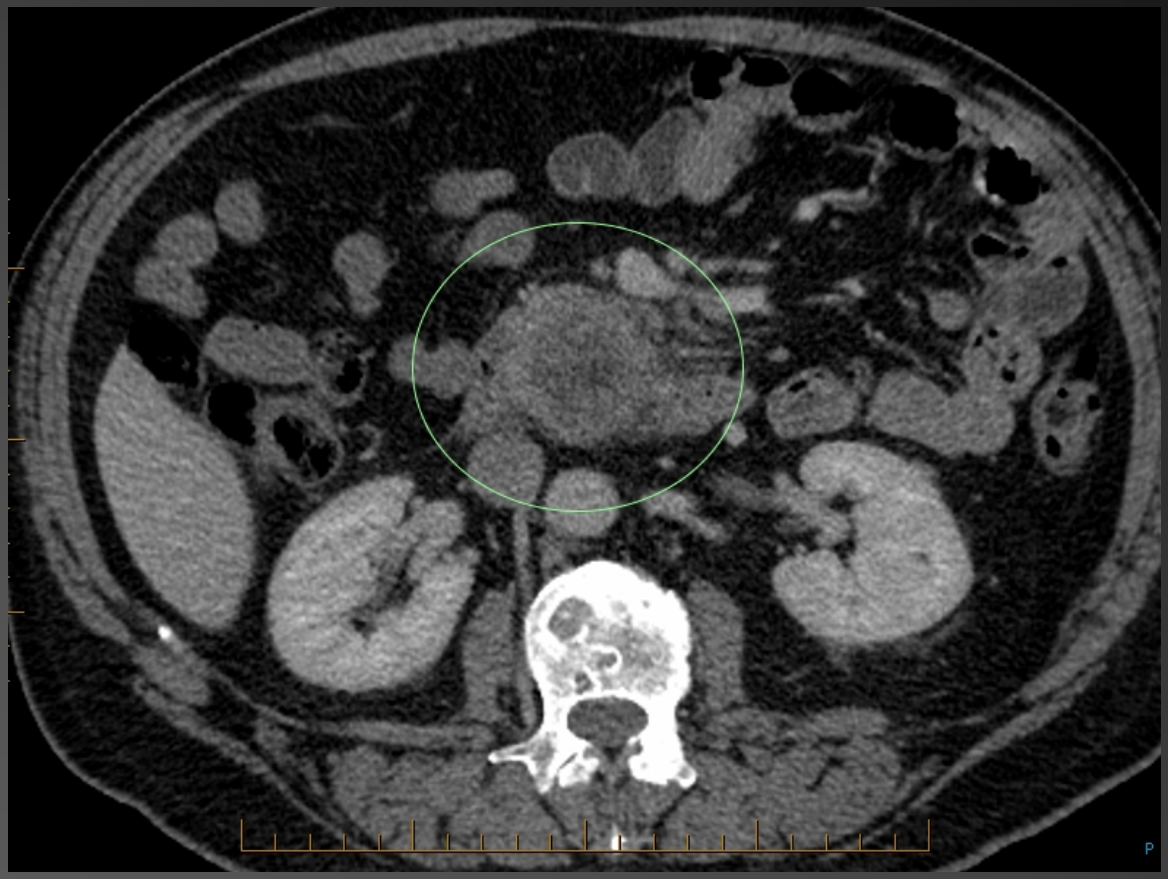
CIRA Case of the Day
June 2015

Case Courtesy of Dr. Kevin Ho
McGill University

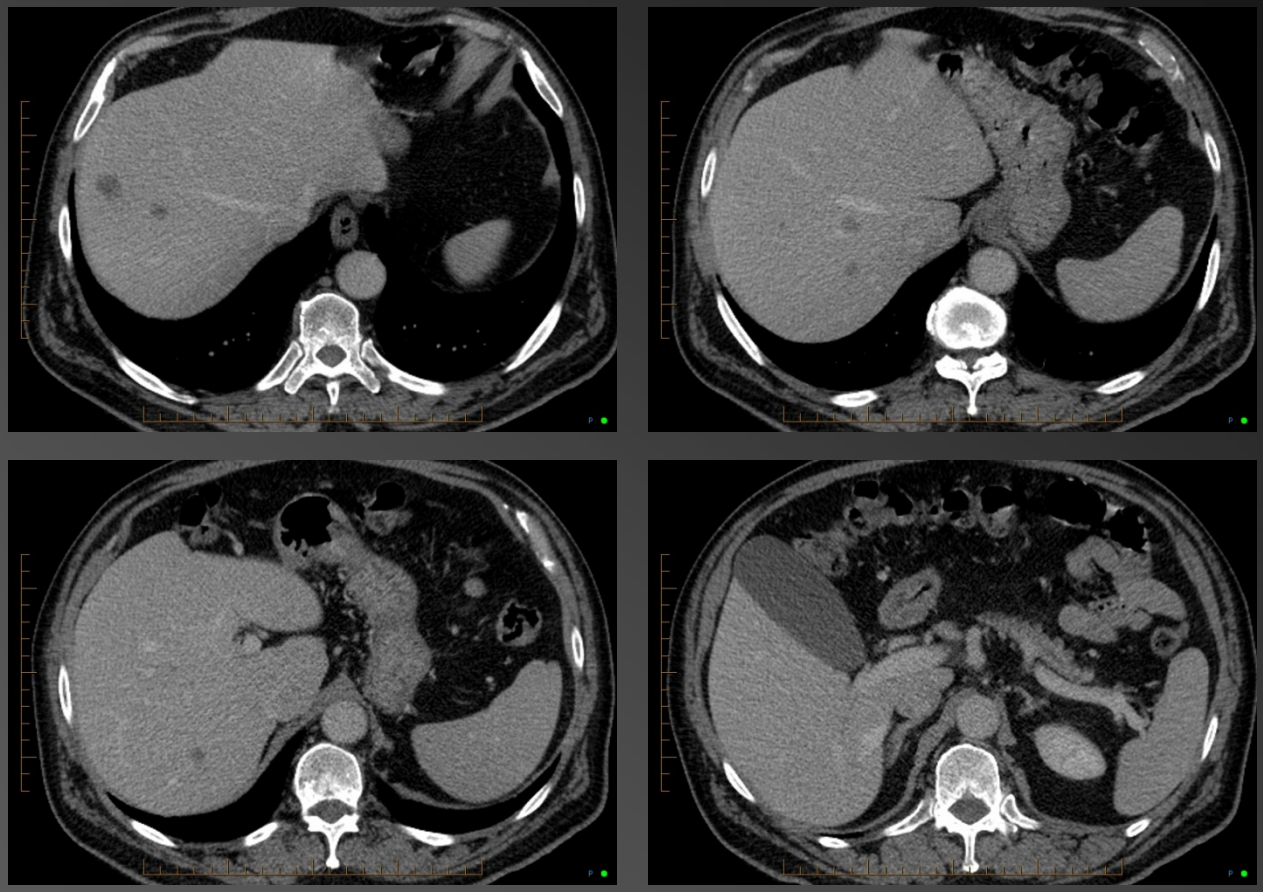
History

- 62 year old man
- Previously well, no past medical history
- Recent diagnosis of pancreatic head mass on CT for vague abdominal pain



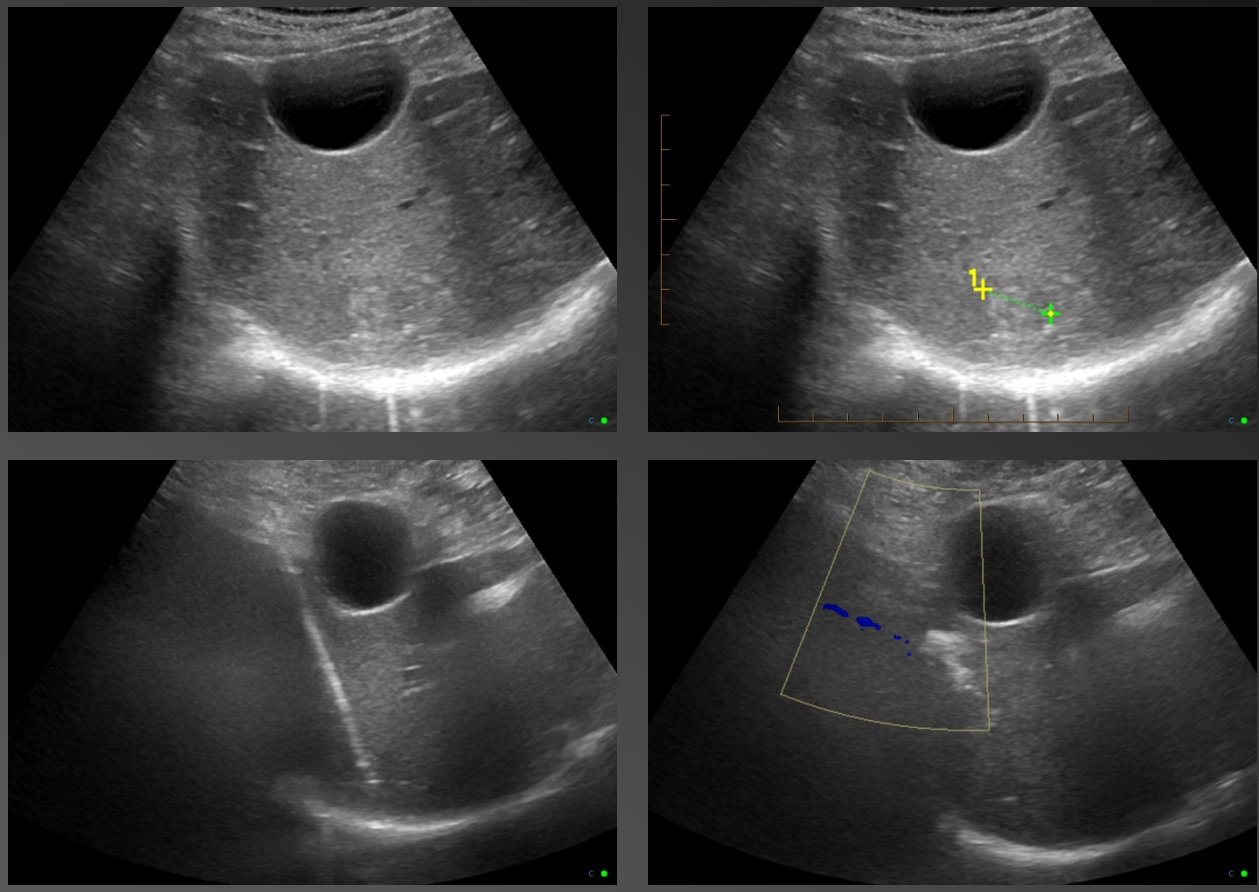
Initial CT abdomen with contrast

Large pancreatic head mass with central low attenuation



Initial CT abdomen - liver

Multiple small low-attenuation foci in the liver were suspicious of metastases



US-guided biopsy was performed

Lesions were isoechoic to liver, and difficult to see. A lesion in segment 6/7 was the most conspicuous, using the gall bladder as a sonographic window. Gelfoam was used to embolize the tract, and colour Doppler showed no bleeding post-procedure.

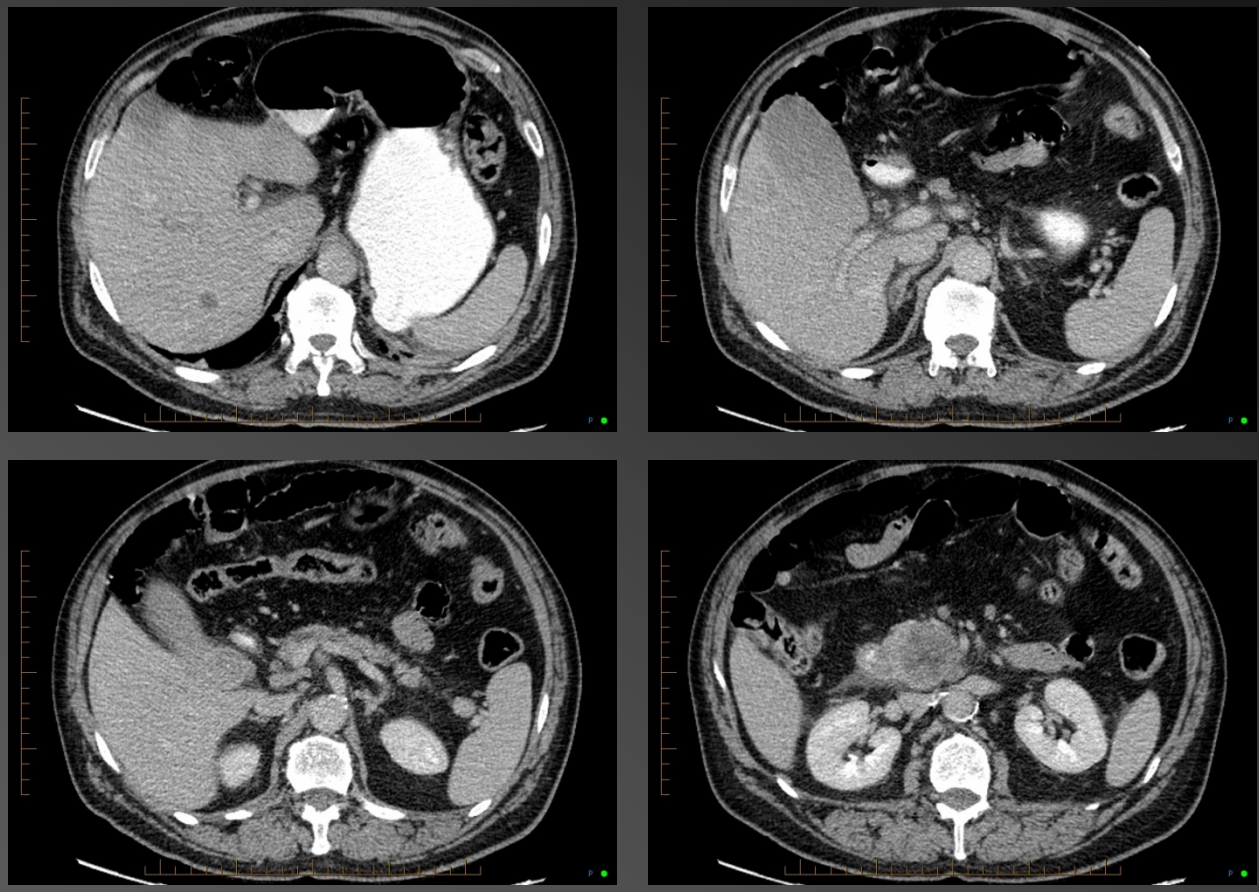
Routine biopsy care

- A 17G coaxial needle was used. Multiple 18G BioPince core biopsies were taken.
- Patient received the routine 3 hours observation
- Patient was well when discharged home

Returned to emergency room 2 days later

- Patient had gradually worsening pain and melena
- He was hemodynamically stable
- Labs showed a slight drop in hemoglobin, which was still within normal limits

- Gastroscopy showed hemobilia at the duodenal ampulla
- Patient was therefore referred for a contrast enhanced CT

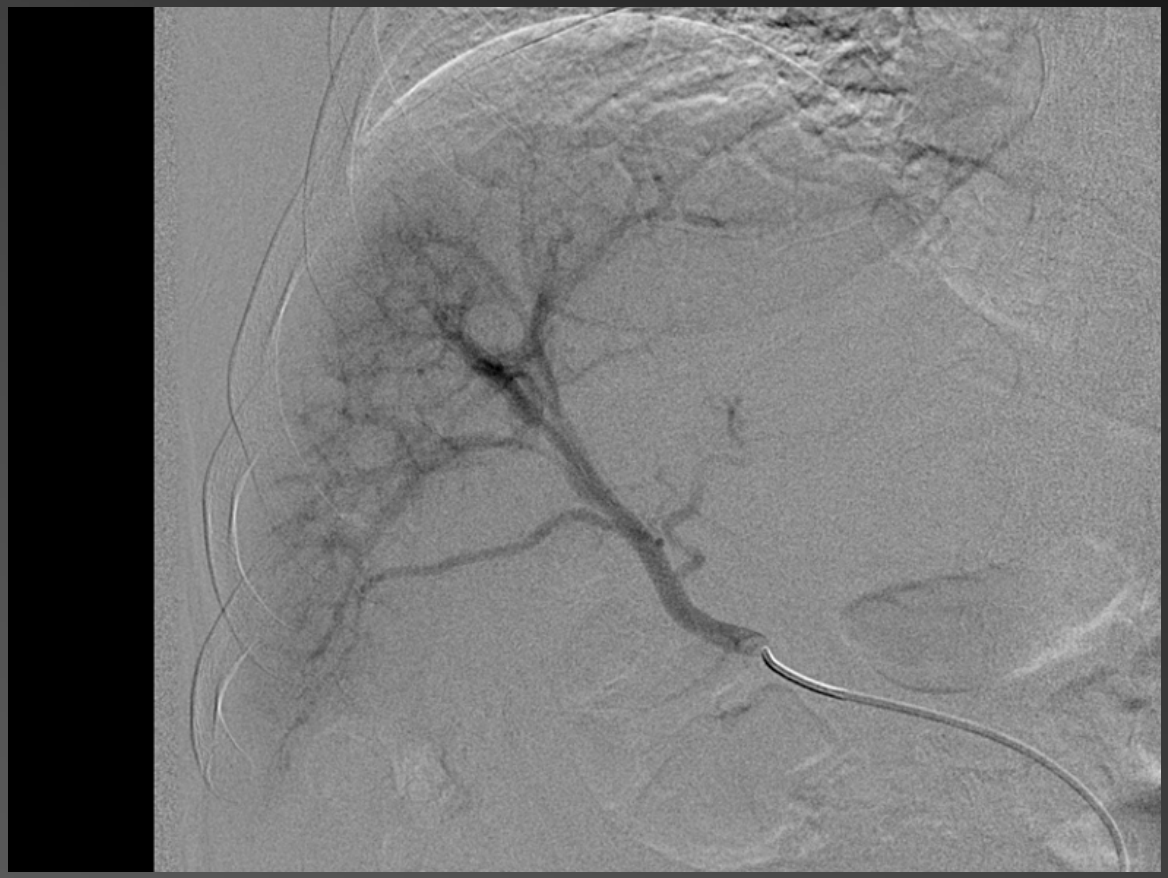


CT 2 days post-biopsy

There was no perihepatic hematoma or extravasation. The gallbladder however was hyperdense, and isodense to liver parenchyma.

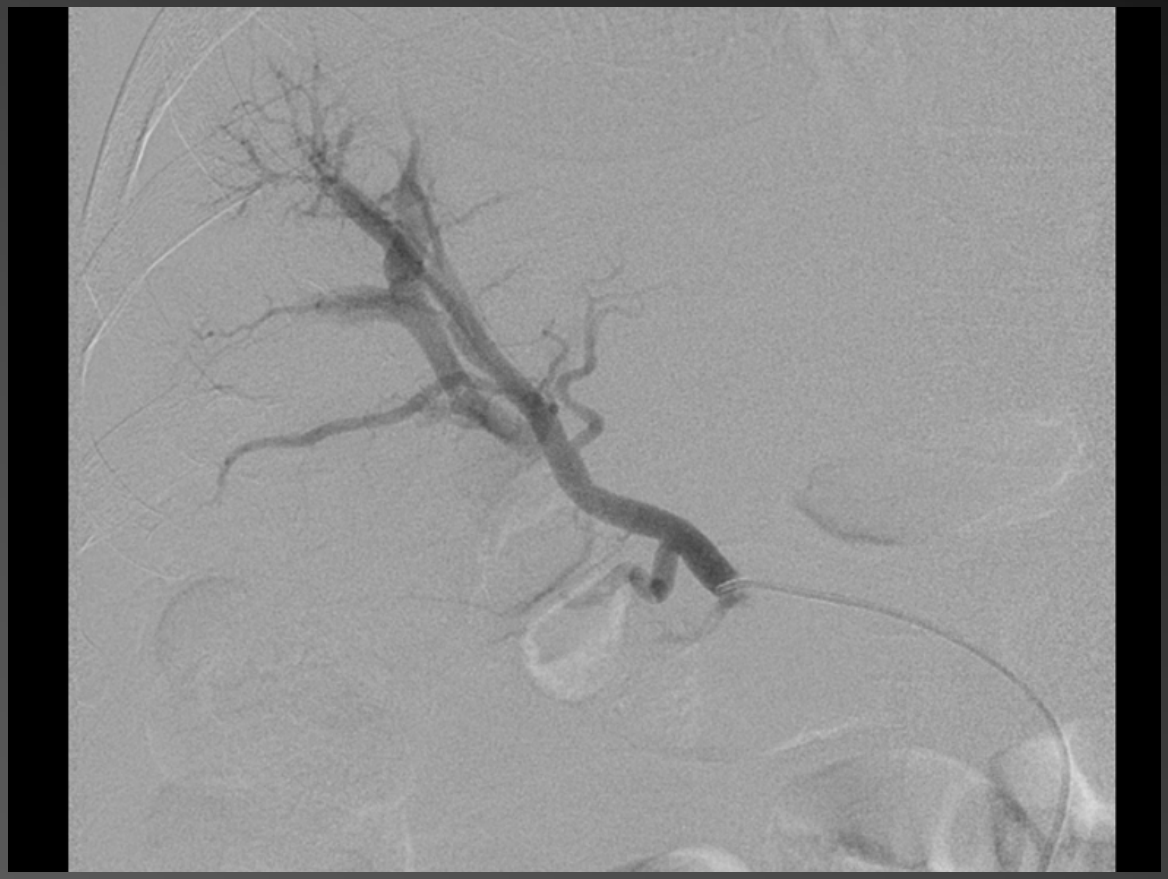
Initial management

- Patient was admitted for observation and monitoring of hemoglobin
- Hemoglobin continued to drop slowly, and necessitated transfusion.
- Patient then had an angiogram, 7 days after initial biopsy



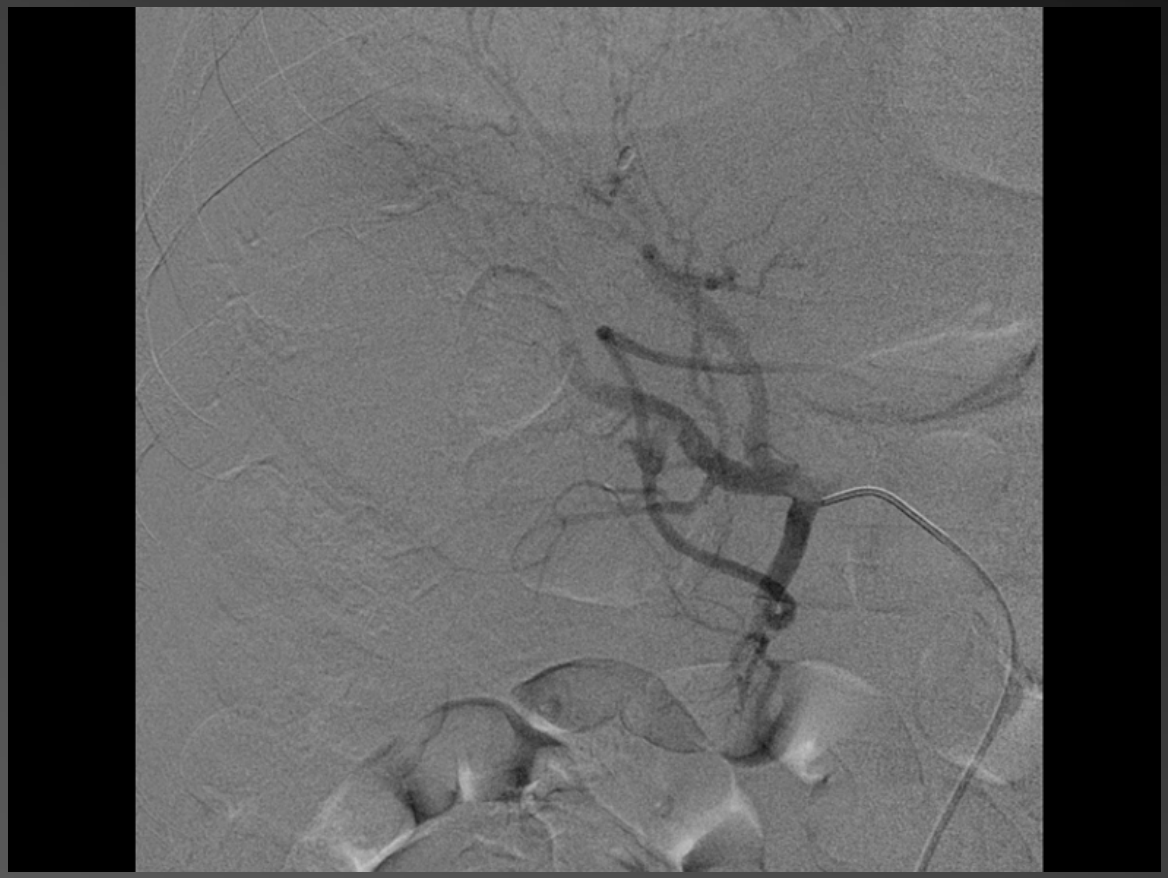
DSA right hepatic arteriogram

There was no definite contrast extravasation or biliary contrast filling. Given the hemobilia, embolization was commenced with gelfoam slurry after this angiogram



2nd right hepatic angiogram

After a small volume of gelfoam embolization, repeat angiogram shows early portal venous contrast filling – consistent with an arterio-portal fistula. There was still no biliary filling.

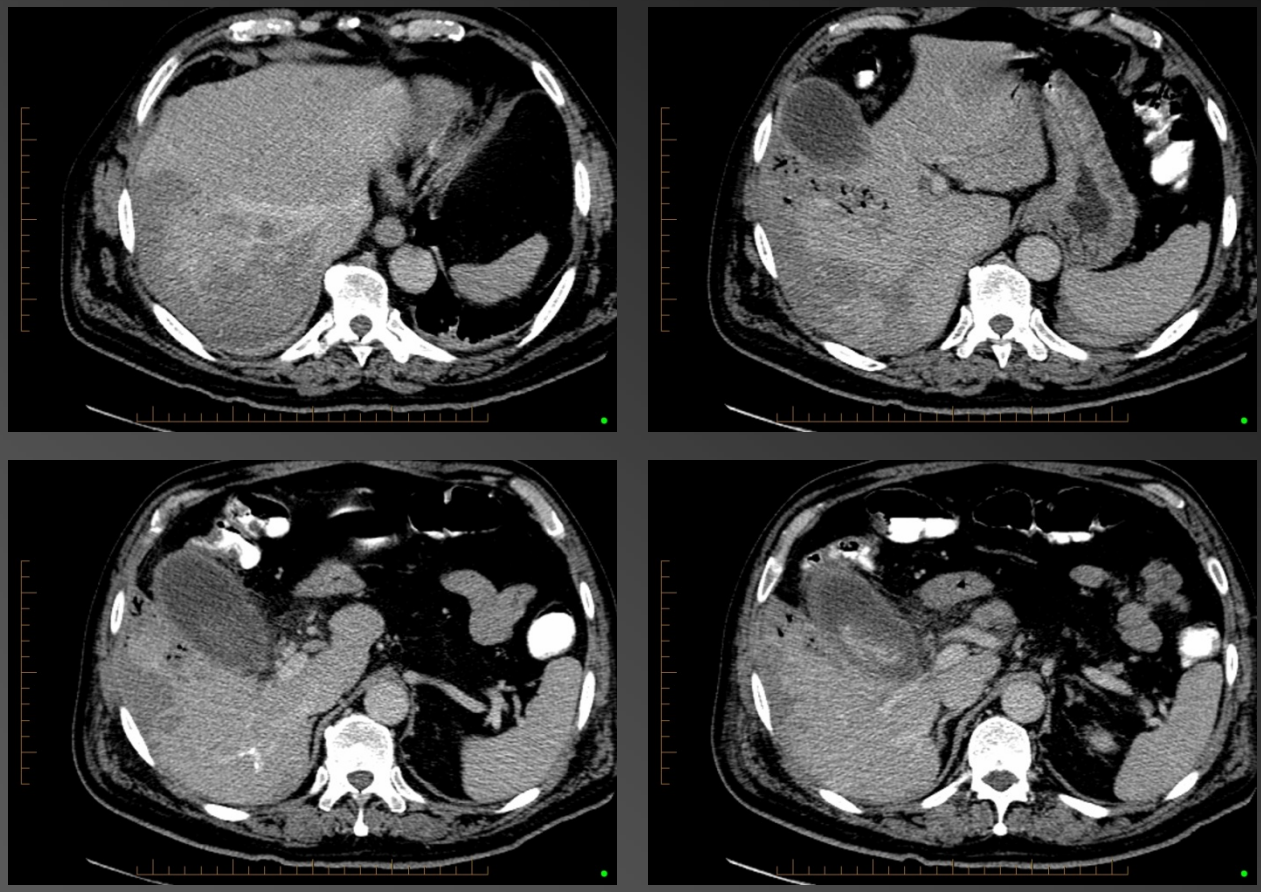


Completion angiogram after embolization

Gelfoam slurry was changed to a slurry with larger gelfoam pieces, and embolization was continued until stasis.

Embolization

- Patient complained of severe right upper quadrant upon completion of the embolization.
- A CT was performed immediately

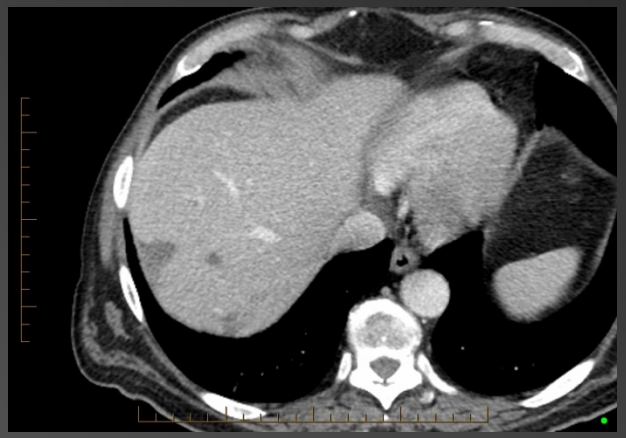


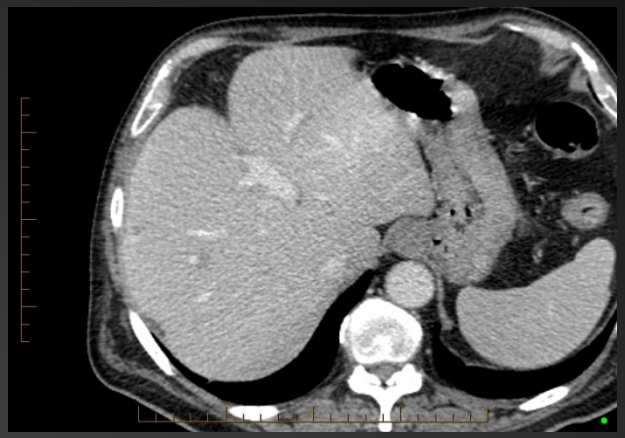
Immediate post-embolization CT

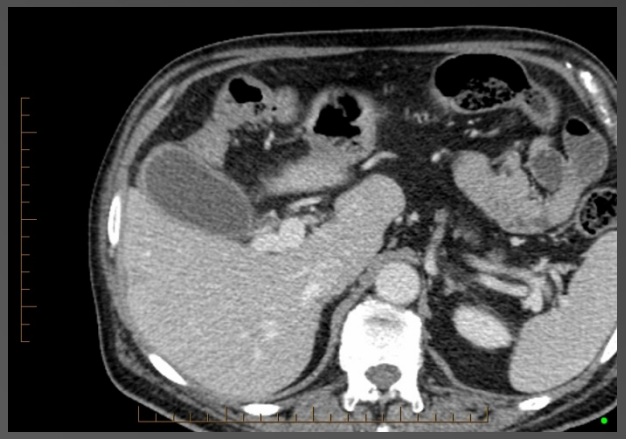
There were patchy areas of low-attenuation ischemia mainly in segment 7. Peripheral branching gas likely represented gelfoam in the hepatic arteries, or maybe portal venous branches. Gallbladder had remnant old blood product.

Clinical course

- Patient was admitted overnight for pain control
- His LFTs were monitored. There was initial derangement, but then these normalised
- Patient was discharged the following day following good pain control.







Routine re-staging CT 2 months later

There were small residual peripheral wedge-shaped infarcted areas, but the rest of the liver had recovered. The small liver metastases were unchanged.

Discussion - Hemobilia

- Hemobilia after a percutaneous liver biopsy is rare – 4 out of 68,276 in a 1986 series [1]

- Overall hemorrhage after a percutaneous liver biopsy is about 0.3%; mortality from bleeding 0.1% [1]

Piccinino F, Sagnelli E, Pasquale G, Giusti G. Complications following percutaneous liver biopsy. A multicentre retrospective study on 68,276 biopsies. J Hepatol. 1986;2(2):165-173.

Discussion - Hemobilia

- Post-biopsy biliary bleeding can be from arterial or portal venous branches.

- Bleeding can be delayed when an initial hematoma that forms in the bile duct dissolves [2]

Lichtenstein DR, Kim D, Chopra S. Delayed massive hemobilia following percutaneous liver biopsy: treatment by embolotherapy. Am J Gastroenterol. 1992;87(12):1833-1838.

Discussion - Hemobilia

- Hemobilia can stop with conservative management, but if continuous and patient status worsens, an angiogram will be necessary [3]

Dang S, Neelima V, Atiq M, Olden KW, Aduli F. Hemobilia after Percutaneous Liver Biopsy Presenting as Hematochezia: A Rare Complication of a Commonly Performed Procedure. Chir Gastroenterol. 2008;24:313- 315.

Arterio-portal fistula

- Treatment may be just observation if patient is asymptomatic – the fistula may spontaneously close over time [4]

- However, the fistula will require closure if there are signs of portal hypertension [4]

Jabbour N, et al. Arterioportal Fistula Following Liver Biopsy. Dig Dis Sci. May 1995; 40(5): 1041–1044.

This case

- Patient likely had injuries of artery, portal vein and bile duct branches
- On embolization, there was likely concurrent embolization of the hepatic artery and portal vein branch - leading to segmental ischemia

Conclusion

- Hemobilia and arterio-portal fistula are rare complications of percutaneous liver biopsy
- If there is no resolution with observation, angiogram +/- embolization is necessary