AETIOLOGY, INCIDENCE, DIAGNOSIS AND MANAGEMENT OF GALLSTONES IN EGYPT

THESIS

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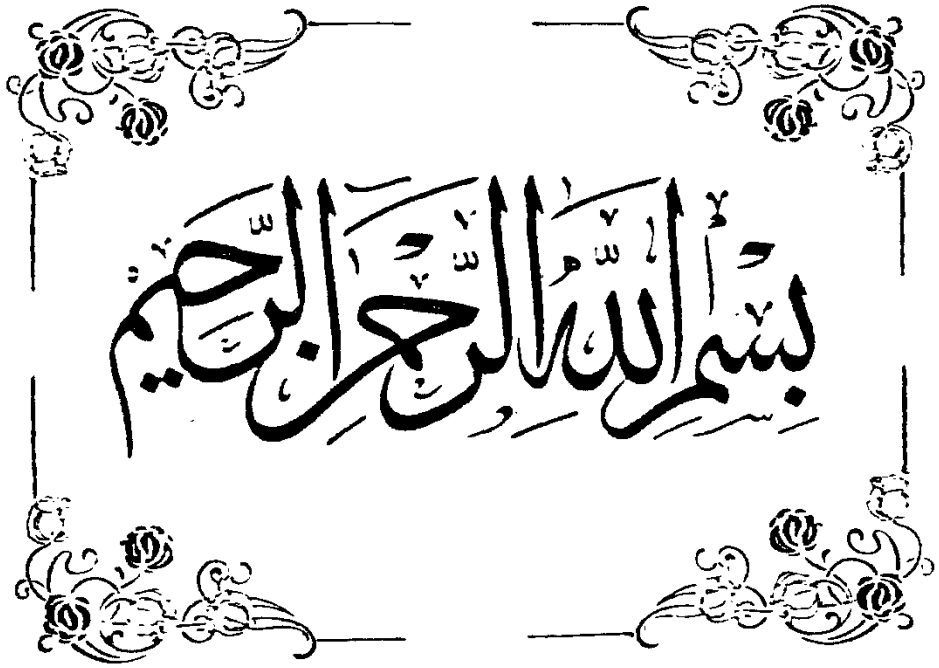

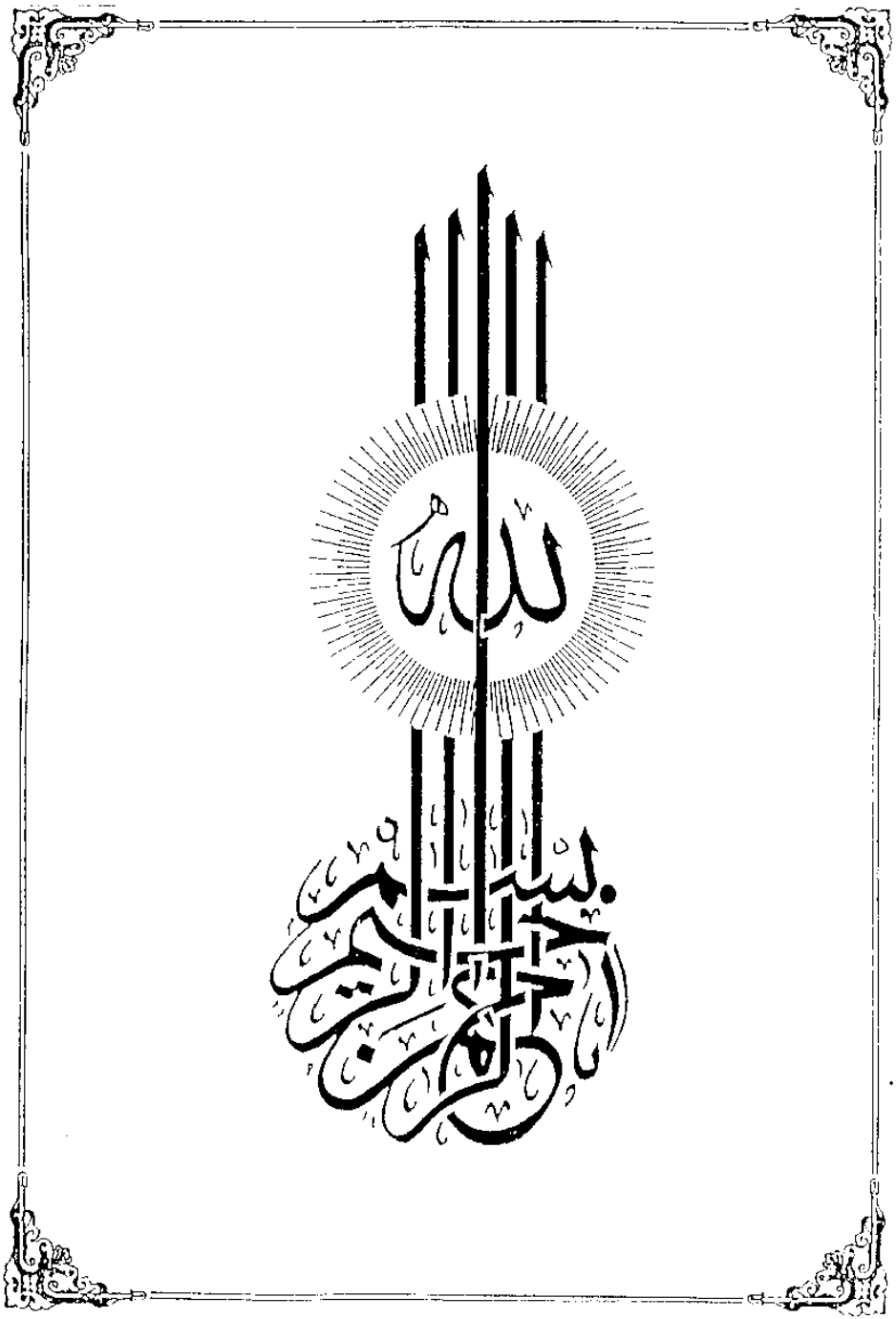

TO MY BELOVED MOTHER

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INTRODUCTION

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Recently cholelithiasis has been revealed to be a metabolic disease caused by environmental factors chiefly the diet *[Bell, 1974]*.

The traditional classification into cholesterol, pigment and mixed stones is based on naked eye appearance, but chemical analysis shows that there is no sharp division, but rather a contineous spectrum of stone composition

In patients with cholesterol-rich gallstones, the gallbladder bile is abnormal in that it is supersaturated with cholesterol in nearly all cases The association of gallstones with obesity is explained by the fact that bile saturation is increased in obesity *[Bennion and Grundy, 1975]*

A stone in the common bile duct is one of the most common and most serious complications of gallstones *[Ellis, 1985]*

Ultrasonography remains the most accurate and precise technique in the diagnosis of gallstone disease *[Matolo et al , 1982]*.

Chenodeoxycholic acid has been reported as effective method of cholesterol gallstone dissolution but the criteria required for its use makes its application limited (*Fromm, 1986*). Cholecystectomy remains the corner-stone treatment for most patients with symptomatic gallstones. It is a safe operation with little morbidity and very low mortality (*Keare and Tanner, 1988*).

In this study, it is attempted to evaluate the gallstone disease as regard its aetiology, incidence, diagnosis and treatment.

REVIEW
OF
LITERATURE

ANATOMY OF THE EXTRAHEPATIC BILIARY SYSTEM

NORMAL ANATOMY

Duct system

Hepatic ducts : According to *Schwartz (1985)*

The intrahepatic segmental bile ducts unite to form lobar ducts which in turn coalesce to form the right and left hepatic ducts that represent the beginning of the extrahepatic biliary system. The right hepatic duct has a sharp curve which accounts for the fact that extrahepatic biliary calculi are less commonly found in this segment. The left hepatic dut is longer than the right and has a greater propensity for dilatation as a consequence of distal obstruction. The junction of the right and left hepatic ducts occurs extrahepatically in almost all instances, but incision and dissection of the fibrous tissue in the hepatic plate may be necessary to expose this junction.

The common hepatic duct which begins at the confluence of the right and left hepatic ducts is 3 to 4cm in length, it is joined by the cystic duct to form the common bile duct (Fig 1).

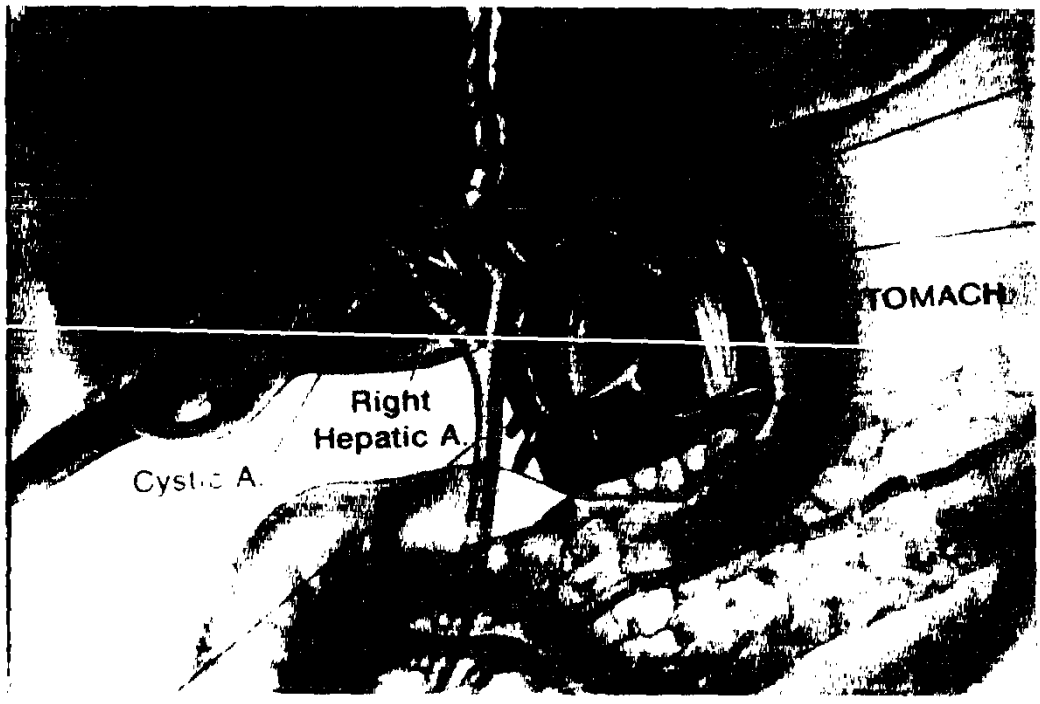

Fig. 1

Normal anatomy of the extrahepatic biliary system

The gallbladder

The gallbladder is located in the bed of the liver in line with the anatomic division of that organ into right and left lobes. It is pear shaped has an average capacity of 50ml, and is divided into four anatomic portions : fundus, body, infundibulum and neck (Fig 2).

The fundus represents the rounded blind end that normally extends beyond the liver margin and is covered with peritoneum. It contains most of the smooth muscle of the organ in contrast to the body which is the major storage area and contains most of the elastic tissue.

The body is covered extrahepatically by peritoneum and tapers into a neck which is funnel shaped and lies in the free border of the hepatoduodenal ligament (lesser omentum). The convexity of the neck may be distended into a dilatation known as the infundibulum or hartmann's pouch. The wall of the gallbladder is made up of smooth muscles and fibrous tissue and the lumen is lined with high columnar epithelium that contains cholesterol and fat globules. The mucus secreted into the gallbladder originates in the tubular alveolar glands and the globular cells of the mucosa lining the infudibulum and neck. The gallbladder enters the common duct system by means of cystic duct that has a variable length averaging 4 cm. It joins the common hepatic duct at

Fig. 2

Anatomy of the gallbladder

an acute angle and the right branch of the hepatic artery resides immediately behind it. Variation in reference to the point of union between the cystic duct and common hepatic duct are surgically important. The cystic duct may lie parallel to the common hepatic duct and actually be adherent to it for a variable length. It may be extremely long and unit with the hepatic duct in the duodenum. On the other hand, the cystic duct may be absent or very short and there may be an extremely high union with the hepatic duct, at times the cystic duct enters the right hepatic duct. In some instances the cystic duct may spirl either anteriorly or posteriorly in relation to the common hepatic duct and join the common hepatic duct from the left side. The segment of the cystic duct adjacent to the gallbladder bears a variable number of mucosal folds that have been referred to as valves of Heister but do not have valvular function.

The cholecystohepatic triangle

This anatomic region of surgical importance was orginally described by ***Calot in 1891***, it is formed by the cystic duct and the gallbladder below, the right lobe of the liver above, and the common hepatic duct medially. The contents of the triangle include the right hepatic artery that enters posteriorly to the common hepatic duct in 87 percent of cases, and anterior to the duct in the remaining 13 percent. It parallels the cystic duct for a short