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Insulinoma with ectopic pancreas, detected by 18F-DOPA PET/CT and missed by 68Ga-DOTATOC PET/CT

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Introduction: Insulinomas are often difficult to localize due to the limited value of conventional imaging tools. PET/CT is increasingly being used as an option for localizing insulinoma. We report a case of insulinoma with ectopic pancreas which could be detected only by 18F-Fluorodihydroxyphenylalanine (18F-DOPA) PET/CT. **Case report:** A 47-year-old woman referred due to recurrent syncope with hypoglycemia (< 60mg/dL) which began two years ago. With 72 hours fasting test, glucose declined to 40 mg/dL (2.22 mmol/L) after 24 hours of fasting. At that time both the insulin and C-peptide levels were inadequately elevated (each 21.05 μ U/mL and 2.80 ng/mL), indicative of autonomous insulin secretion. About 1.8cm enhancing lesion was found at the proximal jejunum mesenteric side by the abdominal CT scan. Endoscopic ultrasound (EUS) revealed 8.6mm sized hypoechoic mass at pancreatic head, the appearance looked closer to the serous cyst rather than insulinoma. There was no visible focal solid lesion on pancreas MRI, nor significant DOTATOC uptake on 68Ga-DOTATOC PET/CT. Selective arterial calcium stimulation test showed a 2.1-fold, equivocal increase of insulin after calcium injection in the gastroduodenal artery. During diagnostic laparoscopy, 2.5x1.5cm mass at jejunum mesentery was resected and pathologically confirmed as ectopic pancreas tissue. After surgery, hypoglycemia persisted and insulin/C-peptide levels were still inadequately elevated. 18F-DOPA PET/CT was performed and a focus with increased 18F-DOPA uptake was seen in pancreas head, indicating the insulinoma. The patient preferred EUS-guided ethanol ablation to surgery, but failed to treat hypoglycemia despite two repeated ethanol ablation procedure. Finally, hypoglycemia was successfully controlled by the radiofrequency ablation to pancreatic head mass. **Conclusion:** 18F-DOPA PET/CT can be a useful option to localize insulinoma not detected by 68Ga-DOTATOC PET/CT.

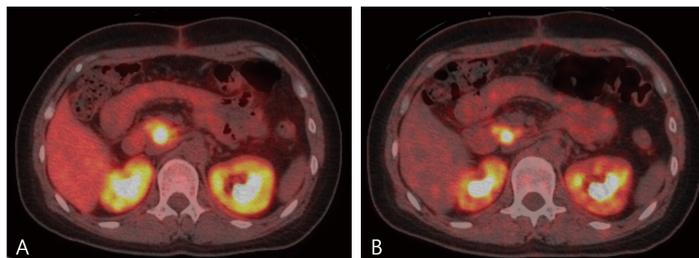


Figure 1. Axial 18F-FDOPA PET/CT fusion image showing on increased uptake in the head of pancreas on both 10min (A) and 1hr (B) images.