PANCREATIC RESECTION AND PALLIATION FOR PANCREATIC CANCER

ESSAY

SUBMITTED FOR PARTIAL FULFILLMENT OF MASTER DEGREE IN GENERAL SURGERY

BY

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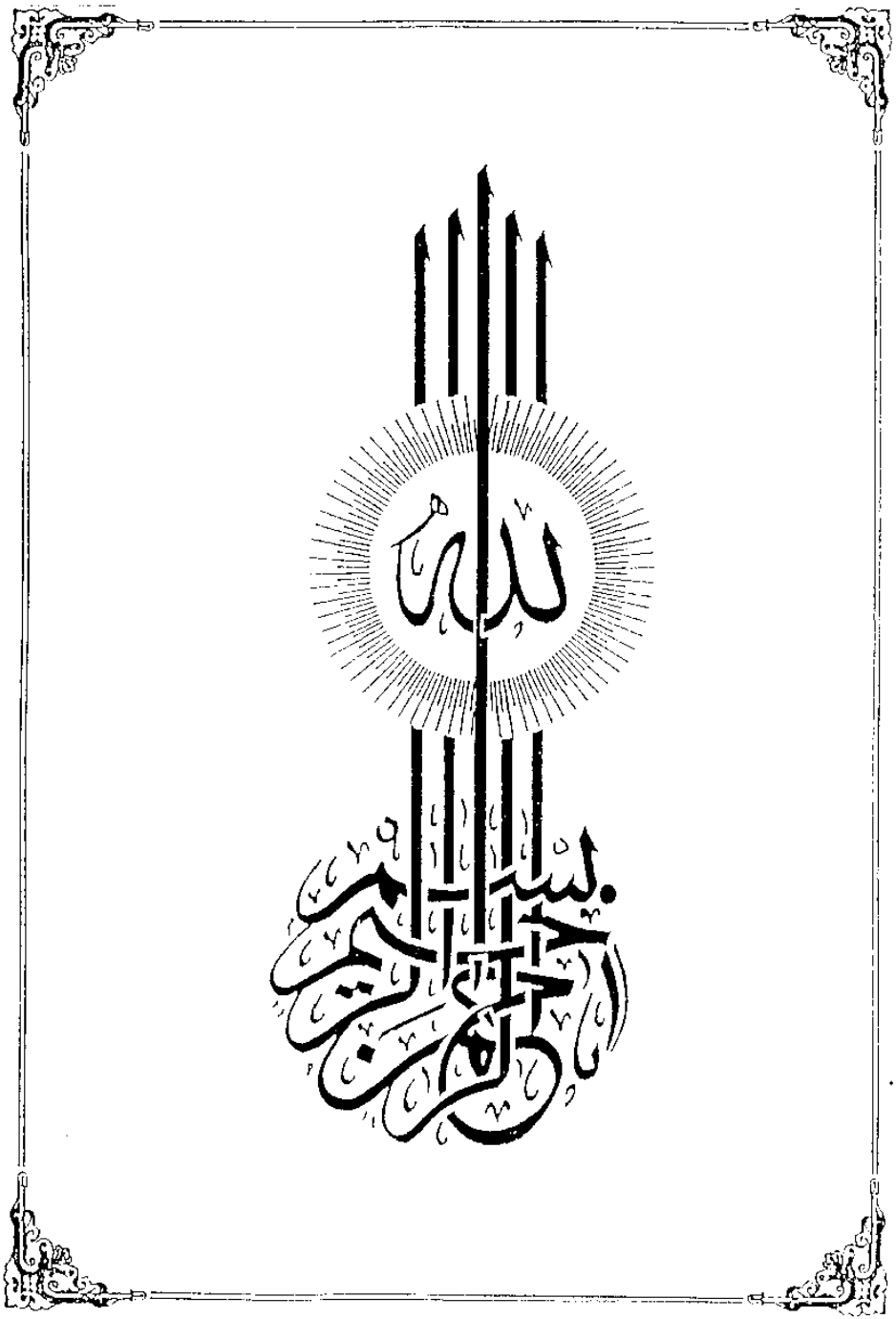
MAGID NAGIB GUIRGUIS



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DEDICATED TO :

My WIFE

AND

My CHILDREN

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CONTENTS

INTRODUCTION

1. INTRODUCTION

The global incidence of pancreatic cancer has been increasing in the past several decades,*(Surjait 1989)* in USA it now ranks second only to colorectal carcinoma among alimentary tract cancers *(Mac Sween 1992)*. In the United States 28000 cases diagnosed each year *(Cameron 1991)*. The incidence reported in the UK (12 per 100000 population / year) has doubled in the last 20 years. *(Russel 1992)*.

Pancreatoduodenectomy operations have now been done for a variety of benign and malignant lesions. and it is now well accepted for cancer of the ampulla, duodenum and distal common bile duct. *(Jordan 1989)*

In the majority of patients operation is performed for a proved carcinoma or a mass in the pancreas with clinical features of carcinoma. *(Neoptolemos 1990)*.

The important diagnostic modalities remain ultrasound, ERCP, and contrast - enhanced CT scanning. Endoluminal ultrasonography has been shown to have a near 100% detection rate for pancreatic cancer. *(Neoptolemos 1992)*.

Ultrasound - guided core - biopsy is probably the best available technique for obtaining a tissue diagnosis. *(Jenning 1989)*.

In the experience of most pancreatic surgeons, only 15 per cent of patients with pancreatic cancer have disease suitable for resection. *(Reber 1989).*

Earlier diagnosis has not had an impact on curability and 85 per cent of patients with this disease still require some form of palliation. *(Surjait 1989).*

The aim of this work is to review the literature regarding pancreatic cancer with special emphasis on operative diagnosis and determination of resectability, technique of pancreatoduodenectomy, its complications, technique of reconstruction of gastrointestinal continuity, contraversies concerning the pancreatoduodenectomy and surgical palliation for pancreatic cancer.

ANATOMY OF PANCREAS

2. *ANATOMY OF THE PANCREAS*

The name pancreas is derived from the Greek; Pan = All and Kreas = Flesh.

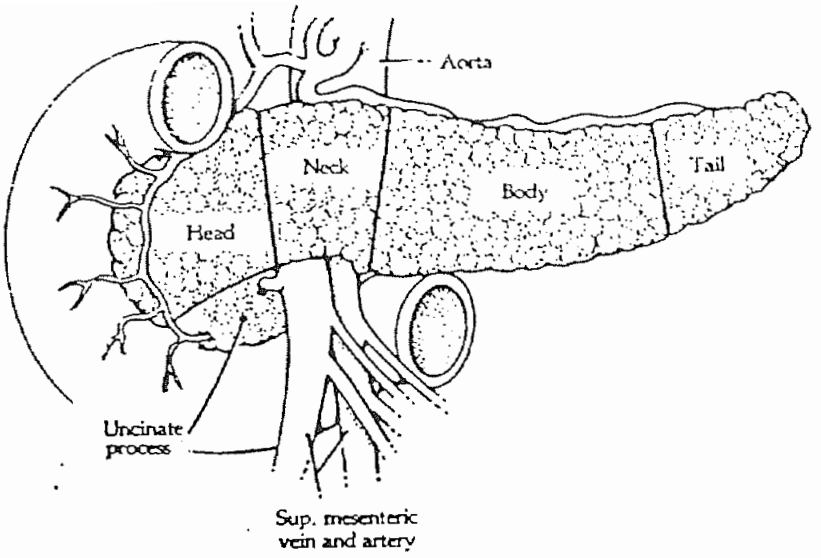
The pancreas is neither striking in appearance nor obvious in function. Its early history is hardly more than a list of the names of those who noticed it in their dissections before passing on to more interesting organs. It was only with demonstration of the digestive enzymes by Claud Bernard in 1850 that the pancreas became a complete organ with an important function and thus a worthy object of study. *(Skandalakis 1992)*.

The pancreas is an elongated Hummer-shaped *(Anson 1984)* or Retort-shaped gland, *(Last 1986)* soft, lobulated, greyish-pink of 12-15 cm. length *(Gray 1989)* and about 80 gm wieght. *(Russell 1992)*.

Parts of the pancreas :

Head

The head of the pancreas is flattened and has an anterior and a posterior surface. The anterior surface is adjacent to the pylorus and the transverse colon. The anterior pancreatoduodenal arcade parallels the duodenal curvature and is related to the pancreatic surface.



The five parts of the pancreas . The line dividing the body and tail is entirely arbitrary. (Skandalakis L.J. 1992).

The posterior, surface is close to the hilus and medial border of the right kidney, the right renal vessels and the inferior vena cava, the right crus of the diaphragm, the posterior panereatoduodenal arcade, and the right gonadal vein. *(John1992).*

The distal portion of the common bile duct may lie behind the pancreatic head in a groove (15 percent), or it may be partially or totally embedded in the pancreatic substance (85 percent). *(Gray S.W. 1992).*

Uncinate process

An extension of the head of the pancreas passes downward and slightly to the left, forming the uncinate process. it passes behind the portal vein and the superior mesenteric vessels, and in front of the aorta and inferior vena cava. In sagittal section, the uncinate process lies between the aorta and the superior mesenteric artery having the left renal vein above and the duodenum blow. *(Skandalakis 1992).*

The uncinate process may by absent or it may completely encircle the superior mesenteric vessels. If the process is well developed, the neck of the pancreas must be sectioned from the front to avoid injury to the vessels. Short vessels form the superior mesenteric artery and vein supply the uncinate process *(White 1972).*

pancreas to travel between the leaves of the mesocolon. *(Skandalakis 1992).*

Posteriorly, the body is related to the aorta, the origin of the superior mesenteric artery, the left crus of the diaphragm, the left kidney and its vessels, the left adrenal gland, and the splenic vein. Small vessels from the pancreas enter this vein. They must be ligated during pancreatectomy if the splenic vein and the spleen are to be preserved. *(John 1992).*

Tail :

The tail of the pancreas is relatively mobile, its tip reaches the hilus of the spleen. Together with the splenic artery and the origin of splenic vein, it is contained between two layes of the splenorenal ligament. The outer layer of the ligament is the posterior layer of the gastrosplenic ligament, careless division may injure the short gastric vessels, the ligament is almost avascular, but digital manipulation should stop at the pedicle. *(White 1973)*

The Pancreatic Ducts

The first description of the main duct was by Wirsung in 1642. Bidloo (1685) observed the junction of pancreatic and common bile ducts, the enlargement of the lumen (ampulla), and the projection of the ducts into the duodenal lumen (Papilla). Bidloo's

work was largely neglected, and the ducts were redescribed in 1720 by Abraham Vater, whose name became attached to the ampulla and the papilla. The accessory duct and papilla were described by Santorini in 1724, but the findings were not published until 1775. *(Dowdy G.S 1962)*.

The main pancreatic duct (of Wirsung) arises in the tail of the pancreas. Through the tail and body of the pancreas, duct lies midway between the superior and inferior margins and slightly more posterior than anterior. The main pancreatic duct and the accessory duct lie anterior to the major pancreatic vessels. *(John 1979)*.

The main duct crosses the vertebral column between the twelfth thoracic and the second lumbar vertebrae. In more than one half of persons, the crossing is at the first lumbar vertebra. *(John 1979)*. In the tail and body of the pancreas, from 15 to 20 short tributaries enter the duct in right angles. Superior and inferior tributaries tend to alternate. In addition the main duct may receive tributary draining the uncinate process and, in some individuals, the accessory pancreatic duct empties into the main duct. Small tributary ducts in the head may open directly into the intrapancreatic portion of the common bile duct. *(Skandalakis 1992)*.

On reaching the head of the pancreas, the main duct turns Caudad and posterior. At the level of the major papilla, the duct turns horizontally to join the caudal surface of the common bile duct and enters the wall of the duodenum, usually at the level of the second lumbar vertebra. *(Skandalakis 1992).*

The accessory pancreatic duct (of Santorini) may drain the anterosuperior portion of the head, either into the duodenum at the minor papilla or into the main pancreatic duct. It is smaller than the main pancreatic duct (of Wirsung) and opens into the duodenum on the minor papilla. *(Dowdy 1962)*

In about 10 percent of individuals, there is no connection between the accessory duct and the main duct. This fact is important to remember when contrast medium is injected into the main duct. *(Skandalakis 1992).*

There is no minor papilla in 30 percent. In some individuals with a minor papilla, the terminal portion of the accessory duct is too small to permit the passage of any quantity of fluid. Three papillae have been seen. A curious loop in the main pancreatic duct was found in 3 of 76 speciments examined by Baldwin; and identical example was reported by Reinhoff. *(Rienhoff 1945)*