

Use of the Forward-viewing Curvilinear Array Echoendoscope For the Performance of EUS-guided Liver Biopsy

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Introduction

Liver biopsy (LB) remains an important procedure for diagnosis of liver diseases despite advancements in non-invasive evaluation. For patients requiring esophagogastroduodenoscopy (EGD) and EUS, a forward-viewing curvilinear array (FV-CLA) echoendoscope may be particularly useful, as this single device combines a gastroscope for video examination along with an echoendoscope. This study evaluated the performance of the FV-CLA echoendoscope to determine whether the theoretical advantages of this hybrid device translate into usability for EGD and EUS-guided LB procedures.

Methods

EUS-guided liver biopsy (EUS-LB) was performed in 25 patients with the FV-CLA echoendoscope (XGIF-UCT160J-AL5; Olympus North America). This study was a retrospective review of endoscopies and biopsies in these patients.

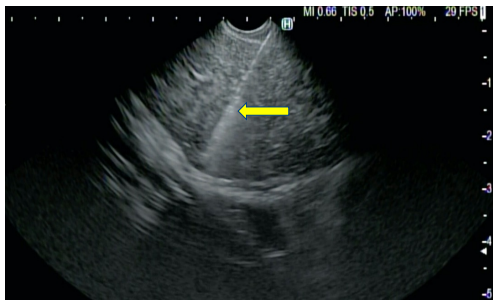


Figure 1: 90-degree sector scanning of the left hepatic lobe with the FV-CLA echoendoscope; a 19G needle (arrow) is used.

Procedural Details

Demographics
Patients: 7 males, 18 females
Age: 51.2 years (range 24-72 years)
EGD indications
6 Abdominal pain or dyspepsia
6 GERD or rule out Barrett's esophagus
5 Rule out esophageal varices
2 EUS-LB only
1 Investigate chronic diarrhea
1 EUS-biliary tree evaluation
1 Melena
1 EUS-Endoscopic work-up prior to RYGB
Liver biopsy indications
19 Abnormal liver function tests
2 Possible cirrhosis on CT
4 Hepatomegaly

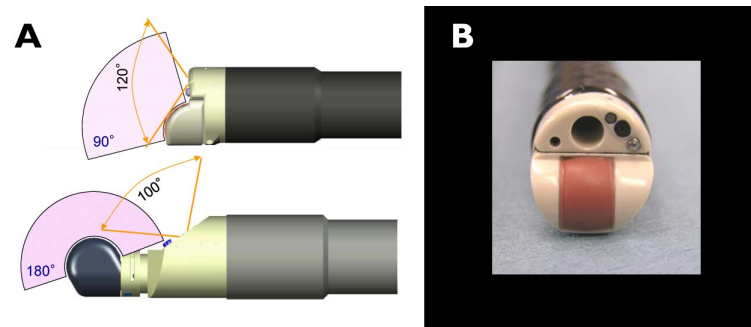


Figure 2: (A) The forward viewing curvilinear array echoendoscope has a similar diameter and length to the linear array echoendoscope. The sector scanning area is 90 degrees compared to 180 degrees. (B) Closer view of the EUS transducer (reddish portion) as well as larger channel and forward optics.

Results

- 25 patients (18 female) underwent EUS-LB using the FV-CLA. Mean age was 51.2 years.
- Indications for the EGD are listed in the table.
- Left lobe LB was performed in 10 patients, right lobe LB in 1 patient, and bilobar LB in 14. The most common indication for LB was abnormal liver function tests.
- Pathological diagnosis was possible in all biopsies.
- All cases had adequate LB cores for pathologic diagnosis. Length of longest piece was 13.0 mm (range 5.3 – 22.6) for left lobe and 14.6 mm (5.8 – 28.0) for right. Aggregate specimen length was 49.5 mm (19.0 – 131.9) for biopsies obtained from the left lobe and 39.7 (10.4 – 68.1) from the right.
- In all procedures, the FV-CLA was easy to maneuver and provided good images. All procedures were completed successfully with no adverse effects.

Conclusion

The FV-CLA echoendoscope allows use of a single scope for EGD and LB. Visualization of both the right hepatic lobe (transduodenal probe location) and left (transgastric) is good, and excellent LB samples can be obtained from both lobes.