

Investigation of liver lesions

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Introduction

- The incidental finding
- VOMIT
- History and examination
- Diagnostic imaging
- (Treatment)

History

- Pain, fever, jaundice, (hypotension)
 - Focus of infection
- Known liver disease (Alcohol, Hep B/C)
- Malignancy (previous and current)
- Oral contraceptive use, anabolic steroids
- Sheep/ dogs
- Family history (Haemochromatosis, PLD)

Examination

- Stigmata of chronic liver disease
- Malignancy examination
 - Breast, head and neck, melanoma, renal, neuroendocrine
- Lymphadenopathy
- Bloods
 - Hb, WCC
 - LFTs, CEA, CA19.9, CRP (CA 15.3)
 - Hydatid serology, pregnancy test

Imaging

- Ultrasound
- CT (triple phase)
 - Chest/ Abdomen/ Pelvis
- MRI (gadolinium and Primovist)
 - Liver

Differential Diagnosis (1)

Normal liver

Solid

Cystic

Solitary

Multiple

Solitary

Multiple

Haemangioma
Focal fatty change
Metastasis
FNH
Benign adenoma
Sporadic HCC
Sarcoma
Lymphoma
Angiomyolipoma

Haemangioma
Metastases
Adenomata/ FNH
Angiomyolipoma

Simple cyst
Cystadenoma
Abscess
Hydatid
Metastasis

Polycystic liver
Abscesses
Hydatid
(Metastases)

Differential Diagnosis (2)

Fatty/ Cirrhotic liver

Solid

Cystic

Solitary

Multiple

Multiple

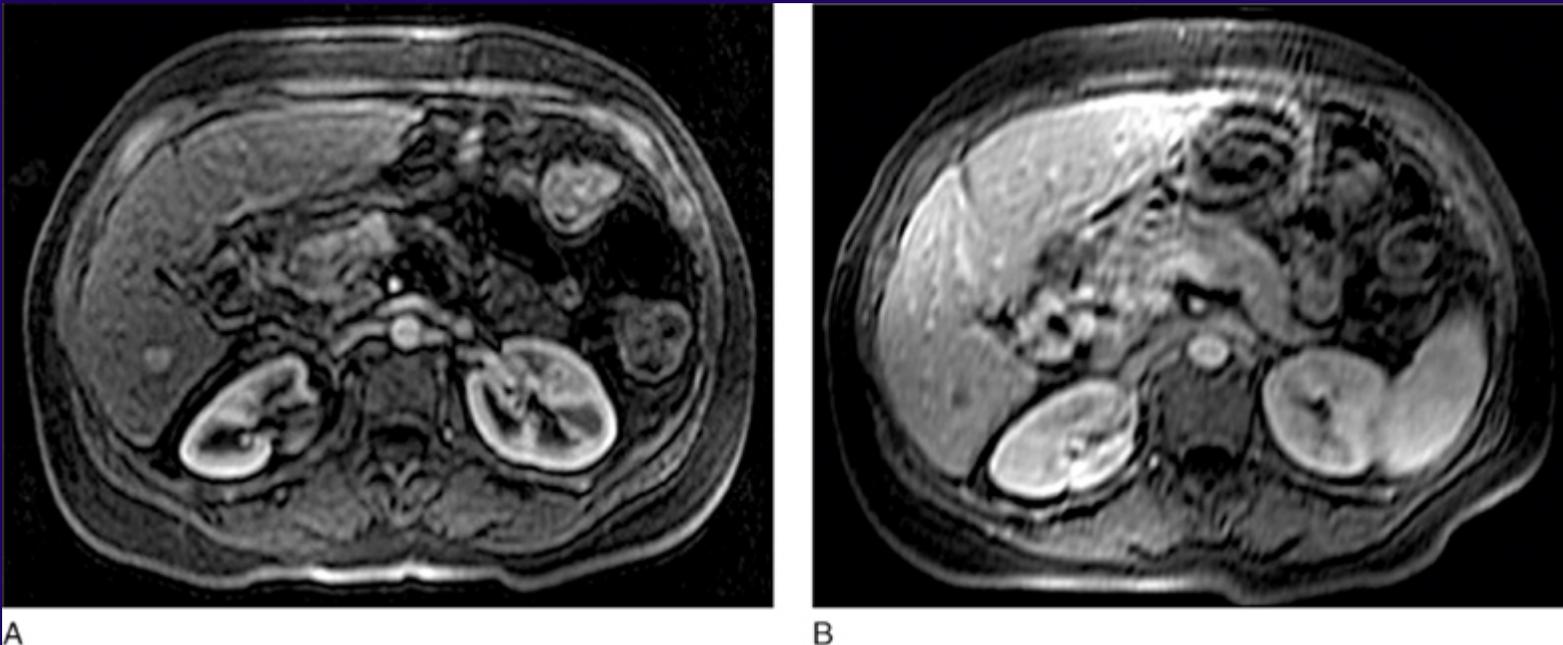
HCC (>2cm,
AFP>400)
Regenerative
nodule

Regenerative
nodules
Multiple HCC
Metastases

Polycystic liver
Abscesses
Hydatid
(Metastases)

Diagnosis of HCC

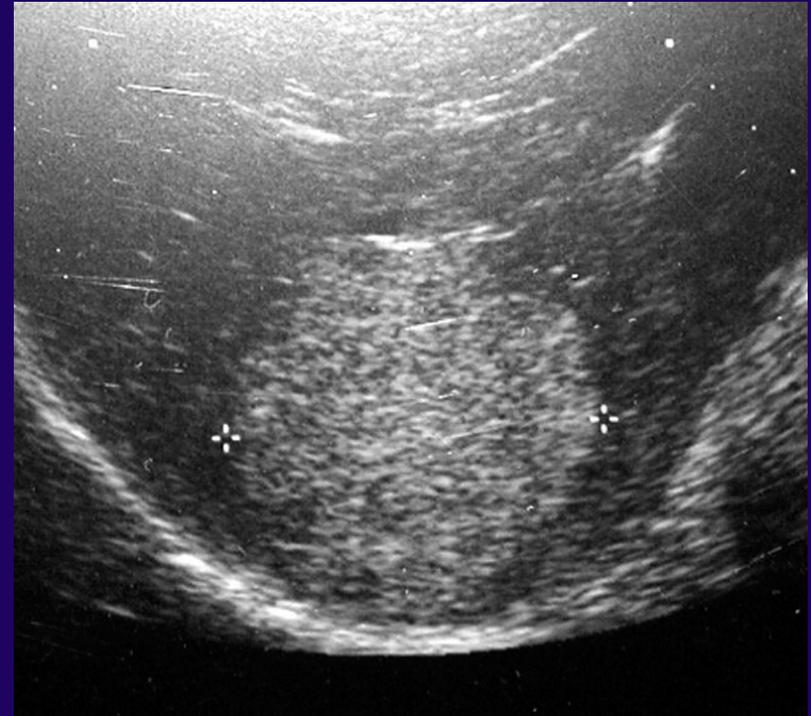
- If AFP > 400 and lesion > 2cm diagnostic
- 70% AFP normal



A, MRI depicts a small nodule with arterial enhancement after contrast administration. **B**, The nodule exhibits washout of the contrast material in the venous phase. This is the characteristic pattern of HCC.

Benign liver lesions

- Haemangioma
- Simple, multiple cysts
 - Biliary cystadenoma
 - Hydatid
- Adenoma and FNH



Haemangioma

- Up to 7% of population
- Occasional need for CT/ MRI
- Most incidental
- Not associated with pain, infection, bleeding, malignant transformation, COC
- No follow-up required
- Massive cavernous haemangioma may cause compression or pain (>10 cm)
 - Kasabach- Merritt syndrome (v.rare)

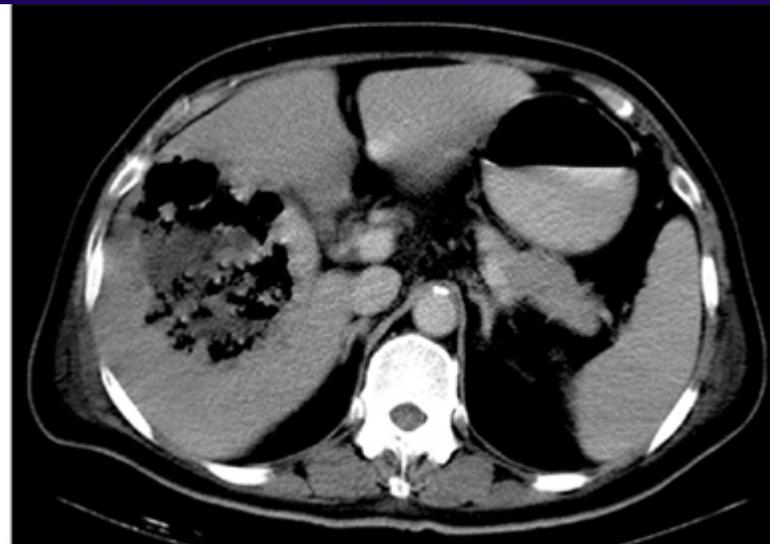


Abscesses

- Systemic symptoms
- Diabetes, immunosuppression, haematologic disorders
- Biliary or colonic source (Klebsiella, E.coli)
 - Dental, pulmonary, cardiac less common



A



B

Cysts

- Pain, bleeding, infection, abnormal LFT
- Majority small, asymptomatic – no treatment required
- Differentiate from Hydatid, Biliary cystadenoma



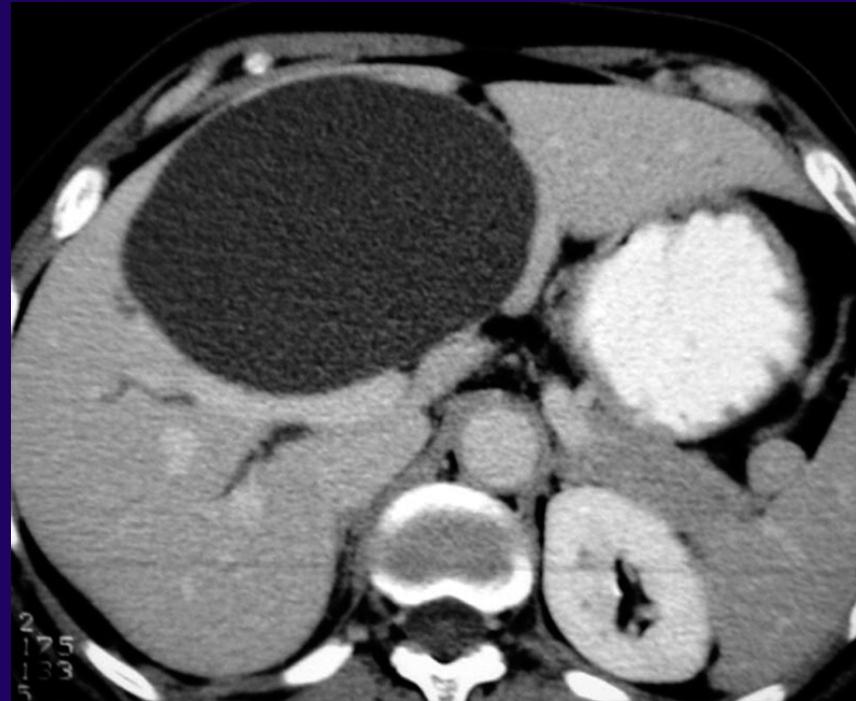
Polycystic liver disease

- Family history (or not)
- Renal cysts, Berry aneurysms
- De-roof dominant cysts
- Pain control can be challenging
- Transplantation in severe cases



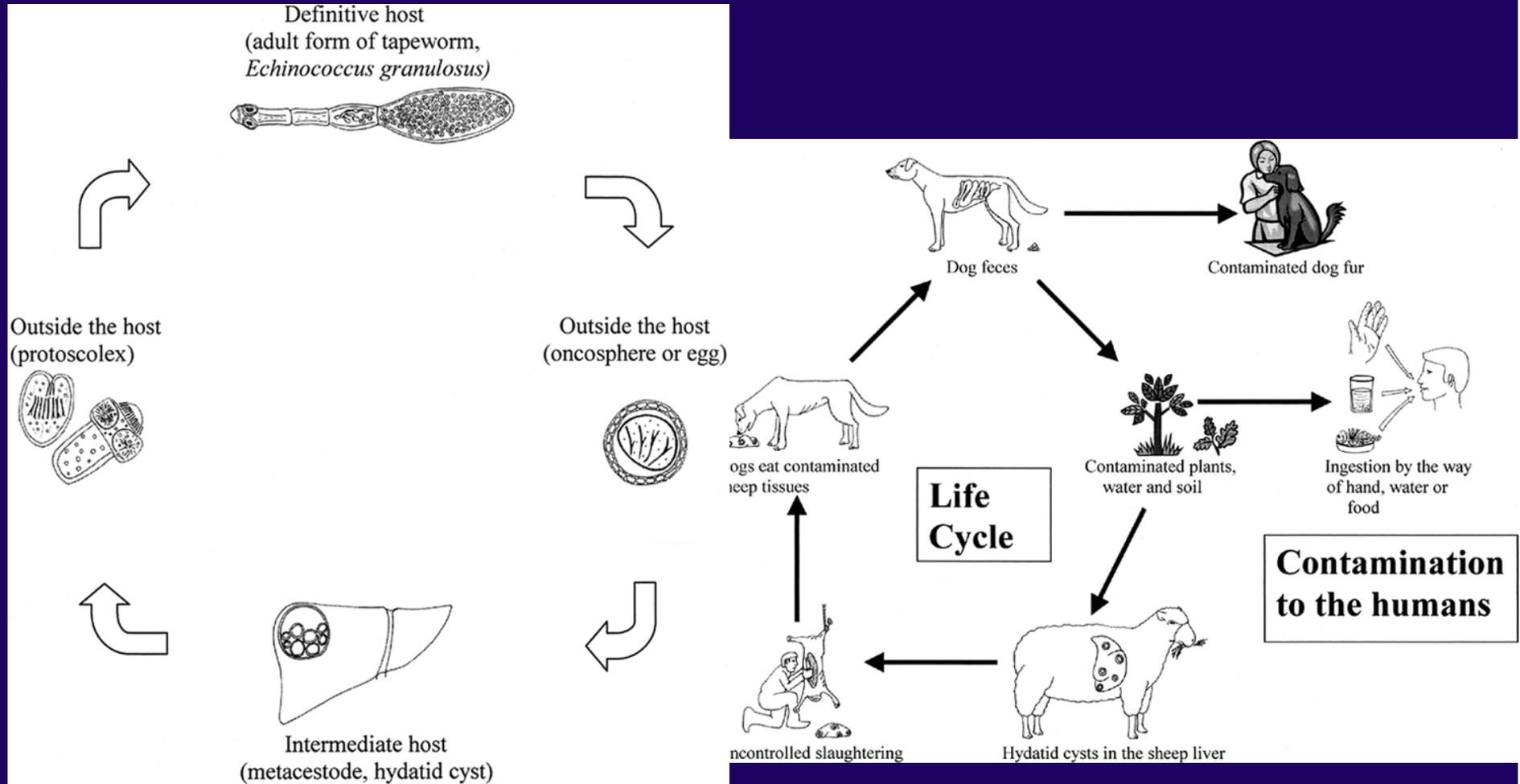
De-roofing cysts

- Is done in DGH
- However, exclude hydatid/ biliary cystadenoma
- ALL recur
- May not improve symptoms
- Can bleed ++ from liver, bile leak also a risk
- Infection risk, re-operation more difficult

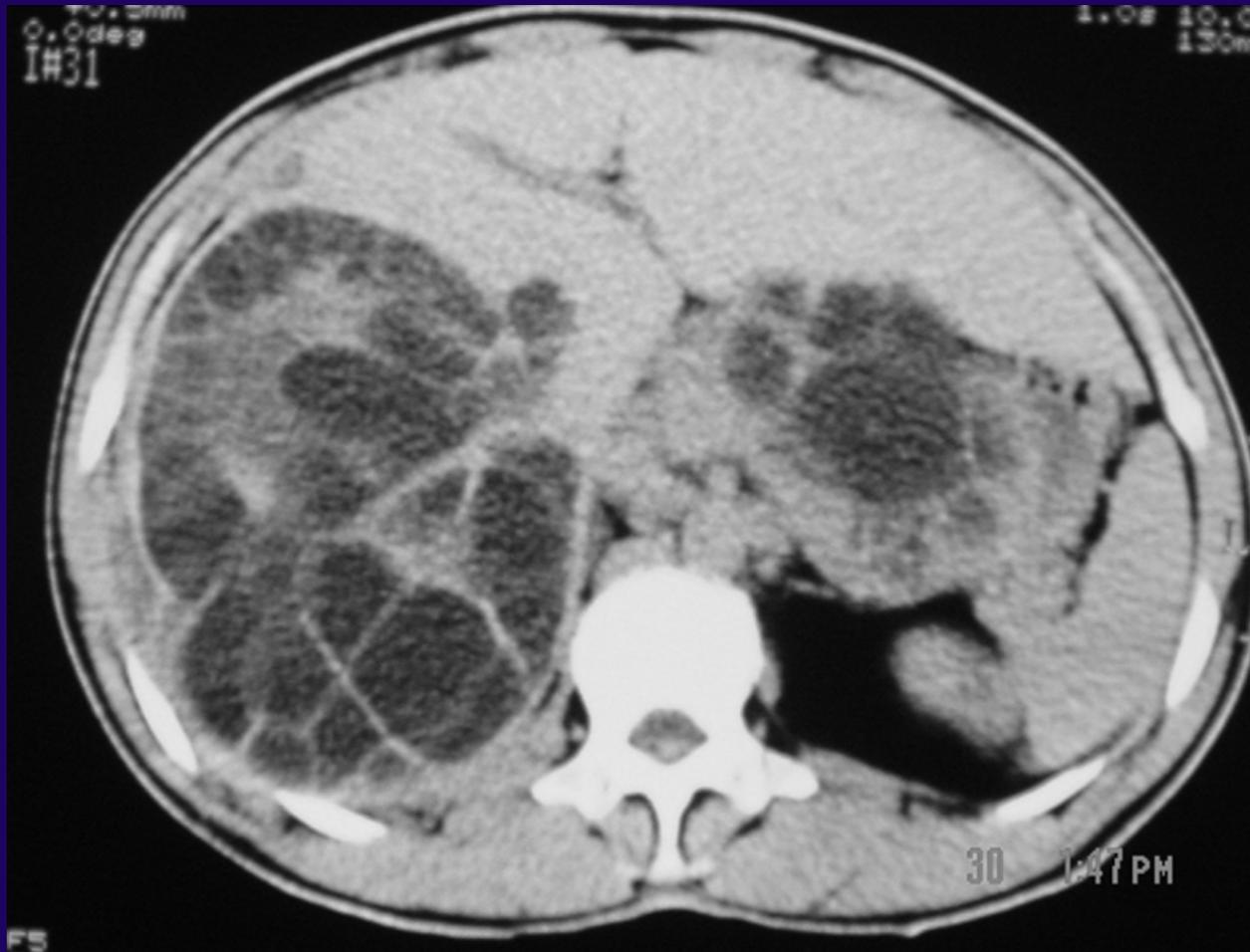


Abdominal CT of a large simple cyst compressing the biliary confluence. Intrahepatic bile ducts of the right liver are enlarged. The portal bifurcation also is compressed.

Hydatid disease



Typical hydatid cyst



Focal nodular hyperplasia

- Second commonest benign liver lesion
- 8:1 Female to Male
- Associated with COC (oestrogen)
- Overlap with adenoma
- Classical 70-80%
 - Central scar
- Telangiectatic (15%)
 - Similar to adenoma (bleeding risk)
 - No central scar
- Mixed hyperplastic/adenoma (5%)
- With dysplasia (<5%)

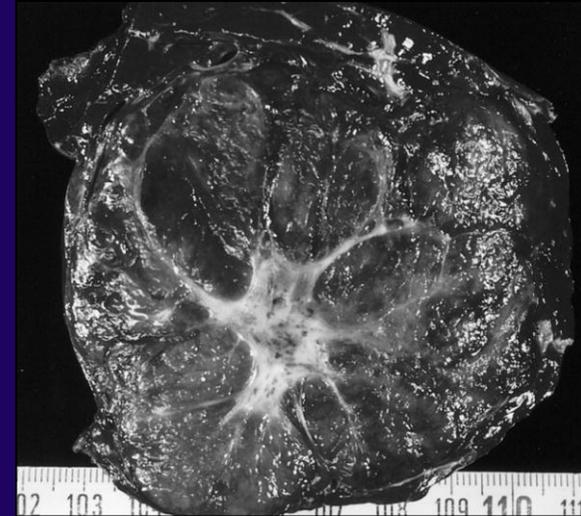


FIG. 1. The gross appearance of classical FNH. Lobulated lesion composed of flesh-colored nodules surrounded by irradiating fibrous septa from a central scar. Note the congestive vessels in the center of the lesion.

Focal nodular hyperplasia

- Can have symptoms
- Multiple
- Associated with adenomas

Signs and symptoms*	Number of patients (n = 130)‡
Incidental discovery	46 (35.4)
Abdominal pain	75 (57.7)
Abdominal mass	5 (3.8)
Hepatomegaly	1 (0.8)
Constitutional symptoms	2 (1.5)
FNH with increased volume on follow-up	1 (0.8)
LFT anomalies	17 (13)†

* That prompted discovery of FNH.
 † Number in total irrespectively to the presenting signs or symptoms.
 ‡ Percentage on the total number of patients with available clinical information.
 LFT, liver function test.

Number of lesion per patient†	Classical form*	Telangiectatic form*	Mixed form*	With dysplasia*
1 (28)	113	10	3	2
2 (22)	41	1	0	2
3 (8)	21	0	0	3
4 (4)	15	1	0	0
5 (1)	5	0	0	0
1-5 (163)	195	12	3	7
15 (2)	2	14	2	0
20 (2)	20	20	0	0
30 (1)	28	1	0	1
15-30 (5)	50	35	2	1
Total: 1-30 (168)	245	47	5	8

* Number of lesions harboring this histologic type.
 † In parenthesis, number of patients.

Focal Nodular Hyperplasia of the Liver: A Comprehensive Pathologic Study of 305 Lesions and Recognition of New Histologic Forms.

Nguyen, Bich; Flejou, Jean-Francois; Terris, Benoit; Belghiti, Jacques; Degott, Claude

American Journal of Surgical Pathology.
 23(12):1441, December 1999.

FNH Management

- Establish diagnosis (CT/ MRI)
 - Liver specific contrast (Primovist) to differentiate between adenoma/ HCC
 - May need lap biopsy
- Treat co-existent gallstones
- Discourage COC/ hormonal therapy
- Surveillance with MRI (1/2 + yearly)
- Intensify surveillance during pregnancy (CEUS)
- If growing, symptomatic resection

- Latest guidelines- if definitely FNH discharge, continue OCP

Hepatic Adenoma

- Liver cell adenomas are rare
- 9:1 F:M
- COC/ hormone therapy
- Often multiple (1-%)
- Rare cases >30
- Rupture/ malignant transformation in pregnancy
- Looks like multiple mets
- Often co-existent FNH

CT taken from a patient presenting with acute abdominal pain and shock. Extensive haemorrhage into a large left lobe adenoma with multiple other lesions

Management of hepatic adenoma

- Establish diagnosis
 - CT/ MRI/ CEUS
 - Biopsy (*but risk of rupture*)
- Stop COC/ hormonal therapy
 - Advise against pregnancy/ consider termination
 - Monitor annual MRI (extend or USS if not growing)
- Resect if > 5cm, growing, symptomatic, β -catenin activation, bleeding, rupture, uncertain diagnosis
- If multiple bilobar consider transplantation

Conclusions

- Cysts can be de-roofed but exclude hydatid/ biliary cystadenoma (serology and diagnostic aspiration)
- Differentiation between benign/ malignant liver lesions requires multimodal investigation and perhaps lap biopsy
- Bleeding liver lesions either Adenoma or HCC will need resection after stabilisation
- **The most common lumps haemangiomas are asymptomatic and will not cause problems.**