

Pancreatic Head Mass: What Can Be Done ? Diagnosis: Angiography

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Vascular and interventional radiology play a diagnostic and therapeutic role in the treatment of pancreatic lesions.

Pancreatic carcinoma has increased in frequency and, although both surgery and chemotherapy are utilized, the prognosis is unfavorable, and average survival is poor. The role of interventional radiology is to treat jaundice and pain.

The pancreatic gland is fed by the gastroduodenal artery, splenic artery and superior mesenteric artery; the pancreaticoduodenal arch feeds the head; the body is supplied by the pancreatica magna (from the splenic artery), and the dorsal pancreatic (from the splenic or superior mesenteric artery).

Imaging of the pancreatic tumors is carried out by computed tomography (CT) [1] (very accurate for staging) magnetic resonance, and endoscopic ultrasound [2].

Angiography is rarely used: the vessel encasement (mesenteric arteries and veins) shows the resectability or unresectability of pancreatic tumors [3].

In case of a doubtful CT, angiography can be used to detect vessel encasement or venous mesenteric thrombosis (be cautious about which results in a false positive).

Fine needle guided biopsy in pancreatic carcinoma is accurate in about 73-85% of the cases. It is complicated by pancreatitis: the greater the pancreatitis, the smaller the lesion. [4].

Angiography can be useful in evaluating patients with islet cell tumors; they are very small and grow slowly. They are limited and have an intense blush; selective

catheterization is very important in order to avoid a false positive due to secondary spleen and mucosal bowel blushes. Angiography can also detect small tumors, multiple lesions, hepatic metastases and vascular encasement [4].

Interventional radiology plays an important role in CT guided percutaneous drainage of pancreatic pseudocysts: CT helps in detecting the relationship with the surrounding structures and cavities.

Non-surgical neoplastic pancreatic treatment, with chemotherapy infusion, is reported as "an effective palliative treatment for advanced pancreatic cancer" [4].

The embolizing treatment of bleeding, particularly of the gastroduodenal artery, requires interventional techniques.

Percutaneous biliary drainage in pancreatic lesions is another application of interventional radiology; the elimination of the obstruction allows the insertion of a metallic stent in order to avoid external drainage, resulting in cholangitis and biliary salt loss.

In benign stenosis, a prosthesis is not useful, due to the high probability of occlusion. On the contrary, in patients with a short life span, the prosthesis could stay patent for the duration of the lifetime of the patient; therefore, this is an elective application.

In conclusion, interventional techniques are of great help to the gastroenterologist and the surgeon. In fact, interventional radiology treats pancreatic lesions by arriving at a diagnosis and treating pancreatic tumors and their complications which include bleeding, jaundice and pain.

Key words Angiography; Biopsy, Needle; Carcinoma; Drainage; Pancreatic Neoplasms; Radiology, Interventional; Tomography, X-Ray Computed

Abbreviations CT: computed tomography

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References

1. Kaneko K, Honda H, Hayashi T, Fukuya T, Ro T, Irie H, Masuda K. Helical CT evaluation of arterial invasion in pancreatic tumors: comparison with angiography. *Abdom Imaging* 1997; 22:204-7. [97166137]
2. Jafri SZ, Aisen AM, Glazer GM, Weiss CA. Comparison of CT and angiography in assessing resectability of pancreatic carcinoma. *AJR Am J Roentgenol* 1984, 142:525-9. [84124799]
3. O'Malley ME, Boland GW, Wood BJ, Fernandez-del Castillo C, Warshaw AL, Mueller PR. Adenocarcinoma of the head of the pancreas: determination of surgical unresectability with-thin-section pancreatic-phase helical CT. *AJR Am J Roentgenol* 1999; 173:1513-8. [20049489]
4. Rossi P, Allison DJ, Bezzi M, Kennedy A, Maccioni F, Wynick D, et al. Endocrine tumors of the pancreas. *Radiol Clin North Am* 1989; 27:129-61. [89058097]