Pathology

Pathology

More than 85% of pancreatic cancers are ductal adeno carcinomas. The remaining tumours constitute a variety of pathologies with individual characteristics. Endocrine tumours of the pancreas are rare. These are cover ed in Chapter 57 Ductal adenocarcinomas arise most commonly in the head of the gland. They are solid, scirrhous tumours, characterised by neoplastic tubular glands within a markedly desmoplas tic fibrous stroma. Fibrosis is also a c haracteristic of chronic pancreatitis, and histological di ff erentiation between tumour Henry T Lynch , 1928–2019, Professor of Preventative Medicine, Creighton University , Omaha, NE, USA. John Law Augustine Peutz , 1886–1970, Chief Specialist for Internal Medicine, St John's Hospital, The Hague, The Netherlands. Harold Joseph Jeghers , 1904–1990, Professor of Internal Medicine, The New Jersey College of Medicine and Dentistry , Jersey City , NJ, USA. - - - - - and pancreatitis can cause diagnostic di ffi culties. Ductal ade - nocarcinomas infiltrate locally , typically along nerve sheaths, along lymphatics and into blood vessels. Liver and peritoneal metastases are common. Proliferative lesions in the pancreatic ducts can precede invasive ductal adenocarcinoma. These ar e termed pancreatic intraepithelial neoplasia or PanIN, and can demonstrate a range of structural complexity and cellular atypia. Cystic tumours of the pancreas may be serous or mucinous. Serous cystadenomas are typically found in older women and are large aggregations of multiple small cysts, almost like bub - ble wrap. They are benign. Mucinous tumours, on the other hand, have the potential for malignant transformation. They include mucinous cystic neoplasms (MCNs) and intraductal papillary mucinous neoplasms (IPMNs). MCNs are seen in - perimenopausal women, show up as multilocular thick-walled cysts in the pancreatic body or tail and, histologically , contain an ovarian-type stroma. IPMNs are more common in the . pancreatic head and in older men, but an IPMN arising from a branch duct can be di ffi cult to distinguish from an MCN. IPMNs arising within the main duct are often multifocal and - have a greater tendency to prove malignant. Thick mucus seen extruding from the ampulla at ERCP is diagnostic of a main duct IPMN. Mucinous tumours can be confused with pseudo -

pancreatic cancer. Demographic factors Age (peak incidence 65–75 years) Male gender Black ethnicity Environment/lifestyle Cigarette smoking Genetic factors and medical conditions Family history Two /f_i rst-degree relatives with pancreatic cancer: relative risk increases 18- to 57-fold Germline BRCA2 mutations in some rare high-risk families Hereditary pancreatitis (50- to 70-fold increased risk) Chronic pancreatitis (5- to 15-fold increased risk) Lynch syndrome (HNPCC) Ataxia telangiectasia Peutz–Jeghers syndrome Familial breast–ovarian cancer syndrome Familial atypical multiple mole melanoma Familial adenomatous polyposis – risk of ampullary/duodenal carcinoma Diabetes mellitus Obesity HNPCC, hereditary non-polyposis color ectal cancer.

cysts (Summary box 72.8 and Figure 72.32) . Occasionally , lymphoepithelial cysts, lymphangiomas, dermoid cysts and intestinal duplication cysts can show up in the pancreas. Solid pseudopapillary neoplasms are rare, slowly progressive but malignant lesions seen in women of

childbearing age, and manifest as large, part-solid, part-cystic tumours. Tumours arising from the ampulla or from the distal com mon bile duct can present as a mass in the head of the pan creas and constitute around a third of all tumours in that area. Adenomas of the ampulla of Vater are diagnosed at endoscopy as polypoid submucosal masses covered by a smooth epithe lium. They can harbour foci of invasive carcinoma; the larger the adenoma, the greater the risk. Biopsies taken at endoscopy may not always include the malignant focus. Endoscopic sur veillance, endoscopic resection or even surgical transduode nal ampullar y excision should be considered (Figure 72.33 Patients with familial adenomatous polyposis (FAP) can present with multiple duodenal polyps. Malignant transformation in a duodenal polyp is a significant cause of mortality in these patients, mandating endoscopic follow-up and pancrea odenectomy in selected patients with high-grade dysplasia within the polyp. Ampullary adenocarcinomas often present early with biliary obstruction. Their natural history is distinctly more favourable than that of pancreatic ductal adenocar cinoma. Ampullary carcinomas are relativ ely small when diagnosed, which may account for their better prognosis. Occasionally , other malig - nant neoplasms can arise at the ampulla, such as carcinoid tumours and high-grade neuroendocrine carcinomas. -

Investigate with MRCP and EUS+FNA Send fluid for CEA, cytology (CEA ≥192 ng/mL indicates mucinous neoplasm) IPMN or MCN Relative indications for surgery: Un /f_i t for surgery No indication for surgery Absolute indications for surgery: • Growth rate ≥5 mm/year • Carcinoma or high-grade dysplasia • Serum

CA19-9 >37 U/L on cytology • Main pancreatic duct dilated • Solid mass 5–9.9 mm • Jaundice (tumour related) • Cyst diameter >40 mm • Enhancing mural nodules ≥5 mm • New-onset diabetes mellitus • Main pancreatic duct dilated ≥10 mm • Acute pancreatitis • Enhancing mural nodules <5 mm Surgery Acceptable surgical risk with 1 or 2 indications or high surgical risk but >2 indications Surgery Figure 72.32 Management algorithm for cystic neoplasms of the pancreas. CA19-9, carbohydrate antigen 19-

9; CEA, carcinoembryonic anti gen; EUS, endoscopic ultrasonography; FNA, /f_i ne-needle aspiration; IPMN, intraductal papillary mucinous neoplasm; MCN, mucinous cystic neoplasm; MRCP , magnetic resonance cholangiography and pancreatography; NET, neuroendocrine tumour. (Adapted fr Study Group on Cystic Tumours of the Pancreas. European evidence-based guidelines on pancreatic cystic neoplasms. Solid pseudopapillary Cystic NET Serous cystic neoplasm neoplasm Other

benign cyst Consider surgery Consider surgery Manage conservatively High surgical risk with 1 indication Monitor at 6 and 12 months Monitor 6-monthly and then annually with: with: • Clinical evaluation • Clinical evaluation • Serum CA19-9 • Serum CA19-9 • MRCP/EUS • MRCP/EUS

om The European Gut 2018; 67 : 789–804.)

Revision #1
Created 2025-12-31 15:27:04 UTC by Omar Ayman
Updated 2025-12-31 15:27:04 UTC by Omar Ayman