

## **EUS-FNA Diagnosis Using Pro-Core Needle for Fine Needle Biopsy (FNB) and EUS-Tattooing of a Small Pancreatic Tumor for Laparoscopic Localization**

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**Context** Endoscopic ultrasonography (EUS) can show pancreatic tumors of few millimeters; nowadays, in the years of laparoscopic approach, the most difficult and time-consuming issue can be how to identify a tumor throughout the pancreatic parenchyma in order to select the site where to transect the pancreas. Preoperative EUS-tattooing could be of help in locating small pancreatic tumors during pancreatic resections. **Case report** Because of the onset of recurrent mild abdominal pain and diarrhea lasting for 4 months, a 70-year-old woman performed a trans-abdominal US that showed a hypoechogenic area of about 7 mm in the body of the pancreas. She had no other significant medical history or laboratory index. A CT-scan did not reveal any lesion throughout the pancreas. EUS examination (using a linear echoendoscope Fujinon) confirmed a hypoechogenic, solid, irregular mass of the body of the pancreas of about 7x4 mm. An EUS-guided fine-needle aspiration biopsy of the lesion was performed with a 22-gauge ProCore needle (Cook) and

then, EUS-guided tattoo was performed using a 22 gauge EchoTip needle: the needle was inserted 3-5 mm proximal to the lesion and 2 mL of sterile purified carbon particles were injected under direct visualization. The patient received pre-procedural i.v. ciprofloxacin and no complications were observed. Cytological examination reported cells suspicious for adenocarcinoma. Nineteen days later, the patient underwent a laparoscopic left pancreatectomy. Ink was clearly visible on the anterior surface of the pancreas. Operative time was 110 minutes. Postoperative outcome was uneventful. Pathologic evaluation revealed a ductal adenocarcinoma of 5 mm in diameter with 17 negative nodes. Distance between pancreatic resection margin and cancer was 15 mm. **Conclusions** Preoperative EUS-tattooing could facilitate laparoscopic localization of small lesions. Further studies to assess safety, indications and limits are needed.