BENIGN LEISONS OF THE PANCREAS

Essay

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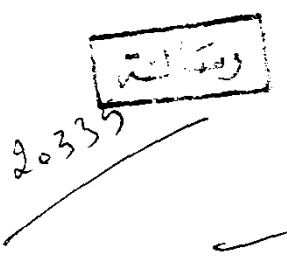

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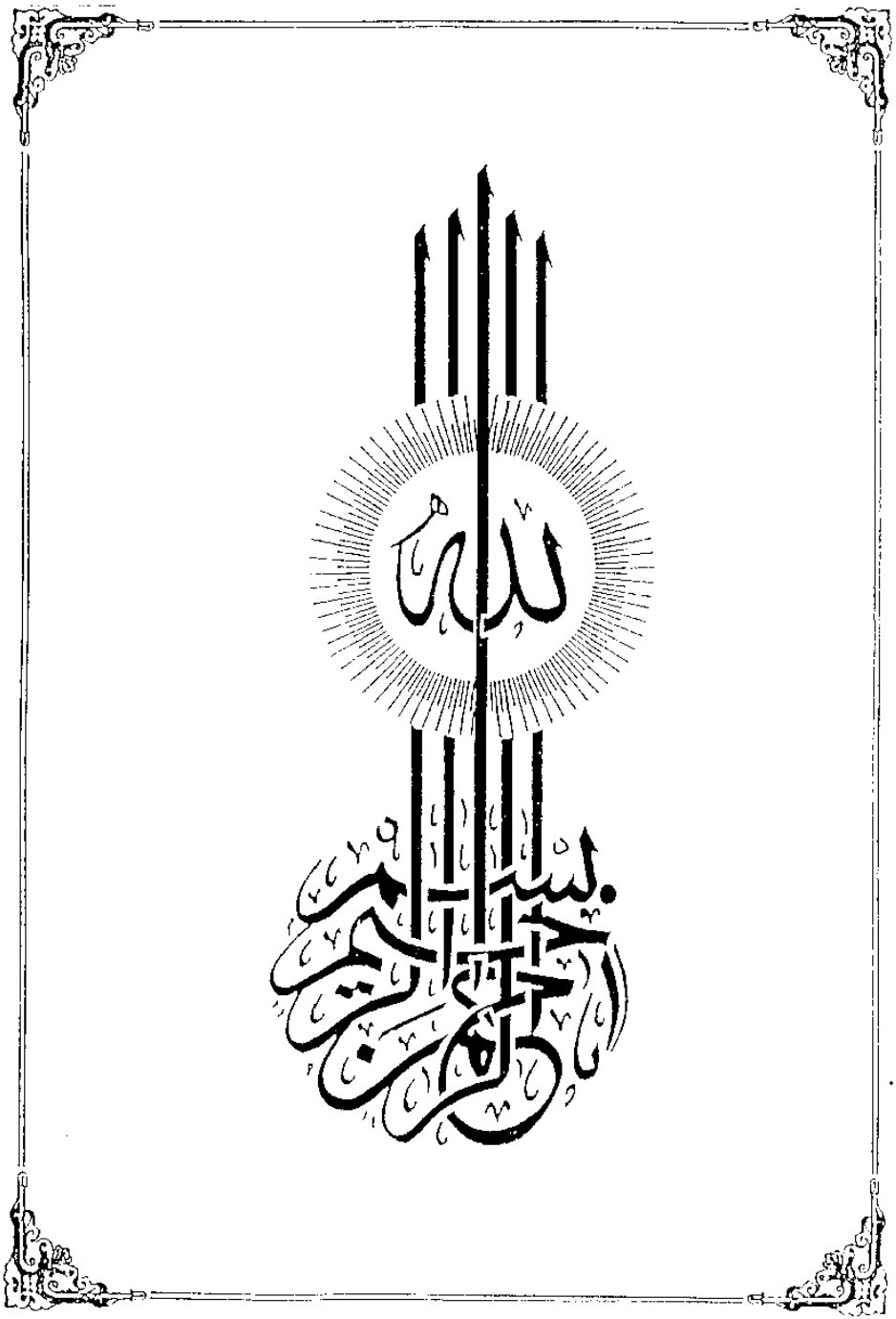

C O N T E N T S

INTRODUCTION

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The pancreas is a retort-shaped retroperitoneal gland. It is composed of both exocrine and endocrine components. It is liable to various benign and malignant disorders.

Congenital pancreatic leisons in this study are discussed with special regard to metabolic and anatomic anomalies.

Pancreatitis whether acute or chronic presents a problem that needs a variety of diagnostic procedures. Its management has been the subject for broad studies and postulates.

Benign cystic lesions of the pancreas are rare, but mostly are amenable to cure with the appropriate management.

Benign pancreatic tumours arise from either the exocrine or the endocrine component of the gland. Their frequency has increased much during the last few years.

They are becoming the sixth most common tumour in males and the seventh in females.

In this study these various benign leisons with their aetiologic, diagnostic, and therapeutic backbones are discussed.

ANATOMY

ANATOMY OF THE PANCREAS

The pancreas is an accessory digestive gland. It has been called the abdominal salivary gland be - cause histologically it resembles the salivary glands of the oral region. The gland is of soft consistancy, and its surface is finely lobulated. It is retort-shaped, tapering from a big head to a narrow tail, and its length ranges from 10 to 20 cm., and it is 3 to 5 cm. in width. It is thickest at the head and the uncinate process, where it measures 2 to 3 cm. The average weight of the pancreas approaches 100 gm. (Edward L. Bradley III and Robert Zeppa, 1981).

The pancreas lies immediately behind the peritoneum of the posterior abdominal wall 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 behind the lesser sac, forming part of the stomach bed. As a consequence of this hidden position of the pancreas, injuries or tumors may easily escape casual exploration.

The pancreas consists of head, neck, body and 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 . The gland lies somewhat obliquely, sloping from the head upwards towards the tail (R.J. Last, 1979).

THE HEAD:

It is the more expanded part of the pancreas, occupying the area defined by the C-shaped curve of the duodenum and separated from it by only a shallow sulcus. It lies over the inferior vena cava and the right and left renal veins. Its posterior surface is deeply indented, and sometimes tunnelled, by the terminal part of the common bile duct. In 75 per cent of individuals, the common bile duct traverses the head of the pancreas before it enters the duodenal wall and this poses an additional anatomic hazard in total pancreatectomy (Edward L. Bradley III and Robert Zeppa, 1981).

The lower part of the posterior surface is prolonged, wedge-shaped to the left, behind the superior

mesenteric vein and artery, in front of the aorta. This is the uncinate process.

The anterior surface of the head lies in both supracolic and infracolic compartments; some of this surface is bare, for the leaves of the greater omentum and of the transverse mesocolon are here wide apart at their attachments.

THE NECK:

It is continuous with the upper left portion of the head. This somewhat constricted portion is grooved posteriorly by the superior mesenteric artery and vein. Behind the neck of the pancreas the superior mesenteric and splenic veins, unite to form the portal vein. The anterior surface of the neck, continuous with the corresponding surface of the body of the pancreas, is covered by peritoneum and lies in the stomach bed of the lesser sac. It rises superior to the pyloric portion of the stomach and is related, through the lesser omentum, with the left bobe of the liver (R.J. Last, 1979).

THE BODY:

It continues from the neck toward the left,

sloping gently upwards. In cross section this portion of the pancreas is somewhat triangular, the apex of the triangle being an anteriorly projecting ridge along which is attached to transverse mesoclon. The ridge separates an anterior surface above from an inferior surface below. The posterior surface of the gland is the base of the triangle (Russell T. Woodburne, 1973).

The anterior surface, in continuity with the neck of the pancreas, lies in the floor of the omental bursa and forms part of the stomach bed. The posterior surface is flat and crosses, from right to left, the left renal vein, the aorta, the left crus of the diaphragm, the left psoas muscle and lower pole of the left suprarenal gland. The splenic vein courses from left to right along the posterior surface; 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. The narrow inferior surface is covered by the inferior reflection of the transverse mesocolon and is in relation with the duodenojejunal flexure and the coils of the jejunum. The superior border crosses the aorta at the origin of the short coeliac axis, and is invaded by the convoluted splenic artery. The

anterior border is the ridge along which the transverse mesocolon attaches. The inferior border, alongside the neck, crosses the origin of the superior mesenteric artery (Russell T. Woodburne, 1973).

THE TAIL:

It is usually blunted and passes forward from the anterior surface of the left kidney at the level of the hilum. Accompanied by the splenic artery, vein and lymphatics it lies within the two layers of the leinorenal ligament and thus frequently makes contact with the spleen; inferiorly, it is in relation with the left flexure of the colon.

DUCTAL SYSTEM:

The main pancreatic duct (duct of Wirsung) begings at the tail of the pancreas and extends to the right at, or slightly superior to, a point halfway between the superior and inferior borders of the pancreas. It lies somewhat closer to the posterior than the anterior surface of the organ, and its tributaries enter almost at right angles along its entire course. In the head of the pancreas the major duct turns inferiorly and joins

the common bile duct in a spindle-shaped dilatation, the ampulla of Vater, that opens into the posteromedial part of the wall of the second part of the duodenum on the surface of a tiny nipple, the major duodenal papilla, that projects into the duodenum.

The minor duct (duct of Santorini) lies in the head of the pancreas in a much more ventral plane and therefore in a surgically more vulnerable plane than the duct of Wirsung. This duct begins at its junction with the main duct in the neck of the pancreas and terminants in the minor papilla, located about 2 cm. proxmial to the major papilla and 7 cm. distal to the pylorus. Tiny accessory ducts emptying directly from the pancreas into the intrapancreatic portion of the common bile duct have been described (Russell T. Woodburne, 1973).

Many variations in the normal anatomy of the ductal system have been described. Configuration of the ducts is normal in only 60 to 70 percent of the population (Edward L. Bradley III, Robert Zeppa, 1981).

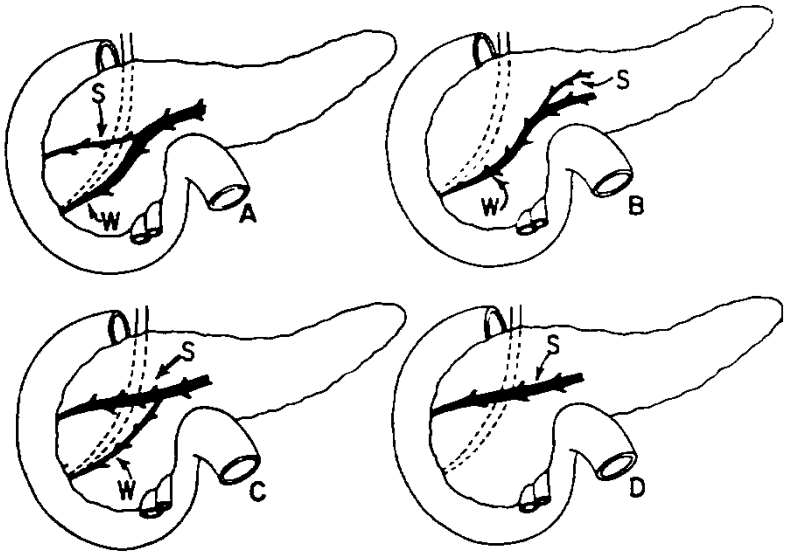

Fig. (1):- Diagrammatic illustration of several variations in the size and connections of the main duct of Wirsung (W) and the accessory duct of Santorini (S). A, The arrangement reported in the majority of dissections. B, Santorini's duct draining the midportion of the gland and connecting directly into the duct of Wirsung. C, and D, The duct of Santorini as the major pancreatic duct. D, Although relatively rare, obliteration of the duct of Wirsung gives the surgeon great difficulty when attempting to catheterize the pancreatic duct preliminary to pancreatogram following sphincterotomy. (From Ellison,E.H.,and Carey,L.C. In Davis, L. (Ed.):Christopher's Textbook of Surgery, 9th ed. Philadelphia, W.B. Saunders Company,1968).