

GI-S01

Update of EUS-guided Tissue Acquisition

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Endoscopic ultrasound (EUS)-guided tissue acquisition (TA) is an important tool for establish the diagnosis of gastrointestinal malignancies and lesions coming from other organs, such as pancreas, bile duct or liver. It is safe to be performed in experienced hands with a high diagnostic yield, especially after the advancement of aspiration needle to biopsy needle. Meanwhile, the diagnostic yield can also be improved by the application of different biopsy techniques including fanning technique or suction method, the application of sonographic contrast agents and the involvement of rapid on-site evaluation by cytologists. This topic will summary the recent update knowledge in EUS-guided TA in order to promote its accuracy and safety in clinical practice.

GI-S02

Update of EUS-guided Local Therapy

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EUS-guided tumor ablation holds great promise as a local therapy method, particularly for pancreatic tumors. The technique offers real-time imaging, the ability to treat tumors in patients who are not suitable for surgery and reduces surgical-related complications.

This technique can be categorized into direct and indirect methods. Direct methods involve procedures like ethanol injection, radiofrequency ablation, photodynamic therapy, and brachytherapy. Indirect methods include fine-needle injection of antitumor agents and the placement of fiducial

markers.

Ethanol ablation has demonstrated success in treating pancreatic neuroendocrine tumors and insulinomas in cases where surgery is not an option. While the method appears to be safe and feasible, it requires standardization to avoid potential complications, such as pancreatitis.

EUS-guided radiofrequency ablation (RFA) uses electromagnetic energy to induce thermal injury to the targeted tissue. Although EUS-RFA has shown promise in treating pancreatic tumors, further research and experience are needed to determine its overall effectiveness and long-term results.

EUS-guided photodynamic therapy (PDT) has shown potential in producing tissue necrosis or apoptosis in pancreaticobiliary malignancies. While animal studies have shown safety, clinical application requires further investigation.

EUS-guided pancreatic cystic lesion ablation has been explored using ethanol lavage (EUS-EL) alone or in combination with paclitaxel injection (EUS-ELPI). Initial results show promise, but more research and long-term results are needed to validate its efficacy and safety.

EUS-guided brachytherapy using radioactive seeds has been tested for various GI malignancies and locally advanced pancreatic cancer. While some partial tumor responses and stable disease have been observed, more research and larger studies are required to establish its role in cancer treatment.

Although current evidence indicates the potential of EUS-guided local therapy of tumor, prospective randomized controlled trials with larger study populations are required to confirm its role in cancer treatment.

GI-S03

Update of EUS-guided Biliopancreatoc Drainage

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Recently, EUS-guided biliary drainage (BD)

procedure has been utilized after failed ERCP and the technical success rate is around 90% from published studies. In addition, issue about EUS-guided BD as primary modality for treatment of biliary obstruction has been analyzed by randomized trial. The advantage is not only time-consuming by difficult ERCP, for example: hepatic hilar stricture or surgical-altered anatomy with unreachable major papilla; but also concerning about possible complication, such as pancreatitis.

Regarding EUS-guided pancreatic duct drainage (PD), the ESGE guideline recommend when retrograde endoscopic intervention fails or is not possible and should only be considered in symptomatic patients with an obstructed pancreatic duct. According to literature review, technical success and adverse event rates were 78.7% and 21.8%, respectively. Unlike EUS-guided BD, most of EUS-guided PD cases are limited for drainage alone.

GI-S04

Update of EUS-guided Hepatic Management

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Endoscopic ultrasound (EUS) has been developed rapidly in recent years. The role of EUS for diagnostic and therapeutic modality has been expanding for various gastrointestinal and liver disease. The concept of “Endo-hepatology” encompasses the wide range of diagnostic and therapeutic procedures that are now gradually becoming feasible for managing various liver diseases. The application of endoscopic ultrasound in the field of hepatology includes tissue acquisition for liver, portal pressure measurements, eradication of varices, drainage of liver focal lesion and tumor management.

GI-O01

Wireless Ultrasound Capsule Techniques: Revolutionizing Endoscopy in Gastrointestinal Diagnosis

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Background: The escalating global incidence of gastrointestinal (GI) disorders and diabetes demands innovative, minimally invasive diagnostic and therapeutic strategies.

Materials and Methods: This research investigated the application of wireless ultrasound capsule techniques. Our cutting-edge wireless ultrasound capsule not only generates high-definition GI tract imaging but also doubles as an efficient insulin delivery system. We conducted a rigorous clinical trial, comparing this novel capsule with traditional endoscopic tools and insulin delivery methods.

Results: The wireless ultrasound capsule demonstrated enhanced diagnostic accuracy, improved patient comfort, and effective insulin delivery in comparison to conventional techniques. Particularly impressive was its capacity to detect smaller GI lesions that were often missed, enabling the potential for early intervention. In addition, the integrated insulin delivery system showed promising results in controlling blood glucose levels effectively.

Conclusion: Our wireless ultrasound capsule marks a significant advancement in GI diagnostics and diabetes management. With its potential for non-invasive, patient-friendly, and efficient medical practices, it is poised to revolutionize healthcare, particularly in the areas of endoscopy and diabetes treatment.