Cystic Tumors Of The Pancreas

Essay

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Presented by

Mohamed Abdel Hameed Diab

M.B., B.Ch.

Under supervision of

Prof. Dr. Hussein Abdel Aleem Boshnak

Professor of general surgery

Faculty of medicine

Ain Shams University

Assist. Prof. Dr. Mohamed Ali Nada

Assistant professor of general surgery

Faculty of medicine

Ain Shams University

Faculty of medicine

Ain Shams University

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List of contents

List of tables

Table No. ***Page No.***

List of figures

Figure No. ***Page No.***

List of abbreviations

BD-IPM **:** branched ducttype of intraductal papillary neoplasm
CEA : carcinoembryonic antigen.
CEUS : Contrasted enhanced ultrasonography.
CHA : common hepatic artery.
CNPs : cystic neoplasms of the pancreas.
CPTs : cystic pancreatic tumors.
ERCP : endoscopic retrograde Cholangiopancreaticography.
EUS : Endoscopic ultrasonography.
FDG-PET : 18f-2fluoro-2deoxy glucose positron tomography.
FNA : fine needle aspiration.
GDA : great duodenal artery.
GEM : Gemcitabine.
GISTs : gastro intestinal stromal tumors.
IDUS : intra-ductal ultrasonography.
IOPN : intraductal oncocytic papillary tumors.
IPDA : inferior gastro-epiplioc artery.
IPDVs : inferior gastro-epiploic veins.
IPMN : intraductal papillary mucinous neoplasm.
IPMT : intraductal papillary mucinous tumors.
Lap SDP : laparoscopic distal splenopancreatectomy.
Lap SPDP : laparoscopic spleen preserving pancreatectomy.
LECs : lympho-epithelial cysts.
LGA : lt. gastric artery.
LOH : loss of heterozygosity.
MCN : mucinous cystic neoplasms.
MDP : main pancreatic duct.
MRCP : magnetic resonance Cholangiopancreaticography.
OCT : optical coherence tomography.
Pan-IN : pancreas intra-epithelial neoplasms**.**
PC : pancreatic pseudocyst.
PCNs : pancreatic cystic neoplasms.
PDAC : pancreatic duct adenocarcinoma.
PET : positron – emission tomography.
RGEA : right gastro-epiploic artery.
SCA : serous cyst adenoma**.**
SCTs : serous cystic tumors.
SMA : superior mesenteric artery.
SMV : superior mesenteric veins.
SPDA : superior pancreatico- duodenal artery.

SPDVs : superior pancreatico duodenal veins.
SPTs : solid pseudopapillary tumors.
SPNs : solid pseudopapillary neoplasms.
US : ultrasonography.
VHL : Von Hippel-Lindau.
WHO : world organization of health.

INTRODUCTION

Cystic tumors of the pancreas, although rare, represent an important group as its proportion among the pancreatic tumors has increased in the last decades, with prevalence that ranges from 1% in the initial reports to up to 29% in some institutions. This increase is due mainly to the advances in diagnostic studies and surgical techniques that, in many cases, may be curative. **(Carlos et al, 2010)**

Pancreatic cystic neoplasms encompass a spectrum of benign, malignant, and borderline neoplasms that either are primarily cystic or result from the cystic degeneration of solid tumors among these neoplasms. **(Megibow et al, 2011)**

Many patients with a pancreatic cystic lesion present with no relevant signs or symptoms. Often the lesion is serendipitously detected by abdominal ultrasonography or cross-sectional imaging studies performed the evaluation of another condition. When the lesion is symptomatic, the patient may present

with recurrent pancreatitis, chronic abdominal pain, or jaundice. **(Takuma et al, 2011)**

The management of cystic neoplasms of the pancreas has not been standardized and is evolving. Surgical resection is indicated for most such lesions in patients who are symptomatic and for whom the surgical risk is low; the proper evaluation and subsequent management of disease in patients without symptoms have not been fully defined. Accurate delineation of the type of tumor and of the prognosis is particularly important, because over a third of cystic lesions are discovered incidentally. On the one hand, a blanket policy of resection for all would certainly lead to the removal of some potentially malignant mucin-producing cystic neoplasms before the patients become symptomatic and have a lower rate of cure. On the other hand, such an approach would also lead to surgery for some serous cystadenomas and other benign lesions that might never cause problems. **(Wargo et al, 2009)**

Aim of the work

We aim from this essay to review the article of cystic pancreatic neoplasms as regard histopathological nature, diagnosis and the recent trends in management.

Anatomy of the pancreas

The pancreas first appears at approximately 5 weeks of gestation as two outpouchings of the endodermal lining of the duodenum just distal to the forming stomach. The outpouchings are the ventral and dorsal pancreas. The dorsal pancreas grows more rapidly than the ventral pancreas. In addition, the ventral pancreas rotates toward the dorsal pancreas as it is "carried" by the common bile duct. Finally, the ventral and dorsal pancreas join and the ductal systems fuse so that secretions from the ventral pancreas enter the shared ductal system of the ventral pancreas and common bile duct. **(Aysel et al, 2013)**

In the final anatomic arrangement, the head of the pancreas originates from both the dorsal pancreas and the ventral pancreas. The ventral pancreas portion is called the uncinate process. The body and tail of the pancreas originate from the dorsal pancreas as in fig (1). **(Alexander et al, 2012)**

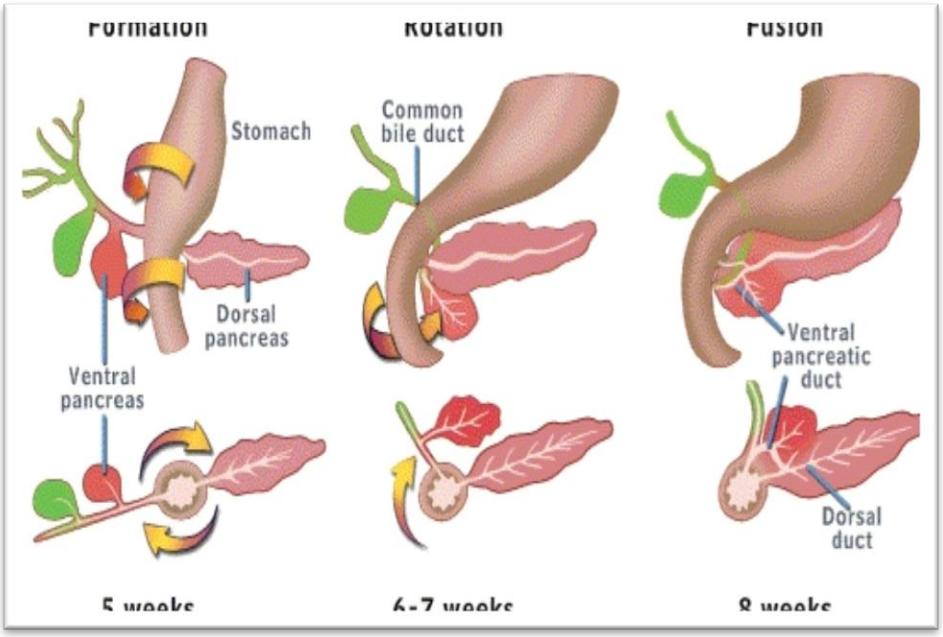

Fig (1):Embryological development of the pancreas*. (Aysel et al, 2013)*

The **pancreas** is a compound racemose gland, analogous in its structures to the salivary glands , it is long and irregularly prismatic in shape; its right extremity, being broad, is called the **head,** and is connected to the main portion of the organ, or **body,** by a slight constriction, the **neck;** while its left extremity gradually tapers to form the **tail.** It is situated transversely across the posterior wall of the abdomen, at the back of the epigastric and left hypochondriac regions. Its length varies from 12.5 to

15 cm, and its weight from 60 to 100 gm**. (De Graff, 2001)**

Relations; the **Head** (*caput pancreatis*) is flattened from before backward, and is lodged within the curve of the duodenum. Its upper border is overlapped by the superior part of the duodenum and its lower overlaps the horizontal part; it's right and left borders overlap in front, and insinuate themselves behind, the descending and ascending parts of the duodenum respectively. The angle of junction of the lower and left lateral borders forms a prolongation, termed the **uncinate process.** In the groove between the duodenum and the right lateral and lower borders in front are the anastomosing superior and inferior pancreaticoduodenal arteries. (**McClusky et al, 2002)**

Anterior Surface; The greater part of the right half of this surface is in contact with the transverse colon, only areolar tissue intervening. From its upper part the **neck** springs, its right limits being marked by a groove for the gastro duodenal artery. The lower part of the right half, below the transverse colon, is covered by peritoneum continuous with the inferior layer of the transverse mesocolon, and is in contact with the coils of the small intestine. The superior

mesenteric artery passes down in front of the left half across the uncinate process; the superior mesenteric vein runs upward on the right side of the artery and joins with the lienal vein to form the portal vein. **(Kimura, 2000)**

Posterior Surface; the posterior surface is in relation with the inferior vena cava, the common bile duct, the renal veins, the right crus of the diaphragm, and the aorta. The **Neck**; springs from the right upper portion of the front of the head. It is about 2.5 cm. long, its antero-superior surface supports the pylorus; its postero-inferior surface is in relation with the commencement of the portal vein; on the right it is grooved by the gastro-duodenal artery. **(Hostani et al, 2002)**

The Body (*corpus pancreatis*); is somewhat prismatic in shape, and has three surfaces: anterior, posterior, and inferior. The anterior surface (*facies anterior*); is somewhat concave; and is directed forward and upward: it is covered by the postero-inferior surface of the stomach which rests upon it, the two organs being separated by the omental bursa. Where it joins the neck there is a well-marked prominence, the tuber omentale, which abuts against

the posterior surface of the lesser omentum. **(Nagai, 2003)**

The **posterior surface** (*facies posterior*); is devoid of peritoneum, and is in contact with the aorta, the lienal vein, the left kidney and its vessels, the left suprarenal gland, the origin of the superior mesenteric artery, and the crura of the diaphragm. The **inferior surface** (*facies inferior*); is narrow on the right but broader on the left, and is covered by peritoneum; it lies upon the duodeno-jejunal flexure and on some coils of the jejunum; its left extremity rests on the left colic flexure. The **Tail** (*cauda pancreatis*); is narrow; it extends to the left as far as the lower part of the gastric surface of the spleen, lying in the phrenicolienal ligament, and it is in contact with the left colic flexure as in fig (2). **(Gray et al, 2005)**