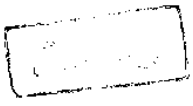
ENDOSCOPIC VERSUS SURGICAL MANAGEMENT OF COMMON BILE DUCT STONES

Thesis
Submitted in Partial Fulfilment
of "M.D." Degree in General Surgery



By

Gamal Abdel Rahman Abou Zeid El-Mowallid
M.B.B.CH., M.Sc.

Supervised by

PROF. DR. NABIL AMIN EL-MEHAIRY
Professor of General Surgery
Ain Shams University

PROF. DR ABDEL RAHMAN EL-ZAYADY
Professor of Tropical Medicine
Ain Shams University

DR. MAGDY BASIONY
Lecturer of General Surgery
Ain Shams University

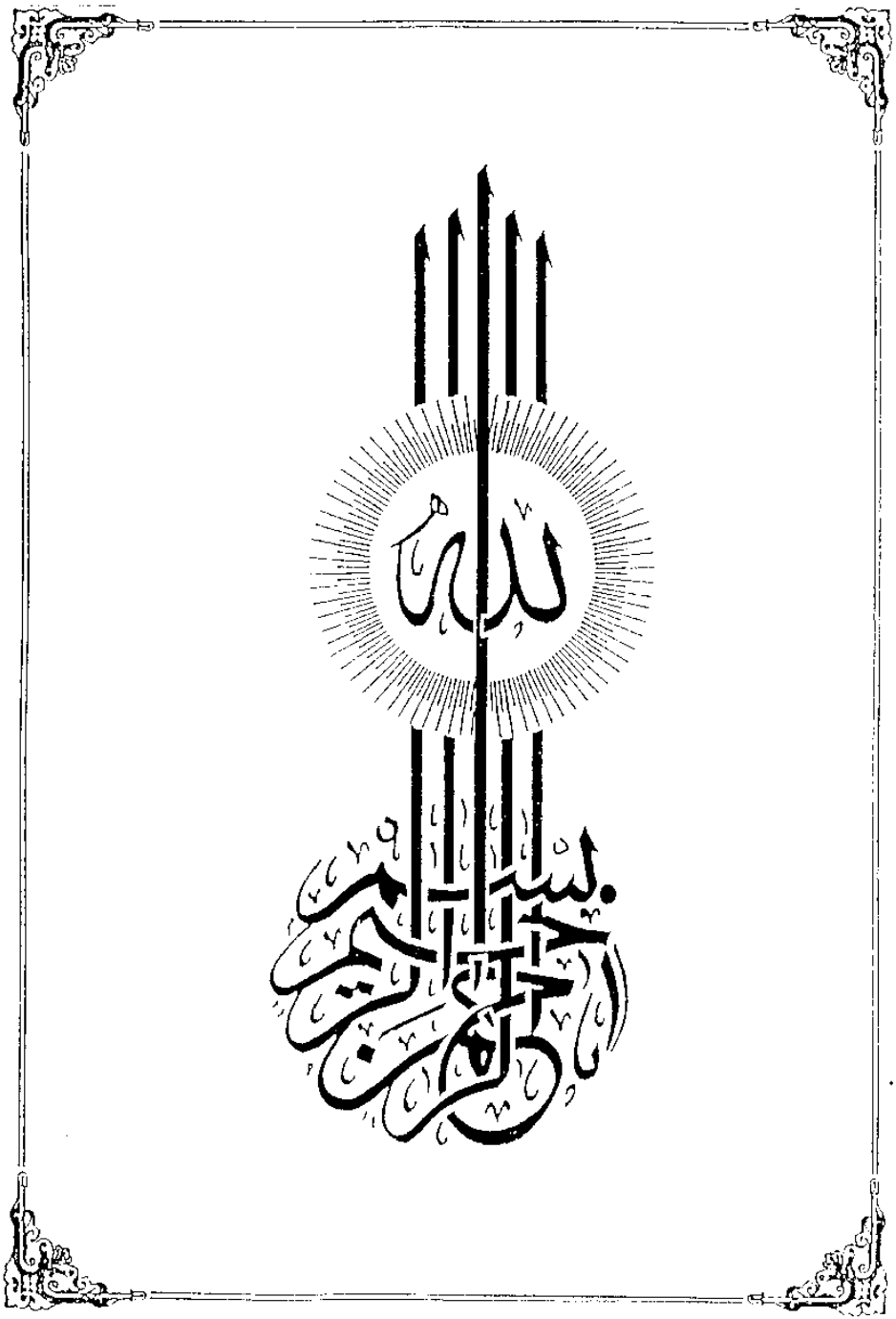
FACULTY OF MEDICINE
AIN SHAMS UNIVERSITY
CAIRO - 1993

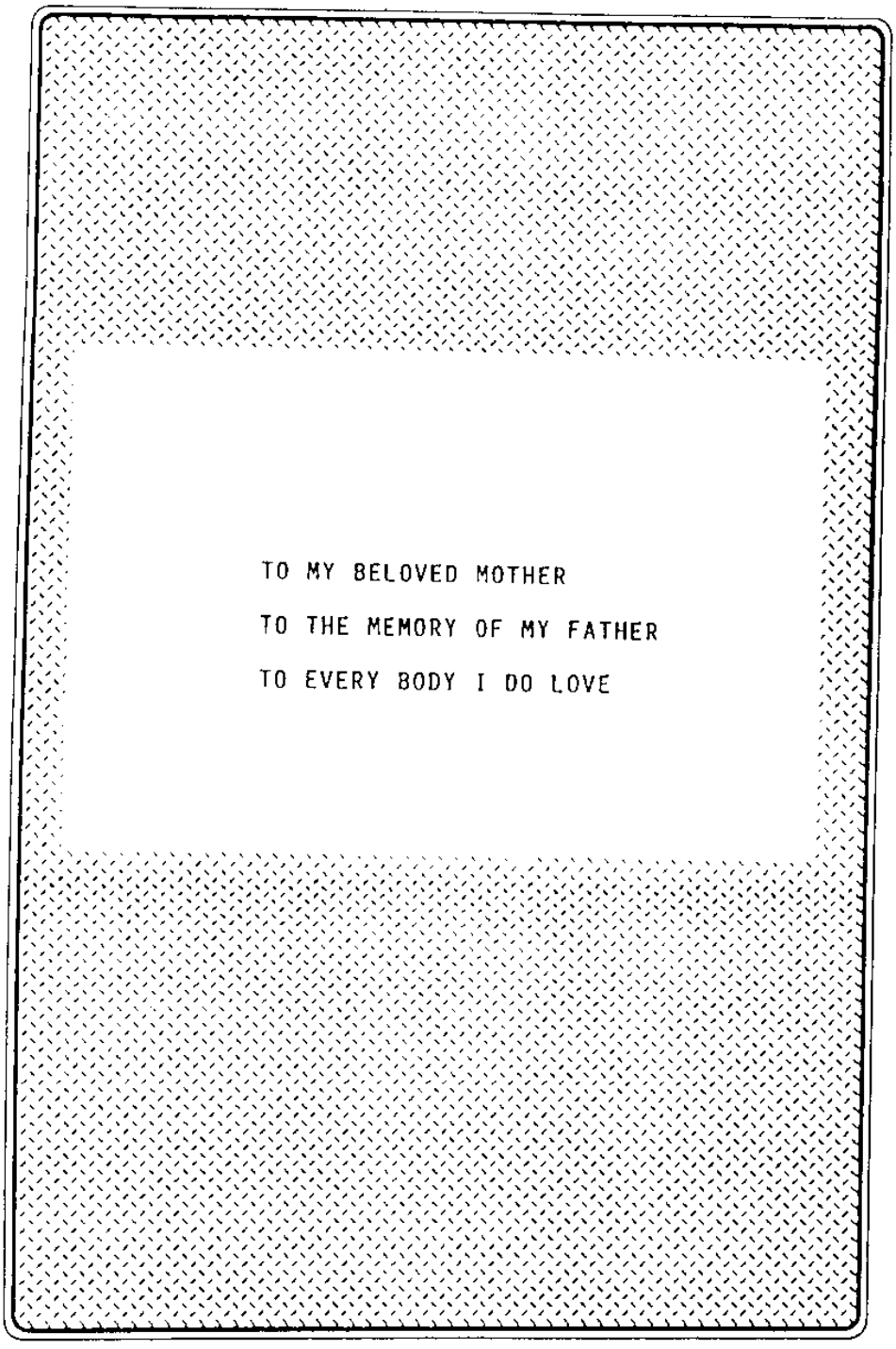
بسم الله الرحمن الرحيم

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنْفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ ۗ
أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُ عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ ﴿٥٣﴾

صدق الله العظيم

سورة فصلت





ACKNOWLEDGEMENT

First and foremost, thanks are due to God.

I like to record my indebtedness and express my gratitudes to Prof. Dr. NABIL AMIN EL-MEHAIRY for his supervision, help and valuable advices for the improvement of this work.

I'd like also to express my deep gratitudes to Prof. Dr. ABDEL RAHMAN EL-ZAYADY for his major and basic contributions for the development of this work.

Also I do not know how to express my pure grateful thanks to Dr. MAGDY BASIONY for his kind patience with me and for the long time he spent in reviewing and improving this work.

Lastly but not least, I'm deeply grateful to all who have contributed to this thesis, especially the professors and colleagues in surgery unit-7-in the Demerdash hospital and the staff workers in ASUSH, and the radiology -department.

CONTENTS

ABBREVIATION

Alk.Phosph.	: Alkaline phosphatase
ALT.	: Alanin amino transferase
AS	: Aortic stenosis
AST	: Aspartate amino transferase
ASUSH	: Ain Shams University Specialized Hospital
CBD	: Common bile duct
CCK	: Cholecystokinin
CCK.PZ.	: Cholecystokinin-Pancreozymin.
CDD	: Choledochoduodenostomy
CHD	: Common hepatic duct
CT	! Computed tomography
DM	: Diabetes mellitus
ECG	: Electrocardiography
EPt	: Endoscopic papillotomy
ERCP	: Endoscopic retrograde cholangiopancreatography.
E/S group	: Endoscopy /Surgery group.
ES or EST	: Endoscopic sphincterotomy.
ESWL	: Extracorporeal shock-wave lithotripsy
FBS	: Fasting blood surgar
GB	: Gallbladder
ɣ G.T	: Gamma glutamyl transferase
HA	: Hepatic artery
IHB	: Incomplete heart block
Int. obst.	: Intestinal obstruction.
I.U.	: International units
I.V.C.	: Intravenous cholangiography
K-A	: King-Armstrong units.
LDH	: Lactate dehydrogenase.
LHA	: left hepatic artery
LHD	: Left hepatic duct.
MRI	: Magnetic-Resonance-Imaging.

M.S.	: Mitral stenosis
MTBE	: Methyl tert butyl ether
NMR	: Nuclear magnetic Resonance
OMI	: Old myocardial infarction.
PD	: Pancreatic duct
P.T.	: Prothrombin time
PTC	: Percutaneous transhepatic cholangiography.
PTCD	: Percutaneous transhepatic cholangiodrainage.
RBCs	: Red blood corpuscles
RHA	: Right hepatic artery
RHD	: Right hepatic duct
S.group	: Surgery group.
SGOT	: Serum glutamic oxaloacetic transaminase = AST.
SGPT	: Serum glutamic pyruvic transaminase=ALT.
TDS	: Transduodenal sphincteroplasty
U.S.	: Ultrasound
VIP	: Vasoactive intestinal polypeptide
WBCs	: White blood corpuscles.

PART ONE

REVIEW OF LITERATURE

CHAPTER ONE

INTRODUCTION

INTRODUCTION

Detection and removal of common bile duct(CBD)stones as well as prevention of retained and recurrent stones remain a major challenge to contemporary biliary surgeons. The common bile duct is explored in approximately 15% of all cholecystectomies and stones are removed in approximately 65% of these explorations. The incidence of concomitant choledocholithiasis varies between 8 to 15% .While retained stones after (CBD) exploration were usually reported in the range of 4 to 7%, the adjunct of routine post-exploratory cholangiography and/or choledochoscopy has contributed to a decreased incidence of less than 5%. It is generally accepted that the majority of common bile duct stones form originally in the gallbladder and later pass down through the cystic duct into the common bile duct(secondary CBD stones). Stones may also form primarily in the common bile duct as when found in patients with congenital abscence of gallbladder. The incidence of primary common duct stones is controversial and varies from 4% to 56% (Girard and Legros,1988).

Biliary exposure is the most important step in any biliary operative procedure .A thorough knowledge of the anatomy of the biliary tract is essential if dissection is to be precise and error avoided (Smadja and Blumgart, 1988).

Bile secretion is one of the major functions of the liver. Significant advances have occurred in our understanding of the physico-chemical relationship of the biliary lipids providing insights into, if not complete elucidation of , the mechanism of gallstone formation. This in turn has heralded the era of the medical dissolution of gallstones (Bouchier, 1988).

Patients with (CBD) stones may have one or more of the following principal clinical findings, biliary colics, cholangitis, jaundice and pancreatitis. In addition,there are, usually, the findings of chronic calcular cholecystitis. It seems likely, however, that many as 50% of patients with choledocholithiasis remain asymptomatic (Way,1991).

Preoperative diagnosis is valuable in permitting planning of a treatment strategy. The majority of approaches to biliary obstruction now rely heavily upon radiological imaging techniques. Standard biochemical testing although performed as a routine in all cases of suspected biliary disease, they are inevitably non-specific and may be more valuable in following the course of the disease after treatment than in providing diagnostic informations (Benjamin and Blumgart,1988).

Because the addition of an exploration of the (CBD) to cholecystectomy increases the morbidity and mortality may rise by three to seven times, it is desirable that all those and only those with choledocholithiasis should have bile duct exploration at cholecystectomy (Girard and Legros,1988).

Although elective biliary surgery, including exploration and removal of stones from the (CBD) is safe in young, fit patients, morbidity and mortality steadily increase with the addition of each of a number of interlinked risk factors. These factors include increasing age, with the attendant risk of cardiovascular and renal diseases, jaundice, cholangitis, pre-existing anaemia and the extent of the necessary surgery . Post-operative mortality can be 20% or higher when two or more risk factors are present (Martin and Tweedle,1987).

In the same way that ERCP has transformed the diagnostic approach to suspected biliary problems and jaundice, so endoscopic sphincterotomy (ES), since it was first performed in man (Kawai et al., in Japan,1974, and Classen & Demling in Germany 1974) has, more than any other therapeutic development, had a dramatic impact on the management of biliary disease in general and the treatment of bile duct stones in particular (Carr-Locke, 1988).

Endoscopic sphincterotomy for the treatment of complications related to (CBD) stones is steadily becoming more widely available and accepted. This is not only so in those patients who have previously undergone cholecystectomy, but also in patients with intact gallbladders (Martin and Tweedle,1987).

Summerfield, 1988, suggested that " only simple cholecystectomy should be performed and surgeons should stop worrying about whether stones remain in the bile duct because endoscopic sphincterotomy can simply remove them later".

Endoscopic sphincterotomy with stone removal is being performed in patients who have not undergone cholecystectomy, especially those who are unfit for surgery. Still certain technical problems and unresolved questions concerning long-term ramifications of the procedure remain. Although endoscopic sphincterotomy with stone extraction is regarded as an alternative to surgery, it is the only therapeutic endoscopic procedure that has an appreciable mortality rate as well as significant morbidity (Sivak,1989).

The aim of this work is to compare the results of the surgical management of common bile duct stones with intact gallbladder, with those of endoscopic sphincterotomy

and stone extraction followed by cholecystectomy if the gallbladder is diseased. The results as regards morbidity, mortality, success rates and length of hospital stay are analysed and compared with literatures and the final conclusion is set up.