

Answers

1. A Gallium 68 positron emission tomographic (PET) - CT scan

Figure B is a Gallium 68 PET-CT scan which shows tracer uptake in the tail of the pancreas and a solitary lesion in the right lobe of the liver (white arrow).

This is a gastrinoma with a solitary metastatic deposit in the liver.

2. Multiple endocrine neoplasia (MEN) Type 1.

MEN Type 1 is a familial tumour syndrome in which persons develop tumours of the parathyroid glands, the pancreatic neuroendocrine glands, the anterior pituitary gland and the skin. Most common are parathyroid tumours that cause hyperparathyroidism and hypercalcaemia. Other tumours include gastrinomas, insulinomas, prolactinoma and carcinoid tumours [1]. Gastrin levels are usually greater than 1000pg/mL and basal acid output is generally greater than 60 percent of maximal acid output or greater than 10 mmol /hour. CT and magnetic resonance imaging can be used to localise tumours >1cm in diameter. Tumours <1cm may be better diagnosed by endoscopic ultrasound or by somatostatin scintigraphy, which is useful in very small tumours. Gallium 68 is an analogue that specifically binds to somatostatin receptor cells of a neuro-endocrine tumour. Sixty percent of gastrinomas are malignant and the liver is the most common site of metastasis.

Reference

1. Brandi ML, Gagel RF, Angeli A et al. Guidelines for diagnosis and therapy of MEN type 1 and type 2. J Clin Endocrinol Metab. 2001; 86(12);5658-71.