Role of Drug Eluting Beads In Chemoembolisation of Hepatocellular Carcinoma

Essay
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List of ABBREVIATION

AFP	Alpha-Fetoprotein
BCLC	Barcelona-Clinic-Liver-Cancer
CT	Computed Tomography
DEBs	Drug Eluting Beads
EASL	European Association For The study Of the Liver
ECOG	Eastern Cooperative Oncology Groups
Gd-EOB-DTPA	Gadolinium ethoxybenzyl diethylenetriamine- pentaacetic acid
HCC	Hepatocallular carcinoma
MELD	Model for end stage liver disease
MIP	Maximum Intensity Projection
MRI	Magnetic Resonance Imaging
MWA	Microwave ablation
PEI	Percutaneous Ethanol Injection
RECIST	Response Evaluation Criteria in Solid Tumors
RF	RadioFrecquency

TACE	Trans catheter Arterial Chemoembolization

Introduction

Hepatocellular carcinoma (HCC) is the fifth most prevelant cancer world-wide and third highest in terms of mortality **(Parkin et al, 2001).**

Surgical methods remain the gold standard for the treatment of hcc.However; this is feasible in only 25-30% of patients because of tumour stage or the severity of underlying cirrhosis **(LIovet et al, 2002- Lo et al, 2002- LIovet et al, 2003- Gamma et al, 2002).**

Transarterial chemoembolisation (TACE) is the most widely used treatment for hepatocellular carcinoma in non surgical patients not suitable for radiofrequency ablation **(Brown et al, 2006).**

Lipidol which is used in conventional transarterial chemoembolisation (TACE), penetrates the portal venules and hepatic sinusoids and affects the hepatic microcirculation **(Tancredi et al, 1999),** also doxorubicin is lost from lipidol in a very short period of time and lipidol droplets separate rapidly from the aqueous phase **(lewis et al, 2006)**.

Drug eluting bead is an embolisation system for loading with doxorubicin in the treatment of malignant hypervascularised tumours. It has been shown to be clinically effective in hcc, neuroendocrine disease and other malignancies **(Poon, 2004- Varela et al, 2005- Coenegrachts et al, 2005).**

Aim of work

The aim of this work is to highlight the role of using the drug eluting beads in chemoembolisation of hepatocellular carcinoma.

The liver is the largest gland in the body and the second largest organ after the skin**.** It is occupying almost the whole of the right hypochondrium, the greater part of the epigastrium**.** Its greatest transverse measurement is from 20 to 22.5 cm. Vertically, near its lateral or right surface, it measures about 15 to 17.5 cm. Its consistence is that of a soft solid; it is friable, easily lacerated and highly vascular. **(Schneck, 1994).**

The liver anatomy

Gross ANATOMY

1) The liver surfaces

The liver possesses three surfaces, superior, inferior and posterior.

a) The superior surface (facies superior)

It comprises a part of both lobes, as a whole it is convex, and fits under the vault of the diaphragm which separates the liver from the lower part of the lungs and pleura, the heart and pericardium and the right costal arches from the seventh to the eleventh inclusive. **(Fig. 1) (Ryan & McNicholas, 1994).**

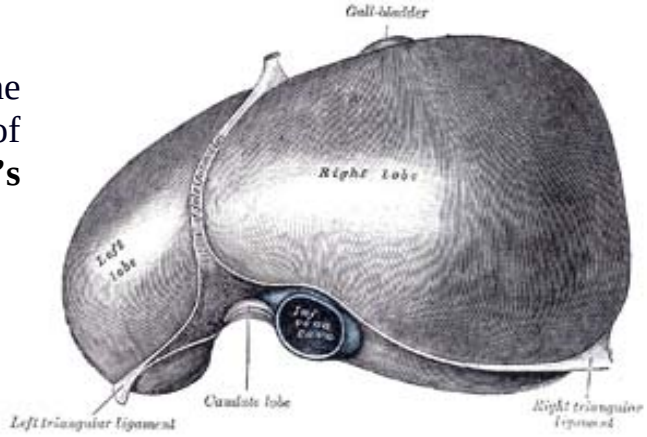

Figure (1): The superior surface of the liver **(Gray's anatomy, 2000).**

b) The postero-inferior surface (facies posterior)

Inferior vena cava fossa is found between the uncovered area and the caudate lobe. The **suprarenal impression** lodges the right suprarenal gland. 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.** The **colic impression** is shallow and is produced by the right colic flexure. The **renal impression** is deeper and is occupied by the upper part of the right kidney **(Fig. 2) (Ryan & McNicholas, 1994).**

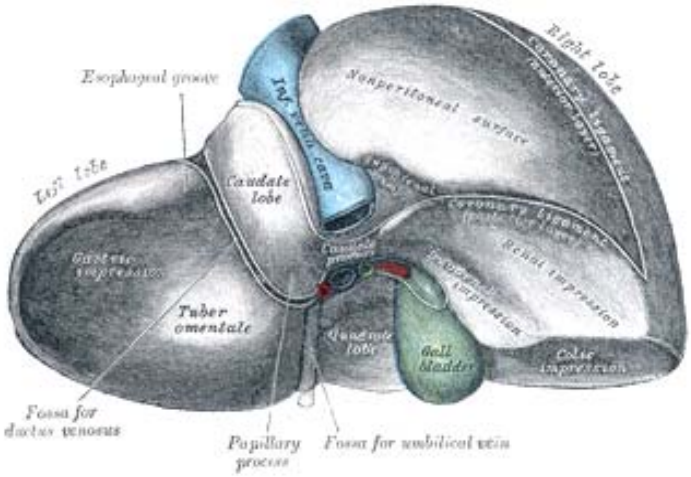

Figure (2): Posterior and inferior surfaces of the liver **(Gray's Anatomy, 2000).**

2) Lobes of the liver:

Traditionally, based on external appearance, four lobes are distinguished: right, left, quadrate, and caudate **(Rutkauskas et al., 2006).** The four lobes are arranged in the form of the letter H. The left limb of the H marks divides the liver into right and left lobes. 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**, this part termed the **caudate process.** The bar connecting the two limbs of the H is the **porta** hepatis (*transverse fissure*); in front of it is the **quadrate lobe,** behind it the **caudate lobe (Fig.3) (Schneck, 1994).**