

EUS-FNA of a lesion in the pancreatic head using a forward-viewing echoendoscope in a patient with Billroth II gastrectomy (with video)

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There are few studies about performing pancreatic EUS of pancreas in patients with surgically altered upper gastrointestinal anatomy.^[1-6] The yield of pancreatic EUS is dependent on lesion location and surgery type. The latest research showed that examination of the pancreatic body and tail was impaired in esophagectomy and total gastrectomy, and total gastrectomy, Roux-en-Y gastric bypass, and Billroth II surgery significantly affect the overall target visualization for lesions located in the head of the pancreas (HOP).^[7] In a large single-center study published in 2010, patients with previous Billroth II surgery had a success rate for HOP visualization of 74% because of the difficult intubation of the afferent limb.^[2] The overall accuracy of EUS-FNA was approximately 70%–80%,^[7,8] which is significantly lower than that obtained in normal anatomy.

It is very difficult to puncture the lesions located in the HOP in patients with Billroth II anatomy under computed tomography (CT) guidance, because of a very deep location of the lesions and interposition of

vessels. Another way to acquire tissue of the lesion is EUS-FNA. The lesions located in the HOP sometimes can be visible by EUS when the scope is inserted into the stomach, but it is hard to achieve an adequate scan. When performing EUS-FNA, the endosonographers also face the problems of long puncture path and intervening blood vessels. Hence, it is important to insert the scope into the afferent limb past the anastomosis and find an appropriate puncture point to perform EUS-FNA. The linear-array oblique-view echoendoscope was commonly used for EUS-FNA procedures; however, there is a high risk of scope perforation while passing through the afferent limb in patients with Billroth II gastrectomy. The linear-array forward-view echoendoscope can avoid this risk and be inserted up to the anastomosis feasibly and safely.

We present a video of EUS-FNA of a lesion in the pancreatic head in a patient with Billroth II gastrectomy for gastric adenocarcinoma. The patient was 68 years old and had jaundice. CT scan and magnetic resonance

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imaging showed a suspected solid lesion in the HOP with dilated main pancreatic duct [Figures 1 and 2]. The diagnosis under consideration might be metastasis of gastric adenocarcinoma or the primary malignant tumor in the pancreas. The choice of treatment, chemotherapy, or surgery depended on the correct diagnosis. Hence, it was critical to acquire specimens of the lesion for cytohistological diagnosis by EUS-FNA.

First, we applied EUS with an oblique-view echoendoscope and could visualize the lesion and the dilated pancreatic duct when inserting the scope into stomach [Figures 3 and 4]. However, EUS-FNA failed to attempt due to the very deep position of the lesion in the field of view. We tried to intubate the scope into the afferent limb and failed because of the unclear endoscopic view.

Then, we changed the oblique-view echoendoscope to a forward-view echoendoscope (TGF-UC260J, Olympus Medical Systems Corp., Tokyo, Japan) and intubated into the afferent limb successfully. Finally, the lesion was visualized in the ultrasound image and punctured using a 22G needle [Video 1]. The cytohistological diagnosis was malignant neoplasm [Figure 5]. Therefore, the patient was recommended to undergo surgery, and the postoperative diagnosis was intraductal papillary mucinous neoplasm (IPMN) with invasive cancer [Figure 6].

Declaration of patient consent

The authors certify that they have obtained the patient consent forms. In the form the male patient has given his consent for his images and other clinical information to be reported in the journal.

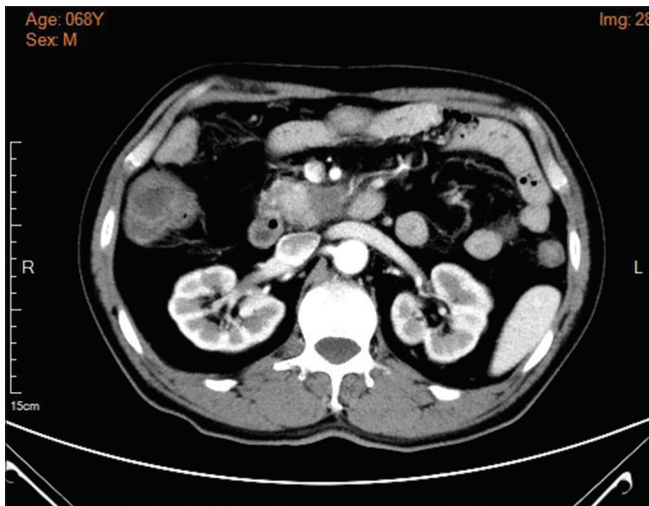


Figure 1. CT scan showed a suspected solid lesion in the HOP



Figure 2. MR imaging showed dilated main pancreatic duct

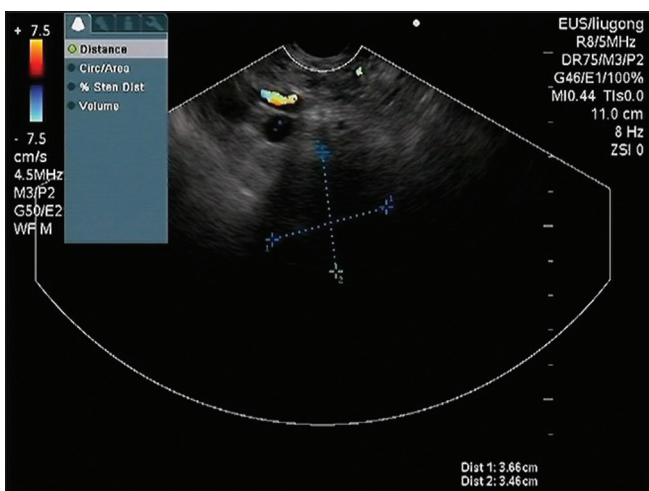


Figure 3. The lesion was visualized in the oblique-view echoendoscope image

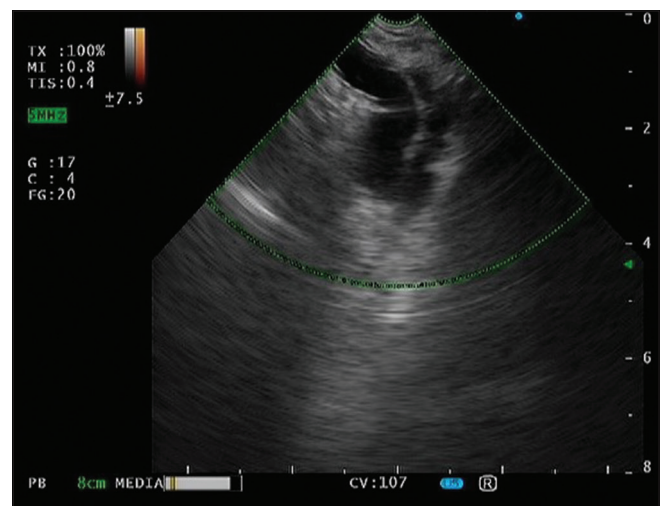


Figure 4. The dilated pancreatic duct was visualized in the oblique-view echoendoscope image

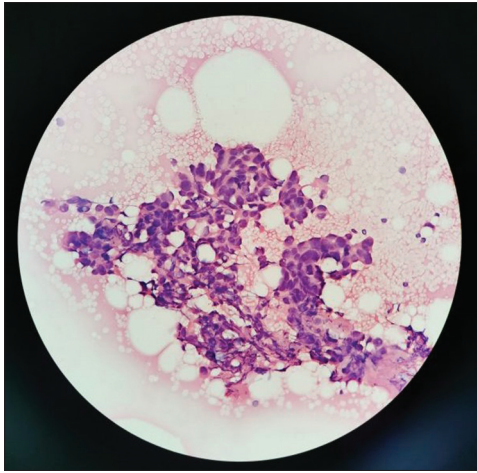


Figure 5. Cytology, malignant cells

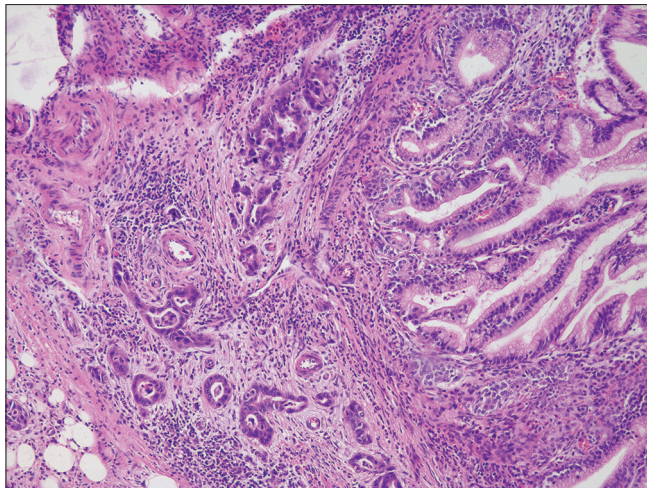


Figure 6. Postoperative pathology, IPMN with invasive cancer

The male patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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