Treatment of a pancreatic endocrine tumor by ethanol injection guided by endoscopic ultrasound

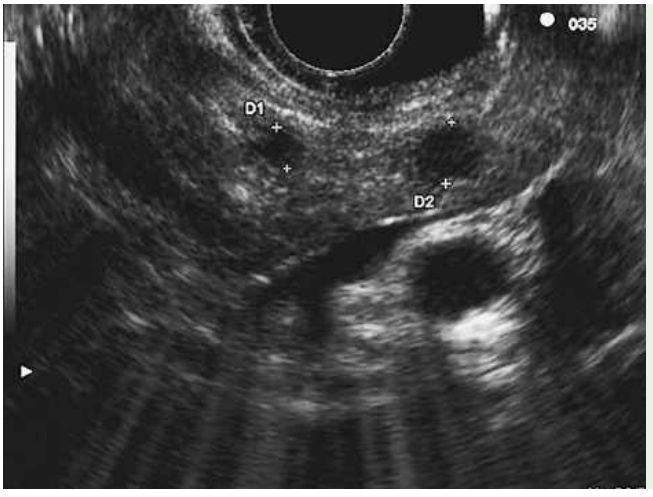

Fig. 1 Echoendoscopy revealed two nodular hypoechoic lesions.

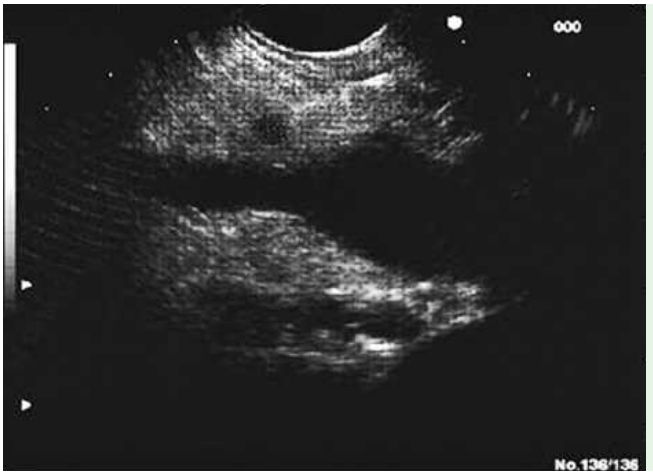

Fig. 2 Endoscopic ultrasound-guided fine-needle aspiration of the pancreatic lesion showed a neuroendocrine islet tumor.

We report the case of a female patient with double endocrine neoplasia type 1. Echoendoscopy (EUS) revealed two nodular hypoechoic lesions (**Fig. 1**), with a color Doppler hypervascular pattern located in the pancreas. We carried out an EUS-guided fine-needle aspiration (FNA) biopsy [1] (**Fig. 2**), which showed a neuroendocrine islet tumor in the pathology report 2 weeks later. Tumor sizes were 11 and 7 mm respectively.

Because the patient refused surgical therapy, we performed an ethanol injection under EUS guidance into the nodule. Ethanol concentration was 40% [2] and its amount did not exeed 2 ml. At the same time celiac plexus neurolysis was carried out to control abdominal pain.

Clinical, biochemical, and transabdominal ultrasonography controls after the EUS-guided injection session and antibiotic treatment were well tolerated, without adverse effects. The patient was discharged from hospital 5 days later.

After the first injection, the patient underwent a second session following the same procedure. Unfortunately, during needle retraction, there was minimal ethanol effusion that caused a small pancreatic necrotic lesion, which was treated with laparoscopic necrosectomy.

Two months later, we performed an Octreoscan and serum tests of vasoactive intestinal peptide (VIP) and chromogranin A (CgA), which were normal. EUS with contrast enhanced detected areas of fibrosis [3]. At present, after a follow-up period of 18 months, the patient is asymptomatic, without recurrent disease; abdominal nuclear magnetic resonance is negative.

EUS is particularly useful in the assessment of small pancreatic tumors missed by other imaging techniques [3 – 5]. EUS-FNA [1] is a gold standard in the management of pancreatic tumors. Unusually, we have explored a new field of EUS that permits injection of drugs directly into the tumor. In our experience, if surgical therapy is refused by the patient or contraindicated because of poor general health conditions, EUS-guided injection is a safe and effective treatment in endocrine lesions, which can eliminate hormonal alterations.

It has been demonstrated that ethanol injection is a safe technique for the treatment of hepatic and thyroid lesions [6]. In our case we have used the same technique to treat pancreatic lesions, thus avoiding surgery, which has high morbidity and mortality; the duration of hospitalization was also reduced. A multicenter study is necessary to establish a standardized procedure for EUS-ethanol injection in neuroendocrine pancreatic tumors.

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