

# Our first case of EUS-guided liver biopsy

Csaba Lőrinczi, Mária Bihari Egyedné, Gréta Sütő, Ádám Tarpay, Richárd Szmola  
 EUH-ERCP laboratory, National Institute of Oncology, Budapest

## Background

The first EUS-guided liver parenchyma biopsy (EUS-LBx) was performed in 2006 and has become increasingly popular in some countries. Several studies have shown that EUS-LBx has a good safety profile and increases patient comfort, as well as the ability to obtain large samples of tissue. There are many advantages compared to percutaneous liver biopsy (Arruda do Espirito Santo P et al., Endoscopy, 2025):

- It can biopsy both the right and left lobes
- It enables simultaneous endoscopic evaluation, such as screening for esophageal varices or the evaluation of other upper gastrointestinal pathology
- It could facilitate elastography and direct portal pressure measurement in the same session under sedation
- Coagulation profile to EUS-LBx: INR less than 1.5 and platelet counts above 50 G/L

There are many tissue acquisition techniques – but now the best results (length of the tissue, less fragmentation) are with wet heparin suction methods. (Mok et al., Gastrointest Endosc 2018)

## Case report

The patient's medical history was notable for long-term treatment with ursodeoxycholic acid due to presumed seronegative primary biliary cholangitis (PBC), which was later discontinued following the diagnosis of a hematological malignancy. After achieving remission of the malignant hematological disease, elevated liver enzymes were found. During further evaluation, the autoimmune panel remained negative. Magnetic resonance cholangiopancreatography (MRCP) suggested caliber irregularities of the intrahepatic bile ducts, raising the suspicion of biliary pathology. For further assessment, the patient was referred for EUS examination. During EUS, no abnormalities were identified in the bile ducts; therefore, an EUS-LBx was performed. Tissue core samples were obtained from both hepatic lobes using the modified wet heparin suction technique.

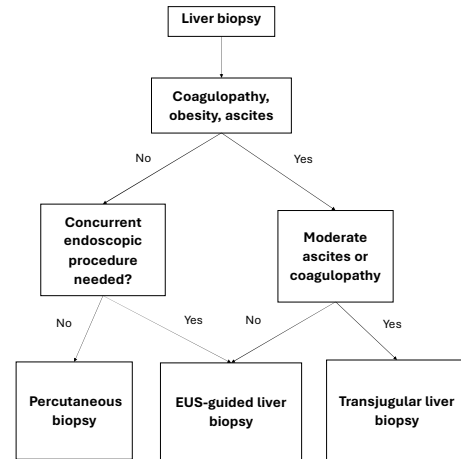


Figure 1 - Considerations in liver biopsy

## Supplies:

- 19 G FNB
- Heparin
- Syringes
- Sterile cup
- Absorbent pad

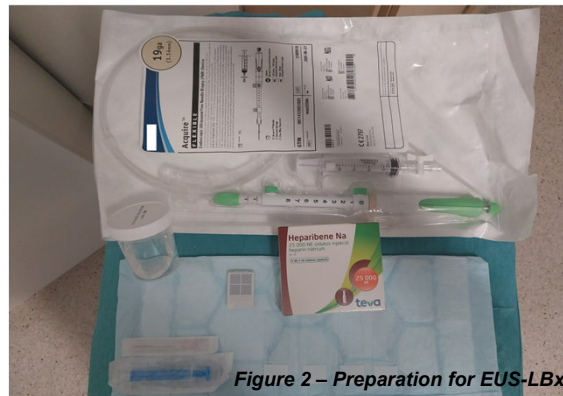


Figure 2 – Preparation for EUS-LBx

## FNB needle set up:

- Remove the stylet
- Heparin priming
- Leaving the syringe attached

## Biopsy procedure:

- Measuring 4 cm (left lobe) and 5 cm (right lobe) actuation distance
- Check Doppler signal in needle path
- Detach the heparin syringe
- One-pass, one-actuation with a quick stroke
- Attach the activated empty suction syringe, apply suction to be able to notice the heparin splash
- Slowly withdraw and finally remove the needle

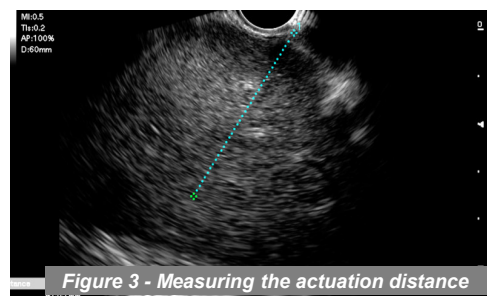


Figure 3 - Measuring the actuation distance

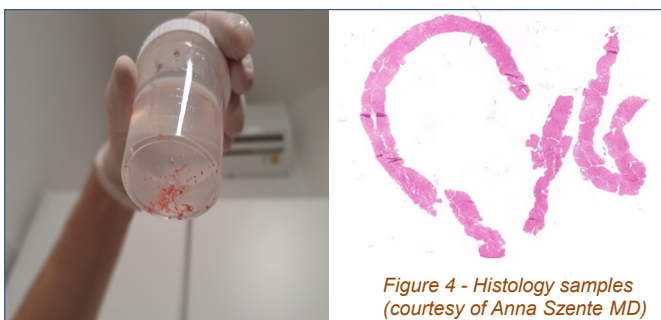


Figure 4 - Histology samples (courtesy of Anna Szente MD)

## Quality of the tissue:

### Macroscopic overview:

- Left lobe: 0,4-1,2 cm
- Right lobe: 0,7-1,3 cm

### Microscopically evaluation:

- Number of portal triads was adequate
- No fibrosis, mild steatosis

## Conclusion

EUS-LBx appears to be a valuable alternative to traditional liver biopsy techniques, particularly in patients who also require endoscopic evaluation. Our initial experience with EUS-LBx was positive, with good patient tolerance and biopsy specimen lengths comparable to international standards.