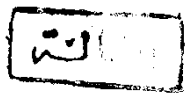


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PANCREATITIS

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INTRODUCTION

I N T R O D U C T I O N

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Acute and chronic pancreatitis has been represented by high rate of morbidity and mortality due to difficulties in diagnosis, laboratory, investigations, hence the subsequent differential diagnosis and treatment in the proper time and technique .

Much has been written on the various forms of pancreatitis since OPIE's description of a patient with acute pancreatitis 1901 .

Also until 1904, chronic pancreatitis was thought to be rare, and was only usually recognized at autopsy .

Classification was a matter of discussion till Marseilles classification and its modification .

Great advances have occurred recently in the laboratory, radiological and scanning techniques . Some of the Laterers include E.R.C.P., Intraoperative pancreatography, ultrasonography and C.T.S. .

Thanks to these advances it has been possible to reach a proper aetiological diagnosis of pancreatitis and to achieve a valuable management .

This explains the increased incidence of pancreatitis and the progressive declines in the morbidity and mortality rates .

In the present study, the various facets of acute and chronic pancreatitis with their manifestations and management are dealt with aiming at a fresh approach to the subject from various points of view .

ANATOMICAL CONSIDERATIONS

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The pancreas is a soft, lobulated, greyish-pink gland, 5 to 6 inches in length . It lies immediately behind the peritoneum of the posterior abdominal wall, extending nearly transversely across the latter, behind the stomach, from the duodenum to the spleen .

The transverse mesocolon is attached to its anterior surface just above the inferior border ; thus, most of the gland lies in the supracolic compartment, in other words , in the lesser sac, forming part of the stomach bed . Still, a narrow strip, along its inferior border, lies in the infracolic compartment (Warick and Williams, 1973) .

The broad right extremity of the pancreas is called the 'Head' and is connected to the main part, or 'Body' , by a slightly constricted 'Neck' ; the gland's narrow left extremity forms the 'Tail' . The head and tail lie back in the paravertebral gutters, while the neck and body are curved boldly forward over the inferior vena cava and aorta, in front of the first lumbar vertebra .

As a whole, the gland lies somewhat obliquely, sloping from the head upwards towards the tail, across the posterior wall of the abdomen in the epigastric and left hypochondriac regions (Greenlee and Prinz, 1981) .

1- RELATIONS OF THE PANCREAS :

The structures in close topographic relationship to the pancreas shall be considered systematically with respect to the head, neck, body and tail .

a) The Head :

It is flattened from before backwards and is moulded to the concavity of the duodenum which it completely fills . Its upper border is overlapped by the superior part of the duodenum whereas the other borders are grooved to receive the adjacent margin of the duodenum, which they overlap both in front and behind to a variable extent . Sometimes, a small part of the head of the pancreas is actually embedded in the descending portion of the duodenum (Last, 1978) .

From the lower and left part of the head, there is a prolongation known as the 'Uncinate Process' which projects upwards and to the left behind the superior mesenteric vessels .

In or near the groove between the duodenum and the right border of the head of the pancreas are the anastomosing superior and inferior pancreatico-duodenal arteries .

From the anterosuperior aspect of the head, the neck juts forwards, upwards and to the left, to be continued into the body of the pancreas . The boundary between the head and the neck in front and on the right side, is a groove for the gastroduodenal artery whereas behind and on the left side, that

boundary consists of a deep groove in which the superior mesenteric and splenic vein unite to form the portal vein .

Almost the whole of the posterior surface of the head of the pancreas is related to the inferior vena cava which runs upwards behind it . The uncinate process passes in front of the aorta and the bile duct lies either in a groove on the upper and lateral part of the posterior surface of the head or in a canal in its substance (Warick and William, 1973) .

b) The Neck :

It measures less than an inch in length ; it extends forwards , upwards and to the left from the head, merging imperceptibly into the body .

Its anterior surface is covered with peritoneum and it adjoins the pylorus whereas its posterior surface is related to the superior mesenteric vein and the beginning of the portal vein (Mallinson, 1975) .

c) The Body :

It is somewhat prismoid in cross section with an anterior, a posterior and an inferior surface .

The anterior surface is concave and is directed forwards and upwards . It is covered with peritoneum, namely the anterior of the two descending layers of the greater omentum .

It forms part of the bed of the stomach from which it is separated by the omental bursa .

The posterior surface is devoid of peritoneum and is in contact with the aorta together with the origin of the superior mesenteric artery, the left crus of the diaphragm, the left psoas major, the left suprarenal gland and finally the left kidney together with its vessels, particularly the left renal vein .

The splenic vein, which courses from left to right, is intimately related to the posterior surface of the body of the pancreas and separates it from the above mentioned structures . The inferior mesenteric vein joins the splenic vein behind the body of the pancreas, in front of the left renal vein where it lies over the left psoas muscle . It should also be noted that the left kidney is separated from the pancreas by the perirenal fascia and fat .

The inferior surface is narrow on the right but broader on the left and is covered with the peritoneum of the postero-inferior layer of the transverse mesocolon . It lies on the duodenojejunal flexure and on some coils of the jejunum and its left extremity rests on the left colic flexure .

The superior border of the pancreas is blunt and flat to the right ; narrow and sharp to the left near the tail . It is related above to the coeliac artery, from which the common

hepatic artery courses to the right just above the gland , while the splenic artery runs towards the left along the superior border of the pancreas, following a tortuous course with the crests of the waves showing above the pancreas and the troughs , out of sight behind it .

The anterior border separates the anterior from the inferior surfaces, and along it, the two layers of the transverse mesocolon diverge from each other . The inferior border separates the posterior from the anterior surfaces . The superior mesenteric vessels emerge under its right extremity (Warick and William, 1973) .

d) The Tail :

It is narrow and it usually lies in contact with the inferior part of the gastric surface of the spleen near the latter's hilum . It is contained within the two layers of the lieno-renal ligament together with the splenic vessels and some lymphatics (Greenlee and Prinz, 1981) .

2- THE DUCTAL SYSTEM :-

a) The Main Pancreatic Duct :

It is a continuous tube which traverses the pancreas from left to right, lying nearer its posterior than its anterior surface . It begins by the junction of the small ducts of the

lobules situated in the tail of the pancreas, and running from left to right through the body, it receives the ducts of the various lobules composing the gland . These latter ducts join the main duct at almost right angles giving a so-called "HER-RING BONE PATTERN" .

By the time the main duct reaches the neck of the pancreas , it will have considerably increased in size . At that point, it turns downwards, backwards and to the right where it comes into relation with the bile duct which lies to its right side . Together, the two ducts pass obliquely into the wall of the descending part of the duodenum and, there, unite to form a short dilated ampulla, known as the "Ampulla of Vater" . The latter's constricted distal end opens on the summit of the "Major Duodenal Papilla" which projects into the duodenum at the junction of its medial and posterior walls, from 8 to 10 cm. distal to the pylorus . As a rule, the pancreatic duct and the bile duct do not unite until they approach very close to the opening on the major duodenal papilla, but sometimes , they open separately into the duodenum (Warick and William , 1973) .

b) The Accessory Pancreatic Duct :

It drains the lower part of the head as well as the un-cinate process of the pancreas . It runs upwards in front of the main pancreatic duct and is frequently connected to it by

a communicating duct . It finally opens into the duodenum 2 cm. proximal and slightly ventral to the major duodenal papilla on a small rounded "Minor Duodenal Papilla" (Maingot, 1985) .

3- BLOOD SUPPLY OF THE PANCREAS :-

a) Arterial Supply :

It is derived from the Splenic artery and the Pancreat-icoduodenal arteries .

- The Splenic Artery : Its pancreatic branches consist of numerous small vessels which are derived from it as it runs along the upper border of the pancreas . They supply the neck, body and tail of the gland .

- The Superior Pancreaticoduodenal Arteries : They are usually two in number, both being terminal branches of the Gastroduodenal artery . The anterior one descends on the front of the groove between the duodenum and the head of the pancreas supplying both these organs and it ends by anastomosing with the anterior division of the Inferior Pancreaticoduodenal artery .

The posterior one runs downwards and to the right in front of the portal vein and bile duct and then on the back of the head of the pancreas supplying the latter as well as the duodenum . It ends by anastomosing with the posterior division of the Inferior Pancreaticoduodenal artery .

- The Inferior Pancreaticoduodenal Artery : It arises from the Superior Mesenteric artery and it usually divides at once into an anterior and a posterior branch .

The anterior one goes to the right in front of the head of the pancreas and ascends to anastomose with the anterior division of the Superior Pancreaticoduodenal artery .

The posterior one passes upwards to the right behind the head of the pancreas, which it sometimes pierces, and ends by anastomosing with the posterior division of the Superior Pancreaticoduodenal artery .

Both divisions supply the head of the pancreas together with its uncinate process as well as the adjoining parts of the duodenum (Last, 1978) .

b) Venous Drainage :

The pancreatic venous return is converged via numerous tributaries into the Splenic, Portal and Superior Mesenteric veins .

- The Splenic Vein : It is a large vein which, as mentioned before, lies immediately posterior to the body of the pancreas and grooves it along the way . It receives the Pancreatic Veins which are several small tributaries which drain the body and tail of the pancreas .