UPDATE IN THE DIAGNOSIS AND TRETMENT OF CHOLANGIOCARCINOMA

Essay

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of Master Degree in
General Surgery

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صدق الله العظيم

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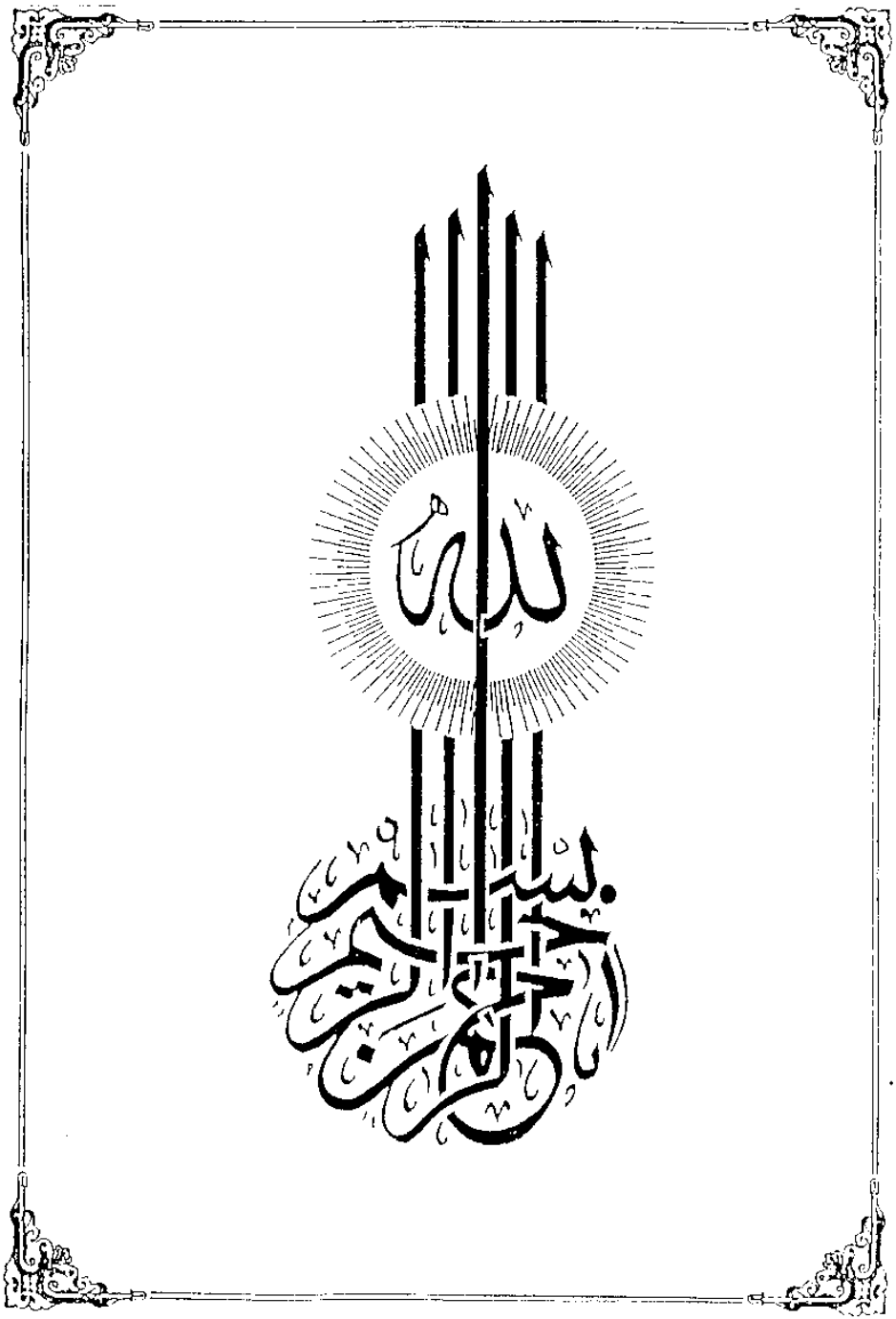

To My Parents

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Introduction

Over the past century, a large amount of information has accumulated concerning the pathology, clinical manifestations, and outcome in patients with cholangiocarcinomas.

Despite its infrequent occurance, the diagnosis of cholangiocarcinoma should be considered in every case of obstructive jaundice. It is only in the last two decades there is revolutionary improvement in radiographic techniques that allowed prompt, accurate diagnosis at a stage where therapeutic approaches permit resection or effective palliative measures. Also, over the past ten years new interventional therapeutic modalities have evolved from the technical skills gained during performing hepatobiliary imaging procedures. These modalities are proved, effective, safe and cost effective palliative procedures compared to surgery.

Together, these relatively recent developments have sparked an international resurgence of interest in the diagnosis and management of malignant bile duct lesions.

SURGICAL ANATOMY OF HEPATO-BILIARY TREE

Surgical Anatomy Of Hepatobiliary Tree

Embryology (Fig. 1)

The liver, gallbladder and bile ducts arise as a ventral bud (hepatic diverticulum) from the most caudal part of the foregut The hepatic diverticulum extends into the septum transversum and expands the ventral mesentery. The hepatic diverticulum divides into: a large cranial part which gives rise to interlacing cords of liver cells and the intra-epithelial lining of the intrahepatic portion of the biliary apparatus. The liver cells anastomose around pre-existing endothelium-lined spaces which will become the hepatic sinusoids. The fibrous, haemopoietic and kupffer cells are derived from the mesenchyme of the septum transversum and a small caudal part which expands to form the gallbladder; its stalk becomes the cystic duct. Initially the extrahepatic biliary apparatus is occluded with endodermal cells, but it is later recanalized. The stalk connecting the hepatic and cystic ducts to the duodenum becomes the common bile duct **(Decker and du Plessis, 1986).**

Surgical anatomy of the liver :

The abdominal surgeon is able and willing to resect almost any structure in the abdomen except the liver. The respect afforded this organ is often based on an unfamiliarity with the anatomy of the organ, which leads to insecurity concerning the vital intrahepatic structures, especially the large viens. These intrahepatic structures are seldom taught or displayed in anatomy courses **(Ger, 1989).**

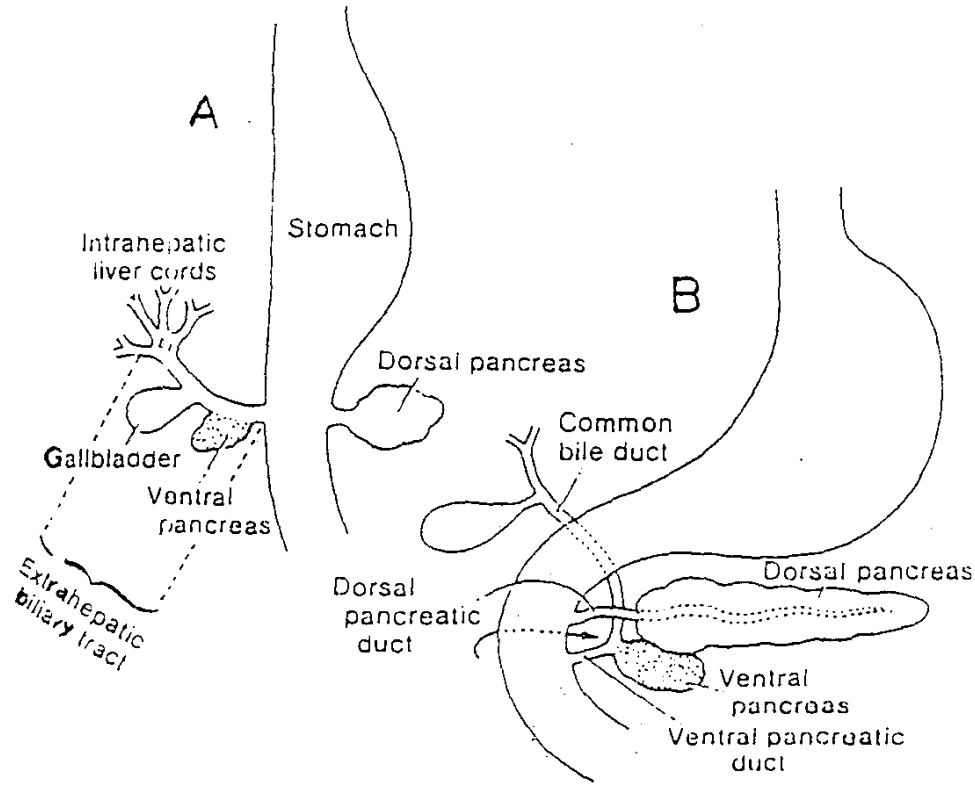

Fig.(1) :The development of the extraheptic biliary tract

A. The hepatic diverticulum. B. Rotation of the duodenum.

skandalakis JE,et al., (1983).

Segmental anatomy (Fig. 2)

The division of the liver into segment, which are delineated by fissures and the distribution of the vascular and ductal structures, has led to a much more aggressive approach to liver surgery. The four fissures, only one is represented superficially(The portoumblical fissure), while. the other three fissures are related to the three large hepatic veins **(Ger, 1988).**

Right fissure :

This fissure commences at the right margin of the inferior vena cava and follows the attachment of the right superior coronary ligament to about 3 to 4 cm from the junction of the latter with the right inferior layer. The fissure then curves anteriorly to a point on the inferior margin about midway between the gall bladder fossa and the right margin of the liver. Passing posteriorly, the fissure follows a line that runs parallel to the gall bladder fossa and crosses the caudate process to reach the right side of the inferior vena cava. Lying almost in the coronal plane, the fissure contains the right hepatic vein, with branches passing anteriorly to segment V and VIII and posteriorly to segment VI and VII **(Ger, 1988).**

Median fissure :

This fissure passes from the gall bladder fossa to the left margin of the inferior vena cava.

Posteroinferioly, the fissure is represented by a line from the gall bladder fossa to the main bifurcation of the hepatic pedicle (Portal traid), and hence to the retrohepatic inferior vena cava **(Ger, 1988).**

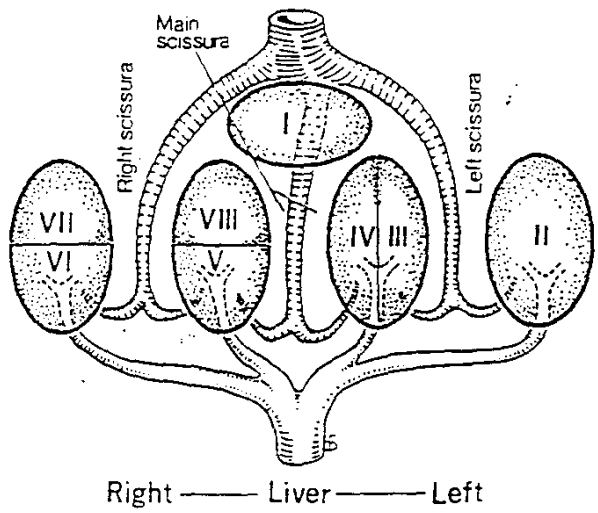

Fig.(2) Schematic representation of the functional anatomy of the liver there are three main hepatic veins lying within the liver, dividing the liver into four sectors, each receiving a portal pedicle **(Ger, 1989).**

Left fissure :

It runs from the left side of the inferior vena cava to a point between the dorsal one third and ventral two thirds of the left margin of the liver. Inferiorly, the fissure passes to the commencement of the ligamentum venosum **(Ger, 1988).**

Portoumblical fissure :

This fissure is marked superficially by the attachment of the falciform ligament which contains the ligamentum teres hepatis in its inferior border. Angled less generously than the right fissure, it meets the inferior margin of the liver at an angle of about 50° **(Ger, 1988).**

The liver segments : (Fig.3, 4)

Segment 1 : This segment, (the caudate lobe and process) is situated on the posteroinferior surface of the liver posterior to the hilar plate is unlike other segments in that it has its own inflow from the hepatic pedicle (portal triad) and an outflow into the inferior vena cava that is independent of the hepatic veins **(Ger, 1988).**

Segment II : Like segment 1, this segment is situated dorsally and it presents on the superior and inferior surfaces. It lies between the left margin of the liver on the left and between the portoumblical fissure superoanteriorly and the fissure for the ligament venosum posteroinferiorly on the right; anteriorly, it is limited by the left fissure. It receives blood from branches of the vessels of the hepatic pedicle (portal triad) that arise from the posterolateral aspect of its left division as the latter turns into the portoumblical fissure. It is drained by dorsal branches that enter the left hepatic vein **(Ger,1988).**

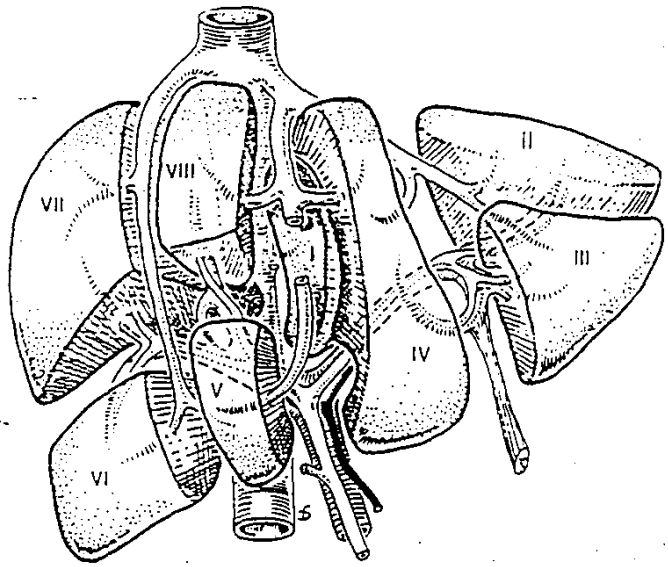

Fig.(3) Diagramatic representation of segmental anatomy of the liver. The eight segments (numbered individually in Roman Numerals) are based on their own portal venous blood supply **(Ger, 1988).**

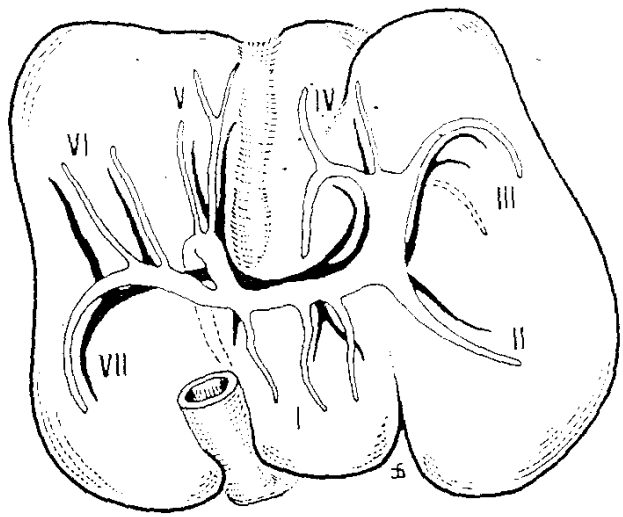

Fig. (4) Inferior view (**Ger,1989**).