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الْحَمْدُ لِلّهِ الّذِي هَدَانَا لِهَـذَا
وَمَا كُنَّا لِنَهْتَدِيَ لَوْلا أَنْ هَدَانَا اللّهُ

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سورة الأعراف آية (٤٣)

Benign Liver Tumours
Diagnosis and management

Essay
Submitted for partial fulfillment of master degree
In general medicine

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List of Abbreviations

CT	Computed tomography
MRI	Magnetic resonance imaging
HA	Hepatic adenomas
HNF1a	Hepatocyte nuclear factor 1a
GSD1	Glycogen storage disease type1
HCA	Hepatocellular adenoma
β- HCA	β-Catenin-activating mutations of hepatocellular adenoma
NTL	Non tumoral liver
HCC	Hepatocellular carcinoma
IHA	Inflammatory hepatic adenoma
CPR	C - reactive protein
SAA	Serum amyloid A
mRNA	Messenger ribonucleic acid
US	Ultrasound
CDUS	Colour dopler ultrasound
CEUS	Contrast-enhanced US
CECT	Contrast enhanced CT
T1-W	T1-Weighted
CK	Cytokeratin
NCAM	Neuronal cell adhesion molecule
FNH	Focal nodular hyperplasia
OCP	Oral contraceptive pills

GGT	Gamma-glutamyl transpeptidase
AFP	Alpha feto protein
RF	Radiofrequency
RFA	Radiofrequency ablation
BMI	Body mass index
ESGSD I	European Study on Glycogen Storage Disease type I
HBV	Hepatitis B virus
HCV	Hepatitis C virus
RPCI	Roswell Park Cancer Institute
TAE	Transcatheter arterial embolization
RICH	Rapidly involuting congenital hemangioma
SPECT	Singlephoton emission computed tomography
KMS	Kasabach-Merritt syndrome
NRH	Nodular regenerative hyperplasia
BMT	Bone marrow transplant
TSC	Tuberous sclerosis complex
AML	Angiomyolipoma
AD-PCLD	Adult polycystic liver disease
PKD	Polycystic kidney disease
PRKCSH	Protein kinase C substrate 80 K–H
MRCP	Magnetic resonance cholangiopancreatography
PTC	Percutaneous transhepatic cholangiography
ERCP	Endoscopic retrograde cholangiopancreatography
VS	Versus

GS Glutamine synthetase

LFABP1 Liver fatty acid binding protein1

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AND
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Benign hepatic tumors include a broad spectrum of regenerative and true neoplastic processes. Because of advances in imaging studies such as computed tomography (CT) and magnetic resonance imaging (MRI) as well as progress in immunohistochemistry, accurate diagnosis can now be made in a large percentage of patients without surgical laparotomy or resection. Many of these tumors present with typical features in various imaging studies. On occasions, biopsies are required and/or surgical removal is needed. The most common benign hepatic tumors include cavernous hemangioma, focal nodular hyperplasia, hepatic adenoma, and nodular regenerative hyperplasia. In the majority of cases of benign hepatic tumors, patients are asymptomatic, and no treatment is indicated. The main indication for treatment is the presence of significant clinical symptoms or suspicion of malignancy or fear of malignant transformation **(Yoon et al .,2003).**

They usually occur in asymptomatic patients with or without underlying liver disease **(Mortele et al .,2001).**

In general, a single imaging study is insufficient for a definitive diagnosis, and further studies may be necessary. However, some of them are associated with serious complications. A reasonable approach to diagnosis , follow up and management of liver masses is based on a rudimentary knowledge of their presentation , associated clinical and laboratory features, natural history and available treatment options **(Bahirawini and Reddy 2008).**

Table1 ,Benign tumors of the liver

A-**Epithelial tumours**

1-Hepatocellular; nodular regenerative hyperplasia , focal nodular hyperplasia and hepatic adenoma

2-Cholangiocellular ;Biliary cystadenoma

B-Mesenchymal tumors

1-Adipose tissue ; lipoma ,myelolipoma and angiomyolipoma

2-Muscle tissue , Leiomyoma

3-Blood vessel ;hemangioendothelioma and Hemangioma

C-Mixed mesenchymal/epithelial

Mesenchymal hamartoma and benign teratoma

D-Others

Inflammatory pseudotumor ,focal fat or fatty sparring and infectious lesions

(Little et al, 1998).

Liver function tests are not reliable unless patients have underlying parenchymal disease (eg, viral hepatitis). Tumor markers that can direct the evaluation are not reliable in a significant proportion of patients who prove to have malignancy, and thus cannot serve to identify benign processes (***Gibbs et al,1998)*** . Benign lesions of the liver can often cause a diagnostic challenge radiographically, because many of the lesions have overlapping radiographic features **(Ito, et al 1996).**

The Aim of the work

To review recent guidelines in diagnosis and management

of benign liver tumours .