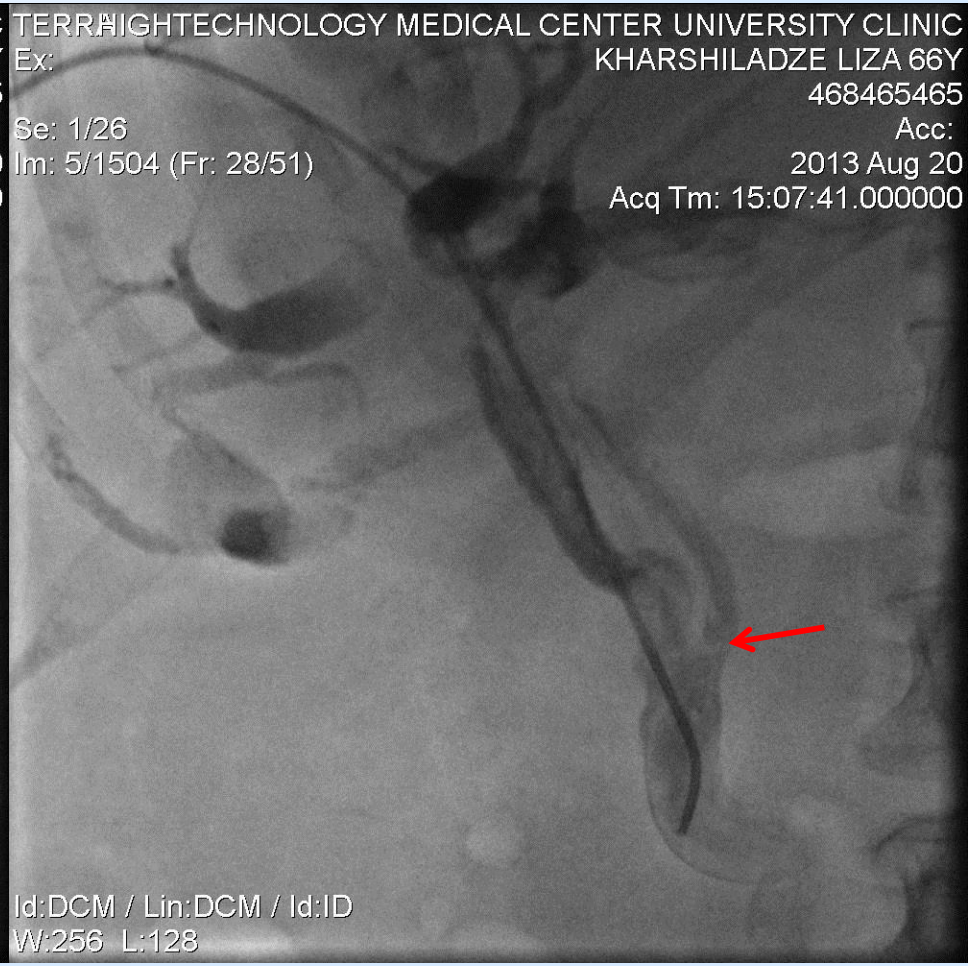
66 years old patient with mechanical jaundice and cholangitis. The primary suggestion was CBD neoplasm, but CT suggested CBD stones; patient was referred to IR for PTC

BAPDL procedure (stone – yellow arrow, bilio-portal fistula –red arrow, PV – green arrow)



BAPDL procedure (bilio-portal fistula –red arrow, PV – green arrow)

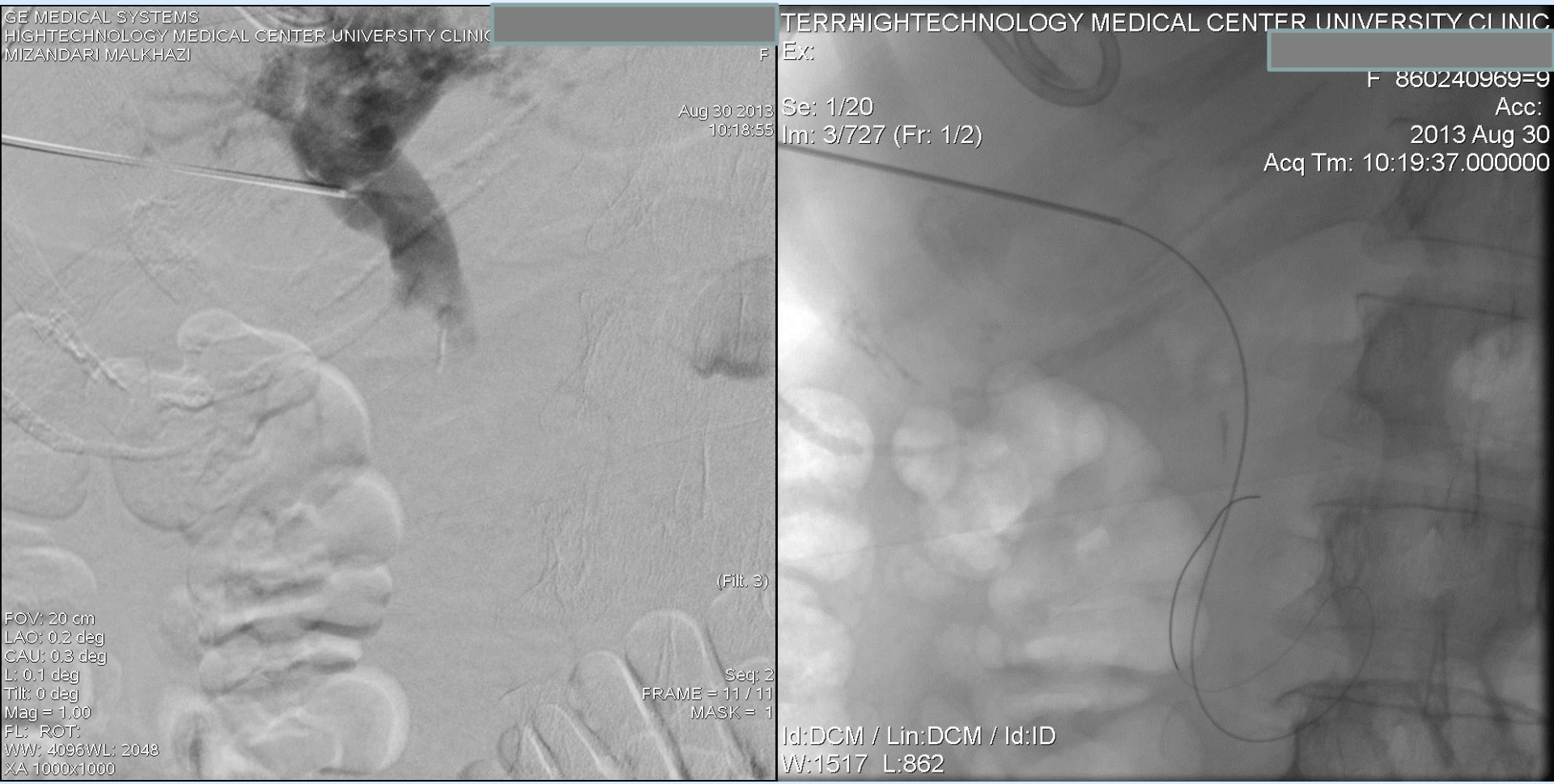




BAPDL has been stopped and finished by external-internal drainage

PV confluence patency problem - most likely the complication of previous pancreatitis; most likely the bilio-portal fistula is also induced by pancreatitis

PV stenting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PV stenting


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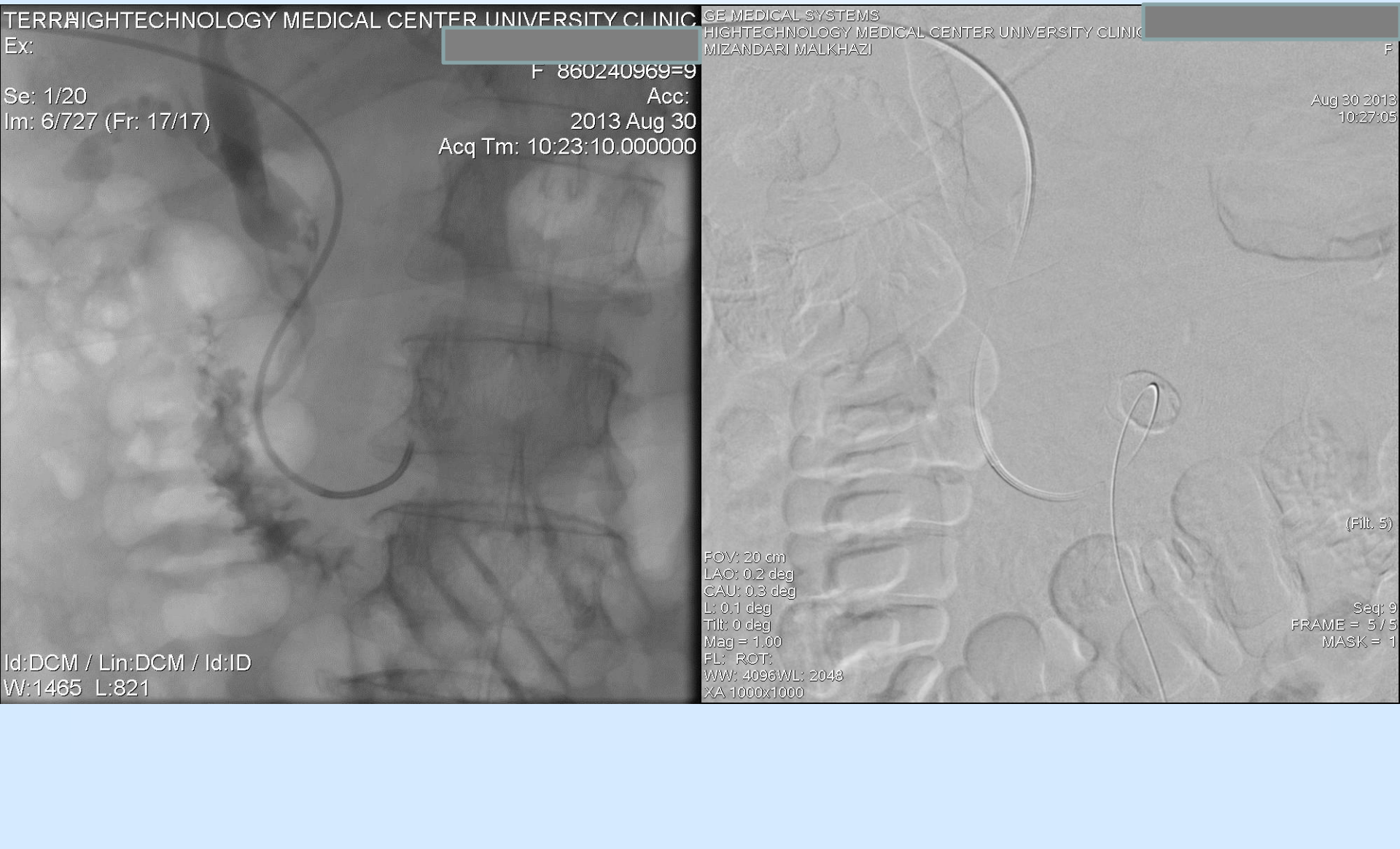
PV stenting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PV stenting


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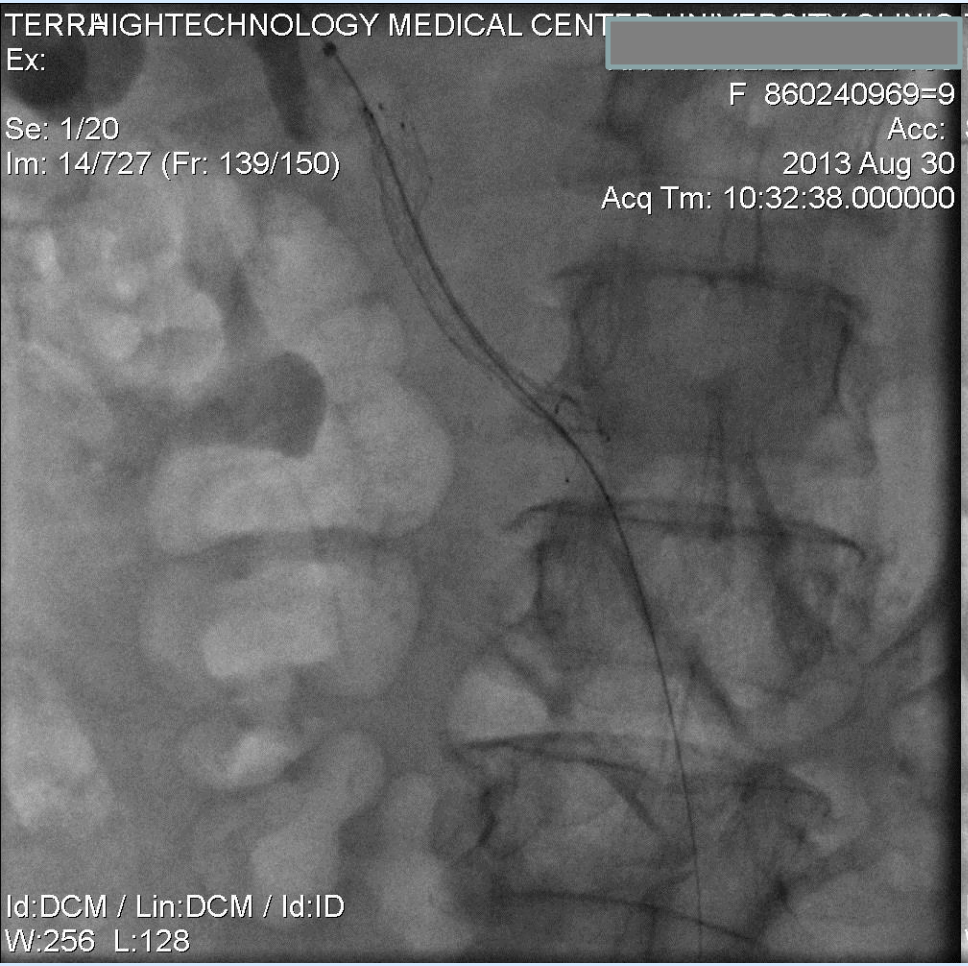
PV stenting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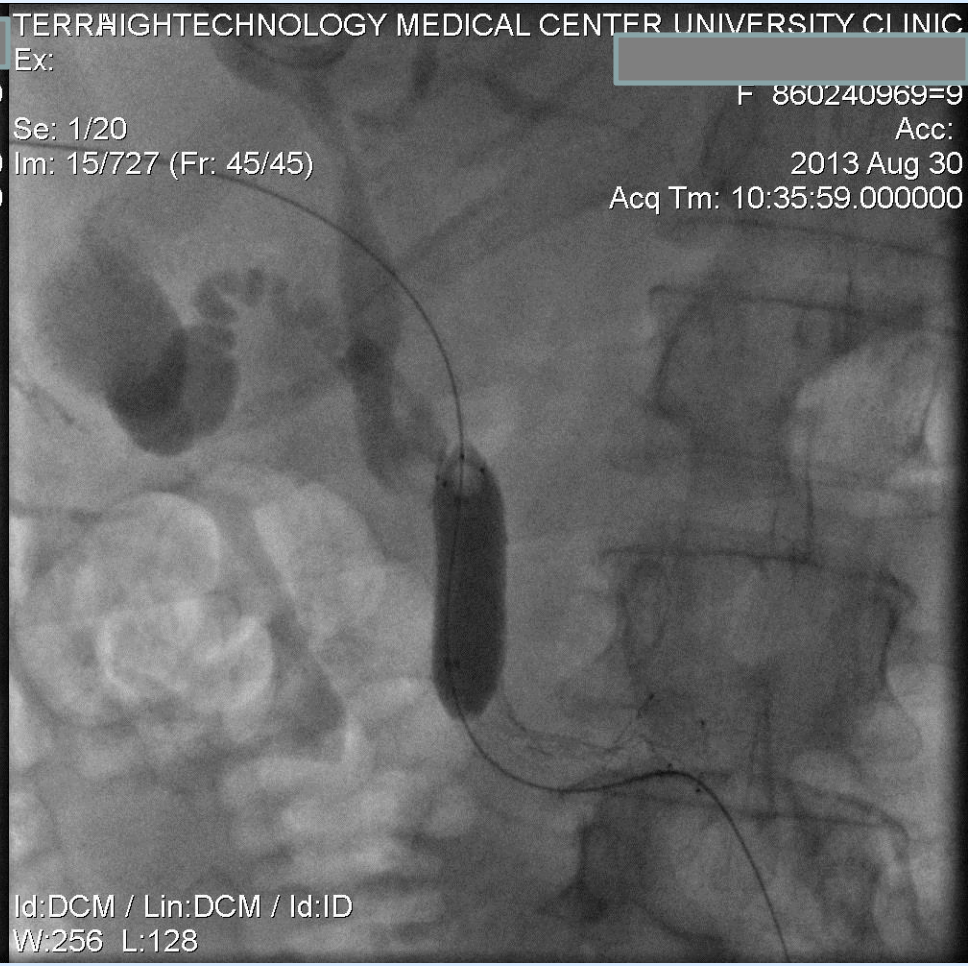
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PV stenting


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Acc:
2013 Aug 30
Acq Tm: 10:42:46.000000
Stone
Id:DCM / Lin:DCM / Id:ID
W:256 L:128

Thanks!