INTRODUCTION

Hepatocellular carcinoma (H.C.C.) is the most common primary liver cancer, the fifth most common cancer and the third most common global cause of cancer-related deaths. In 2000, there were 564,000 new cases and 549,000 deaths from H.C.C. worldwide, indicating the devastating prognosis of this tumor ***(Sheriff et al., 2009)***.

All HCC occurs in the setting of cirrhosis or advanced fibrosis Thus, any cause of liver disease that can result in cirrhosis should be considered a potential risk factor for HCC. Not surprisingly, the most common causes of cirrhosis (hepatitis B virus [HBV], HCV, and alcohol) are also the most common causes of HCC ***(Figueras et al., 2001).***

HCC is seen less commonly in genetic hemochromatosis autoimmune hepatitis, primary sclerosing cholangitis, nonalcoholic fatty liver disease, alpha-1 antitrypsin deficiency, Wilson disease, primary biliary cirrhosis, and certain metabolic liver diseases ***(Riaz et al. 2009)***.

Recognition of those at risk and early diagnosis by surveillance with imaging, with or without serologic testing, are extremely important ***(Nathan et al., 2009)***.

The clinical presentation of HCC is variable from patient to patient. It can range from an asymptomatic presentation to tumor rupture with a catastrophic hemoperitoneum. Hence, screening is very important in the “at-risk”population to prevent HCC. Alpha-fetoprotein and liver ultrasound are the most widely utilized surveillance tests but their performance is not optimal. There is an urgent need for new surveillance tests ***(Nathan et al., 2009)***.

Detection of early-stage HCC in the cirrhotic liver is a challenging task. Advances in imaging modalities (hardware, software, as well as technical innovations) have greatly improved the detection of small nodules in part by focusing on the idea of cancerogenesis as a process leading to HCC. Ultrasound has found its place in guiding interventional therapy and post-therapeutic monitoring. The introduction of advanced techniques such as harmonic imaging, and power and Doppler modes, as well as contrast-enhanced techniques, have proved more effective than grey-scale imaging alone. In a suspicious hepatic lesion, CT and MRI are used for tumour assessment and staging. Especially the use of dynamic contrast-enhanced procedures have improved radiological diagnostic reliability ***(Sasaki et al., 2009)***.

Surgical resection of HCC, either partial hepatectomy or total hepatectomy with transplantation, offers the best long-term recurrencefre outcome (60%–70% 5-year survival) ***(Lopez et al., 2006)***.

Locoregional ablation refers to a variety of intervention techniques that specifically target a tumor or a tumor and surrounding tissue with a process to directly destroy the tumor. Numerous methods of ablation have been developed. Percutaneous ethanol injection utilizes direct injection of absolute ethanol into the tumor, resulting in dehydration of cells and protein degradation with coagulative necrosis of the tumor and surrounding tissue ***(Lorenzini et al., 2008)***.

Several technological modifications of external beam radiation have allowed delivery of tumoricidal radiation doses the most popular methods of locoregional ablation are radiofrequency ablation (RFA) and transarterial chemoembolization (TACE) ***(Strasberg et al., 2000)***.

Most HCC tumours are highly vascular with rich blood supply making transarterial chemoembolization an attractive therapeutic option ***(Sasaki et al., 2009)***.

We go in this essay to make comparison between upper &lower Egypt about occur of H.C.C. to make early detection &diagnosis .thus to add early management of cases before complication occur.

To make Comparison between cases of primary hepatocellular carcinoma in upper & lower Egypt from first of January 2011 to last of December 2011, we select cases of primary hepatocellular carcinoma in upper Egypt from clinic of

Aswan oncology society and in lower Egypt from clinic of the National Liver Institute of Menofia University where cases of primary hepatocellular carcinoma are coming for follow-up. Make statistics and emphases to it's early treatment by conservative or surgical.

AIM OF WORK

The aim of work of this essay is to review the literature pertaining to hepatocelullar carcinoma in upper Egypt in comparison to lower Egypt this compare from the side of (risk factor–age-sex-hepatitis B-hepatitis C-or B&C at the time) with emphasis on the recent modalities in its management.

ANATOMY OF LIVER

General description and Topography

The liver is the biggest of the body's organs; it weighs 1400-1600 gms in adult males and 1200-1400 gms in adult females, representing about 1/40 of the total body weight. The liver lies in the upper abdomen and occupies the right hypochondrium and part of the epigastrium (***P.Kekis and B.Kekis, 2006***).

Surface Anatomy of Liver:

The upper border is a line concave upwards, which extends from the left 5th rib in midclavicular line to the 4th right intercostals space in midclavicular line, passing by the xiphisternal joint, then continuous to the right 7th rib in midaxillary line. The right border is a vertical line from right 7th to 11th ribs in midaxillary line then extends for 1/2 inch below costal margin.The inferior border is an Oblique line which joins the ends of upper and right borders crossing the left 8^{th} then right 9^{th} costal margin ***(Shella, 1997).***

Surfaces:

The liver possesses three surfaces, superior, inferior and posterior. A sharp, well-defined margin divides the inferior from the superior in front; the other margins are rounded. The superior surface is attached to the diaphragm and anterior abdominal wall by a triangular or falciform fold of peritoneum, the falciform ligament, in the free margin of which is a rounded cord, the ligamentum teres ***(Cunningham's, 2004)*****.**

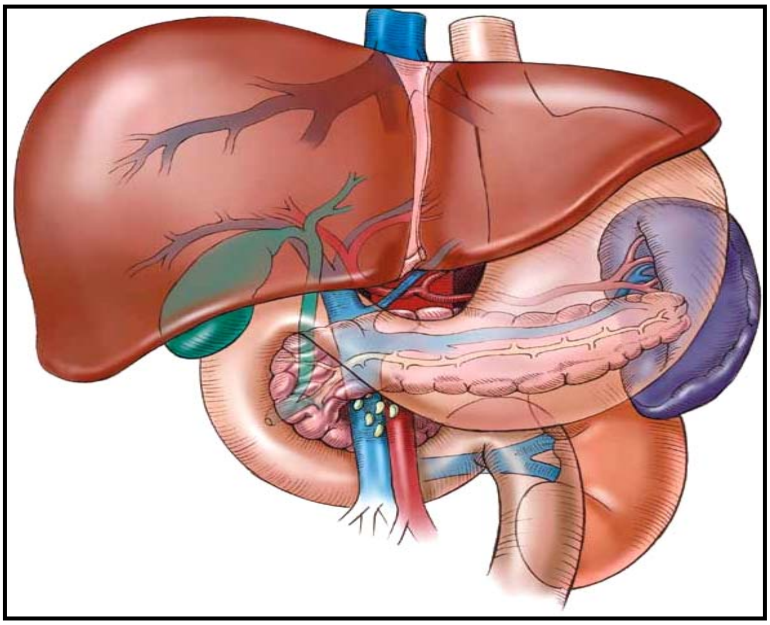

Figure 1: Relations of the liver to other organs ***(John et al.,2000)***.

The line of attachment of the falciform ligament divides the liver into two parts, termed the right and left lobes, the right being much the larger. The inferior and posterior surfaces are divided into four lobes by five fossæ, which are arranged in the form of the letter H. The left limb of the H marks on these surfaces the division of the liver into right and left lobes; it is known as the left sagittal fossa, and consists of two parts, viz., the fossa for the umbilical vein in front and the fossa for the ductus venosus behind. The right limb of the H is formed in front by the fossa for the gall-bladder, and behind by the fossa for the inferior vena cava; these two fossæ are separated from one another by a band of liver substance, termed the caudate process. The bar connecting the two limbs of the H is the porta (transverse fissure); in front of it is the quadrate lobe, behind it the caudate lobe ***(Cunningham's, 2004).***

The superior surface (facies superior) comprises a part of both lobes and, as a whole, is convex, and fits under the vault of the diaphragm which in front separates it on the right from the sixth to the tenth ribs and their cartilages, and on the left from the seventh and eighth costal cartilages. Its middle part lies behind the xiphoid process, and, in the angle between the diverging rib cartilage of opposite sides, is in contact with the abdominal wall. Behind this the diaphragm separates the liver from the lower part of the lungs and pleuræ, the heart and pericardium and the right costal arches from the seventh to the eleventh inclusive. It is completely covered by peritoneum except along the line of attachment of the falciform ligament ***(Skandalakis, 2000).***

The inferior surface (visceral surface), is concave, directed downward, backward, and to the left, and is in relation with the stomach and duodenum, the right colic flexure, and the right kidney and suprarenal gland. The surface is almost completely invested by peritoneum; the only parts devoid of this covering are where the gall-bladder is attached to the liver, and at the porta hepatis where the two layers of the lesser omentum are separated from each other by blood vessels and ducts of liver ***(Cunningham's, 2004).***

The inferior surface of the left lobe presents behind and to the left the gastric impression, molded over the antero-superior surface of the stomach, and to the right of this a rounded eminence, the tuber omentale, which fits into the concavity of the lesser curvature of the stomach and lies in front of the anterior layer of the lesser omentum ***(Cunningham's, 2004).***

The under surface of the right lobe is divided into two unequal portions by the fossa for the gall-bladder; the portion to the left, the smaller of the two, is the quadrate lobe, and is in relation with the pyloric end of the stomach, the superior portion of the duodenum, and the transverse colon ***(Gray and Henry, 2000).***

The portion of the under surface of the right lobe to the right of the fossa for the gall-bladder presents two impressions, one situated behind the other, and separated by a ridge. The anterior of these two impressions, the colic impression, is shallow and is produced by the right colic flexure; the posterior, the renal impression, is deeper and is occupied by the upper part of the right kidney and lower part of the right suprarenal gland ***(Gray and Henry, 2000).***

Medial to the renal impression is a third and slightly marked impression, lying between it and the neck of the gall-bladder. This is caused by the descending portion of the duodenum, and is known as the duodenal impression. Just in front of the inferior vena cava is a narrow strip of liver tissue, the caudate process, which connects the right inferior angle of the caudate lobe to the under surface of the right lobe. It forms the upper boundary of the epiploic foramen of the peritoneum ***(Chummy, 1999)***.

The posterior surface is rounded and broad behind the right lobe, but narrow on the left. Over a large part of its extent it is not covered by peritoneum; this uncovered portion is about 7.5cm. broad at its widest part, and is in direct contact with the diaphragm. It is marked off from the upper surface by the line of reflection of the upper layer of the coronary ligament, and from the under surface by the line of reflection of the lower layer of the coronary ligament. The central part of the posterior surface presents a deep concavity which is molded on the vertebral column and crura of the diaphragm. To the right of this the inferior vena cava is lodged in its fossa between the uncovered area and the caudate lobe. Close to the right of this fossa and immediately above the renal impression is a small triangular depressed area, the suprarenal impression, the greater part of which is devoid of peritoneum; it lodges the right suprarenal gland. To the left of the inferior vena cava is the caudate lobe, which lies between the fossa for the vena cava and the fossa for the ductus venosus. Its lower end projects and forms part of the posterior boundary of the porta; on the right, it is connected with the under surface of the right lobe of the liver by the caudate process, and on the left it presents an elevation, the papillary process. Its posterior surface rests upon the diaphragm, being separated from it merely by the upper part of the omental bursa. To the left of the fossa for the ductus venosus is a groove in which lies the antrum cardiacum of the esophagus ***(Chummy, 1999)***.

The anterior border is thin and sharp, and marked opposite the attachment of the falciform ligament by a deep notch, the umbilical notch, and opposite the cartilage of the ninth rib by a second notch for the fundus of the gall-bladder. In adult males this border generally corresponds with the lower margin of the thorax in the right mammillary line; but in women and children it usually projects below the ribs. The left extremity of the liver is thin and flattened from above downward ***(Gray and Henry, 2000).***

Fossæ: The left sagittal fossa is a deep groove, which extends from the notch on the anterior margin of the liver to the upper border of the posterior surface of the organ; it separates the right and left lobes. The porta joins it, at right angles, and divides it into two parts. The anterior part, or fossa for the umbilical vein, lodges the umbilical vein in the fetus, and its remains (the ligamentum teres) in the adult; it lies between the quadrate lobe and the left lobe of the liver, and is often partially bridged over by a prolongation of the hepatic substance, the pons hepatis. The posterior part, or fossa for the ductus venosus, lies between the left lobe and the caudate lobe; it lodges in the fetus, the ductus venosus, and in the adult a slender fibrous cord, the ligamentum venosum, the obliterated remains of that vessel ***(Chummy, 1999).***

The porta or transverse fissure (porta hepatis) is a short but deep fissure, about 5 cm. long, extending transversely across the under surface of the left portion of the right lobe, nearer its posterior surface than its anterior border. It joins nearly at right angles with the left sagittal fossa, and separates the quadrate lobe in front from the caudate lobe and process behind. It transmits the portal vein, the hepatic artery and nerves, and the hepatic duct and lymphatics. The hepatic duct lies in front and to the right, the hepatic artery to the left, and the portal vein behind and between the duct and artery ***(Gray and Henry, 2000).***

The fossa for the gall-bladder is a shallow, oblong fossa, placed on the under surface of the right lobe, parallel with the left sagittal fossa. It extends from the anterior free margin of the liver, which is notched by it, to the right extremity of the porta ***(Gray and Henry, 2000).***

The fossa for the inferior vena cava (fossa venæ cavæ) is a short deep depression, occasionally a complete canal in consequence of the substance of the liver surrounding the vena cava. It extends obliquely upward on the posterior surface between the caudate lobe and the bare area of the liver, and is separated from the porta by the caudate process ***(Gray and Henry, 2000)*.**

On slitting open the inferior vena cava the orifices of the hepatic veins will be seen opening into this vessel at its upper part, after perforating the floor of this fossa ***(Cunningham's, 2004)*.**

Lobes: The right lobe (lobus hepatis dexter) is much larger than the left; the proportion between them being as six to one. It occupies the right hypochondrium, and is separated from the left lobe on its upper surface by the falciform ligament; on its under and posterior surfaces by the left sagittal fossa; and in front by the umbilical notch. It is of a somewhat quadrilateral form, its under and posterior surfaces being marked by three fossæ: the porta and the fossæ for the gall-bladder and inferior vena cava, which separate its left part into two smaller lobes; the quadrate and caudate lobes. The impressions on the right lobe have already been described ***(Cunningham's, 2004)*.**

The left lobe (lobus hepatis sinister) is smaller and more flattened than the right. It is situated in the epigastric and left hypochondriac regions. Its upper surface is slightly convex and is moulded on to the diaphragm; its under surface presents gastric impression and tuberosity ***(Chummy, 1999).***

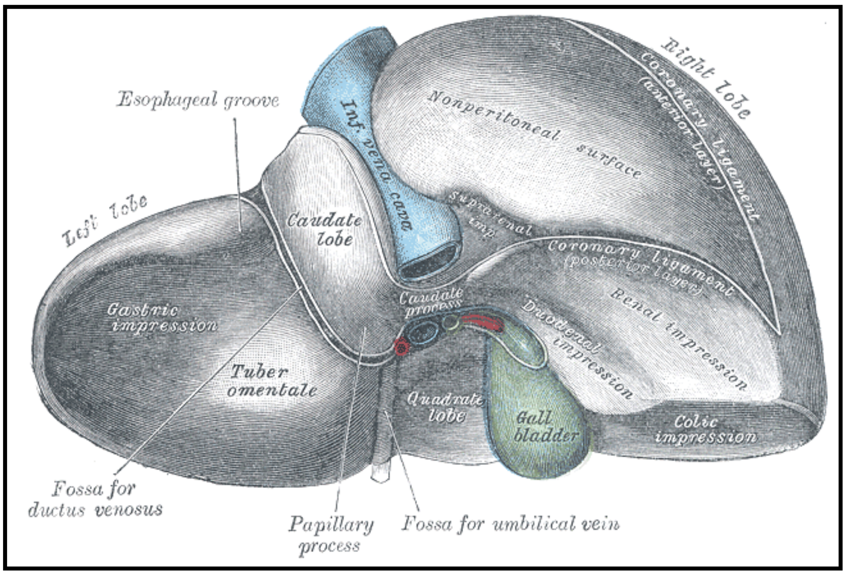

Figure 2: Surfaces, lobes and fissures of the liver as seen from posterior view ***(Snell, 2001)***.

Stability of The Liver:

The normal or even the enlarged liver never falls down into the abdominal cavity. It is supported by the hepatic veins and the inferior vena Cava. At the postmortem examination liver cannot be displaced caudally until the I.V.C. is divided below the diaphragm. The thin inferior border of the liver is prevented from tilting downwards by the attachment of the triangular ligament and ligamentum teres and by resting on the underlying viscera ***(Chummy,1999).***

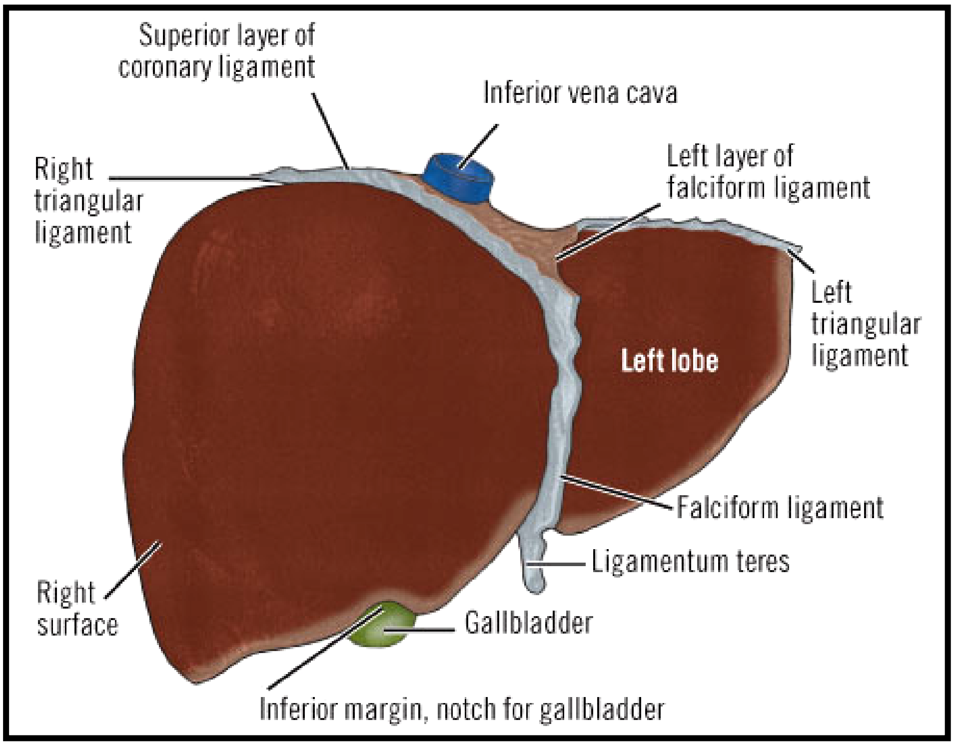

Figure 3: Diaphragmatic aspect of the liver illustrating features of the anterior and superior surfaces ***(Jones and Hardy, 2006)***.

Peritoneal attachment of The Liver:

The liver is invested in the peritoneum except for the gallbladder bed, the porta hepatis, and posteriorly on either side of the IVC in two wedge shaped areas (called the bare area of the liver to the right of the IVC). The peritoneal duplications on the liver surface are referred to as ligaments. The diaphragmatic peritoneal duplications are referred to as the coronary ligament, whose lateral margins on either side are the right and left triangular ligaments (Fig 3). From the center of the coronary ligament emerges the falciform ligament, which extends anteriorly as a thin membrane connecting the liver surface to the diaphragm, abdominal wall, and umbilicus. The