Endoscopic UltraSound-Guided Radiofrequency Ablation (EUS-RFA) for the treatment of pNETs

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N.F., ♀, 67 y.o., BMI 21

Four episodes of “altered mental state”, fatigue, increased weight (+ 5Kg/6 months).

Medical History:

Hypertension

Prescriptions: Enalapril

Blood tests: Full blood count, urea and electrolytes, and thyroid function test were normal, blood glucose was normal.

EEG and Brain MRI scan were normal.

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During her most severe attack, a blood sugar concentration of 35 mg/dL was recorded.

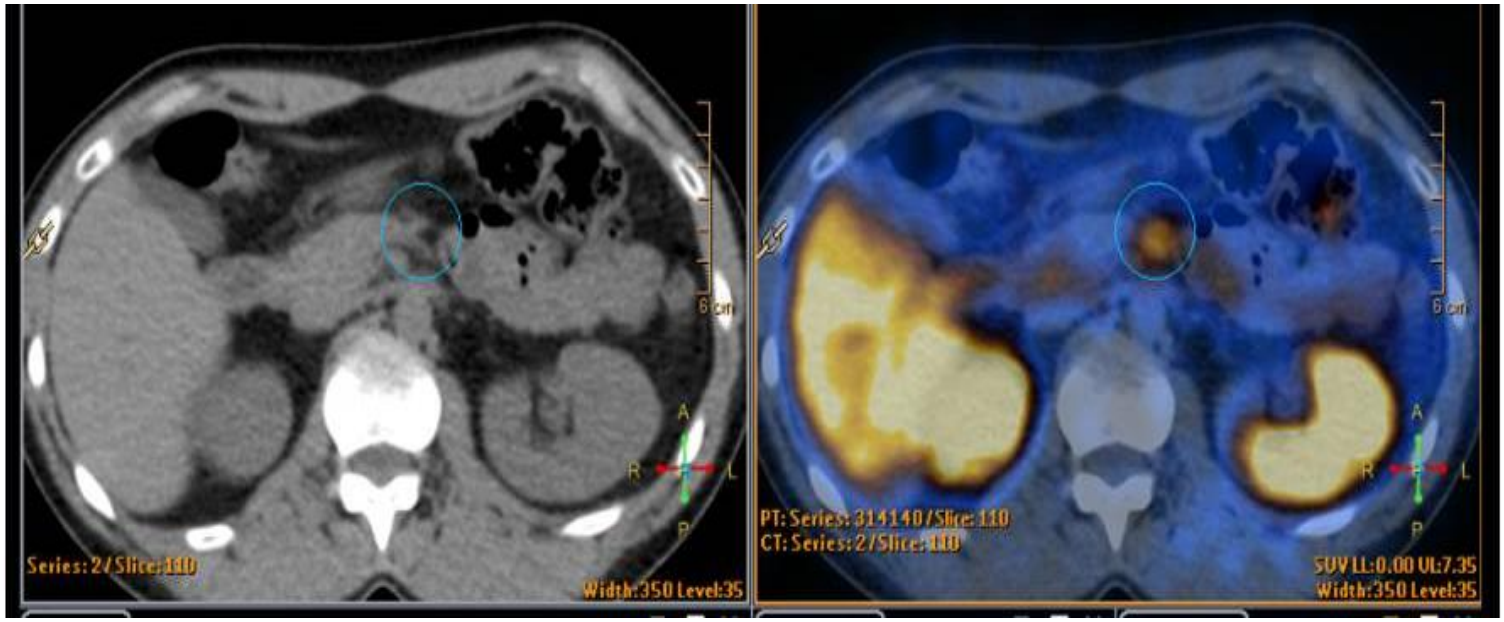
Fasting insulin: mIU/mL 41.1 (*normal range 2.6-24.9)*

C-peptide, ng/mL 4.0 (*normal range 1.1-4.4)*

Blood sugar: mg/dL 45

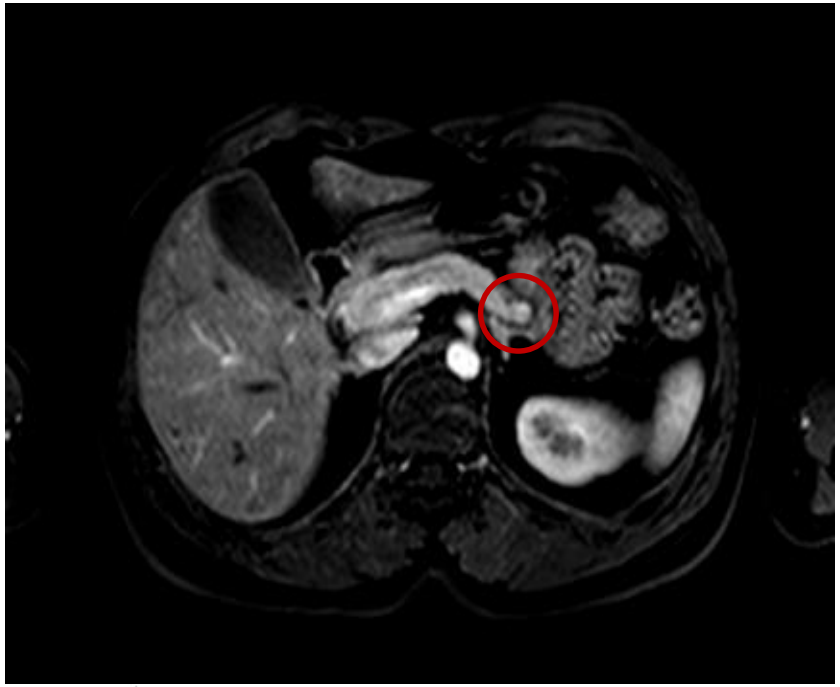
Abdominal CT scan: NEGATIVE

Gallium-68 PET: increased uptake at the body of the pancreas

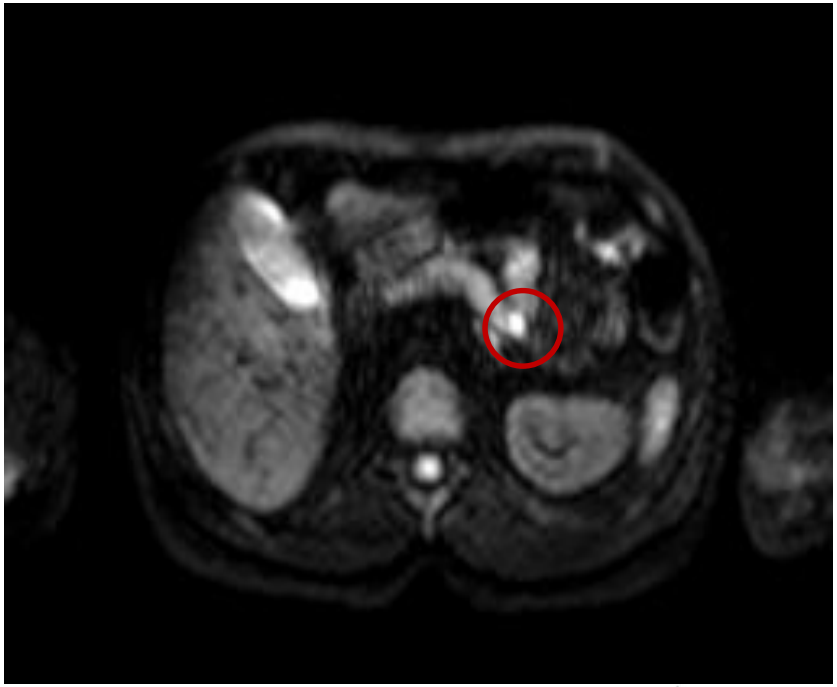


MRI: pancreatic nodule (body-tail)

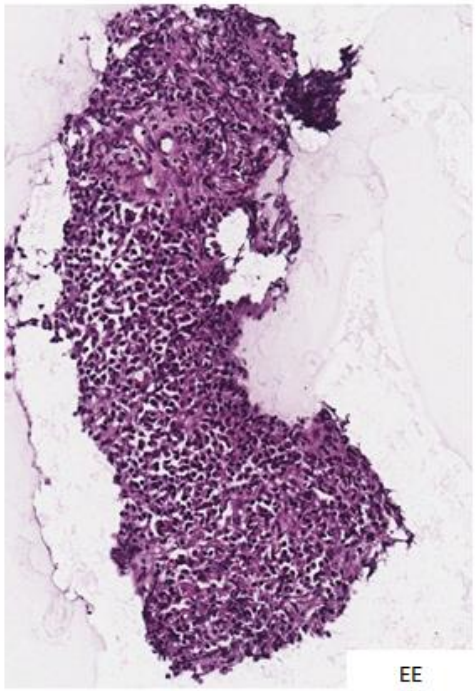
Arterial Phase MRI

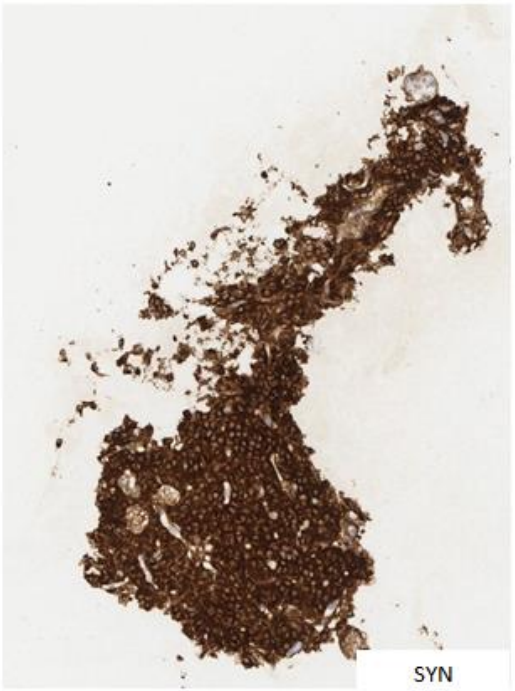


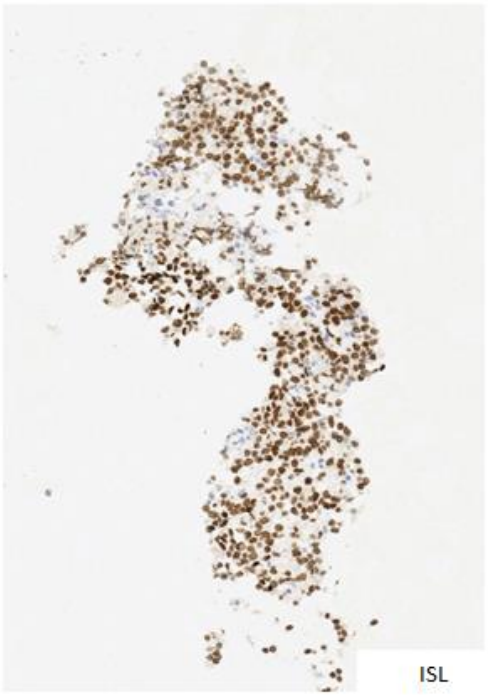
Diffusion-Weighted MRI



Endoscopic UltraSound (EUS): 0.8 cm, hypoechoic nodule, well defined margin







Pancreatic WD neuroendocrine tumor (NET G1) composed by beta cells (Ki67 2%).

WHAT TO DO NEXT ?

What to do for patients **unwilling** or **unsuitable** for surgery ?

- Medical Therapy
- Arterial Embolization
- Ablation (percutaneously- surgically -endoscopically):
  - Ethanol-Ablation
  - Cryo-Ablation
  - **RadioFrequency-Ablation (RFA)**

EUS guided RFA

How to perform **EUS-guided RFA**

- Procedure is performed under real-time visualization
- 19-G Needle Electrode with Internal cooling system
- Generator: power output of 30-50 W

- The volume of necrosis obtained depends on:
  - length of the exposed tip
  - applied power
  - exposure time
  - features of the tissues


0
1
2
3

EUS-RFA of pNETs

- EUS can be used to target the lesion and to perform RFA under real-time visualization
- Following the procedure:
  - patient remained free of symptoms
  - fasting glucose, insulin level, C-peptide normalized
- EUS-RFA seems a feasible, safe (?), and effective (??) procedure for local ablation of pNETs

- Assessment of the **safety** and **effectivity** profile requires larger prospective, multicenter, trials