

# Hepatobiliary tumours

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## Abstract

Greater use and sensitivity of radiological imaging including ultrasound, computed tomography and magnetic resonance imaging has meant that an increasing number of hepatobiliary tumours are identified incidentally, leading to diagnostic and therapeutic difficulties. They can be classified by their anatomical location, biological behaviour and cell of origin. Haemangiomas are the most common benign tumour of the liver. They have no potential for malignant transformation, and can therefore be treated conservatively. Liver cell adenoma has a strong association with the oral contraceptive pill and most would recommend resection because of potential for rupture, malignant transformation and misdiagnosis. Focal nodular hyperplasia has no risk of malignancy and can also be treated conservatively if asymptomatic, although avoidance of oral contraception is recommended. Hepatocellular carcinoma accounts for 90% of all primary liver malignancy and usually occurs on a background of chronic liver disease. Surgical resection may be possible in well compensated cirrhotics, but transplantation treats the underlying cirrhosis as well as removing all tumours. Most tumours can metastasize to the liver and the detection of liver metastases is generally associated with a poor prognosis. However, colorectal liver metastases are curable with liver resection and therefore screening following resection of a primary colon cancer is essential. Both gall bladder cancer and hilar cholangiocarcinoma have a poor prognosis because they are often advanced at presentation, with invasion of local vital structures as well as perineural and lymphatic spread. Radical resection can potentially be curative, but often only palliative treatment to relieve biliary obstruction is possible.

**Keywords** benign; cholangiocarcinoma; focal nodular hyperplasia; gall bladder carcinoma; haemangioma; hepatocellular carcinoma; liver cell adenoma; metastasis; peri-ampullary tumour

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Practitioners from all areas of medicine may be faced with the evaluation of lesions arising in the liver or biliary tract. Greater use and sensitivity of radiological imaging including ultrasonography, computed tomography (CT) and magnetic resonance imaging (MRI) has meant that an increasing number of hepatobiliary tumours are identified incidentally, leading to diagnostic and therapeutic difficulties. They can be classified by their anatomical location, biological behaviour and cell of origin (Table 1).

## Benign liver tumours (Table 2)

Benign focal liver masses are present in approximately 9% of patients in the general community in developed countries.<sup>1</sup>

### Hepatobiliary tumour classification

Cell type	Benign	Malignant
Hepatocyte	Liver cell adenoma	Hepatocellular carcinoma
	Hepatocellular hyperplasia Focal nodular hyperplasia Nodular regenerative hyperplasia Macroregenerative nodules	Fibrolamellar carcinoma
Cholangio-epithelial	Simple hepatic cyst	Cholangiocarcinoma
	Polycystic liver disease	Carcinoma of the gall bladder
	Hepatobiliary cystadenoma Bile duct adenoma Papillomatosis	Ampullary cancer
Mesenchymal	Mesenchymal hamartoma	Angiosarcoma
	Haemangioma	Epithelioid hemangioendothelioma
	Infantile haemangioendothelioma	
	Lipoma/angiomyolipoma	
	Leiomyoma	
	Fibroma Focal fatty change	
Others	Inflammatory pseudotumour Myxoma Epidermoid cyst Benign teratoma	Myxoma

Table 1

## Common liver tumours

Liver tumour	Aetiology	Female: male	Histology	Symptoms/ complications	Major differential	Diagnosis	Management
Haemangioma	Nil	3:1	Large blood filled spaces lined by endothelium	Mass effect Bleeding/ thrombosis Kasabach-Merritt syndrome	Adenoma HCC Metastases	CT/MRI – well demarcated hypodense lesion (pre contrast) peripheral nodular enhancement (early phase) + centripetal filling (late phase)	Conservative unless symptoms or complications
Adenoma (HCA)	OCP Endocrine disorders  Klinefelters syndrome	11:1	Uniform mass of hepatocytes without ducts or portal triads	Mass effect Malignant transformation  Rupture	FNH  HCC	CT – hypodense with peripheral contrast enhancement + centripetal filling to become hypervascular in the arterial phase Sulphur colloid scintigraphy (Tc-99) – cold spot	Resection
Focal nodular hyperplasia (FNH)	Nil	9:1	Regenerating nodules + connective tissue septae	Mass effect	HCA  HCC	Colour doppler US – spokewheel vascularity radiating from a central scar CT/ MRI – central scar (60%) Sulphur colloid scintigraphy (Tc-99) – hot spot	Conservative
Hepatocellular carcinoma (HCC)	Liver cirrhosis – especially viral + metabolic Promoters: Etoh aflatoxin	2:1	Varying degrees of differentiation	Metastasize Local pain bleeding	Macroregenerative nodules HCA/FNH metastases	Alpha-fetoprotein CT/MRI – arterial phase hypervascularity	Resection Transplantation Locoregional chemotherapy Percutaneous ablative techniques
Hepatic metastases	Colon/rectum, bronchus, pancreas, breast and stomach primary	1:1	Depending on primary	Often asymptomatic Pain, weight loss, anorexia, fever, liver failure, carcinoid syndrome	Benign tumours  HCC	Tumour markers  CT/MRI – typically hypodense lesion with some arterial rim enhancement	Resection Systemic chemotherapy Local ablative techniques

CT, computed tomography; MRI, magnetic resonance imaging; OCP, oral contraceptive pill; US, ultrasound; Etoh, ethyl alcohol.

Table 2

## Haemangioma

The most common benign tumour of the liver, with an incidence ranging from 0.4–20% in published ultrasound and autopsy series. It is commoner in women (3:1) and occurs most frequently between the ages of 30–70 years. They can be capillary or cavernous and are probably congenital in origin. They have no potential for malignant transformation; can occur as solitary or multiple tumours (40%).

In the majority of cases they are entirely asymptomatic, but can cause symptoms by mass effect, haemorrhage or thrombosis. Acute rupture with intra-abdominal bleeding is extremely rare. There is some evidence to suggest that growth is hormone dependent and associated with the oral contraceptive pill (OCP) or pregnancy. The majority remain stable over time although they can enlarge and require resection to improve the symptoms.<sup>2</sup>

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