

Liver

Showstoppers

Case 2.

The text 'Liver' and 'Showstoppers' is rendered in a large, bold, purple font with a textured, histological appearance. 'Case 2.' is in a smaller, black, sans-serif font.

History

- 48y female
- 2006: 1st presentation decompensated alcohol-related liver disease.
- 2014: Single Hepatocellular carcinoma (HCC) 14mm, segment VIII on background cirrhosis with iron overload.
- HFE genotyping negative for genetic haemochromatosis.

Radiology



CT 2014

CT 2019



MDT Discussion

- 2014: 14mm HCC Segment VIII.
Transplant contraindicated: porto-pulmonary hypertension.
- Trans-arterial chemo-embolisation (TACE) and radio-frequency ablation (RFA) 2015/16/17/18 with HCC recurrence.
- Liver function and pulmonary disease improved following abstinence and sildenafil treatment for pulmonary hypertension.
- 2017: Listed for transplant.
- 2019: 35mm HCC.
DCD (donation after circulatory death) transplant.

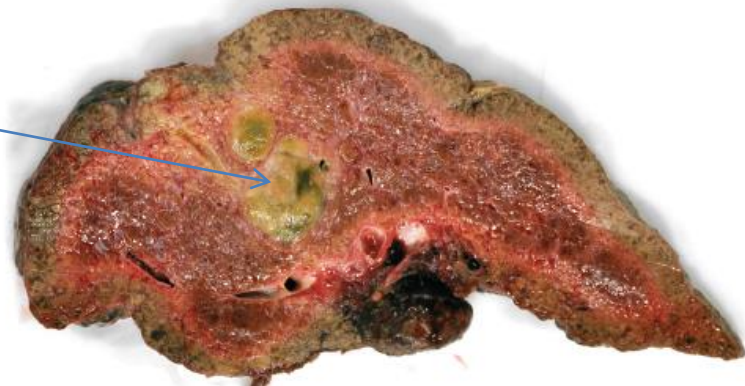
Macroscopy

Micronodular liver

Segment 7/8: 52mm pale, partly bile stained, well-circumscribed lesion with heterogenous appearance including areas of necrosis.

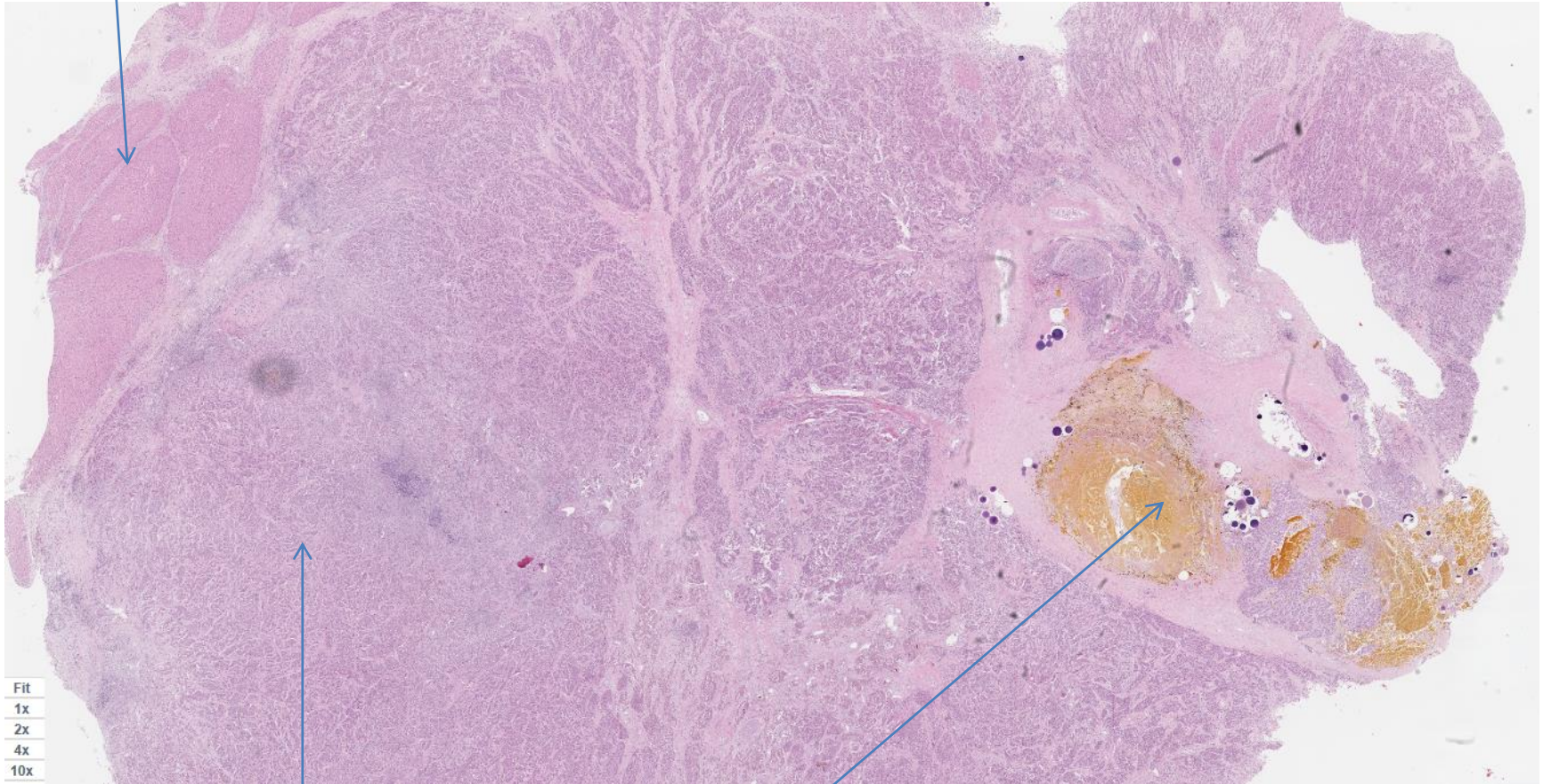
Residual viable HCC

Gallbladder: firm bile-stained submucosal area at the fundus.



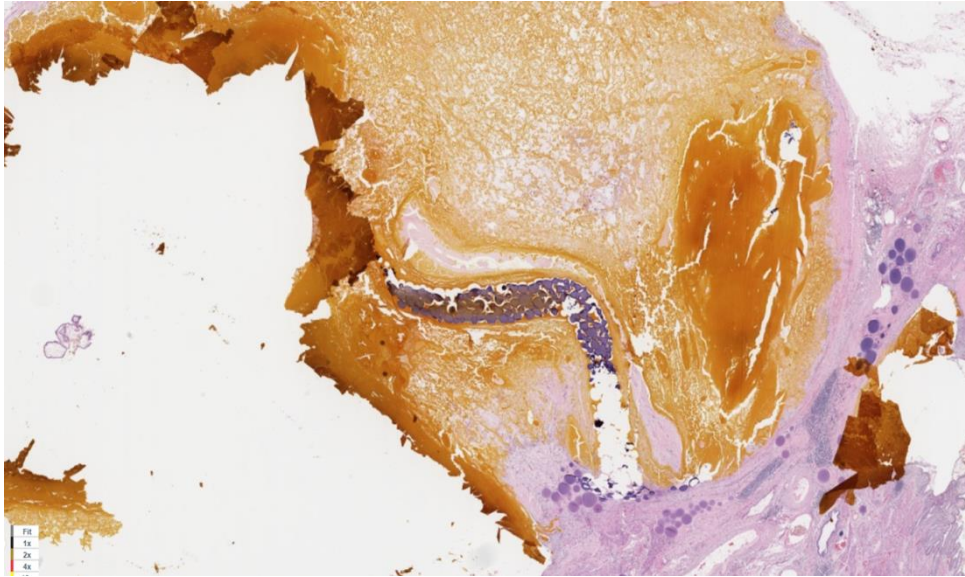
Microscopy

Background cirrhosis



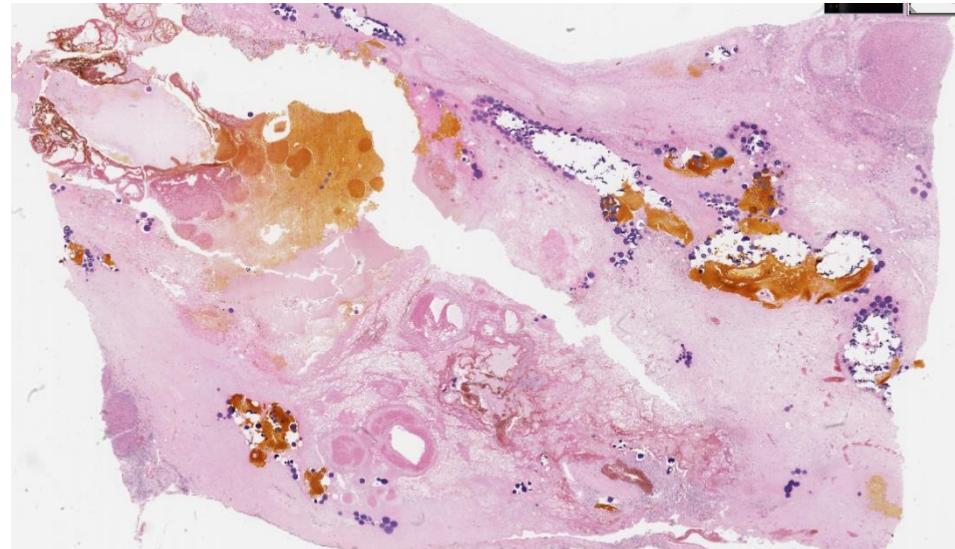
HCC with TACE related bile duct ischaemia with bile extravasation.

Microscopy

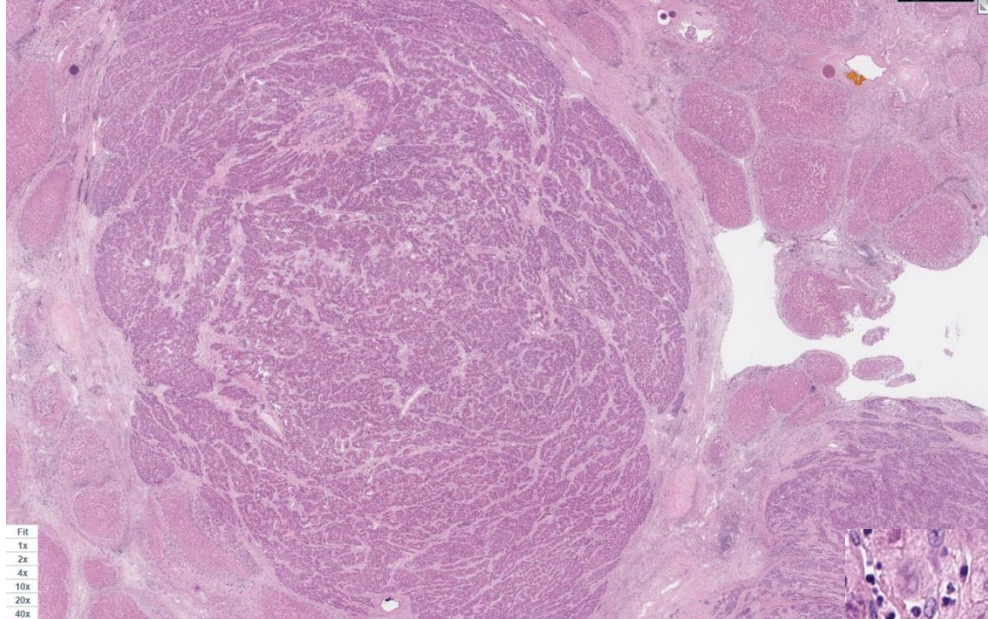


Focal gallbladder ischaemia due to TACE resulting in ulceration and bile accumulation in surrounding tissues

Area of fibrosis and bile extravasation adjacent to HCC. Scarred outlines of biliary structures with bile extravasation associated with TACE beads.

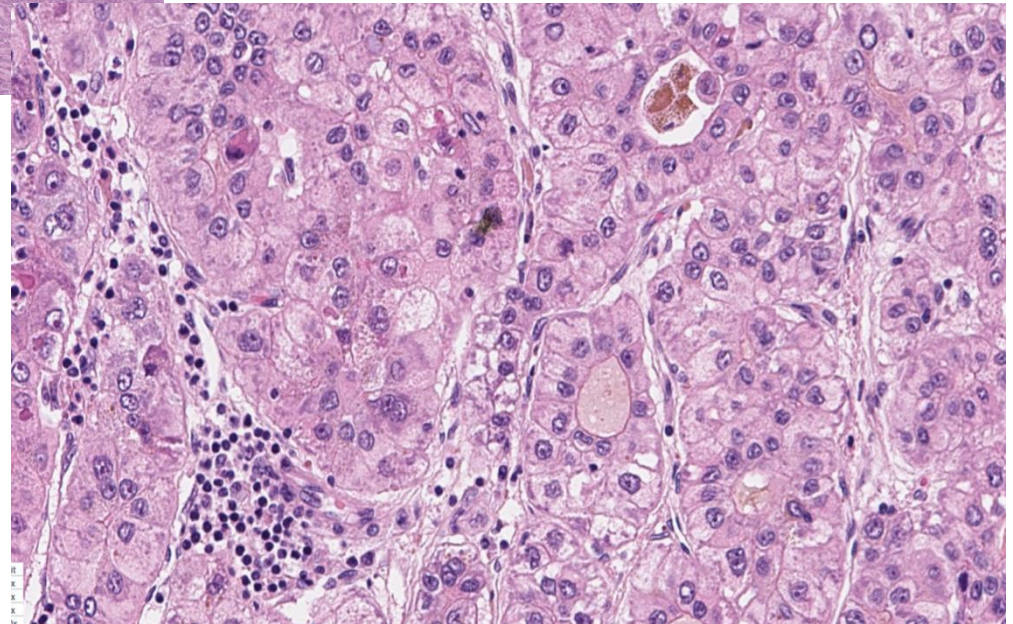


Microscopy

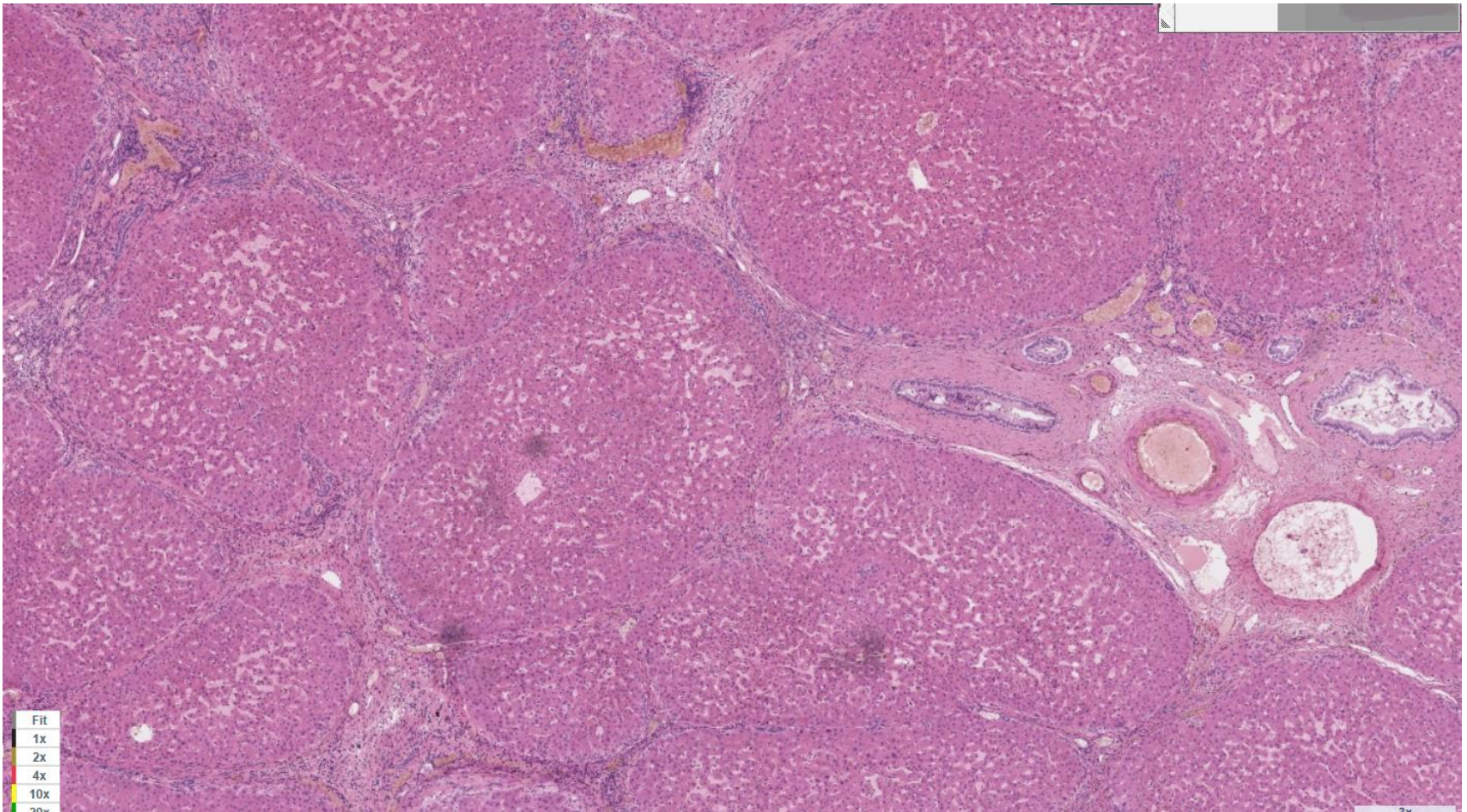


HCC recurrence

High power
view of HCC



Microscopy



Background liver – cirrhosis is histologically cryptogenic,
no steatosis/evidence of previous alcohol related liver injury.

Diagnosis

- HCC recurrence in cirrhotic liver – previous **alcohol related liver disease**.
- Previous good response of HCC to TACE (2014 – 2019).
- Gall bladder and intra-hepatic bile duct ischaemia with biliary extravasation secondary to TACE.

Discussion

- Good response of HCC to TACE is a good prognostic factor associated with prolonged time to metastasis and improved survival.¹
- This patient demonstrated favourable tumour biology from the outset with minimal change in tumour size between diagnosis Oct 2014 and interval scan Mar 2015.
- This was born out with well controlled disease over 5 years before transplant.

Discussion continued

- Major complications following TACE are rare (less than 5%) with procedure-related mortality occurring in 0.5% of the patients.⁴
- Biliary ducts have exclusive blood supply from the hepatic artery branches, which form the peribiliary capillary plexus. They are therefore very susceptible to ischaemia from TACE.²
- Occasionally, as a result of hepatic artery embolization, inadvertent occlusion of the biliary vascular supply may occur leading to bile duct necrosis, biliary stasis and formation of intrahepatic biloma and biliary stricture. This predisposes to cholangitis and related morbidity.²

Discussion continued

- Non-targeted embolization can lead to gallbladder ischemia/infarctions when the cystic artery is occluded. Most of the cases have a self-limited clinical course. ⁴
- Risk factors for TACE related bile duct injury include tumour size <5cm, pre-TACE bile duct dilatation, proximal intra-arterial injection site, treatment interval <3/12, co-injection of Lipiodol. ²
- Variable incidence of bile duct injury post TACE 0.87% - 3.3%.²
- Potentially some mildly protective effect of hypertrophied peribiliary plexus observed in cirrhosis.³

References

1. Early treatment response to transcatheter arterial chemoembolization is associated with time to the development of extrahepatic metastasis and overall survival in intermediate stage hepatocellular carcinoma. Lee SW et al. *Cancer Chemotherapy Pharmacol*, 2017 Jan;79(1):81-88
2. Biliary complications of arterial chemoembolization of hepatocellular carcinoma. E.Dhamija et al *Diagnostic and Interventional imaging* (2015) 96, 1169-1175
3. Liver/biliary injuries following chemoembolisation of endocrine tumours and hepatocellular carcinoma: Lipiodol vs. drug-eluting beads. Boris Guiu et al. *Journal of Hepatology* Vol 56, Issue 3, March 2012, pg 609-617
4. Embolization of liver tumours: Past, present and future Ashwin Rammohan et al. *World J Radiol* 2012 Sep 28; 4(9): 405-412