Reoperative Biliary Surgery

Essay

Submitted for Partial Fulfilment of
Master Degree In General Surgery

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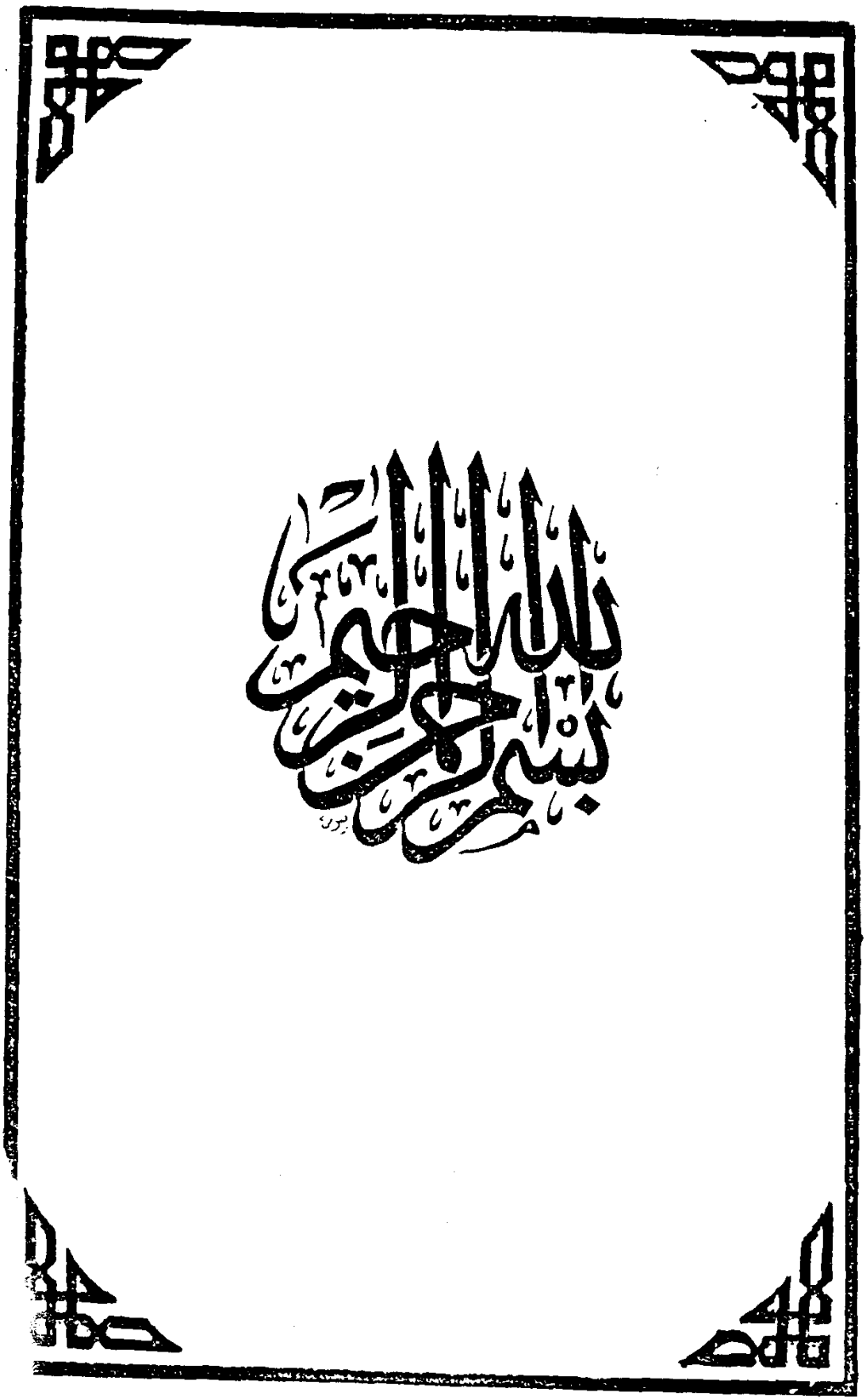

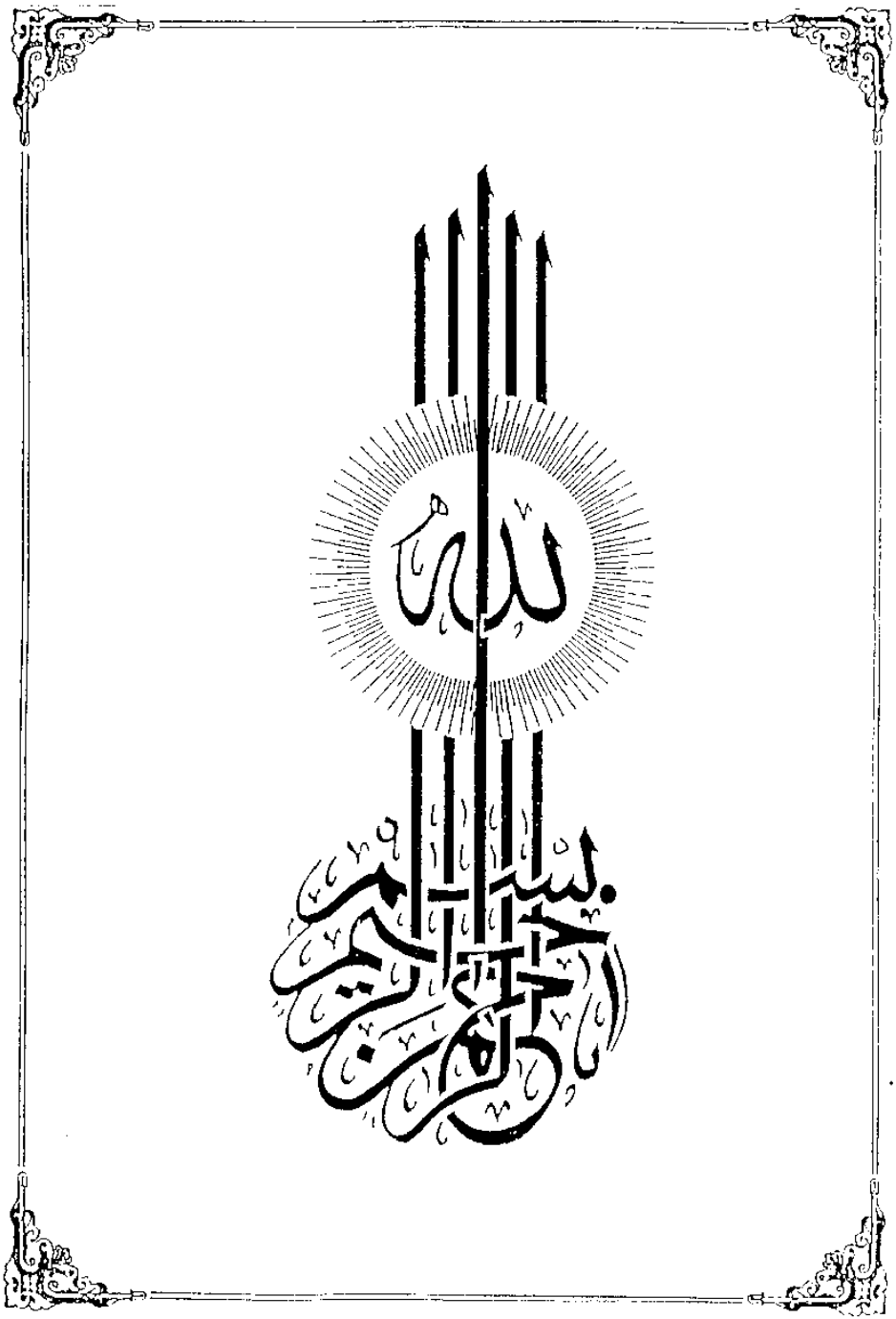

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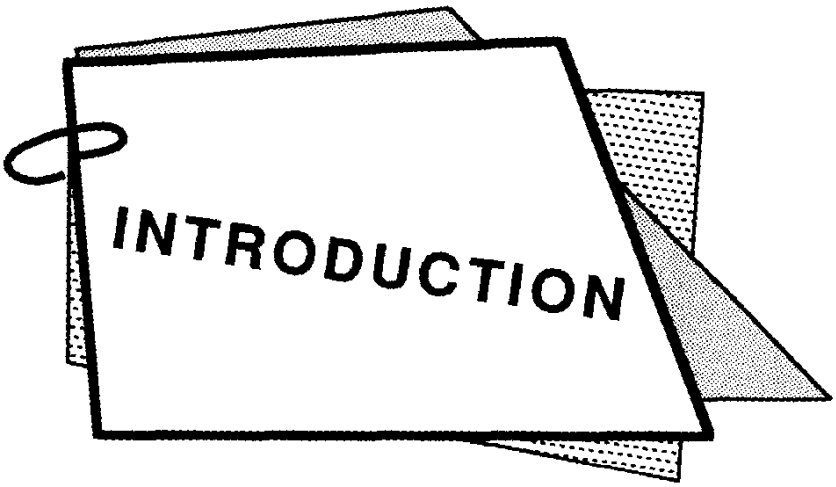
INTRODUCTION

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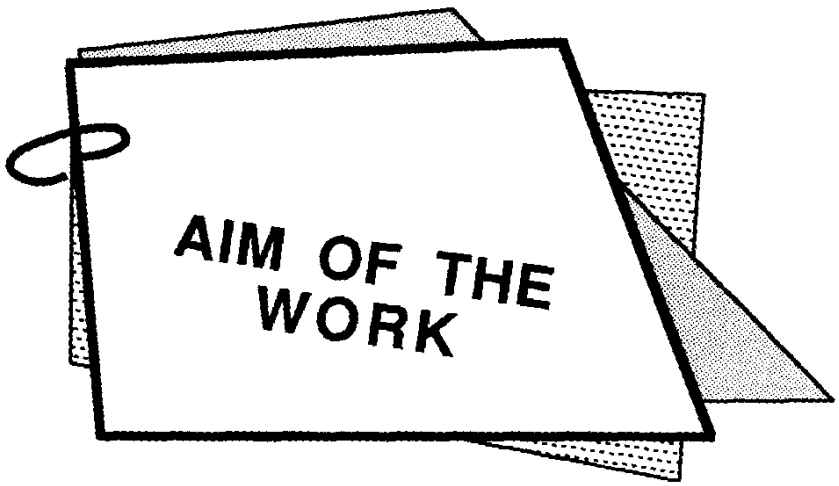
Meticulous dissection in a bloodless operative field and absolute identification of anatomical structures are laudable principles in any surgical procedure, but never are they so vital as in gall bladder and biliary tract operations *(Soper, 1985)*. The closeness to the portal vein, hepatic arteries and other structures vital to life, the propensity for congenital anatomical variations, and the obliteration of landmarks imposed by inflammation combine to emphasize the need for strict adherence to these general principles *(Gurll, 1985)*.

Operative injuries of the bile ducts are a rare, but sometimes catastrophic, consequence of abdominal surgery *(O'Conner, 1992)*. Over ٥٠ % of bile duct injuries occur during biliary tract operations *(Browder et al., 1987)*. Approximately 0.5% of cholycystectomies involve common bile duct injuries *(Blumgart et al., 1987)*. Ductal injuries may occur in cases where massive bleeding or distortion of anatomical planes are encountered during a difficult cholycystectomy or gastrectomy *(Andren-Sandberg et al., 1985)*.

More often injuries occur during the so-called easy cholycystectomy and are not recognized until after the initial operation *(Hillis et al., 1977)*.

Most injuries involve direct trauma to ductal structures, while 2% to 7% are "non-traumatic", resulting from necrosis of the duct caused by adjacent abscess, inflammation or electrocautery injury *(Braasch et al., 1985)*.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The aim of this work is to discuss in brief the possible complications following biliary surgery necessitating reoperative intervention, and to mention possible alternative surgical procedures available for each complication.


REVIEW OF
LITERATURE

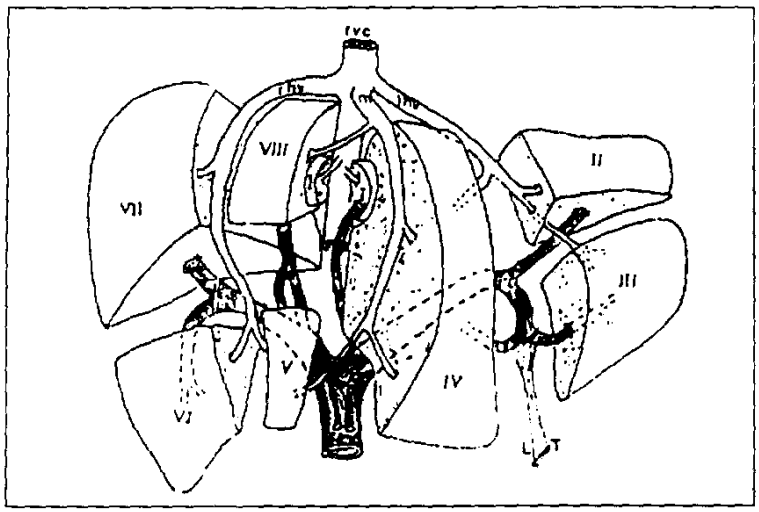
Chapter I

Surgical Anatomy of The Biliary System

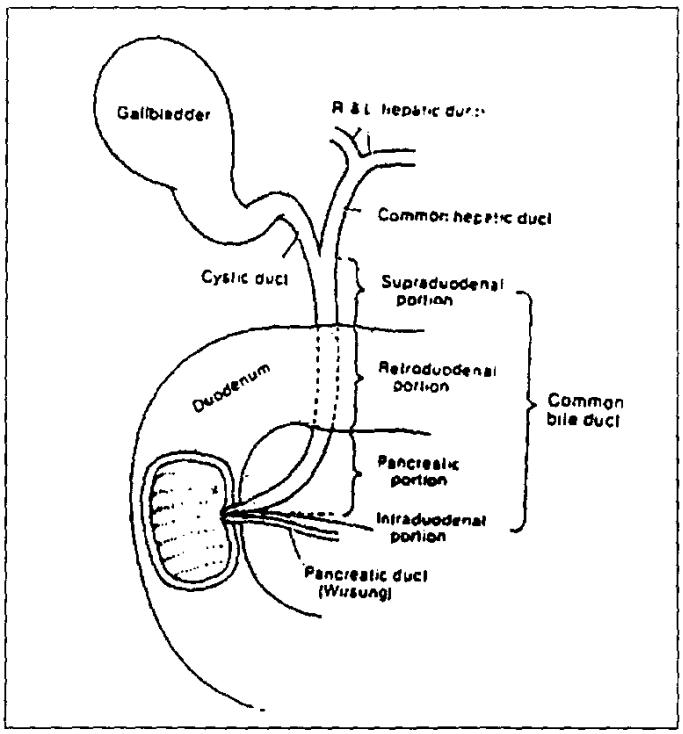
The anatomy of the biliary system has been the subject of extended research for many years. The biliary tract includes both intra and extra-hepatic biliary ducts.

Intra-hepatic biliary ducts:

The intra-hepatic ducts are enclosed with the portal vein and hepatic artery and their branches in a connective sheath derived from the fibrous capsule (Glisson) of the liver. The ducts run with other components of the hepatic pedicle to drain the different eight segments of the liver. Thus, on the right, segments V and VIII are drained by anterior descending and ascending branches, and segments VI and VII by posterior descending and ascending branches which join to from the right hepatic duct *(Ger, 1989)*. On the left, segments II and III are drained by two lateral branches and segment IV by one medial branch. The two lateral ducts unit so formed being joint by the medial branch to form the left hepatic duct. The caudate lobe drains by one duct, and the process by two ducts into the right and left hepatic ducts *(Ger, 1989)*.



Segmental Anatomy of The Liver *(Ger, 1989)*



The extrahepatic biliary tract and the four portions of the common bile duct *(Source from Skandalakis JE, Gray SW et al., 1983).*

Extra-hepatic biliary ducts:

Extra-hepatic ducts consist of the hepatic or excretory duct of the liver, the gall bladder, a reservoir in which bile accumulates and is concentrated before passing through the cystic duct which is the continuation of the gall bladder and the common bile duct which is union of the hepatic and cystic ducts *(Mcvay, 1984)*.

The hepatic ducts:

The intra-hepatic segmental bile ducts unite to form lobar ducts, which in turn, coalesce to form the right and left ducts that represent the beginning of the extra-hepatic biliary system.

The right hepatic duct:

It measures approximately 1 cm it enters the liver with a sharp curve which accounts for the fact that extra-hepatic biliary calculi are less commonly found in this segment *(Schwartz, 1990)*.

The left hepatic duct:

It is longer than the right and its average length is 2.5 cm which makes it more accessible because it has a more transverse course prior to entering the liver *(Schwartz, 1990)*.

The common hepatic duct:

It's formed in the depth of the transverse fissure of the liver by union of the right and left hepatic ducts. The resulting trunk

runs downwards, backwards and medially in the lesser omentum. At the liver hilus, the duct cross the portal vein and branches of the hepatic artery. As it leaves the hilus, it lies over the anterolateral aspect of the portal vein and maintains that position to its termination. The length of the duct averages 4 cm but may vary considerably depending upon the level at which it's joined by the cystic duct. The hepatic duct is related to the hepatic artery proper which sometimes runs closely along its left margin but usually lies some distance from it. From the right branch of the hepatic artery, the cystic artery runs dorsal to the hepatic duct to ramify over the anterior surface of the neck of the gall-bladder *(Mcvay, 1984).*

The gall bladder:

It is thin walled, pear shaped sac about 50 CC in volume It lies in a fossa in the inferior surface of the liver which separates the right lobe from the quadrate lobe. Loose connective tissue and peritoneum reflected from its sides, attach the gall bladder to the liver. It is divided into 3 parts ***(Skandalakis et al., 1983).***

The fundus:

It represents the rounded, blind end that occupies the cystic notch in the margin of the liver and exceeds it for a distance of 1 cm or more. It is directed downwards, forwards and to the left and is partly covered with peritoneum. When the gall bladder is