ASSESSMENT OF RENAL FUNCTION IN SURGICAL OBSTRUCTIVE JAUNDICE BEFORE AND AFTER OPERATION

THESIS

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By

SALAH MOHAMMED SAMAN

MB.B.Ch. (EL-AZHAR UNIVERSITY)

Supervised by

Dr. Badawy Labib Mahmoud

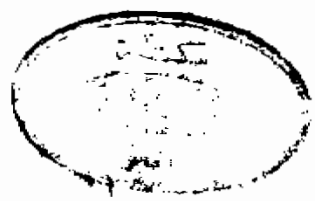
Prof. of General Medicine
Faculty of Medicine
Ain Shams University

Dr. Fakhry Hamed Ebeid

Ass. Prof. of General Surgery
Faculty of Medicine
Ain Shams University

Dr. Ibrahim Khalil Aly

Ass. Prof. of Clinical Pathology
Faculty of Medicine
Ain Shams University



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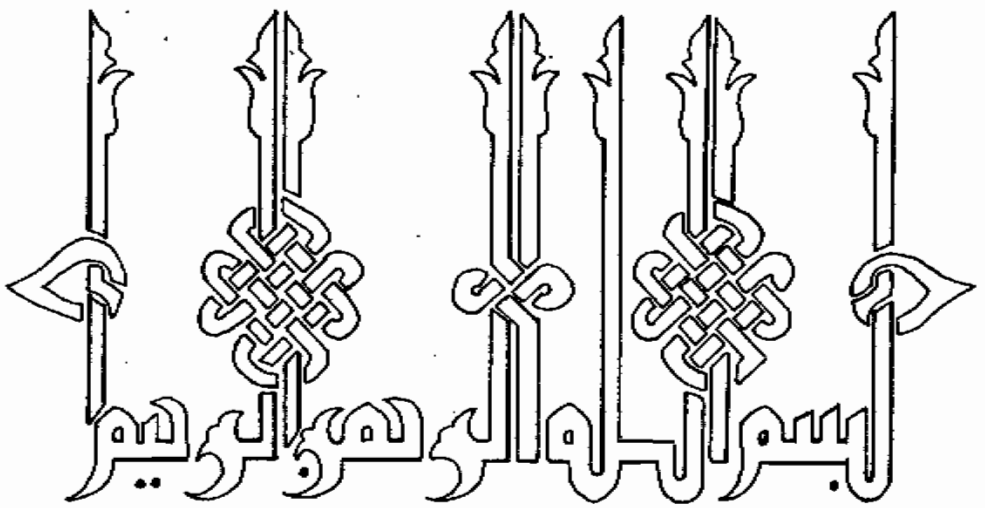

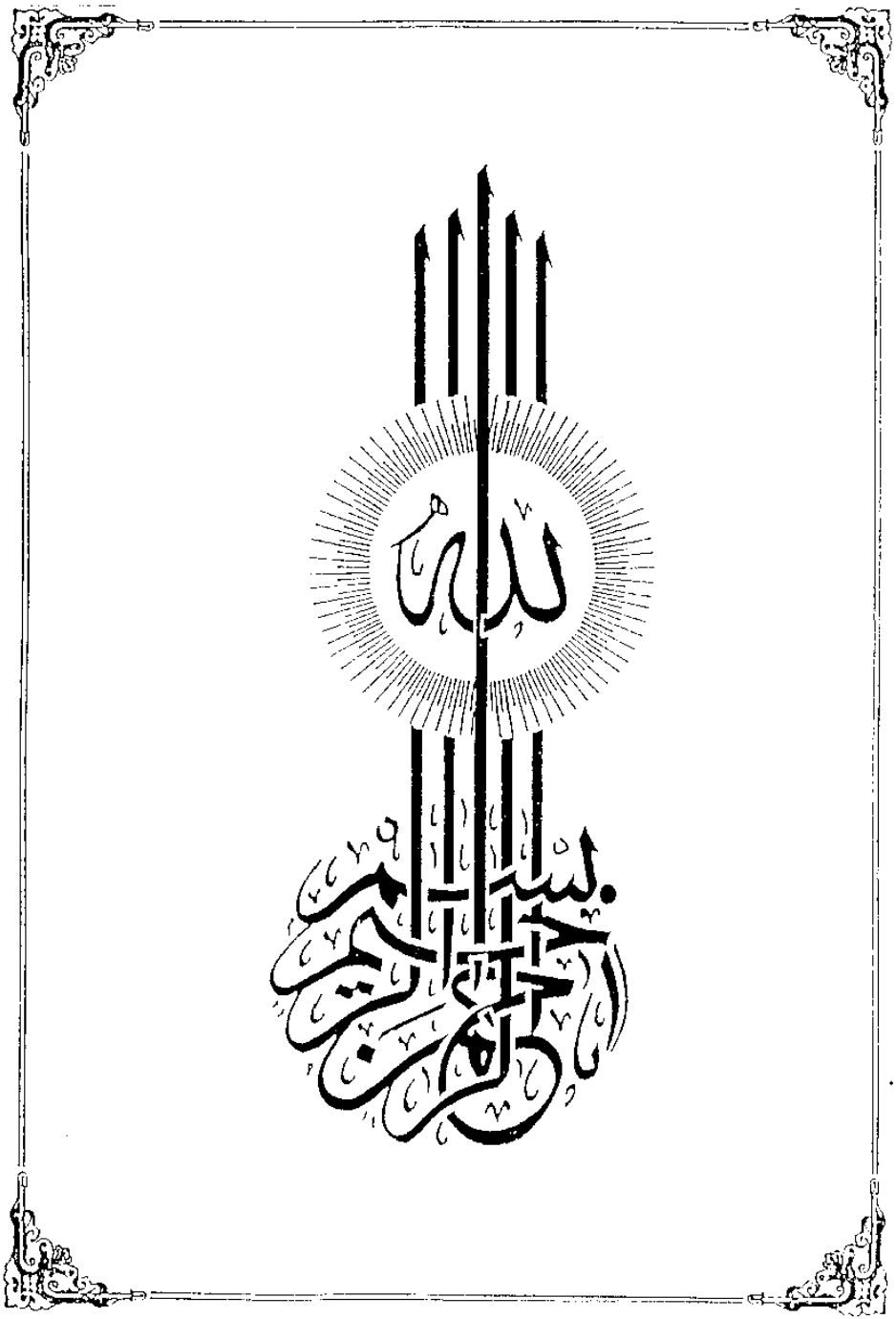

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Dr. S.M. Saman

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INTRODUCTION AND THE AIM OF THE WORK :

There is a great incidence of post-operative renal failure in patients with obstructive jaundice if they subjected to an operation to relief obstruction (Dawson J.L., 1964). Obstructive jaundice produces functional and anatomic changes in the kidney (Aoyagi 1968). The most striking alterations are the reduction and intrarenal redistribution of renal blood flow (Hishida, 1980), the development of a positive sodium blanace (Yarger, W.C. 1976), and the reduction in the concentration and dilution capacities of the kidney (Better O.S., 1983). The most pecular anatomic lesions are those of proximal tubules, and eventually vacular degeneration and necrosis may develop. In clinical practice, however, it is difficult to recognize tubular lesions in obstructive jaundice (Amodio P. 1985). There are many studies have been carried out to solve the problem why surgery in patient with obstructive jaundice might produce post-operative renal failure. In acute renal failure of obstructive jaundice, Dawson (1968) had shown a close association between depth of jaundice and the development of acute renal failure following

a period of ischaemia, and Baum et al (1969) showed that the toxicity was related to conjugated bilirubin. Fulop et al (1971) in man have indicated the presence of a spiral mechanism, in that hyperbilirubinaemia complicated by certain other additional factors leads to impaired renal function with further increases in serum bilirubin levels.

In 1964, Dawson showed that mannitol infusion prevented the onset of renal failure in patients with obstructive jaundice undergoing surgery.

The aim of this work is to study the relationship between obstructive jaundice and renal changes which might occur in those patients postoperatively and the importance of estimating Beta 2 microglobulin as a good indicator of renal tubular damage in these cases.

Review of literature

EXTRA HEPATIC CHOLESTASIS

* Gall Bladder Stone
* Stone in the common bile duct.
* Bile dust strictures.
* Pancreatitis.
* Carcinomas in the Region of Ampulla of Vater.
* Sclerosing Cholangitis.

SURGICAL OBSTRUCTIVE JAUNDICE

Cholelthiasis :

Gall stones are common. Survey have shown that in the developed countries gall stones are present in at least 20 percent of women over the age of forty (Russel, L.S. 1968).

In men, the incidence is less, but it increases with age. Even in children, infants, and the newborn, the disease is no longer a curiosity. (Bills, P.M. 1975).

Overweight people are a little more prone than those who are thin, and in general, repeated pregnancies favour stone formation. The old axiom that a typical gallstone sufferer is a woman who is fat, forty, and fertile is only partly true, and in recent years there has been an increase in the number of relatively young women admitted for cholecystectomy soon after their first pregnancy. Indeed, with the advent of the contraceptive pill, which diminished satisfacting bile salt production by the liver, and impairs the empting of the gall bladder, a new axiom is emerging.

Nature of Gallstones :

Gallstones are crystalline bodies formed from the constituents of bile. The character of the stone depends mainly upon the predominance of one or more constituents. Among the constituents of bile are found types of cholestrol, bile acids, bile pigments, protein, carbonate, phosphate, calcium, sodium, potassium, and enzymes (such as glucuronidase). Crystallization takes place most commonly in the gall bladder. Primary stones in the hepatic and common bile duct are less crystalline than primary gall bladder stones and are more like a concretion of sludge.

Classification :

In general, gallstones are divided into three group by the naked eye appearance of the constituent in major proportion :

1- Solitary or multiple cholestrol about 10 %,

2- Pigment stones about 10 - 15 %,

and 3- Mixed stones about 75 - 80%

The centre of gallstone varies in appearance

and constituents. In some stone, there is a clear crystalline pattern radiating from the centre, in others, the centre may be homogeneous, and irregular, and crystallization may begin at a little distance therefrom. Analysis of the centre of the stone may give an indication of the origin of the gallstone. Unfortunately, no one single constituent predominates.

Size and Shape :

Gallstones may be single or multiple, small or large, round, mulberry, coral-like, and faceted. These characteristics are an expression of the environment in which the stone began and continued to grow.

Aetiology :

Cholestrol and bile pigment are insoluble in water and would be insoluble in bile if it were not for the formation of soluble complexes and compounds. Disturbance of these complexes will result in the emergence of these substances in crystalline or paracrystalline forms. The act of crystallization probably depends upon the appearance of an interface in a more or less colloid

environment in varying hydrogen ion concentration. Epithelial cells, organisms, foreign bodies, parasites, and small particles of pigment are likely causes of an interface. Layering of bile, particularly when stasis occurs, produces an other kind of interface that may explain the so called aseptic primary stone formation.

2. Gall stones in the common bile duct (Choledocholithiasis):

The majority of stones in the common bile duct have migrated from the gallbladder and are associated with calculous cholecystitis. Secondary stones that are not of gall bladder origin usually form following partial biliary obstruction due to such changes as residual calculous, traumatic stricture or sclerosing cholangitis. Stones are single or multiple, ovale and conforming to the long axis of the duct. They tend to impact in the ampulla of Vater and may project into the duodenum.

Effects of Common Bile Duct Stones :

1- Silent Stones : Rarely the common bile duct can be full of stones, but without symptoms.

2- Bile duct obstruction is usually partial, for the calculus exerts a ball-valve action at the lower end of the common bile duct.

3- Cholangitis : The stagnant bile is readily infected, probably from the intestine. The bile becomes opaque and dark brown. The common bile duct is thickened and dilated with ulcerated mucosa, especially in the ampulla of Vater. The cholangitis may spread to the intra-hepatic bile ducts. E.coli is the commonest infecting organism. Other include bacteroides, streptococci, lactobacilli and clostridia.

4- Acute or chronic parcreatitis may result from stones in the ampula of Vater, with bile regurgitation along the pancreatic duct.

Clinical Picture :-

The clinical features are those of cholestatic jaundice with cholangitis.

The classical picture is of an elderly, obese woman with a previous history of flatulent indigestion, fat intolerance and mild-epigastric pain, presenting with triad of jaundice, abdominal pain, chills and fever.