



Contrast Enhanced Ultrasound Guided Liver Lesion Biopsy

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A 60-years old woman with a portal mass lesion involving the duodenum and head of the pancreas was proven to have adenocarcinoma on endoscopic ultrasound (EUS) guided fine needle aspiration cytology (FNAC).

In addition, another lesion was seen in segment V of the right lobe of the liver on contrast enhanced CT scan and was sent for USG guided biopsy to see if there was spread to the liver or not. This lesion was however not visible on routine plain USG (Fig 1A).

Intravenous ultrasonic contrast (Sonovue) was then injected and the lesion was visualized in real-time showing peripheral rim-like hyperenhancement on the arterial phase (Fig. 1B). Since the lesion could be seen with contrast enhanced ultrasound (CEUS), a tru-cut biopsy was performed (Fig. 2) with CEUS guidance. The lesion turned out to be a hemangioma on histopathology.

CEUS is an evolving technique that involves intravenous administration of microbubble contrast that can be tracked in real-time and enables localization of lesions in different

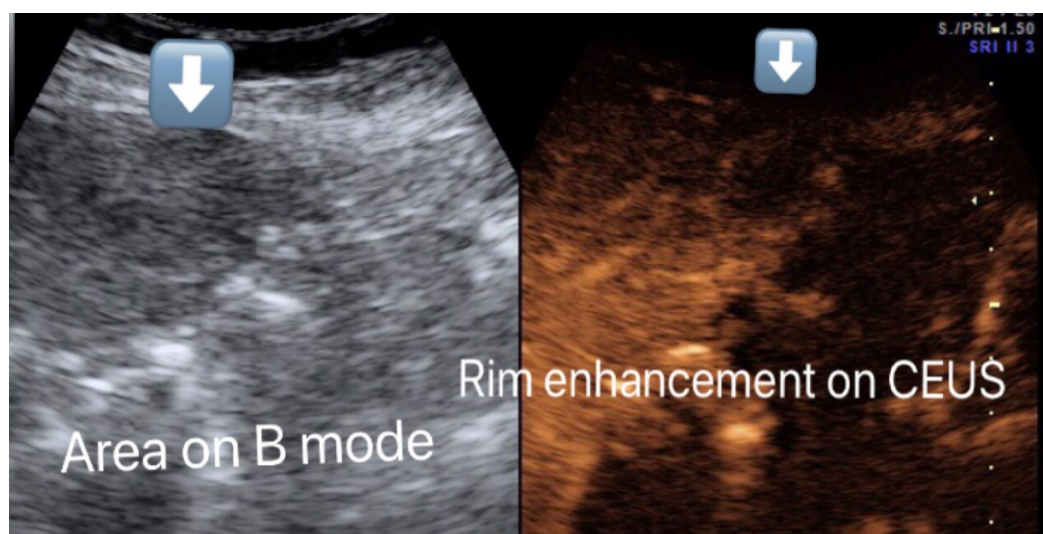
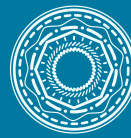


Fig. 1 (A, B): 60-years old woman with proven adenocarcinoma of the duodenum with a liver lesion seen on CT scan. Plain USG (A) does not show the lesion. Contrast enhanced USG (B) shows the lesion well with peripheral rim enhancement.



At a glance:

- CEUS is an emerging technique that allows visualization of lesions in the body that may not be seen on plain USG but are seen on other modalities like CT and MRI
- Real-time administration of contrast allows a needle to be guided towards the lesion so that a biopsy can be easily performed
- CEUS guided biopsies can thus be performed for lesions in solid organs that are otherwise difficult to see on plain USG

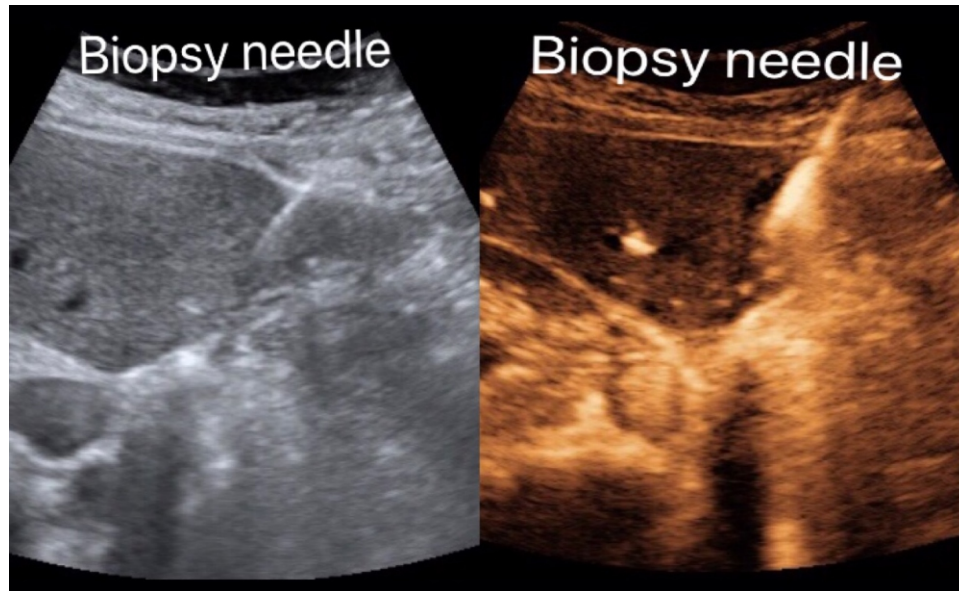


Fig 2 (A, B): The biopsy needle is well visualized within the lesion guided by the contrast enhancement.

parts of the body like the liver. It is especially useful in situations where the lesion is seen on CT scan or MRI but not appreciated on routine USG as in this case.

It is also useful for

- Follow-up of hepatocellular carcinoma treated with chemo-embolization
- Tumor thrombus detection
- For characterization of liver and renal lesions when contrast CT or MRI is not possible
- Sonohysterosalpingography
- Flow and lesion characterization during echocardiography

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