Chief Complain

- Liver lesion found in routine health check 41 days ago

Present Illness

- On 2005-7-26 at 台北署立醫院 he underwent a health check for the first time.
- Abdominal US showed suspicious of a 6*5 cm hepatoma, mild fatty liver, and a 0.6 cm gallbladder polyp.
- Cholesterol 303, TG 526, Glucose 226 mg/dL were also noted.

- He was recommended to visit a bigger hospital. Therefore he visit our GI OPD on 2005-8-5
- lost 3 kilogram and felt malaise in the recent 2 months
- denied any symptoms including loss of appetite, nausea, vomiting, hematemesis, dysphasia, or melena

Past history

- Nil

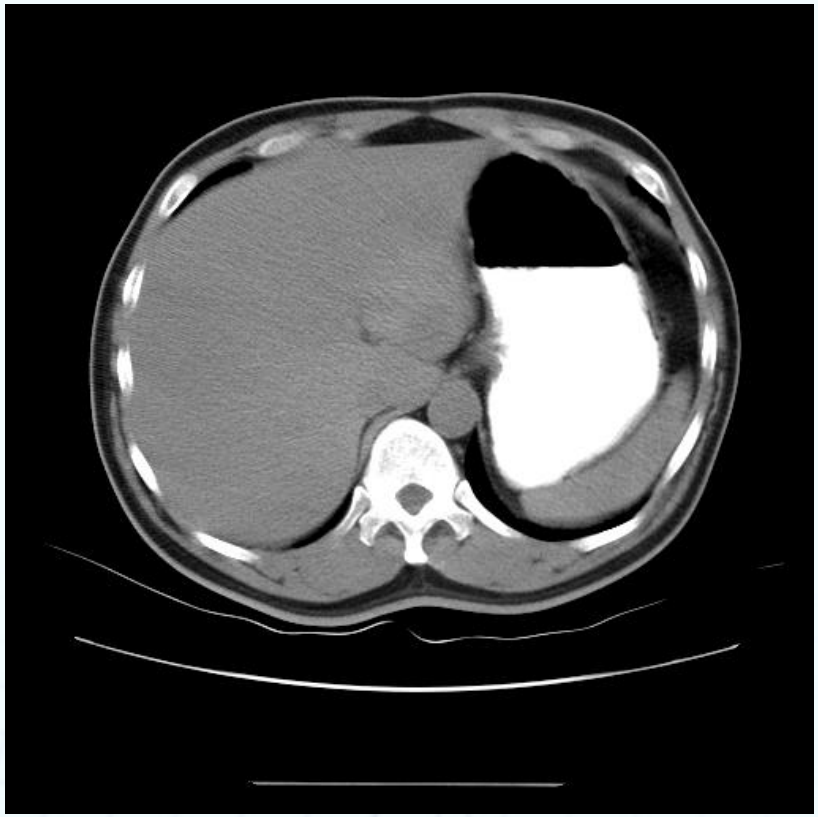
Personal history

- Smoking: 0.5PPD/20 years
- Alcohol: occasional

Lab

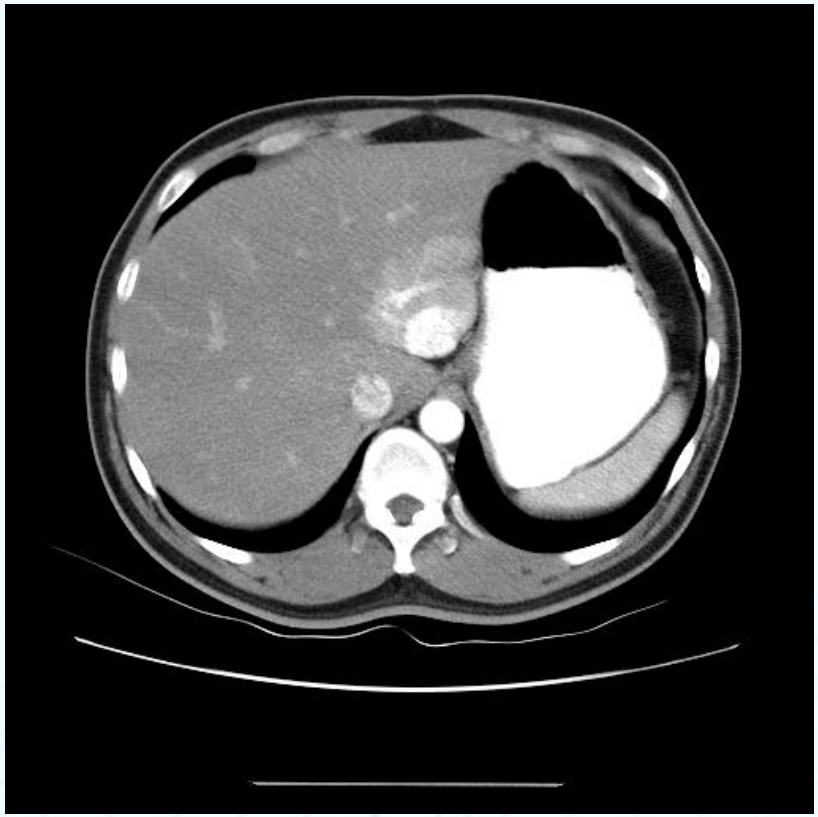
- HbA1C (血液) [4.0-6.0 %] 11.4
- Lipemia
- GOT(血液) [0-40 IU/L] 27
- GPT (血液) [0-40 IU/L] 40

Image



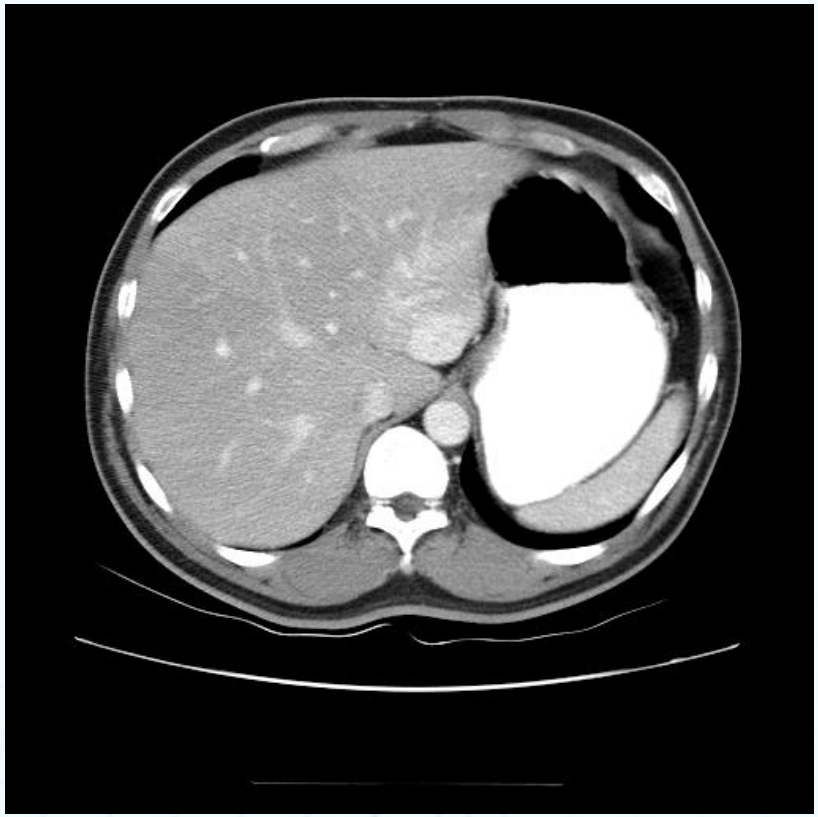
- ill define strong enhanced mass
- locate mainly of Seg II~III
- Pre-contrast phase

Image



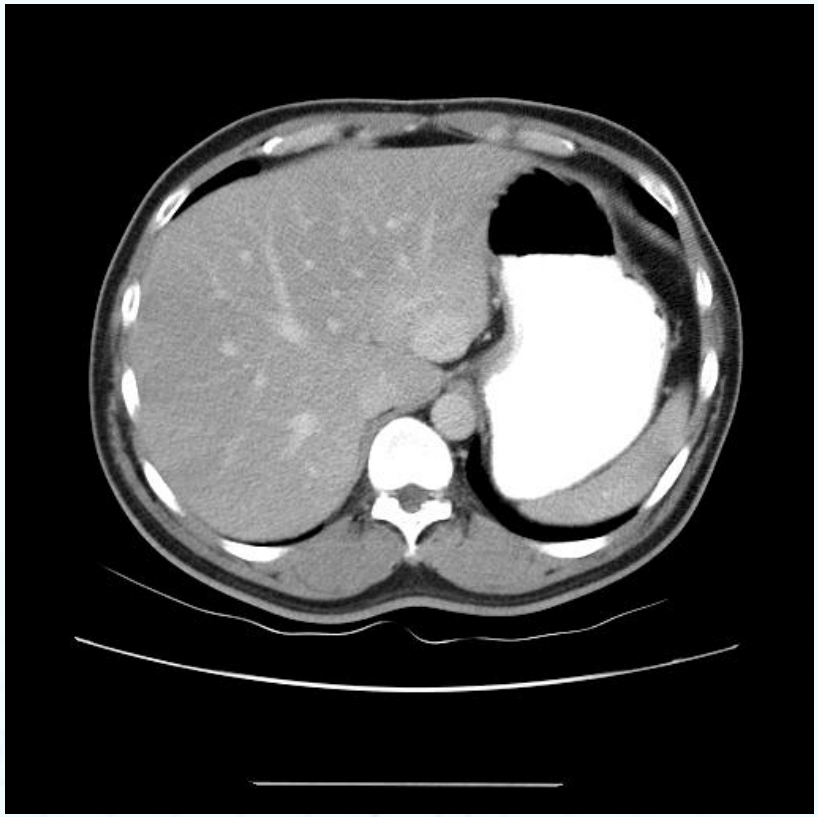
- ill define strong enhanced mass
- locate mainly of Seg II~III
- central scar like appearance
- arterial phase

Image



- ill define strong enhanced mass
- locate mainly of Seg II~III
- portal phase

Image



- ill define strong enhanced mass
- locate mainly of Seg II~III
- delay phase

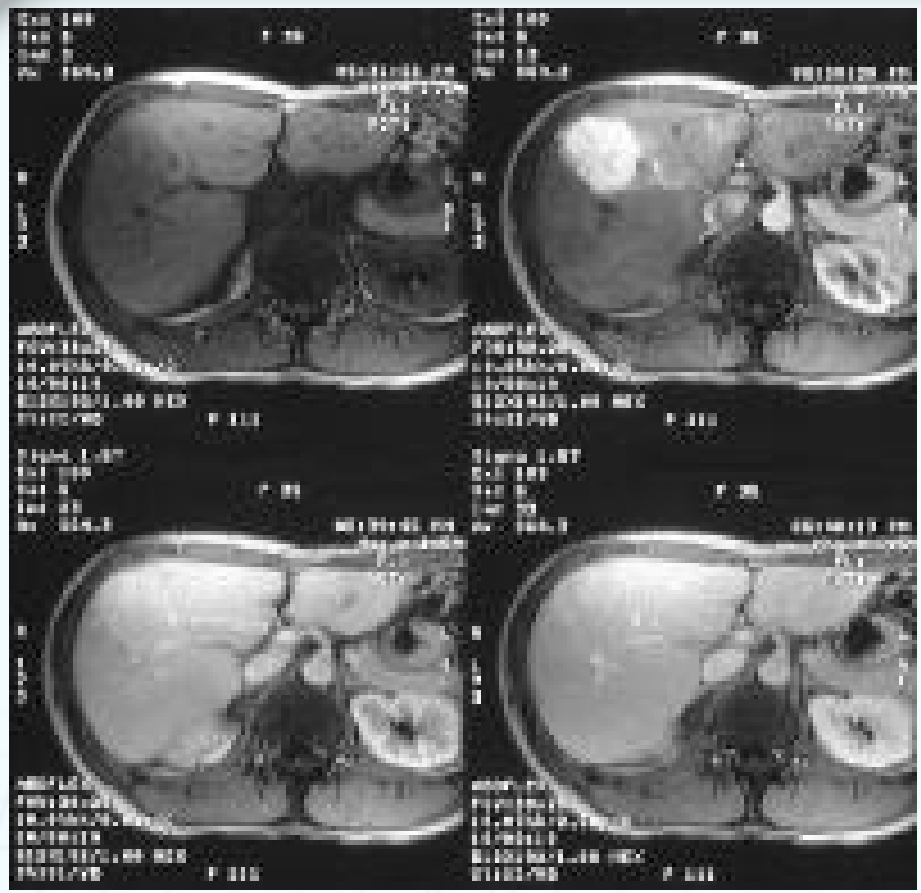
Differential diagnosis

- Liver hemangioma
- Focal Nodular Hyperplasia
- Hepatocellular Carcinoma
- Liver, Metastases

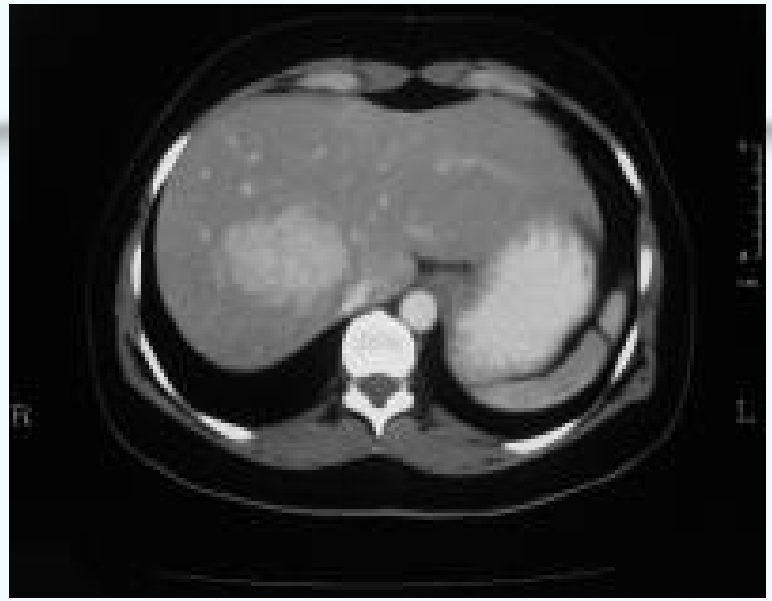
Focal Nodular Hyperplasia

- the second most common tumor of the liver
- result of a localized hepatocyte response to an underlying congenital arteriovenous malformation
- discovered during imaging, angiography, radionuclide liver scanning, or surgery

- clinical course is asymptomatic
- liver function tests are usually normal
- a solitary lesion (80-95%), but multiple lesions may occur



- Top left, T1-weighted MRI demonstrates an ill-defined low-signal-intensity mass.
- Top right, The mass enhances intensely in the arterial phase after the administration of contrast



- The mass demonstrates intense enhancement

- Image shows an ill-defined hyperechoic mass in the right lobe of the liver.

Hepatocellular Carcinoma

- the most common primary hepatic tumor and one of the most common cancers
- risk factors include alcohol abuse, viral hepatitis, and metabolic liver disease
- alpha-fetoprotein (AFP) as serum proteins , often high

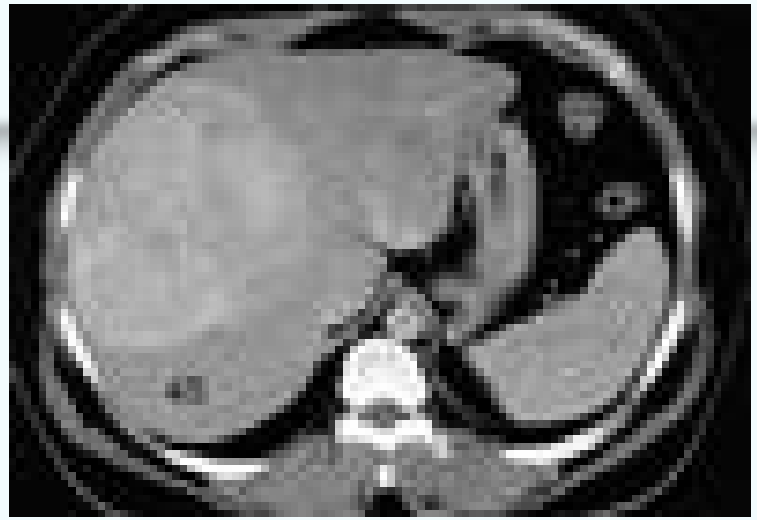
- 3 growth patterns of HCC

  -Solitary mass - Often large

  -Multifocal or nodular pattern - Multiple nodules

  -Diffuse - Multiple, small foci scattered diffusely throughout the liver

- clinical symptoms included fever of unknown origin, abdominal pain, malaise, weight loss, and hepatomegaly, Jaundice, bleeding, hepatic rupture, and hemoperitoneum



- a hyperattenuating, unsharply limited, multifocal lesion

- Ultrasound shows hyperechoic mass representing hepatocellular carcinoma.

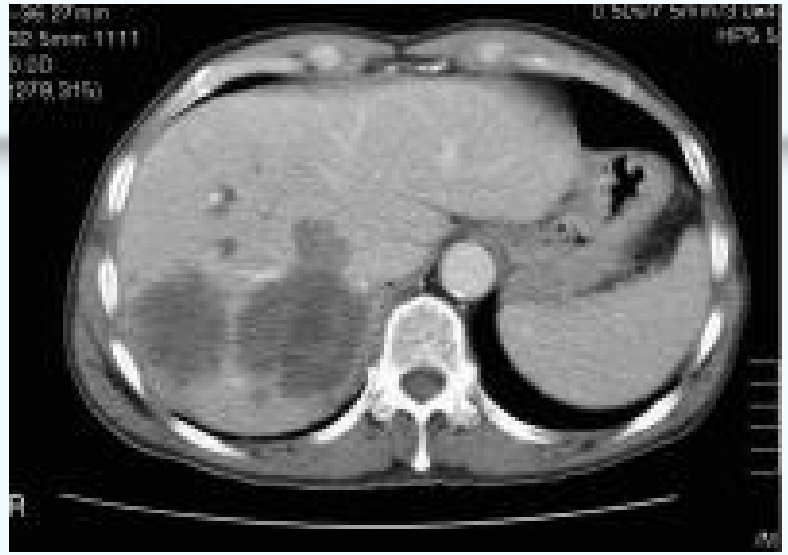
Liver, Metastases

- liver is the second most commonly involved organ by metastatic disease, after the lymph nodes
- the most common primary sites are the eye, colon, stomach, pancreas, breast, and lung
- In children, the most common liver metastases are from a neuroblastoma, a Wilms tumor, or leukemia.

- Most liver metastases are multiple, involving both lobes in 77% patients, and only 10% are solitary
- one half the patients with liver metastases have clinical signs of hepatomegaly or ascites; liver function tests tend to be insensitive and nonspecific.

- carcinoid liver metastases on contrast-enhanced axial CT scan through the upper abdomen

- carcinoid liver metastases on a gadolinium-enhanced axial MRI through the liver



- Contrast-enhanced CT scan in a patient with colorectal liver metastases

- A 2.5-cm echogenic nodule in the left lobe of the liver

Final diagnosis

Liver hemangioma

Discussion

Clinical Manifestation

- The reported incidence rate of hepatic hemangiomas is approximately 2%.
- The prevalence rate at necropsy is as high as 7.4%.
- The female-to-male ratio is 4-6:1
- can occur at all ages but are more common in older persons

Clinical Manifestation

- the most common benign liver tumor
- The majority are asymptomatic and incidentally discovered at imaging, surgery, or autopsy.
- may cause symptoms because of the compression of adjacent structures, rupture, acute thrombosis, or consumptive coagulopathy

Clinical Manifestation

- Pressure on the stomach and duodenum caused abdominal pain, early satiety, nausea, and vomiting
- Pedunculated hemangiomas may twist and cause acute abdominal pain
- Acute thrombosis may result in acute inflammatory changes that cause fever, abdominal pain, and abnormal liver function

Clinical Manifestation

- Spontaneous or posttraumatic rupture is a catastrophic complication that occurs in about 1-4% and mortality rate, as high as 60%
- Laboratory test results may suggest anemia, and reduced hematocrit levels may be present in patients with ruptured hemangiomas

Clinical Manifestation

- giant hemangiomas associated with Kasabach-Merritt syndrome (DIC, thrombocytopenia, hypofibrinogenemia)
- May increase the size during pregnancy or estrogenic therapy

Typical image

- CT scan
  - With contrast-enhanced CT scan, hemangiomas are characterized by a hypodense center with ring or globular enhancement of the periphery.
  - Contrast enhancement progresses centripetally, with late hyperdensity in the central portion of the tumor.

Hemangioma: CT

Homogeneous enhancement

Hemangioma: CT

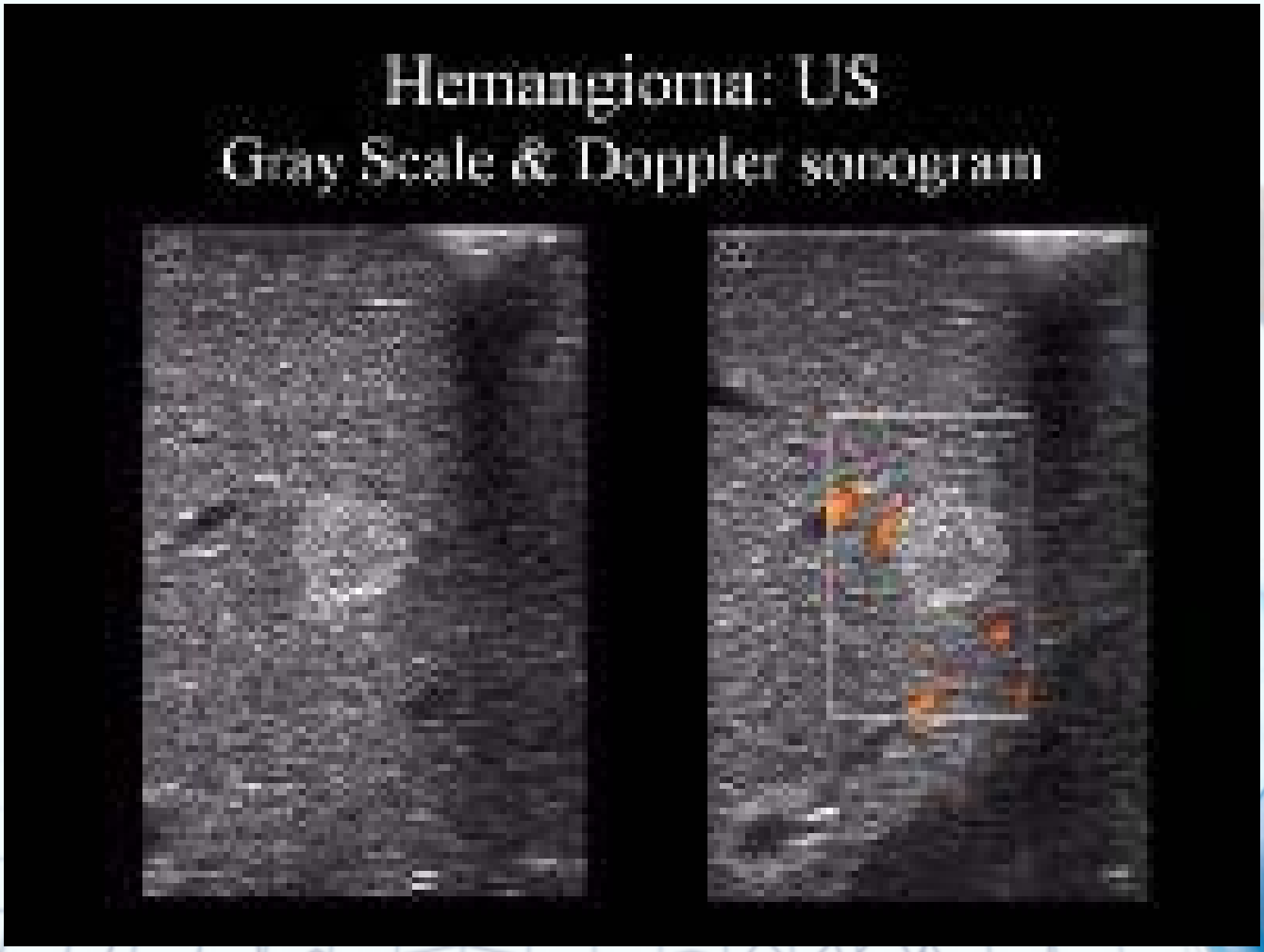
Homogeneous and Nodular enhancement

Typical image

- Ultrasound
  - This is the most commonly employed initial diagnostic tool. It is widely available and inexpensive. Hepatic hemangiomas usually are echogenic, but their sonographic appearance is variable and nonspecific.
  - Addition of color Doppler to routine US provides qualitative and quantitative data and increases the sensitivity and specificity of the test. Serial US examinations can be used to monitor any increase in size of the hemangioma over time

Hemangioma: US

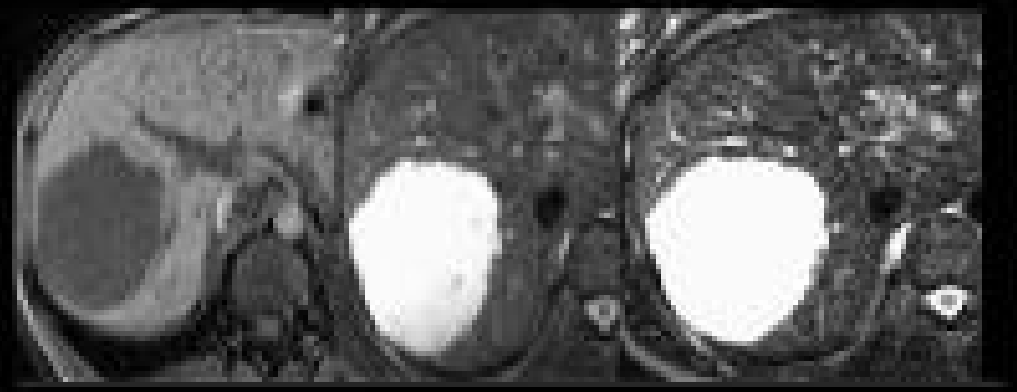
Gray Scale & Doppler sonogram



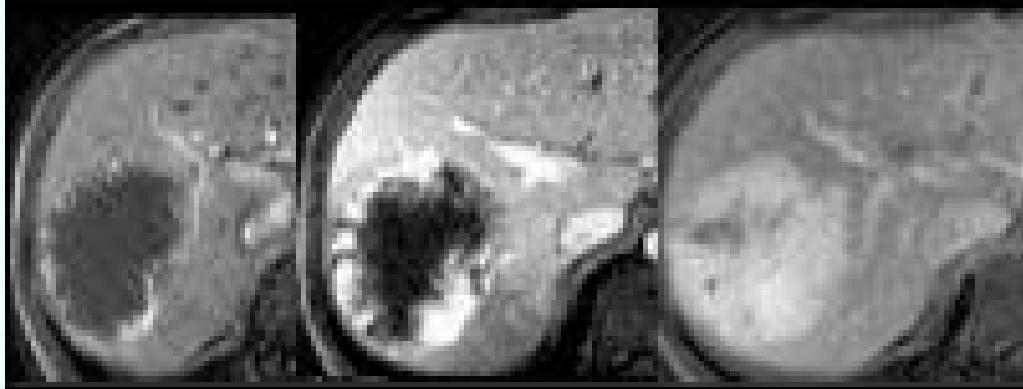
Typical image

- MRI
  - MRI with contrast enhancement is highly specific and can differentiate hemangiomas from other liver lesions. In one study, MRI imaging with T1-weighted gradient echo and T2-weighted fast spin echo after intravenous administration of 1.1 mg iron/kg body weight accurately described hemangiomas, hepatic metastases, and hepatocellular carcinoma based on different enhancement patterns

Hemangioma: MRI
T1WI & Dual-echo T2WI



Hemangioma: Gd-MRI
Progressive centripetal enhancement



Treatment

- **Medical Care:**

-Most hepatic hemangiomas are small and asymptomatic at the time of diagnosis, and they are likely to remain that way

-No medical therapy is known to reduce the size or eliminate hepatic hemangiomas

Treatment

- **Surgical Care:**

-In general, surgery is indicated for symptomatic hemangiomas, rapidly growing tumors, and large lesions (>10 cm). Surgery also should be performed if hemangioma cannot be differentiated from hepatocellular carcinoma

Prognosis

- Excellent prognosis

Thanks for your attention