LETTER / Gastrointestinal imaging

Pedunculated insulinoma on the anterior border of the head of the pancreas: An unusual location to be aware of

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Functional endocrine tumours of the pancreas are rare lesions, insulinomas being the most frequent. The majority of patients with insulinoma are between 30 and 60 years of age and 59% of them are women [1]. Most insulinomas are sporadic, while 10% develop in patients with multiple endocrine neoplasia (MEN) [2]. Diagnosis is based on the clinical symptoms and laboratory results. The standard treatment is surgical ablation of the tumour. Preoperative imaging examinations (CT, MRI, EUS) are essential and locate the tumour in over 80% of cases [1,3—5]. Here we report a case of pedunculated insulinoma that had developed on the anterior surface of the head of the pancreas with a long peduncle carrying the insulinoma to the left of the superior mesenteric vein.

Observation

A 39-year-old woman came to the emergency unit complaining of headaches and asthenia with paraesthesia of the extremities, which had been developing over 4 years, with a recent increase in the symptoms. The patient had no noteworthy medical history. Clinical examination found no disorders of vigilance, no convulsions and no neuroglucopenic disturbance. A fasting insulin test confirmed the diagnosis of inappropriate secretion of insulin. Laboratory aetiological tests were negative as was OctreoScan scintigraphy. An abdominopelvic CT scan with injection of a contrast agent retrospectively showed a pedunculated hyper-vascular lesion in the pancreatic phase measuring 10 by 6 mm, attached to the anterior surface of the head of the pancreas, with a 7 mm long peduncle displacing the lesion to the left side of the superior mesenteric vein (Fig. 1). MRI confirmed the topography of this lesion (Fig. 2) and no other pancreatic lesion was seen.

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2211—5684/$ — see front matter © 2012 Éditions françaises de radiologie. Published by Elsevier Masson SAS. All rights reserved.
http://dx.doi.org/10.1016/j.diii.2012.04.025
An endoscopic ultrasound examination performed after the CT scan initially found a formation suggesting an endocrine tumour in an extrapancreatic position, pedunculated relative to the head of the pancreas (Fig. 3). It was a hypoechoic abnormality measuring one centimetre in height and 4 to 5 mm thick, hypervascularised in colour Doppler energy and showing massive, early uptake of contrast agent after injection of Sonovue®, while the rest of the pancreatic gland was normal. The diagnosis made was of pedunculated insulinoma. The patient underwent laparoscopic surgery with ablation of the lesion, and histopathological analysis confirmed the diagnosis of insulinoma (Fig. 4). Postoperative laboratory results showed normalisation of the fasting blood glucose level, blood insulin level and C-peptide concentration.

Discussion

Here we report a case of pedunculated insulinoma, which had developed on the anterior surface of the head of the pancreas and was treated by limited laparoscopic resection. Pancreatic insulinomas are rare tumours of less than 2 cm in size. It is important to detect these small lesions by preoperative imaging in order to determine operative procedures. Peroperative evaluation is possible, but in 10 to 27% of cases is not effective in locating the tumour [3]. Non-invasive imaging techniques are currently preferred but their sensitivity varies considerably depending on the studies; it is improving significantly however with the technological progress of slice imaging. Recent studies have thus shown CT scan sensitivity higher than 80% [1,4,5]. MRI sensitivity even reaches 92% [6]. Preoperative endoscopic ultrasonography is performed by most teams and its sensitivity, which also varies with the studies, is nevertheless still very high, at around 90% [7,8].

There may be common factors for the various imaging techniques failing, such as the iso-echogenicity or isodensity of the lesion relative to the pancreatic gland, a lack of hypervascularisation or only slight hypervascularisation of the lesion [5,8,9].

Diffuse hyperplasia of the islets of Langerhans or I nesidoblastosis is by nature a factor for preoperative detection failing, because of the diffuse, non-focused character of the lesion [5]. Other factors for failure are more specific to particular techniques: for endoscopic ultrasound, location in the tail of the pancreas makes identification of the lesion more difficult. CT and MRI contrast resolution is not good enough for left pancreatic locations where small insulinomas may develop close to and be confused with splenic vessels [5].

Pedunculated forms are not common and amount to less than 10% of cases of sporadic pancreatic insulinomas [5,9,10]. They are also a classic and significant source of failure of preoperative imaging evaluation [5,9]. They occur most often in the body and tail of the pancreas [5,9]. In our case, the peduncle was 7 mm long displacing the insulinoma to the left side of the superior mesenteric vein and in front of the body. We therefore advise making an exhaustive search for focused enhancement, using multiplanar reconstructions, not only within the pancreas,
Pedunculated mesenteric-portal techniques within pancreas noma head.

Conclusion

Pedunculated pancreatic insulinomas are rare lesions of the pancreas and their diagnosis is difficult. The case that we are reporting here is a particular form of pedunculated insulinaoma arising on the anterior surface of the head of the pancreas with a long peduncle displacing it to the left of the mesenteric-portal axis. This justifies carrying out an exhaustive search during the examinations to locate an insulinoma within or around the pancreas, using the various imaging techniques available to us.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References