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Comparative Study Between US & ERCP In The Diagnosis Of CBD Calculi

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INTRODUCTION AND AIM OF THE WORK

I N T R O D U C T I O N

Jaundice is a common symptom in our country. It may be hepatocellular, obstructive or haemolytic. Obstructive jaundice have many causes, one of them is stone common bile duct. The condition is either painful or painless.

Differentiation between obstructive jaundice and hepatocellular jaundice by biochemical investigation was not easy but many ^Xradiological tools are used to reach the diagnosis including ultrasonography and endoscopic retrograde cholangiopancreatography. The diagnostic tools are complementary to each other and not competitive.

Endoscopic retrograde cholangiopancreatography has a therapeutic value in the form of sphincterotomy and extraction of calculi in addition to its diagnostic value.

Almost all stones are formed in the gallbladder, but occasionally stone formation may occur within the main bile ducts or intrahepatic canaliculi.

Radiology is the most valuable method of investigation. Early detection and observation lead to their removal before complications supervene.

4. Aim of the work

To compare the efficiency of endoscopic retrograde cholangiopancreatography and ultrasonography as a diagnostic tools in cases suspected to be jaundice of obstructive nature.

ANATOMY OF THE HEPATOBIILIARY SYSTEM

Developmental Anatomy:

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The liver arises in the fourth week as a diverticulum from the ventral surface of the foregut, close to the point where it is continuous with the yolk stalk. This diverticulum is lined with endoderm, and grows ventrally and cranially into the septum transversum, giving off two solid buds of cells, which form the right and left lobes of the liver. The solid buds of cells develop into epithelial trabeculae, the hepatic cylinders, which branch and anastomose to form a close meshwork. The intervals of the meshwork become filled with Blood sinusoids, and on section the organ has the appearance of a vascular sponge. These vessels arise in situ as the result of the influence exercised by the endodermal cells of the liver on the potentially angiogenic cells of the mesenchyme of the septum transversum. The invasion of the vitelline veins by the epithelial trabeculae of the liver to form a sinusoidal system of vessels occurs only over a restricted area in a few mammals.

By the continued growth and ramification of the endodermal hepatic cylinders the mass of the liver is gradually formed, but its connective tissue stroma is derived from included mesenchymal cells of the septum transversum. Recent observations suggest that the formation of intrahepatic ducts is dependent upon contact between the developing embryonic liver mass and a preformed extrahepatic duct system. The original diverticulum from the duodenum forms the bile duct, and from its distal part the cystic duct and gallbladder arise as an outgrowth, solid at first but later canalised. The bile duct first opens into the ventral wall of the duodenum; later, it migrates to the left across the dorsal (originally right) surface of the duodenum to the position which it occupies in the adult on the medial (or mesenteric) border. This migration is ascribed to differing rates of growth in the duodenal walls and is aided by proliferation of the lining epithelium of the duodenum, which is most marked in this position. As the liver enlarges, it projects more and more into the abdominal cavity from the caudal surface of the septum transversum. In the process mesenchyme of the septum becomes drawn out ventral to the liver to

form the falciform and coronary ligaments; and dorsal to the liver to form the lesser omentum. These peritoneal folds are collectively the ventral mesogastrium.

About the third month the liver almost fills the abdominal cavity, and its left lobe is nearly as large as its right. From this period the relative development of the liver is less active, more especially that of the left lobe, which actually undergoes some degeneration and becomes smaller than the right, but until birth the liver remains relatively larger than in the adult. (Grey's 1973).

Extrahepatic biliary apparatus:

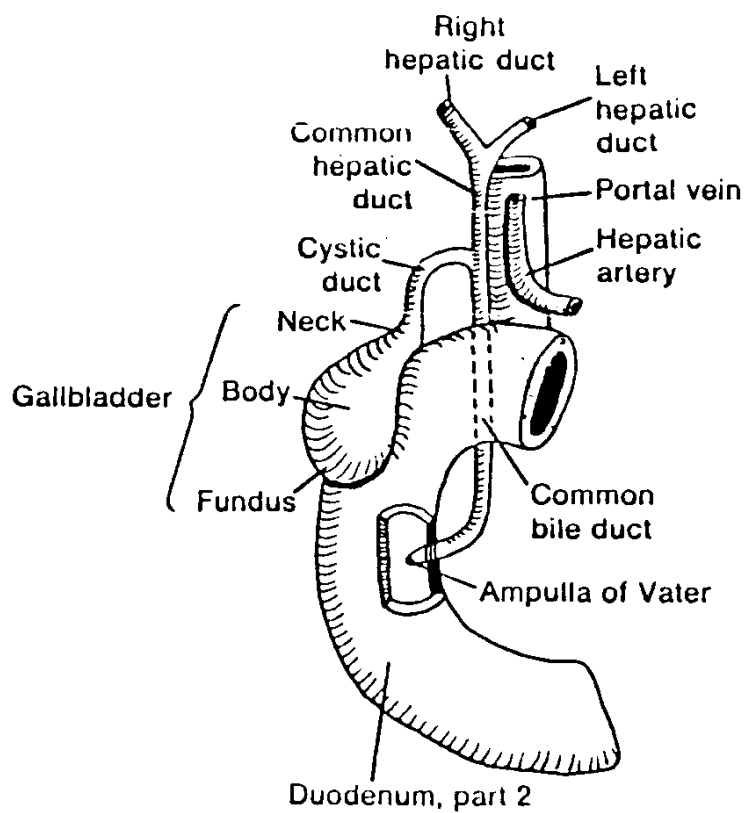
The intrahepatic biliary ducts from the segments of the right and left lobes unite in the region of the portahepatis to form the right and left hepatic ducts which are usually seen emerging from the right and left margins of the porta respectively.

They inturn join just below the porta to form the common hepatic duct. The right branch of the hepatic

artery usually passes behind this duct, which descends within the free margin of the lesser omentum, where it is joined (usually on its right side) by the cystic duct from the gallbladder to form the common bile duct (Fig.1)Hamilton 1976).

Gallbladder and cystic duct:

The gallbladder is a pear-shaped sac lying in a fossa on the visceral surface of the liver, the shape and size of the gallbladder vary with its physiological activities. It has a blind lower end or fundus and a body which narrows to form the neck which become continues with the cystic duct. The fundus is rounded and usually projects beyond the inferior margin of the liver; it comes into contact with the anterior abdominal wall at about the level of the tip of the 9th costal cartilage. The body is directed upwards and backwards from the fundus. The posterior surface is free and covered with the peritonium whereas the anterior surface lies in the fossa on the visceral surface of the liver to which it is attached by areolar tissue. The posterior surface is related to the superior (1st) and descending (2nd) parts of the duodenum and the proximal



(Fig.1) Extrahepatic biliary apparatus.

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part of the duodenum and the proximal part of the transverse colon.

Occasionally the gallbladder is embedded in the liver substance; very rarely it is suspended from the liver by a short mesentry. The neck of the gallbladder arches to the left and continues into the cystic duct; the wall of the neck, where it narrows to become the cystic duct, may show a small pouch or diverticulum that is directed downwards and backwards, commonly called Hartmann's pouch. It is now considered not to be a feature of normal gallbladder and is always associated with some pathological conditions, (Hamilton 1976).

Cystic Duct

The cystic duct is the continuation of the neck of the gallbladder, and is commonly 2-3 cm. long with a diameter of about 3mm. It passes upwards and to the left to join the common hepatic duct, usually about 3 cm below the porta hepatis and a centimetre or so above the duodenum, so forming the common bile duct. The cystic artery (from the right branch of the hepatic) commonly