TIMING OF SURGICAL INTERVENTION IN ACUTE PANCREATITIS

Essay

Submitted in Partial Fulfillment of the Master Degree in **General Surgery**

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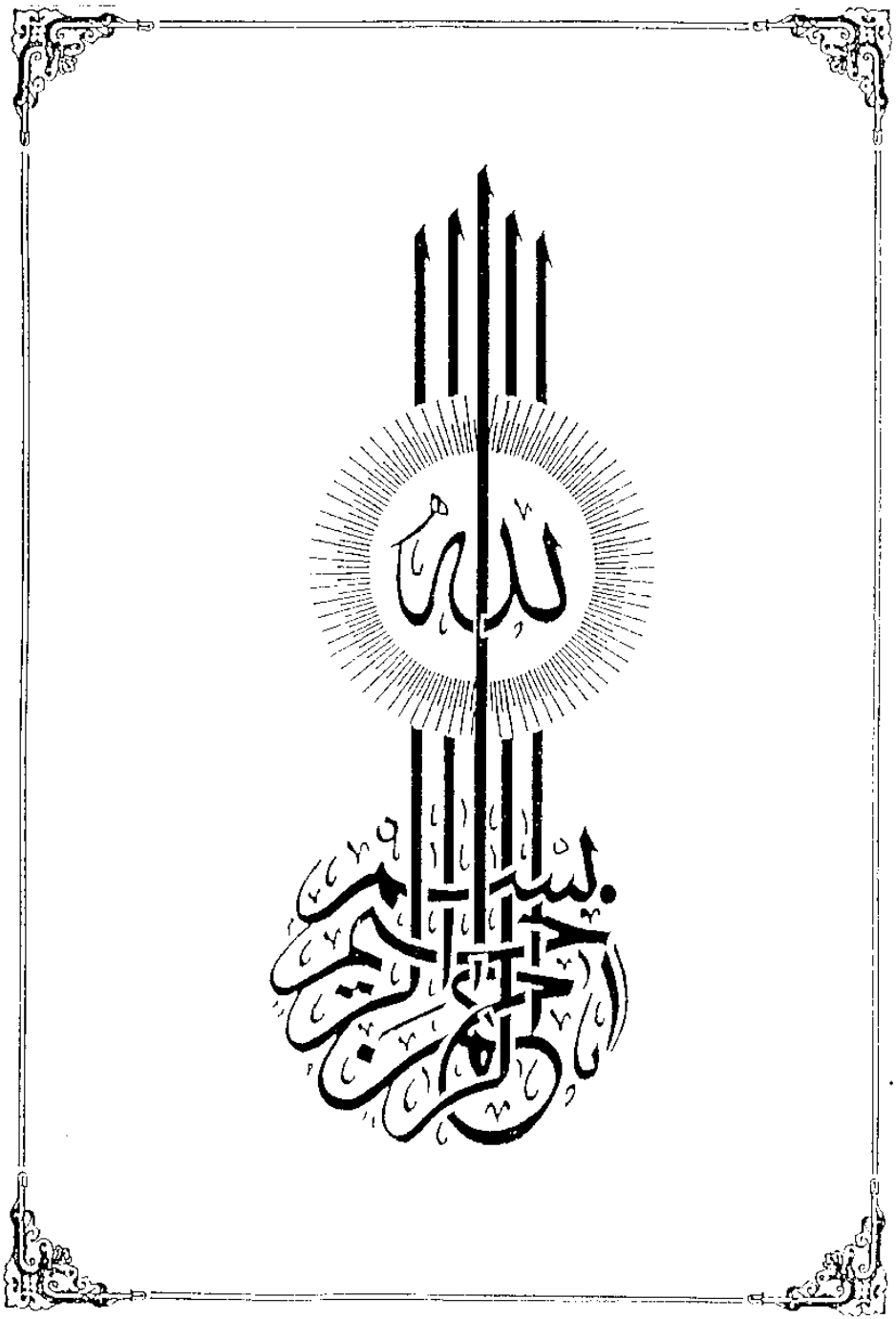
1995

بسم الله الرحمن الرحيم

(وقل رب زدنى علماً)

"صدق الله العظيم"

"سورة طه آيه رقم (١١٤)



Acknowledgement

I would like to express my gratitude to ***Prof. Dr. Mohammed Ragheb***, Professor of General Surgery, Ain Shams University, for the kind advice, encouragement, and supervision he offered throughout the course of this work.

Special grateful thanks and appreciation to ***Dr. Abd El Wahab Ezzat,*** Lecturer of General Surgery, Ain Shams University, his continuous help, encouragement, and supervision provided me all facilities during the conduction of this work.

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INTRODUCTION

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Acute pancreatitis is a nonbacterial inflammation of the pancreas caused by the activation, interstitial liberation, and the digestion of the gland by its own enzymes.

There have been many causes postulated to be the aetiological factors of pancreatitis, of which biliary tract diseases and stones, chronic alcoholism, and idiopathic groups are the most common.

It is characterized clinically by acute abdominal pain, elevated concentrations of pancreatic enzymes in blood, and an increase in the amount of pancreatic enzymes excreted in urine. The patient appears severely ill, may be shocked with nausea and vomiting.

Diagnosis of acute pancreatitis depends upon careful history, clinical findings, and laboratory results, beside the new radiological investigatory techniques.

The basic principle, that the patients with acute pancreatitis should initially be treated with intensive non operative measures, is generally accepted, unless diagnostic

laparotomy is indicated or if the patient is deteriorating despite of the intensive medical therapy.

The timing and choice of the surgical procedures is a matter of controversy. In gallstone pancreatitis, cholecystectomy should be performed before the patient is discharged from hospital, usually about one week after admission.

Aggressive initial surgical debridement should be the first step in managing symptomatic pancreatic necrosis and that the presence of infection not be the sole determinant of intervention.

Aim of the work:

The aim of work is to detect the proper timing of surgical intervention for the management of acute pancreatitis and associated gall stones and common bile duct stones. It's also to detect the timing and recent surgical technique for the management of necrosis, infected necrosis, abscess and pancreatic pseudocyst.

ANATOMY OF THE PANCREAS

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The pancreas is a soft, lobulated, greyish-pink gland, 12-15 cm long extending nearly transversely across the posterior abdominal wall from the duodenum to the spleen behind the stomach. Its broad right extremity or head is connected to the body by a slightly constricted neck; its narrow, left extremity is the tail *(Peter Williams et al., 1989).*

Relations of the pancreas: (Figure 1, 2)

The head is moulded to the C. shaped concavity of the duodenum, which is completely filled by the head. It lies over the inferior vena cava and the right and left renal veins at the level of L2 vertebra. Its posterior surface is deeply intended, and sometimes tunnelled by the terminal part of bile duct. 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 of the head. The anterior surface of the head lies in both supracolic and infra colic compartements; some of this surface is bare, for the leaves of the greater omentum and of the transverse mesocolon are here wide a part at their attachments *(McMinn, 1990).*

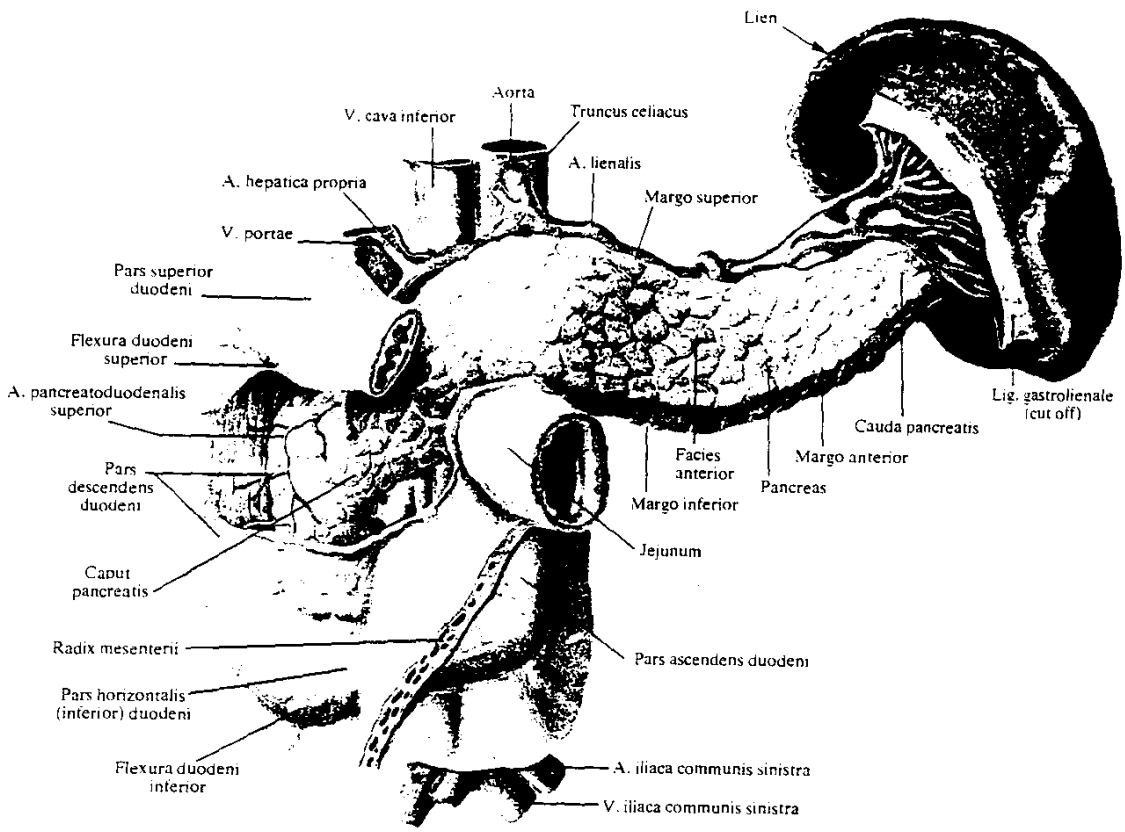

Figure (1): Pancreas, doudenum and spleen; anterior aspect (Sinelnikov R.D. 1989).

The head is related posteriorly to the hilum of the right kidney, I.V.C. and right crus of diaphragm *(Skandalakis et al., 1979).*

The Neck about 2 cm long, projects antrosuperiorly and to the left from the head *(Peter Williams et al., 1989).* It is defined as the narrow band of the pancreatic tissue that lies in front of superior mesenteric and portal veins, continuous to the

right with the head and to the left with the body *(Volk and Allen, 1986).*

At the lower margin of the neck the superior mesenteric vein is embraced between the neck and the uncinate process of the head, and the splenic vein runs into the left side of the vertical superior mesenteric-portal channel. The transverse mesocolon is attached towards the lower border of the neck, which lies in the stomach bed of the lesser sac (omental bursa) *(McMinn, 1990).*

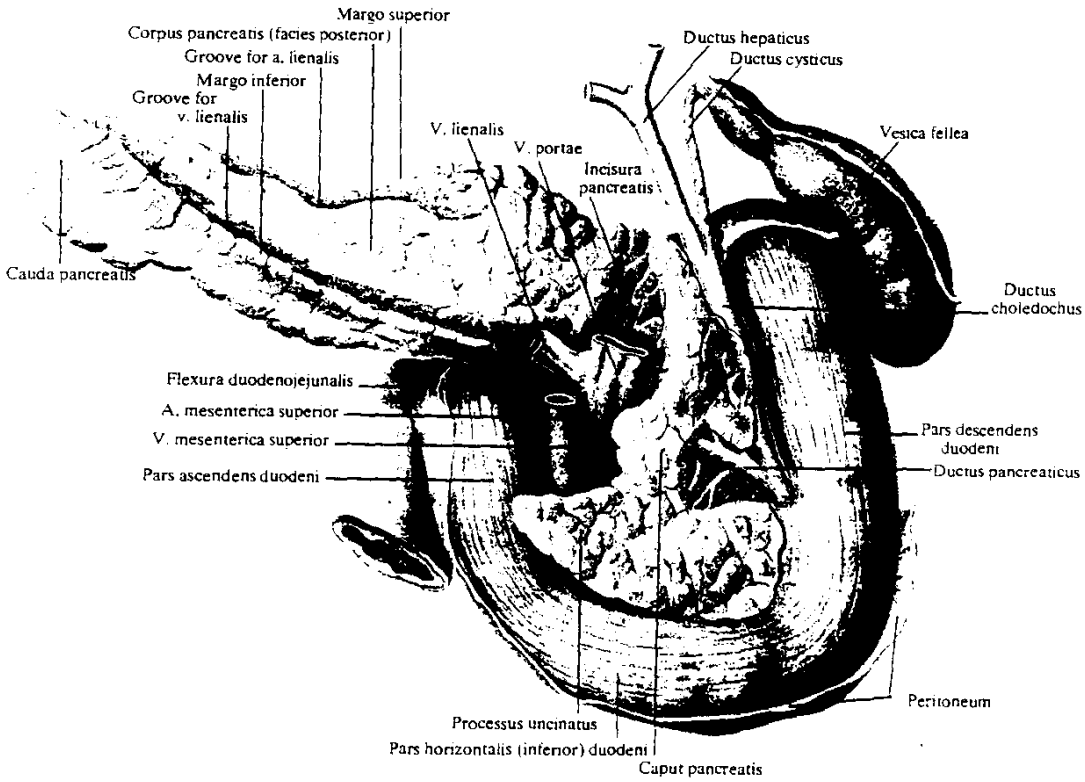

Figure (2): Pancreas, duodenum, gall bladder, and bile ducts; posterior aspect (Sinelnikov R.D. 1989).

The body of the pancreas passes from the neck to the left, sloping gently upwards across the left renal vein and aorta, left crus of the diaphragm, left psoas muscle and lower pole of the left suprarenal gland, to the hilum of the left kidney. Its upper border crosses the aorta at the origin of the coeliac trunk; the tortuous splenic artery passes to the left along the upper border of the body and tail *(Peter Williams et al., 1989).*

Transverse mesocolon is attached toward the lower part of this surface the body lies therefore, behind the lesser sac where it forms part of stomach bed. Because the pancreas usually slopes slightly upwards, its whole length is not necessarily seen in one CT scan. The splenic vein lies closely applied to its posterior surface, the inferior mesenteric vein joins the splenic vein behind the body of the pancreas infront of the left renal vein where it lies over the left psoas muscle *(McMinn, 1990).*

The Tail of the pancreas 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 lienorenal ligament and thus touches the spleen *(McMinn, 1990).*

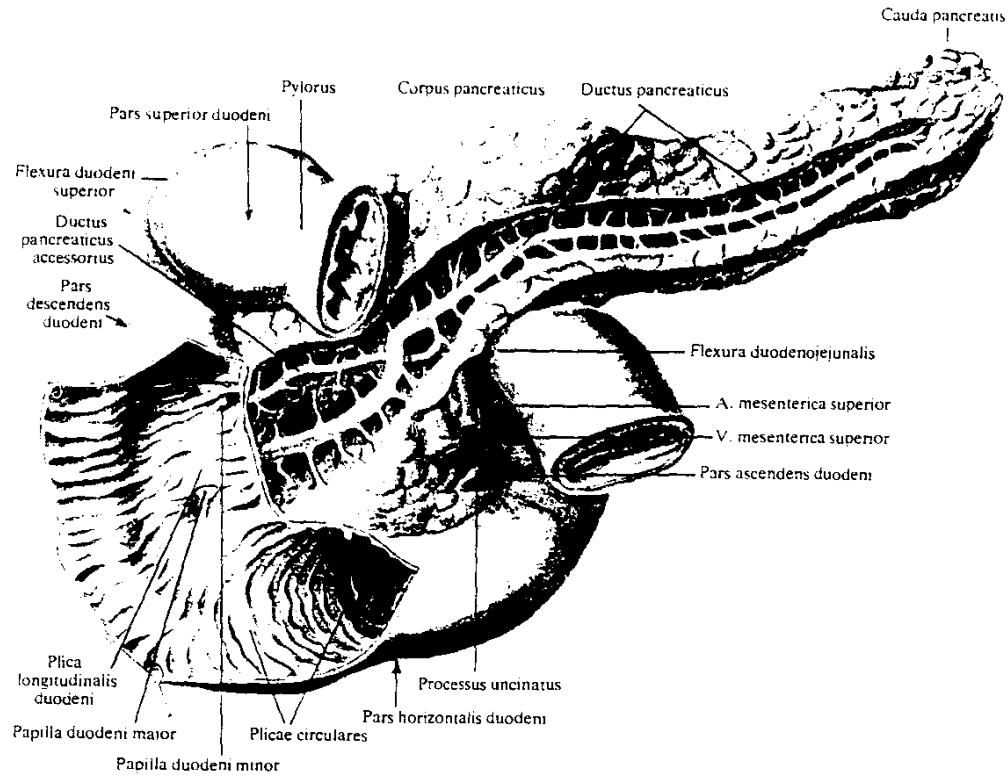

Figure (3): Pancreas, pancreatic duct system and duodenum; anterior aspect (Sinelnikov R.D. 1989).

The pancreatic ducts

The main pancreatic duct is a continuous tube leading from the tail to the head, gradually increasing in diameter as it receives delicate tributaries on its way, which join it almost at right angles. It joins the bile duct at the hepato-pancreatic ampulla. It drains the tail, body, neck and upper part of the head of the pancreas.

The accessory pancreatic duct drains the uncinate process and lower part of the head and crosses the main pancreatic duct to open in the duodenum at the minor duodenal papilla, situated 2 cm proximal to the major papilla *(Peter Williams et al., 1989)* Figure (3).

The duodenal end of the accessory duct may fail to expand; secretion is then diverted along the connecting channel into the main duct.

In 10% of the cases, the main duct drains into the accessory papilla and has no connection with common bile duct *(Volk and Allen, 1986).*

The arterial blood supply of the pancreas

The pancreas is supplied with blood from both the coeliac trunk and the superior mesenteric artery. The head of pancreas and the concave surface of duodenum are supplied by 2 pancreatico-duodenal arterial arcades:

1. Anterior pancreatico duodenal arcades:

Is formed by anastomosis of the antero-superior pancreatico-duodenal artery (branch from gastro-duodenal) and