A 21-year-old woman presented with recurrent hypoglycemia, syncope, and episodic seizures, associated with rapid weight gain (body mass index [BMI] 60). Hyperinsulinemia was confirmed and she was started on treatment with diazoxide. Magnetic resonance imaging showed a 1.5-cm nodule at the pancreatic head. Endoscopic ultrasound (EUS) confirmed a 1.5-cm hyperechoic nodule within the pancreatic head, between the common bile duct and the main pancreatic duct. EUS-guided fine needle aspiration (EUS-FNA) was performed with a 22-gauge needle (Echo-Tip; Cook Medical, Limerick, Ireland) (▶ Fig. 1) and the definitive diagnosis of an insulinoma was established by immunohistochemical analysis (▶ Fig. 2).

Surgical treatment (Whipple’s procedure) was contraindicated because of the patient’s high BMI. Therefore, EUS-guided fine needle injection (EUS-FNI) was suggested to ablate the lesion. The patient was hospitalized for prior hydration. EUS-FNI was performed with 99% ethanol (1.5 mL) using a 22-gauge needle (Echo-Tip), with the patient under general anesthesia. After 60 seconds, ultrasound monitoring showed the typical image of a hyperechogenic shadow forming from within the lesion. No portal vein thrombosis was detected on EUS after the alcohol injection (▶ Video 1) and there was no evidence of acute pancreatitis after 2 days of in-hospital observation. At follow-up 2 weeks after discharge, the patient’s serum glucose had returned to normal levels, she had lost 4 kg and the diazoxide dose was reduced.

Pancreatic neuroendocrine tumors (pNETs) account for 1%–2% of all pancreatic tumors. PNETs are classified as either functional or nonfunctional, the latter being more common (up to 85%). Among functional pNETs, insulinomas are the most common [1–2]. EUS is a useful diagnostic tool, showing a sensitivity of up to 85% [3]. Insulinoma resection was first reported in 1929 and remains the treatment of choice [4]. Nevertheless, EUS-FNI of ethanol into an insulinoma has been described as an efficient and safe technique for hypoglycemia resolution, and is indicated for patients with a prohibitive surgical risk [5].

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Competing interests
None

The authors
Flávio Amaro Oliveira Bitar Silva1, Rogério Colaiacovo1, Osvaldo Araújo1, Anna Fernanda Domene1, José Viana Lima Junior2, André de Moricz2, Lucio Rosinni2
1 French-Brazilian Center of Echoendoscopy, Santa Casa de São Paulo, SP, Brazil
2 Endocrinology Department, Santa Casa de São Paulo, SP, Brazil
3 Department of Surgery, Santa Casa de São Paulo, SP, Brazil

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E-Videos
Video 1 Endoscopic ultrasound-guided fine needle injection (EUS-FNI) of 99% ethanol into an insulinoma.

Fig. 1 Echoendoscopic image showing the endoscopic ultrasound-guided fine needle aspiration.
Corresponding author

Flávio Amaro Oliveira Bitar Silva, MD
Rua Cesário Mota Júnior, nº 112, no 4º andar do Pavilhão Conde de Lara, Vila Buarque, São Paulo, SP, 01221-020, Brazil
flavioamaro.obs@gmail.com

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Fig. 2 Histological analysis of the fine needle aspirate showing the appearance on: a hematoxylin and eosin (H&E) staining; b – e immunohistochemical staining with: b CD 56; c insulin; d Ki 67; e synaptophysin.