Recent Advances of EUS, EUS-FNA

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EUS

Endoscopic ultrasonography (EUS) has widened its applications and been become an indispensable examination. Recently new techniques such as three dimensional EUS, electronic radial EUS, forward view convex EUS, and navigation system for EUS, have been introduced. And 3D-EUS has introduced high diagnostic accuracy in the diagnosis of GI malignancy invasion, especially in early cancers. Electronic radial EUS, which can be employed Doppler function, is useful for evaluating solid tumor, especially differentiating pancreatic endocrine tumor from pancreatic cancer. Forward view convex EUS is the therapeutic scope in the field of Endoscopic ultrasonography guided fine needle aspiration (EUS-FNA). Using this scope, it become easy to pass through the GI tract because of vertical puncturing route, compared to the oblique puncturing route with conventional convex EUS. The principle of navigation system is based on UPD for the colon, so called “colonavi”. For the EUS beginner, it is difficult to understand biliopancreatic anatomy. This system navigates not only the position of EUS but also estimates scanning picture. I have believed this system will be helpful for EUS beginner in the near future.

EUS-FNA

First report about EUS-FNA, in which Vilmann reported fine needle aspiration cytology of pancreas cancer and Grimm treated a case with pseudocyst, were made in 1992. Then EUS-FNA has become popular in the clinical fields and the accuracy of EUS-FNA has been reported 76 to 90 % in pancreas diseases, 82 to 100% in lymph node and mediastinal diseases, and 38 to 100% in gastrointestinal diseases such as submucosal tumor etc. Furthermore EUS-FNA has assumed a indispensable examination and has widen its applications such as cytology, pseudocyst drainage, celiac plexus neurolysis, ethanol injection therapy, immunotherapy, and gene therapy etc. On the other hand, concerning about its complications of EUS-FNA, 0 to 2.6% of complication has been reported except for 7.4% on the drainage of pancreas pseudocyst. A fundamental principle in establishing indications for EUS guided FNA is a determination as to whether or not its information obtained has the potential in choosing patient treatment, and is to treat a disease easier and safer than other options. Of course, puncturing route between convex endosonography and its target has to be established without vascular structure
and informed consensus should be obtained before its procedure. Furthermore bleeding tendency and possibility of malignant cell seeding has to be always considered.