

CASE 23. DIAGNOSIS

PANCREATIC INSULINOMA (UNCINATE PROCESS)

This condition is seen in more detail on magnetic resonance imaging (Fig. 1, arrow).

Although many different modalities are available for preoperative localization of functional islet cell tumours, the accuracy of these techniques remains controversial. Traditionally a combination of computed tomography and angiography has been used. More recently, newer imaging techniques, including ultrasonography (transabdominal, endoscopic and intraoperative), MRI and radionuclide scanning with a somatostatin analogue have come into use.

Detection of functional islet cell tumours is challenging because the small size (less than 2 cm) of these lesions

necessitates imaging techniques with both high resolution and high inherent tissue contrast. Recent studies have shown that a combination of intraoperative ultrasonography and palpation has a sensitivity of 100%.¹ Many pancreatic surgeons may, however, wish to have the tumour localized preoperatively.

Although recent application of 2-phase dynamic helical CT has been reported to have a sensitivity as high as 82%,² this technique relies on the administration of an exogenous contrast agent precisely timed to attain adequate tissue contrast and on appropriate collimation to achieve adequate resolution. Even with these parameters optimized, CT sensitivity decreases with tumours smaller than 1 cm in dimension. MRI, a modality that has superior inherent tissue con-

trast discrimination, has been limited in the past by motion artifacts and decreased spatial resolution. The development of new software and hardware has helped to reduce these problems, improve resolution and enhance existing tissue conspicuity through fat suppression techniques. MRI is now considered particularly good at detecting tumours less than 1 cm in dimension. For this reason the current literature suggests that MRI alone^{1,3} or in combination with ultrasonography,⁴ be used as the initial radiologic approach to detect clinically suspected small endocrine pancreatic tumours.

References

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FIG. 1. Axial fat-suppressed spin-echo T_1 magnetic resonance image demonstrates a discrete hypointense mass (arrow) in the uncinus process.