

CIRA Case of the Month

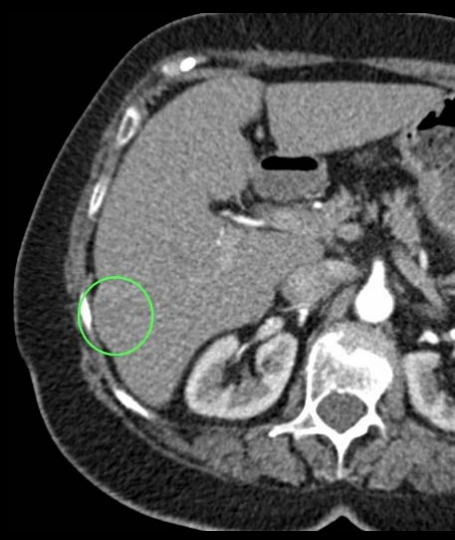
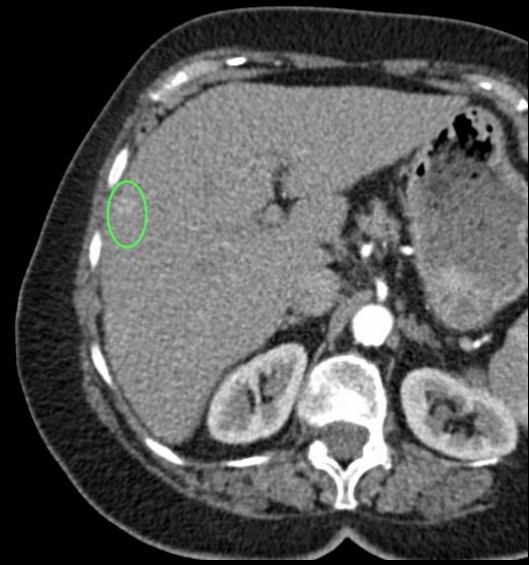
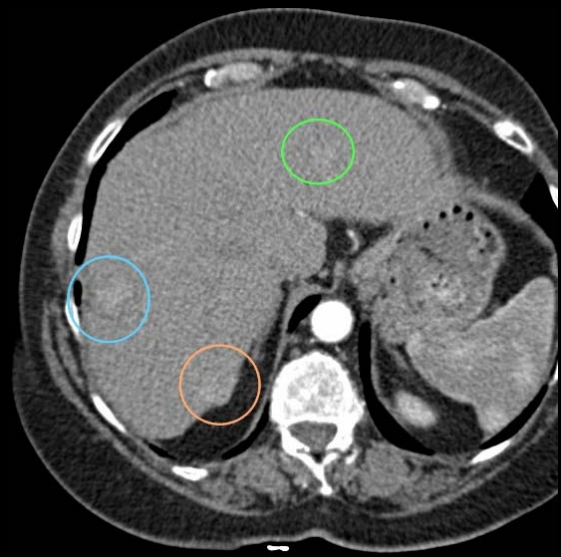
Case Courtesy of Drs. S. Alshehri and A. Mujoomadar
Western University

Case presentation

- 63-year-old female
- She is known to have liver cirrhosis secondary to hepatitis C virus
- S/P Harvoni with complete eradication of the virus
- Referred for consideration of liver transplant
- No history of ascites, GI bleeding or decompensated features
- No recent weight or appetite changes

Case presentation

- MELD score of 7
- AFP > 2400
- Had a CT scan two months prior to referral to our hospital, which showed several liver masses



CT

- Demonstrated multifocal HCC with 4 lesions identified
- Segment 8: 3.2 cm
- Segment 6: 3 cm
- Segment 2: 1.2 cm
- Segment 7: 1.7 cm
- Portal veins, hepatic veins and hepatic artery are patent
- No ascites, varices or splenomegaly

Percutaneous Liver Biopsy

- Performed at an outside institution 2 months prior and demonstrated moderately differentiated HCC

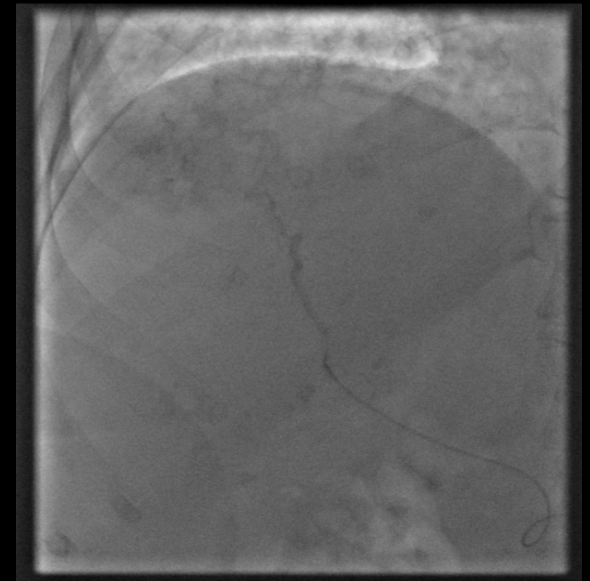
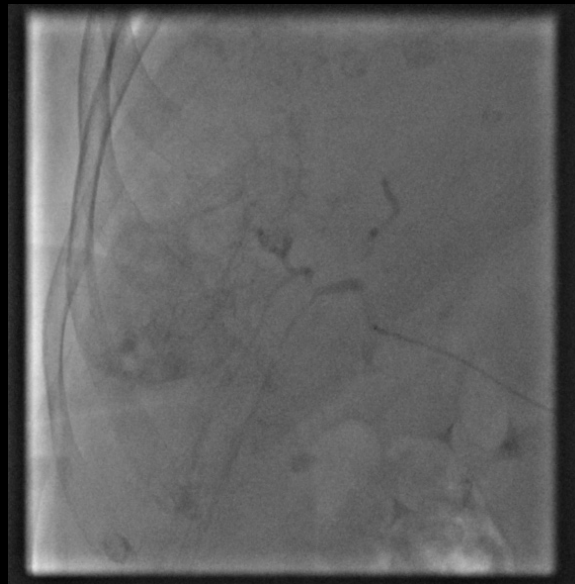
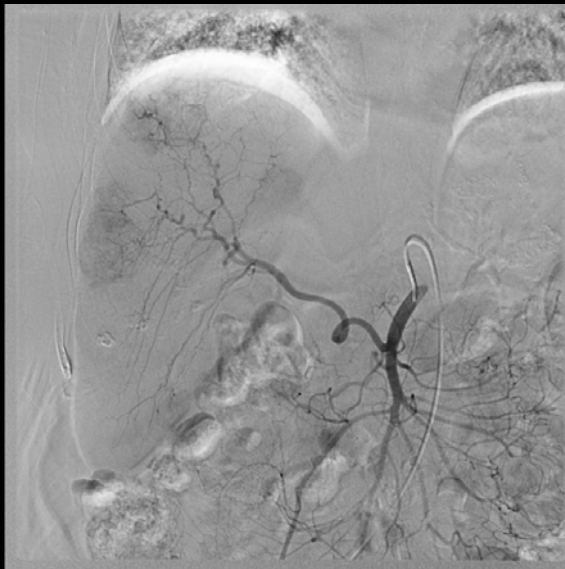


Clinical details

- Presented at the Hepatocellular Carcinoma Multidisciplinary Tumor Board
- The decision was made to perform TACE with the goal of reducing her AFP to less than 400 prior to liver transplant

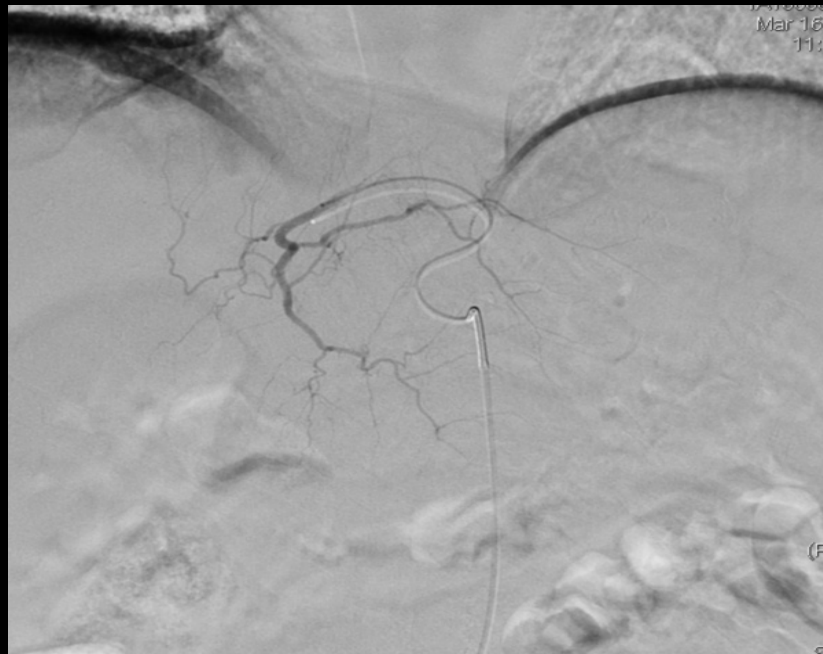
January 2016 – Right lobe TACE

- Selective chemoembolization of three right lobe lesions was performed (Hepaspheres and doxorubicin)



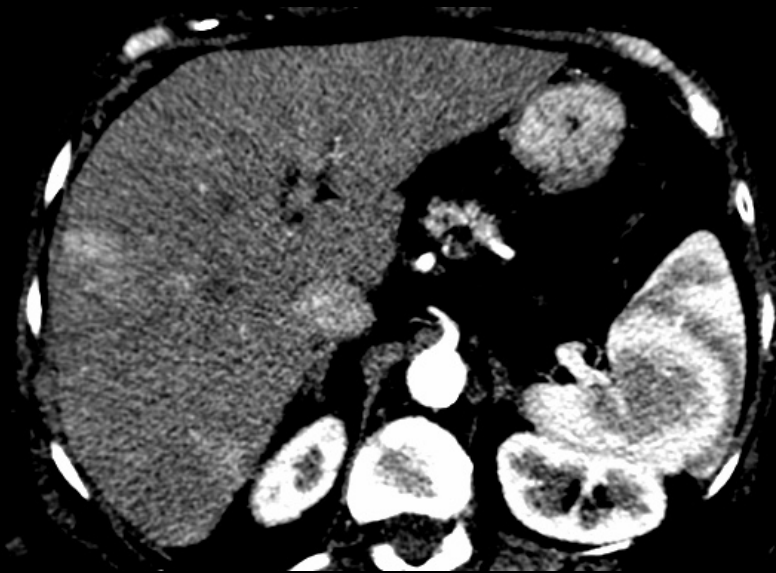
March 2016 – Left lobe TACE

- Selective chemoembolization of left lobe lesion

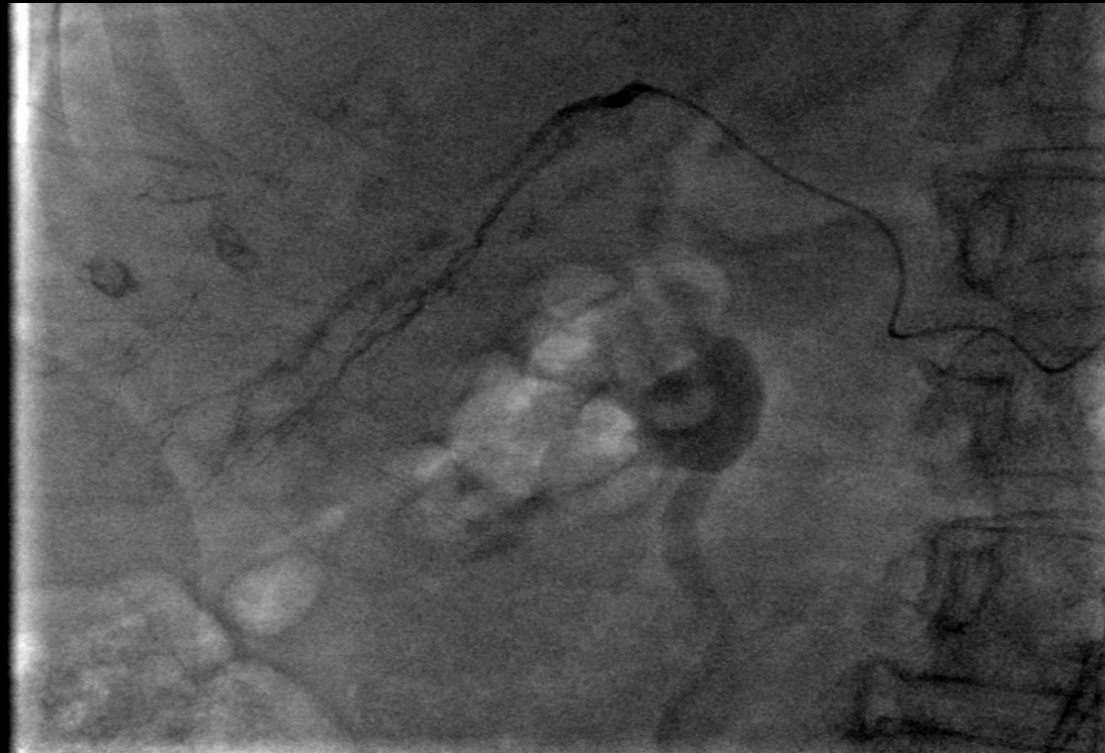


May 2016 – Follow-up CT scan

- Residual tumor in right lobe
- AFP rose to 490 from a low of 300
- Tumor board decided to proceed with another TACE

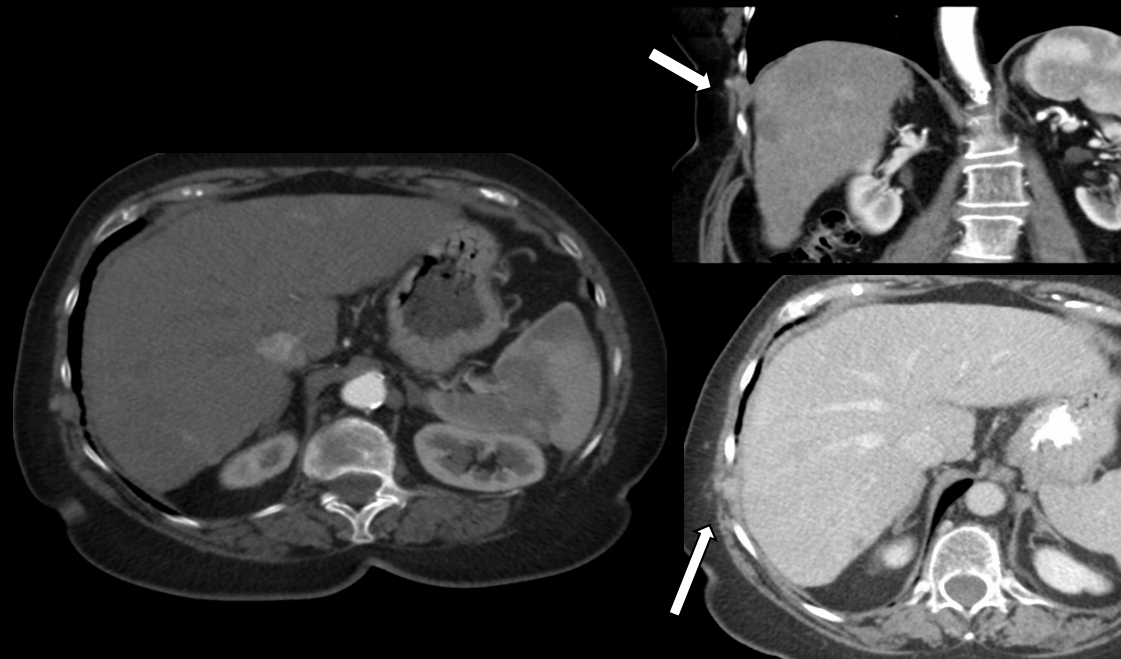


May 2016 – Repeat right-sided TACE



August 2016 – Follow-up CT scan

- New extrahepatic chest wall enhancing nodule 1.6 cm
- Likely seeded from previous biopsy

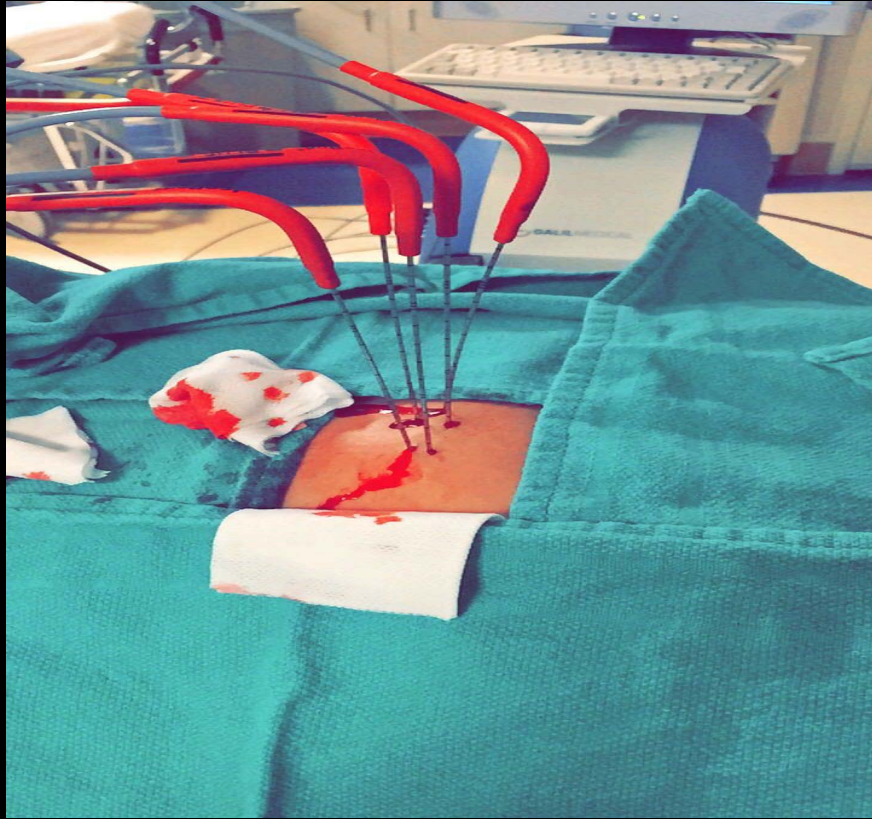


Clinical details

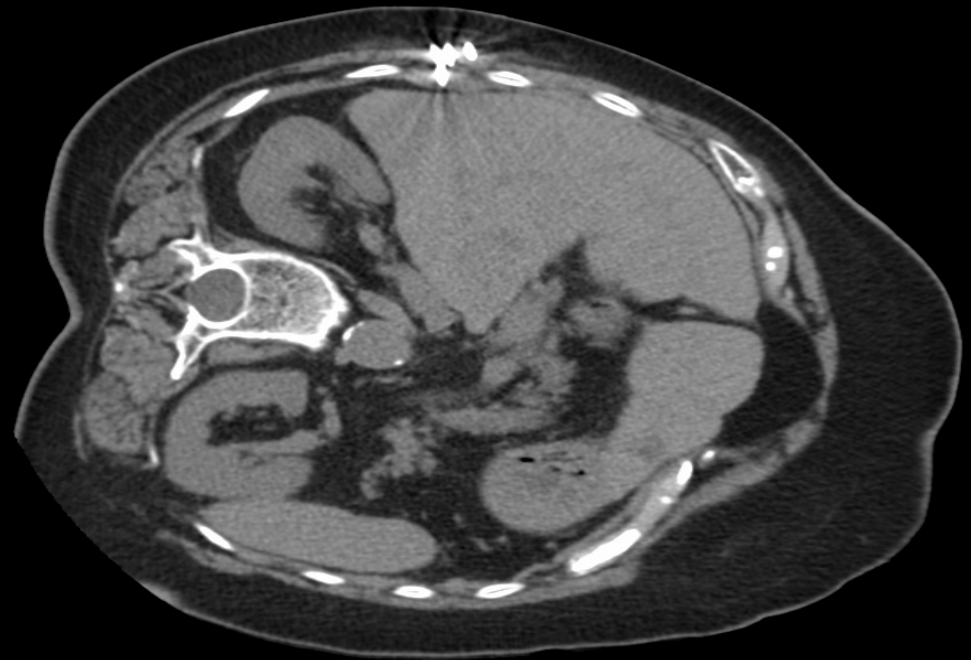
- AFP increasing
- New lesions in the left lobe as well
- Patient to start sorafenib
- IR was asked for an opinion regarding the tumor track seeding
 - Image-guided cryoablation was chosen so that the ablation of the tumor seeding could be monitored with imaging

October 2016 - Cryoablation

- Patient was placed on the CT scan table in the left lateral decubitus position
- Ultrasound of the right chest wall was performed to localize the lesion
- The procedure was performed using local anesthetic
- 17-gauge cryoprobes were inserted using ultrasound guidance



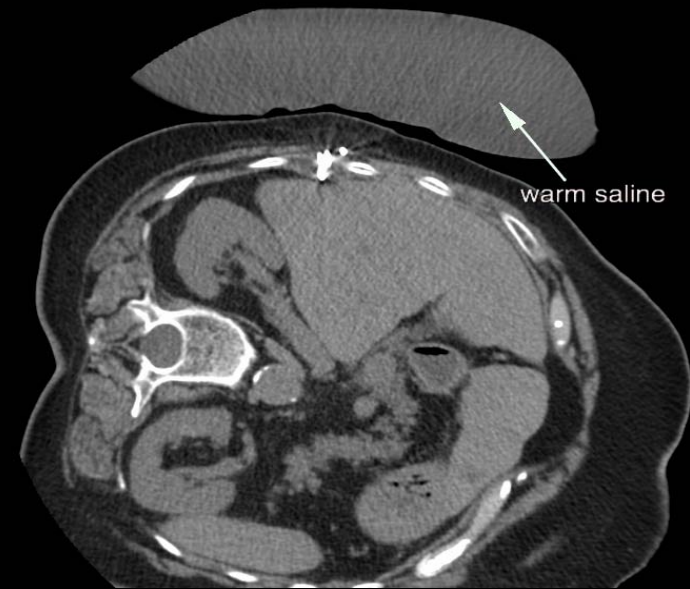
- CT scan was performed to assess the needle placement



- Warm saline was placed on the skin to prevent thermal injury



- Cryoablation was performed using a 10-minute freeze and 5-minute thaw single algorithm
- The lesion and iceball were monitored with CT scan



Cryoablation details

- Following thawing, the needles were removed and a dressing applied
- The patient tolerated the procedure well and recovered uneventfully

December 2016 – Follow-up CT scan

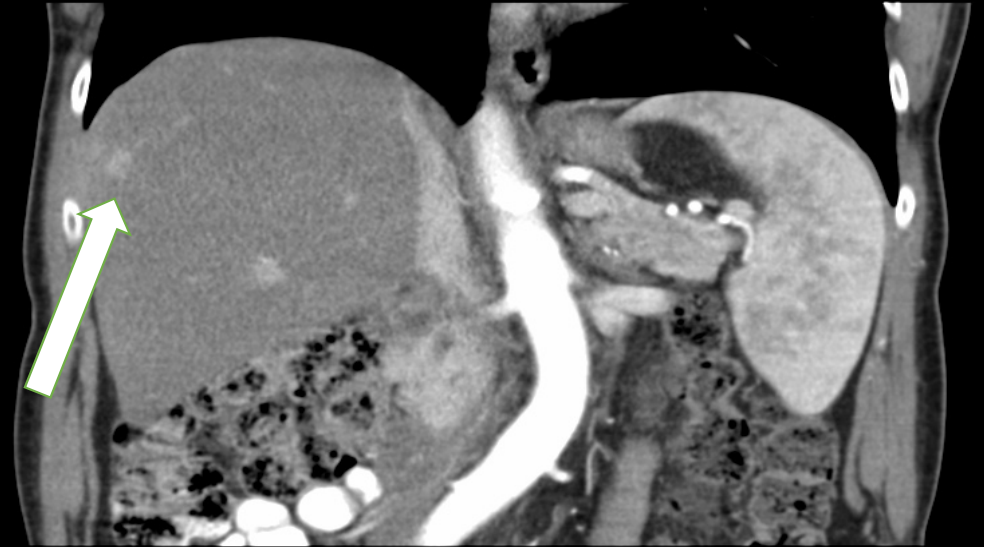
- Resolution of the chest wall pain with no residual lesion



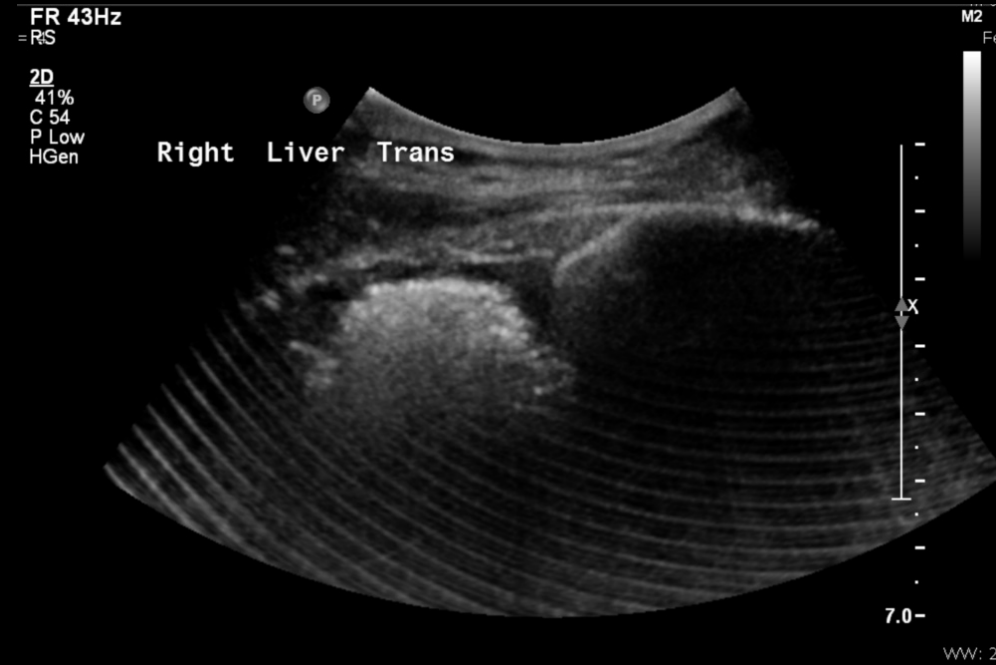
Companion Case

- 68-year-old male
- known hepatitis C, liver cirrhosis (Childs A liver disease)
- multifocal HCC treated with TACE and RFA
- recent new HCC at segment 7/8

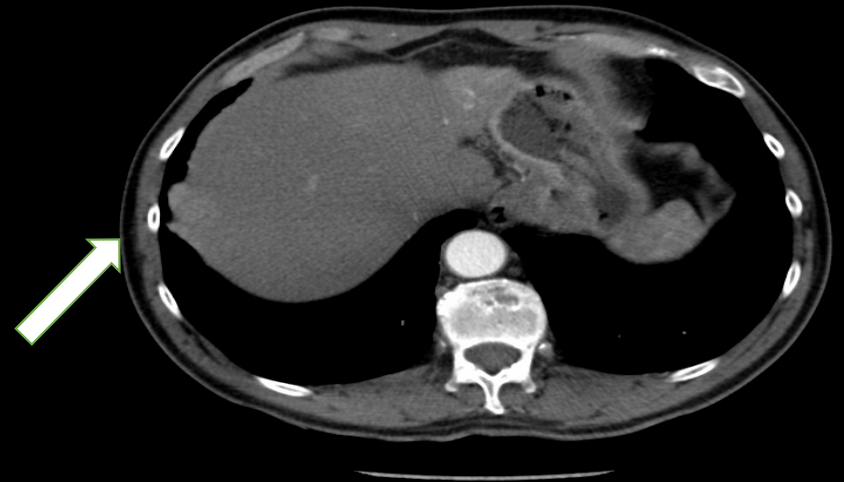
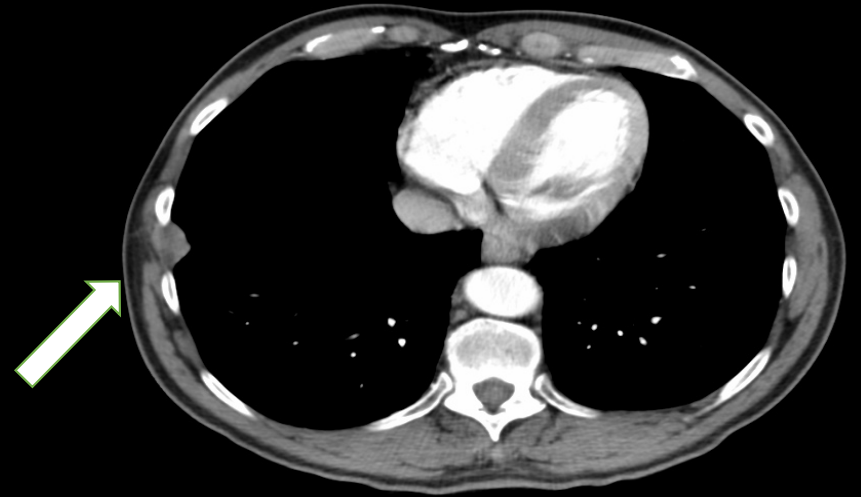
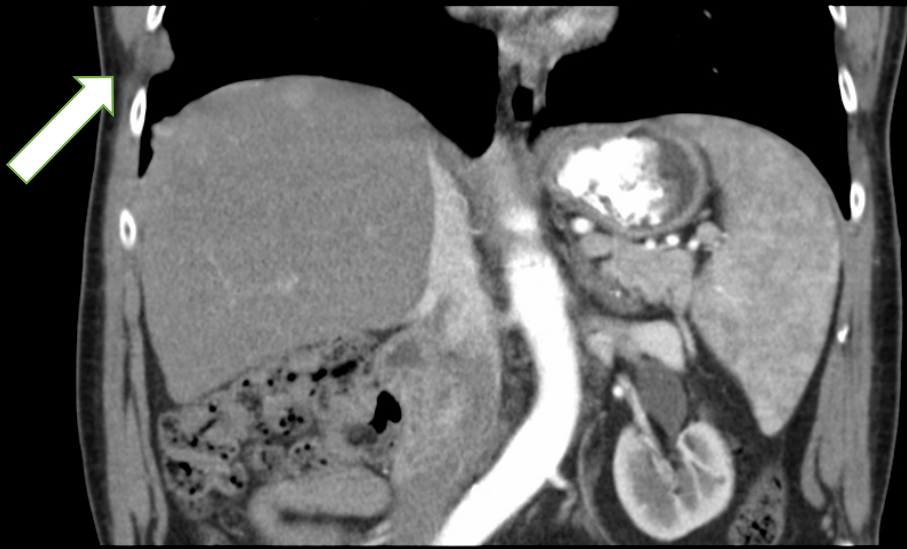
CT scan - HCC segment 7/8



US-guided RFA



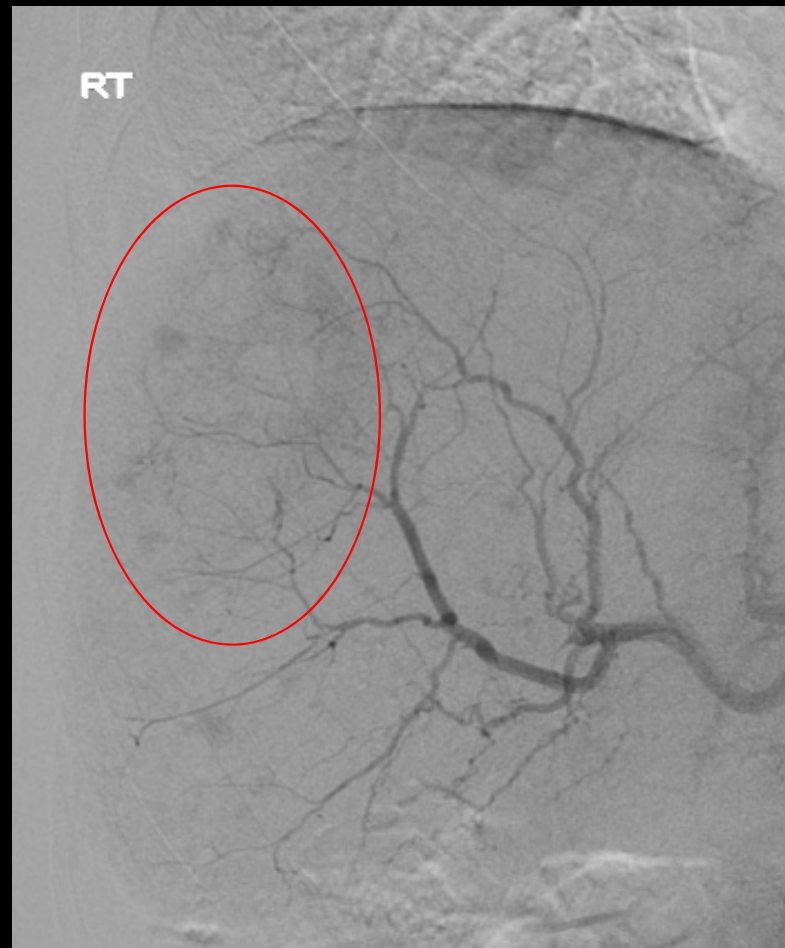
Follow-up CT Tumor tract seeding



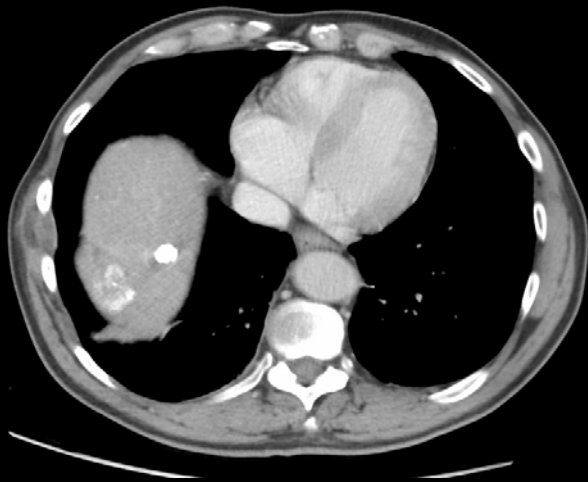
CT-guided cryoablation



TACE on following day



Follow-up CT – no recurrence



Discussion

- There is a significant risk of needle track seeding, greater when performing diagnostic liver biopsy as compared to therapeutic percutaneous procedures
- A reported seeding rate of tumor cells along the needle tract is ranged from 0.6 to 5% using various biopsy techniques
 - Meta-analysis : 2.7% (Silva MA, GUT 2008;57:1592)
 - Safety of using coaxial technique (Maturen KE, AJR 2006; 187:1184)

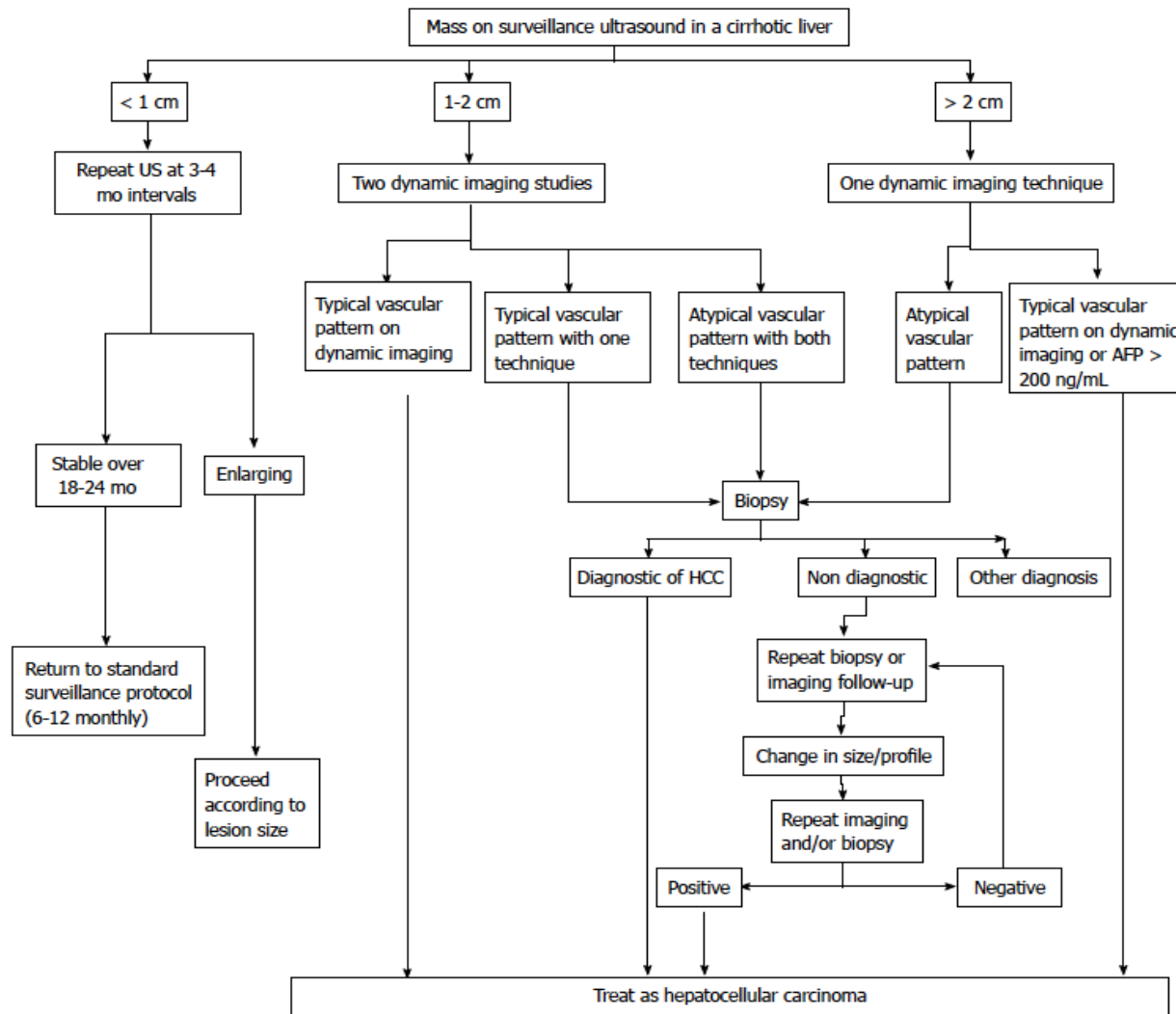


Figure 1 Suggested algorithm for evaluation of a liver mass detected during hepatocellular carcinoma surveillance in a patient with cirrhosis according to the American Association for the Study of Liver Diseases (AASLD) guidelines¹⁹.

Discussion

- Whenever liver transplantation is feasible, diagnostic needle biopsies should be avoided, but ablations are needed as “bridge” treatments
- The need for percutaneous needle biopsy should be critically evaluated, especially if surgery is an acceptable option
- In practice, images should be carefully reviewed along the needle or ablation tract for evidence of seeding
- Numerous factors are related to the risk of seeding after invasive procedures
 - larger diameter needles
 - more passes
 - subcapsular tumor location
 - poor differentiation of the tumor