肝 脏 疾 病

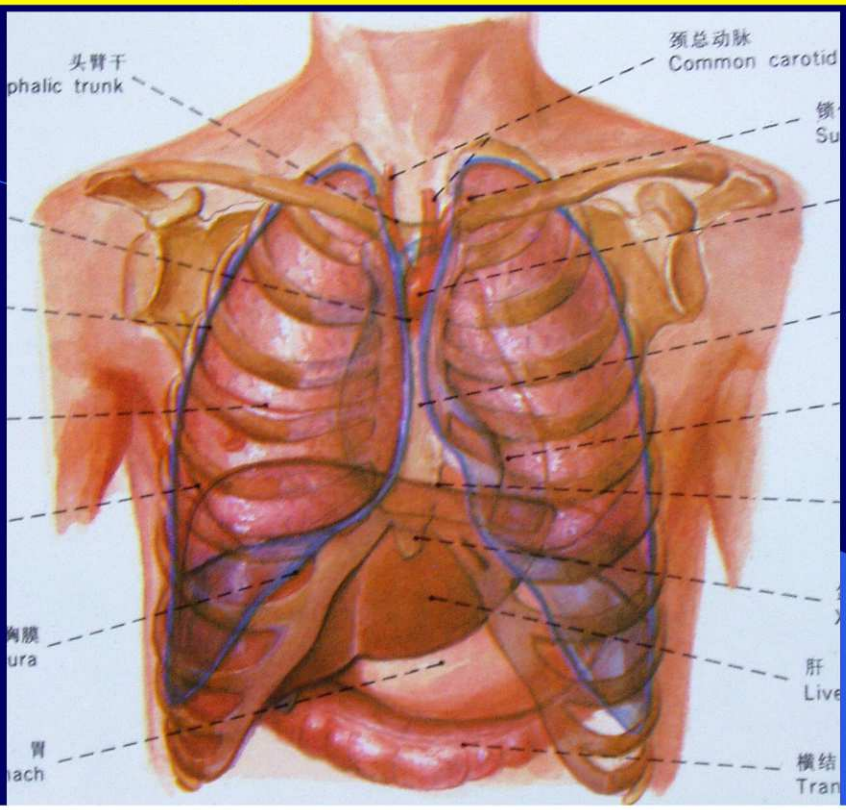
LIVER DISEASES

授课教师：王志明

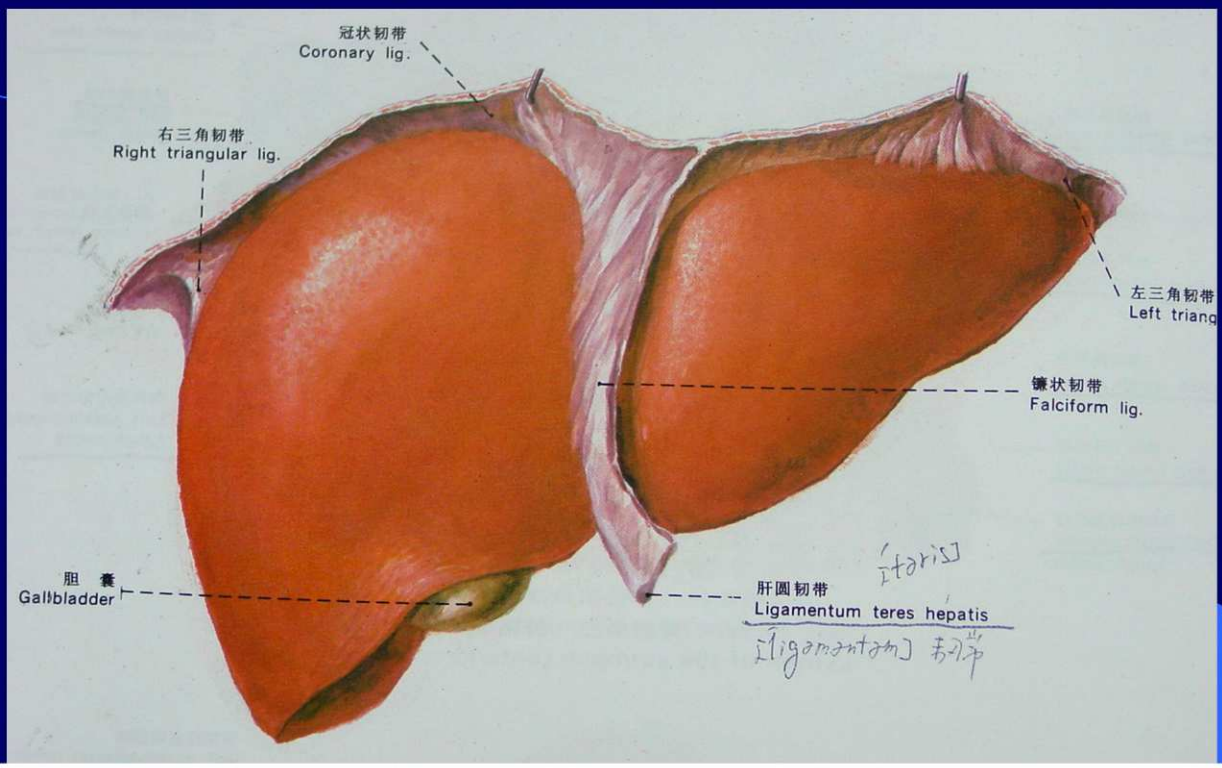
第一节 外科解剖生理

SURGICAL ANATOMY AND PHYSIOLOGY

1. Shape and size of the liver



2. ligaments of the liver



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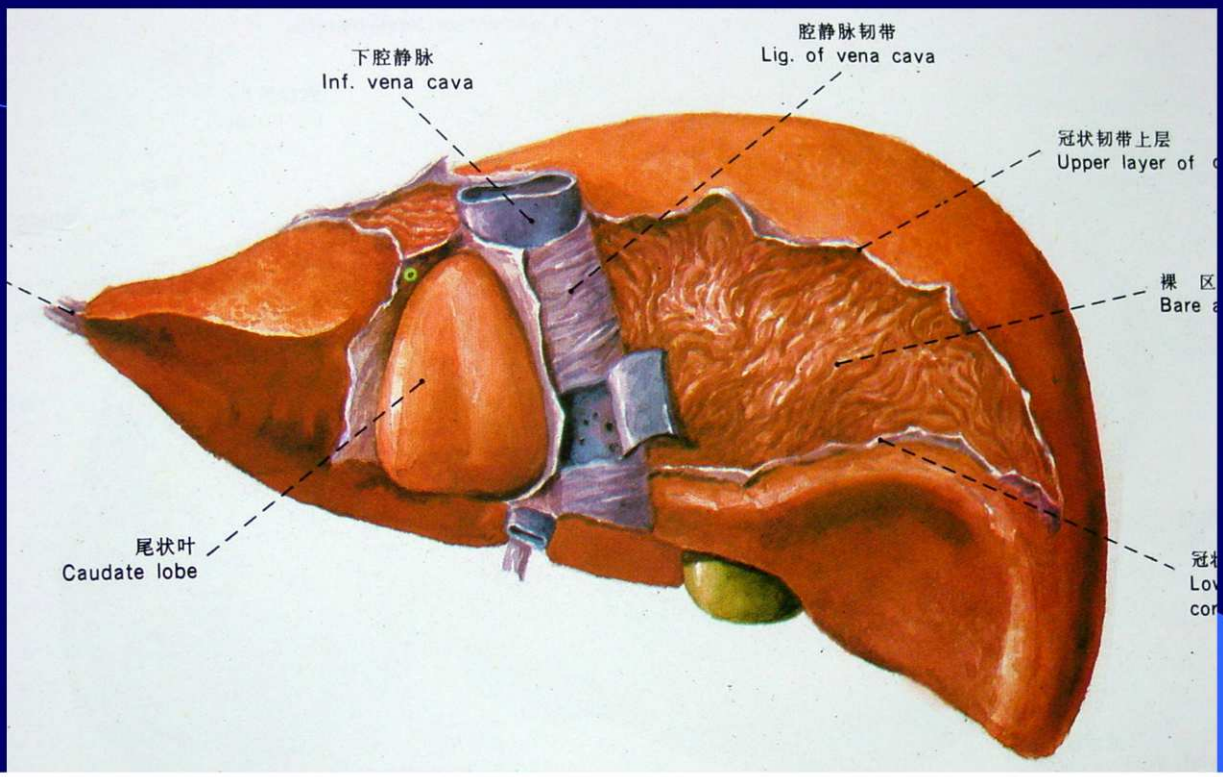

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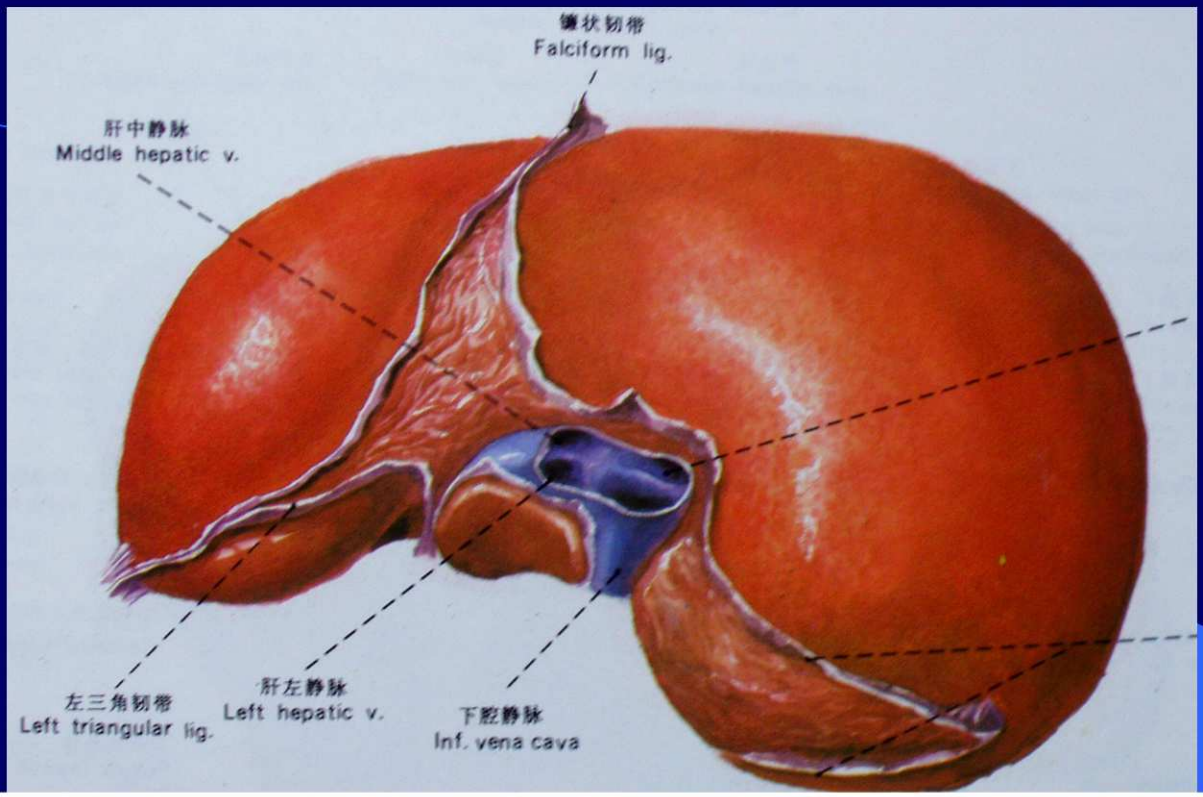
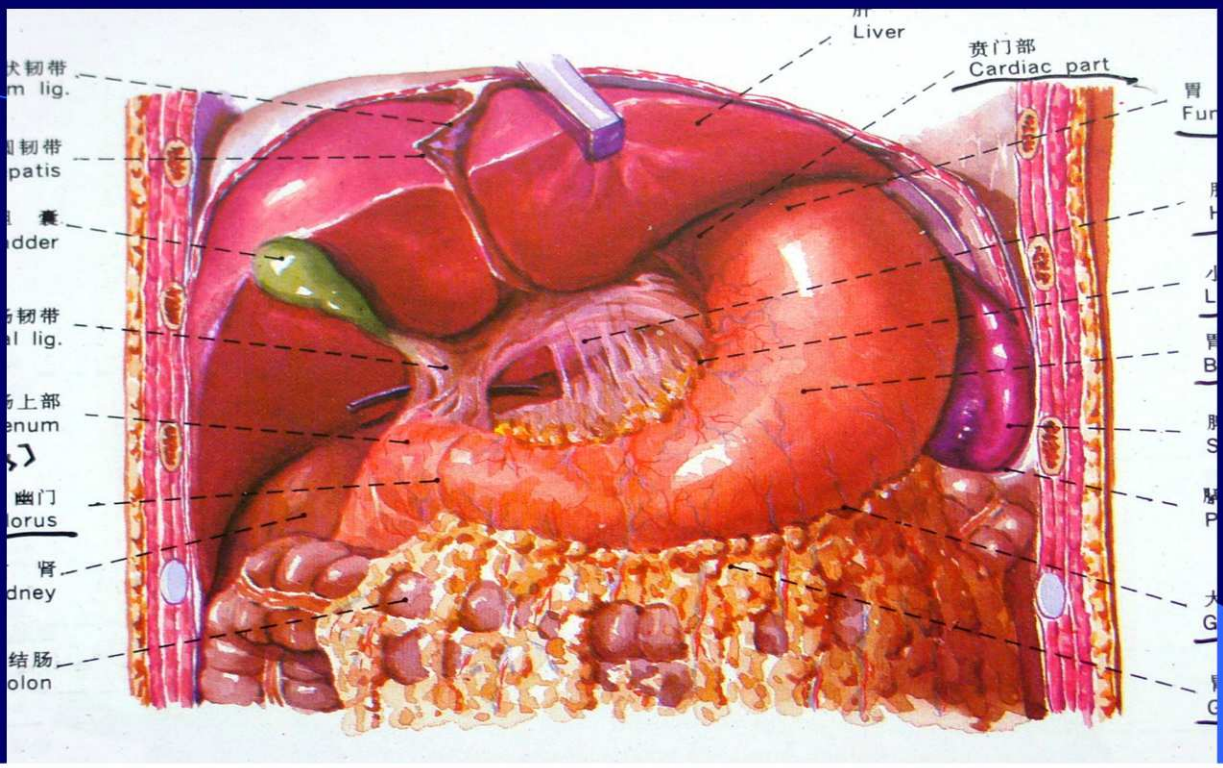
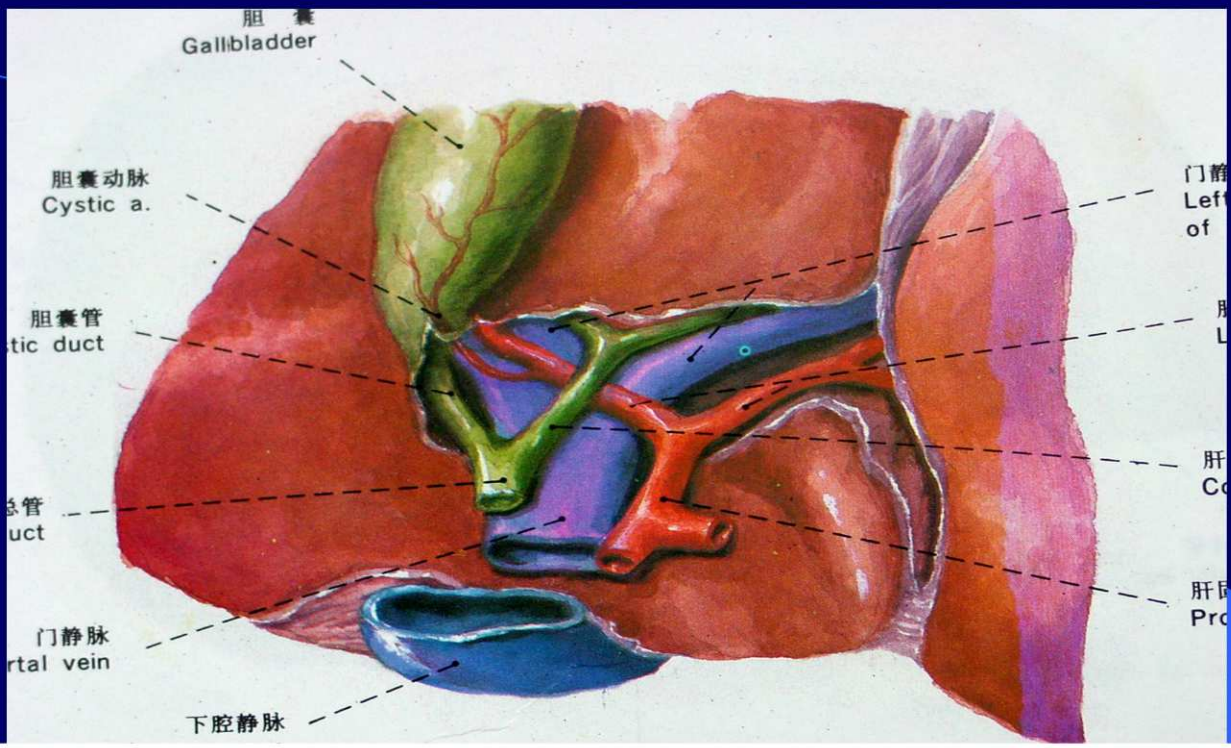


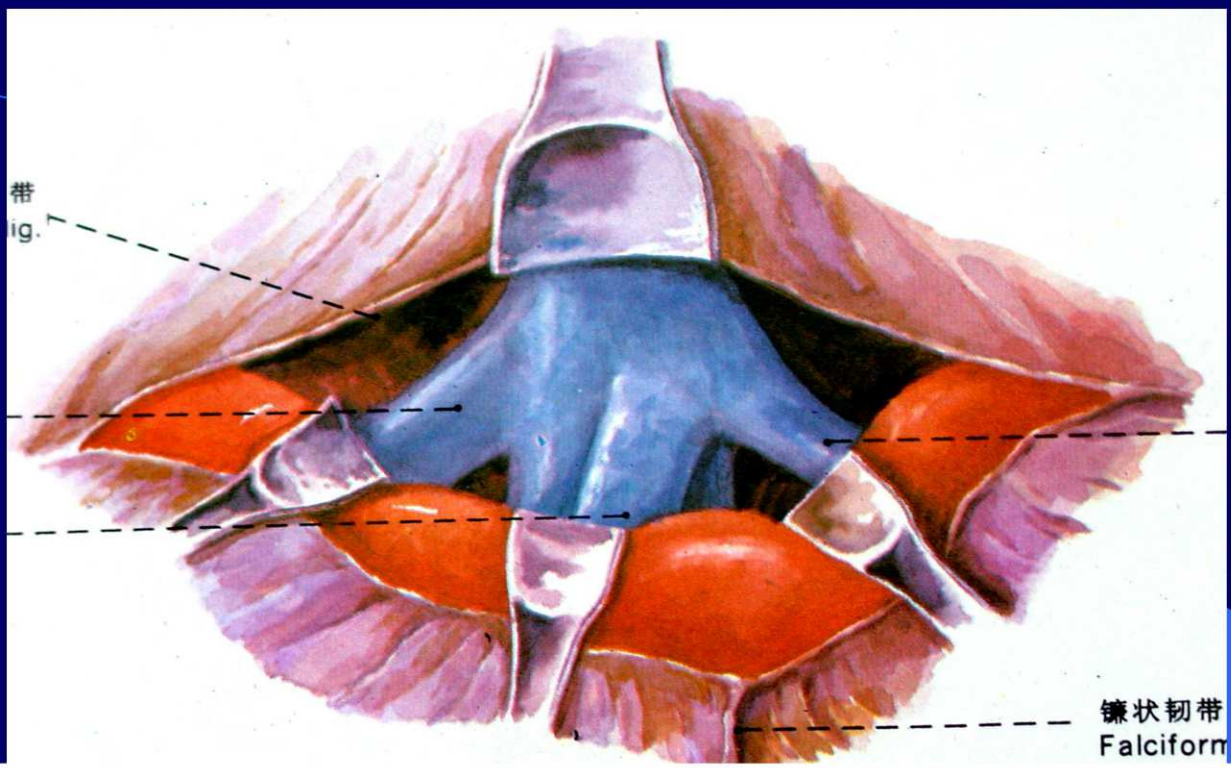
3. Adjacent organs



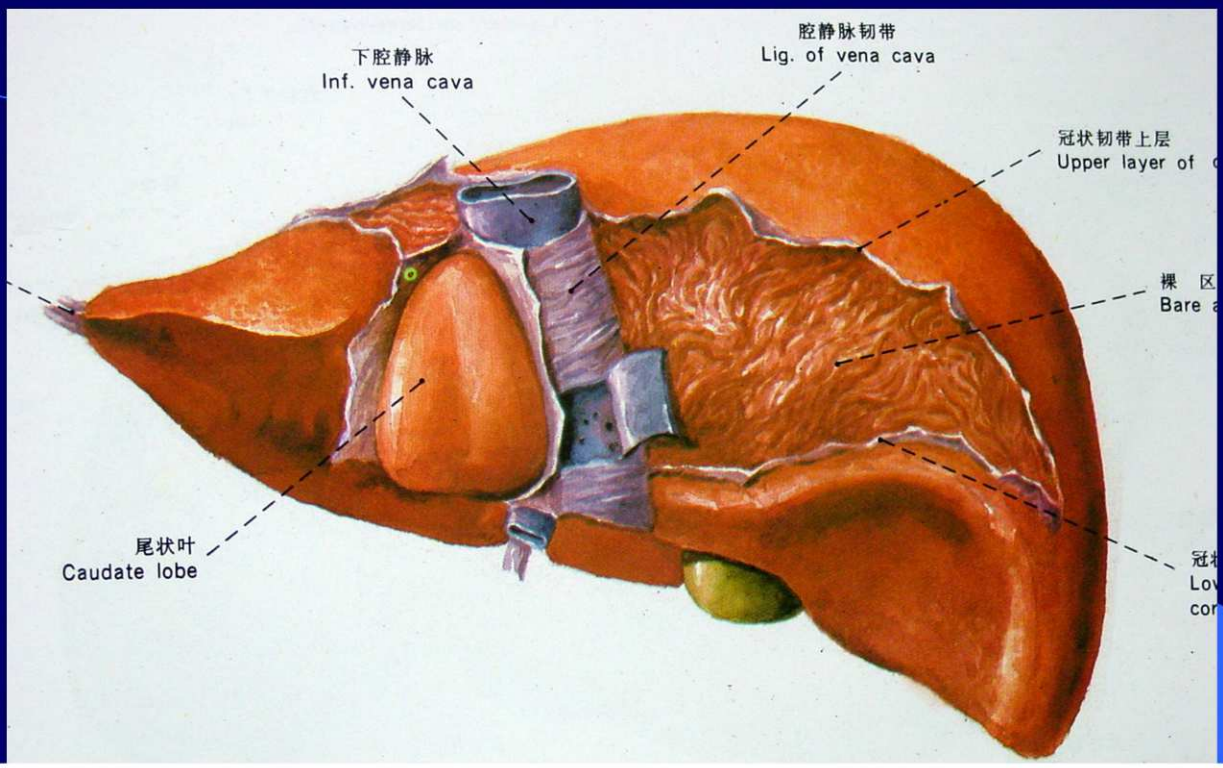
4. The first porta hepatis and blood supply



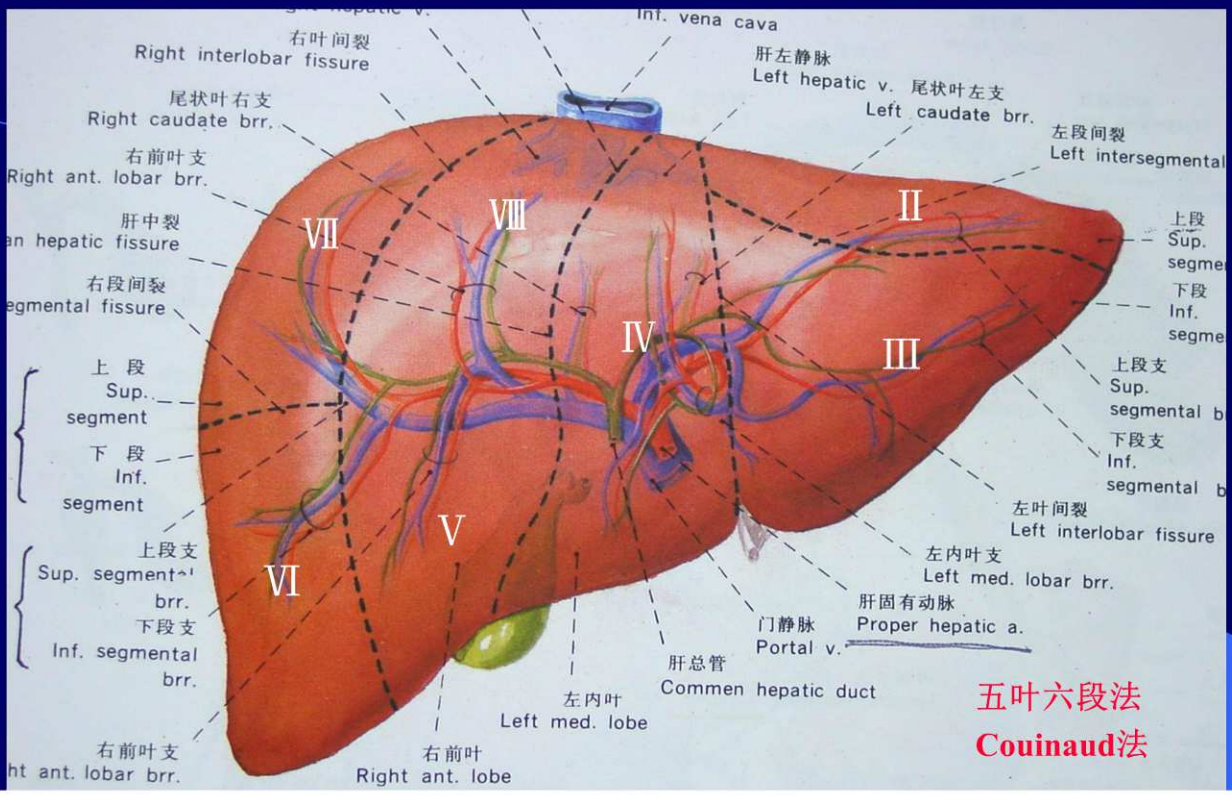
5. The second porta hepatis



6. The third porta hepatis



7. The liver segments



8. Physiological functions of liver

7.1.Bile secretion： 600~1000ml/day

7.2.Metabolic functions：

- Sugar hepatin ↔ glucose
- Protein synthesis
  deamination
  transamination
- Fat
- Vitamine VitA, B, C, D, E, K
- Hormone estrogen, antidiuretic hormone, aldosterone

7.3.Coagulation functions

7.4.Detoxifcation functions

7.5.Immune functions

9. Regeneration of liver

- Extraordinary regenerative capacity
- The blood of portal vein is very important for hepatocellular regeneration
- Occlusion time of the hepatic blood flow

第二节 肝脓肿

HEPATIC ABSCESS

- Bacterial hepatic abscess
- Amebic hepatic abscess

Common findings:

- Fever
- Right upper quadrant pain
- Hepatomegaly

BACTERIAL HEPATIC ABSCESS

1. Etiology and pathology

1.1. Infected pathway

①Biliary tract

②Hepatic artery

③Portal vein

④Others: infection of adjacent organs liver trauma

1.2. Pathogen

Escherichia coli, staphylococcus aureus, streptococcus, bacteroid

2. Clinic findings

2.1.Main symptoms：

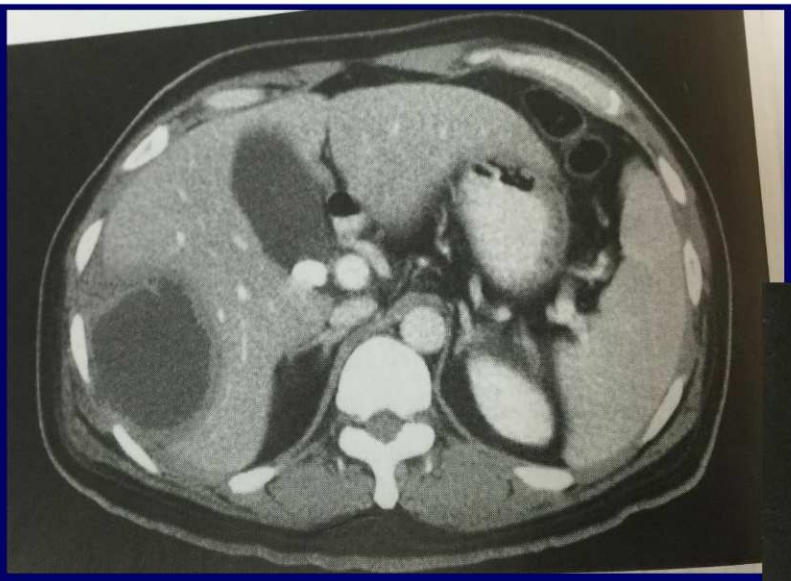
chill, high fever, pain in hepatic area,

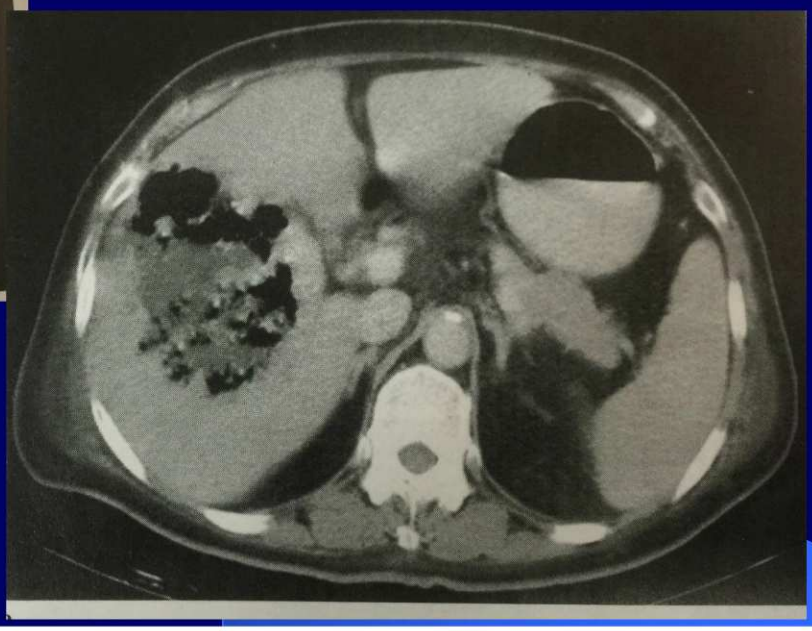
2.2.Main signs：

hepatomegaly, knock pain in hepatic area,
pitting edema of intercostal space

2.3.Examinations：

①Blood routine
②BUS
③CT
④X-ray





2.4.Complications rupture

①subphrenic abscess
②pleural effusion
③pericardial effusion
④acute peritonitis
⑤ upper gastrointestinal hemorrhage

3. Diagnosis

①History
②Clinic findings
③Blood routine
④Ultrasound

4. Differential diagnosis

❶Amebic hepatic abscess

表 41-1　细菌性肝脓肿与阿米巴性肝脓肿的鉴别

	细菌性肝脓肿	阿米巴性肝脓肿
病史	继发于胆道感染或其他化脓性疾病	继发于阿米巴痢疾后
症状	病情急骤严重，全身脓毒症症状明显，有寒战、高热	起病较缓慢，病程较长，可有高热，或不规则发热、盗汗
血液化验	白细胞计数及中性粒细胞可明显增加。血液细菌培养可阳性	白细胞计数可增加，如无继发细菌感染，血液细菌培养阴性。血清学阿米巴抗体检测阳性
粪便检查	无特殊发现	部分病人可找到阿米巴滋养体或结肠溃疡面（乙状结肠镜检）粘液或刮取涂片可找到阿米巴滋养体或包囊
脓液	多为黄白色脓液，涂片和培养可发现细菌	大多为棕褐色脓液，无臭味，镜检有时可找到阿米巴滋养体。若无混合感染，涂片和培养无细菌
诊断性治疗	抗阿米巴药物治疗无效	抗阿米巴药物治疗有好转
脓肿	较小，常为多发性	较大，多为单发，多见於肝右叶

❷Subphrenic abscess

❸Liver cancer

❹Infection of biliary tract

5. Treatments

5.1. Medical treatments

- ▲ Systemic treatments
- ▲ high efficient antibiotics
- ▲ percutaneous puncture exsuction and drainage under ultrasound-guided

5.2. Surgical treatments

- ▲ Incision drainage
- ▲ Hepatectomy

AMEBIC HEPATIC ABSCESS

Main characteristics：

1. 是肠道阿米巴感染的并发症
2. 绝大多数为单发
3. 首选内科治疗：药物、穿刺抽脓、支持治疗
4. 手术治疗：
   - ▲穿刺置管闭式引流
   - ▲切开引流
     - 指征：①内科治疗无效者
       ②脓肿伴继发细菌感染内科治疗无效
       ③脓肿已穿破者

第三节 肝包虫病

Hepatic Hydatidosis

Characteristics

1. 是由犬绦虫的囊状幼虫寄生在肝脏所致。
2. 发病有明显的地域性，病史中有牧区居住或与狗、 羊等动物有密切接触史。
3. 后期临床表现上腹肿块、腹痛、压迫症状；病程中常有过敏反应史。
4. BUS为首选检查，结合典型病史较易诊断。
5. 因继发感染、囊肿破裂可产生严重的并发症。
6. 治疗以手术为主，手术原则为彻底清除内囊、防止囊液外溢、消灭外囊残腔和预防感染。

第四节 肝肿瘤

HEPATIC TUMOR

▲malignant tumor

- Primary hepatic cancer (PHC)
- Metastatic hepatic cancer

▲Benign tumor

PRIMARY HEPATIC CANCER

1.Summary

▲Epidemiology：

▲Mortality rate： 我国肿瘤的第二位, 全球死于肝癌者50万人/每年，50%在中国

▲Survival rate： 5年总生存率36%，小肝癌5年生存率75%，微小肝癌90%

▲Removal rate： 总切除率为10~30%，小肝癌54%

▲Recurrence rate： 5年复发率为62%，高峰期为术后1~2年

2. Etiology

▲Hepatic cirrhosis: 53.9～85%

necrotizing hepatic tissue → hyperplasia

→dedifferentiation→canceration

▲Virus hepatitis: HBV: ＞90%,

HCV: 10%±,

HDV

▲Aflatoxin

▲The others

3. Pathology

3.1 Gross types

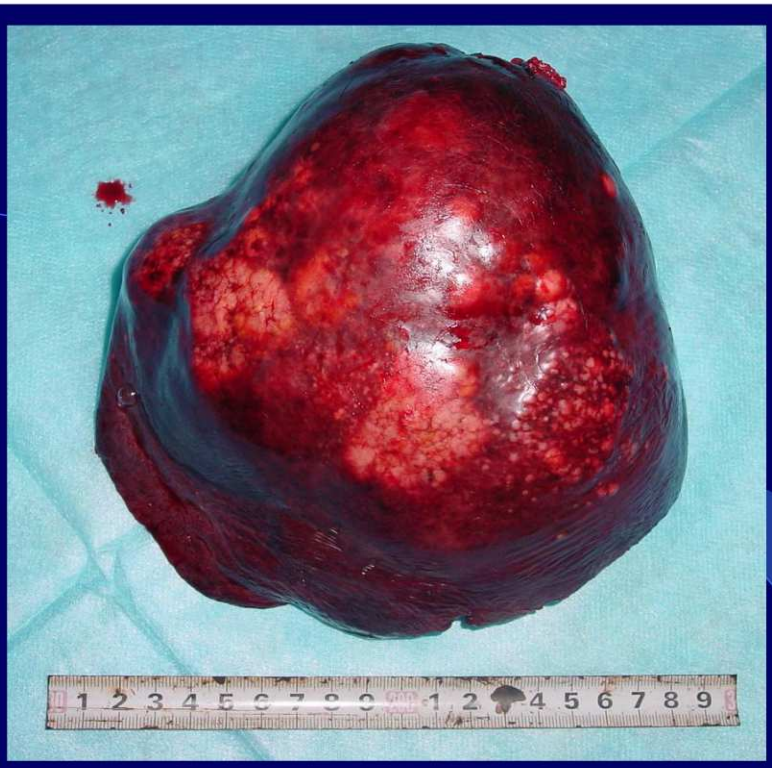
▲nodular form

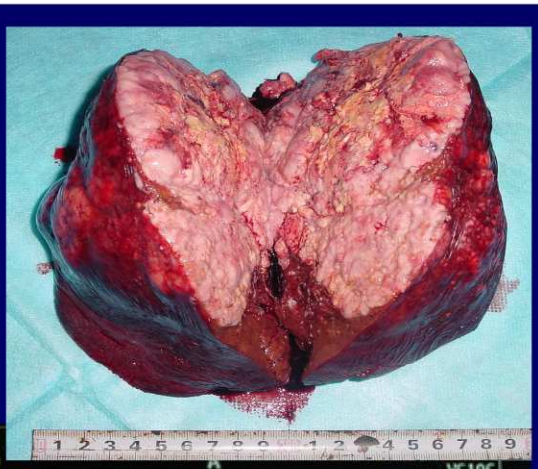
▲massive form

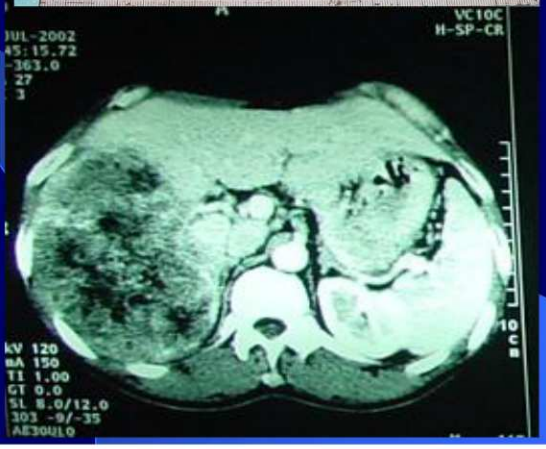
▲diffuse form

Tumor size

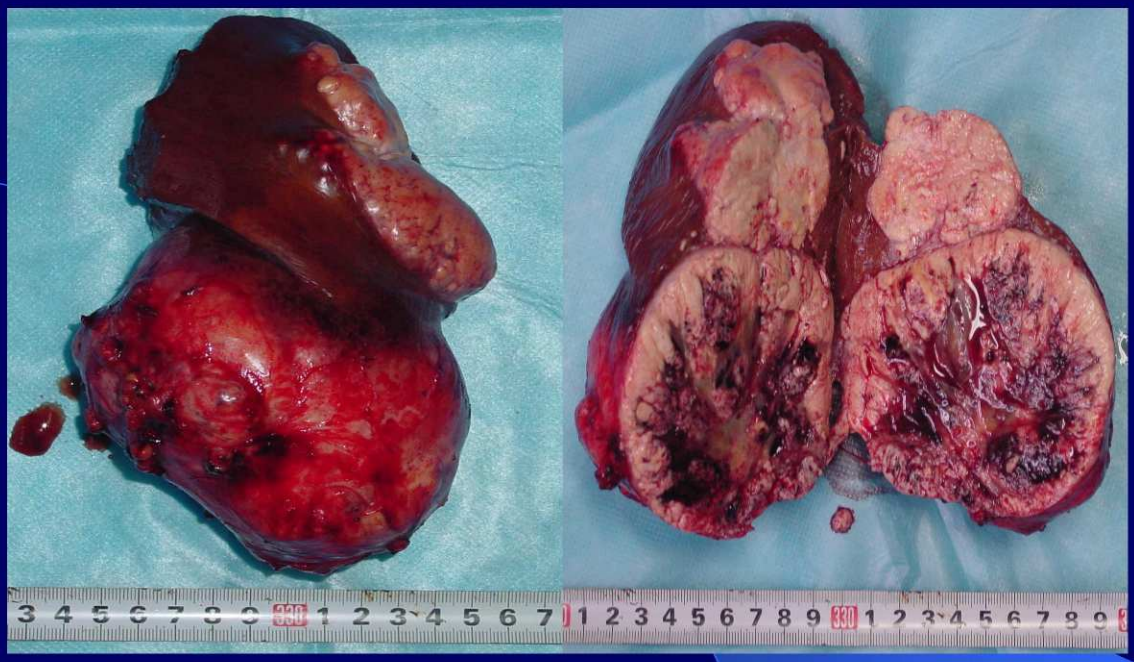
- Tiny hepatic cancer≤2cm
- Small hepatic cancer＞2cm, ≤5cm
- Big hepatic cancer＞5cm, ≤10cm
- Massive hepatic cancer＞10cm



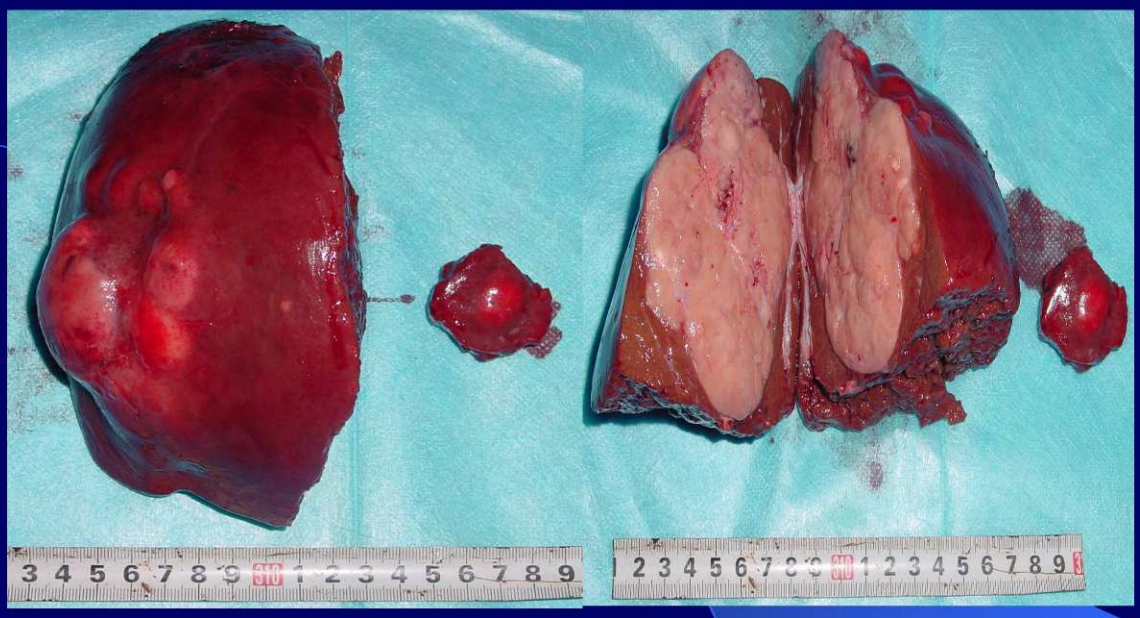




HCC（massive form）



HCC（massive form）



HCC（nodular form）

3.2 Cellular types

① Hepatocellular Carcinoma (HCC)

the most common， 91.5%

in children→Hepatoblastoma

②Cholangiocellular Carcinoma 5.5%

③Mixed form (hepatocholangioma) 3.0%

3.3 Metastatic pathway

▲Intrahepatic spread

the most common
portal venous embolism

▲Blood

▲Lymph

▲Direct spread

▲Implantation

4. Clinic findings

4.1 Sympotoms

▲Pain in the hepatic area

▲Sympotoms of digestive system

anorexia, abdominal distention, nausea, vomiting

▲tiredness, loss body weight

▲Fever

▲Paracarcinoma manifestations

hypoglycemia, hypercythemia,
hypercalcemia, hypercholesterolaemia

4.2 Signs

▲Hepatomegaly the most common

▲Jaundice

▲Ascites

▲Hepatic cirrhosis manifestations

5. Complications

▲Bleeding by tumor rupture

▲Upper gastrointestinal haemorrhage

▲Secondary infection

▲Hepatic encephalopathy

6. Diagnosis

6.1. Hematological examinations

▲AFP(Alpha-fetoprotein) assay

Positive rate　60～70%

Diagnosis standards

- AFP≥400μg /L
- Excluding the undermentioned possibility of

①active liver diseases (hepatitis and cirrhosis)
②embryonic tumor of testis or ovary
③pregnancy

▲The others

6.2 Imageological examination

▲Ultrasound: accuracy: 90%,

the first selection

▲CT: accuracy: ＞90%,

▲MRI (Magnetic Resonance Image)

▲Selective hepatic arteriography: accuracy: ＞95%

▲Percutaneous liver biopsy

6.3 Early diagnosis

▲Main objects

Examination of the high-risk crowd

高危人群---乙肝及丙肝标志物阳性、有肝硬变及慢性肝炎病史、年龄在35岁以上的人群(特别在男性)。

▲Main means

BUS+AFP assay

7. Differential diagnosis

▲Metastatic hepatic cancer

▲Hepatic cirrhosis

▲Benign hepatic tumor

▲Extrahepatic tumor near to liver

▲Hepatic abscess

8. Treatments

8.1.Principles

- Early treatments
- Combined treatments
- Active treatments

8.2.Considerations for selecting treatments

- General condition
- Liver function
- Tumor conditions

  size, location, number, range, portal venous embolism, metastasis etc.

8.3 Means of treatments

① Operations main conditions:

liver function, extrahepatic metastasis, general conditions.

▲Hepatectomy

- radical operation
- palliative operation
- under celioscope
- accompanied by hypersplenism and esophageal varices

▲Tumor is not resectable

- HAL (Hepatic Aterial Ligation)
- HAE (Hepatic Aterial Embolization)

  Drugs: 5-FU, ADM, MMC, CDDP

  Materials of embolization : LP (lipiodol)+drug

  GF (gelfoam)+drug

- DDS (Drug Delivery System)
- RF (Radiofrequency)
- Microwave
- Refrigeration

② Percutaneous puncture treatments:

RF, microwave, Haifu knife, anhydrous alcohol injection under ultrasound-guided

③ Chemotherapy:

- via DDS of hepatic artery/portal vein
- THACE (Transcatheter Hepatic Arterial Chemoembolization, THAI+THAE)

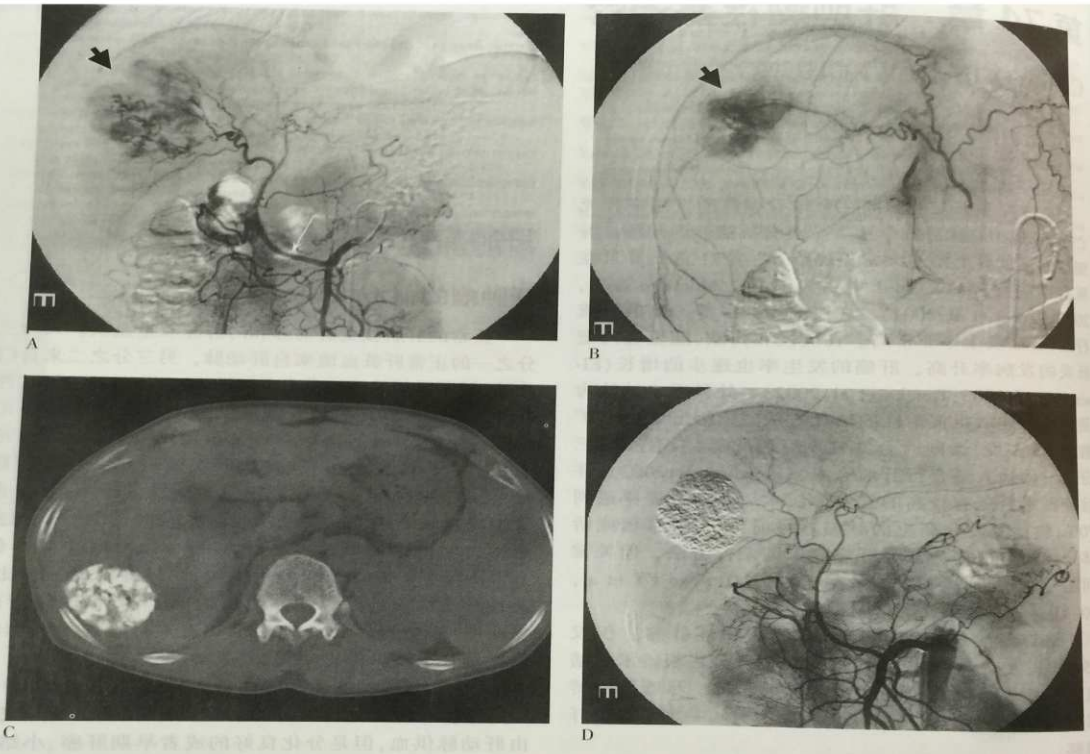


图 74.1 一56岁女性肝癌病人，最初扫描见部分肝肿瘤由右隔下动脉供血。A. 肠系膜上动脉造影显示，肝固有动脉起源于肠系膜上动脉（长箭），并且可见具有小叶轮廓的富血管肿瘤。肿瘤上面的边缘部分界限不清（短箭）提示肝外侧支动脉供血的可能性。B. 右隔下动脉造影显示肿瘤显著异染（箭所示部位）。C. TACE 治疗：10ml 碘化油和 50mg 盐酸阿霉素组成混合体化疗，可吸收性明胶海绵栓塞。两周后，CT 检查可见，几乎整个肿瘤都可见碘油沉积。D. 4 个月后，随访造影显示，肿瘤血供消失，致密的碘油吸收致肿块缩小

④ Radiotherapy

⑤ Sorafenib

⑥ Immunotherapy

⑦ Chinese traditional medicine

⑧ Managements of hepatoma rupture

METASTATIC HEPATIC CARCINOMA

Characteristics:

1.机体的恶性肿瘤可经门静脉、肝动脉、淋巴、直接蔓延途径转移，肝是最常见的血行转移器官。

2.常为多发或弥漫型结节。

3.一般无肝炎、肝硬化。

4.AFP阴性，CEA、CA19-9、CA125增高。

4.有三种类型：早发型、同步型、迟发型。

5.主张积极治疗。

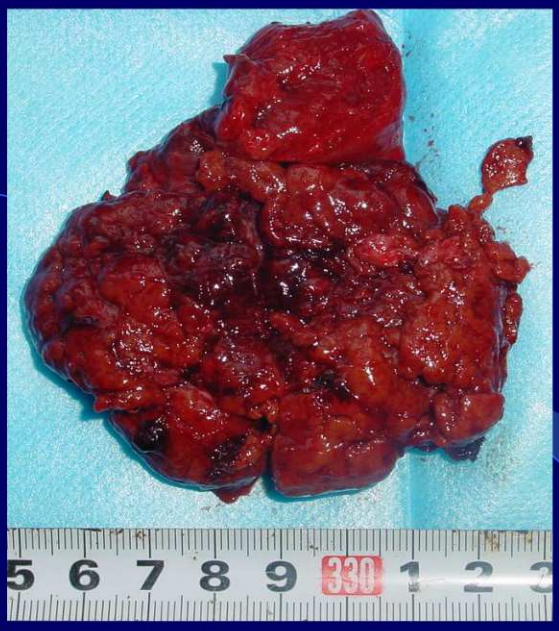
BENIGN HEPATIC TUMOR

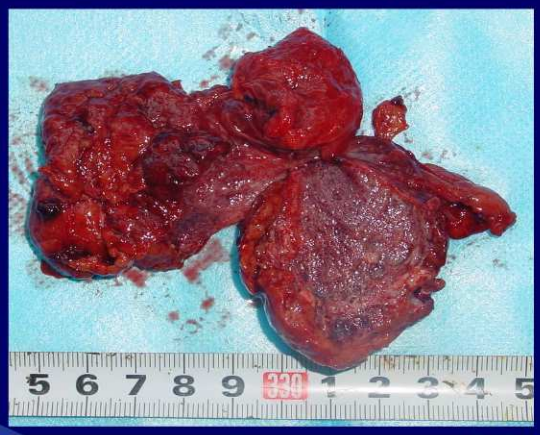
- ▲ Cavernous Hemangioma（海绵状血管瘤）
- ▲ Local Nodular Hyperplasia（局灶性结节性增生）
- ▲ Hepatic Adenoma（肝腺瘤）
- ▲ Lipoma（脂肪瘤）
- ▲ Neurofibroma（神经纤维瘤）
- ▲ Myxoma（粘液瘤）

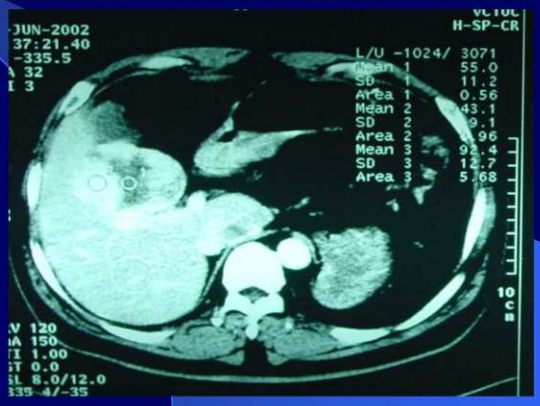
Cavernous Hemangioma of Liver

Characteristics

1. 起源于肝内的胚胎性血管错构芽。
2. 外观似海绵，不会发生恶变。
3. 多见于女性，多无肝炎、肝硬化病史。
4. 发展缓慢，常无症状，多于B超或腹腔手术中发现。
5. 肿瘤较大时可产生肝肿大及压迫症状。
6. 最危险的并发症为破裂出血，尤以婴幼儿多见，但临床少见。
7. 如合并有动静脉瘘，由于回心血量增多，可致心衰。
8. 诊断须结合病史、AFP、BUS、CT、MRI，尤注意与小肝癌鉴别。
9. 手术限于直径＞10cm或有症状者，最有效的治疗是肝切除术。



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SD 3 12.7
Area 3 5.68
10 cm
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A 150
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T 0.0
L 8.0/12.0
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肝血管瘤图片

第五节 肝囊肿

HEPATIC CYST

congenital

Nonparasitic cyst

acquired

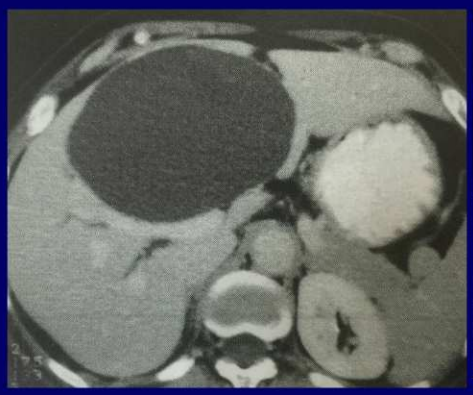
Parasitic cyst

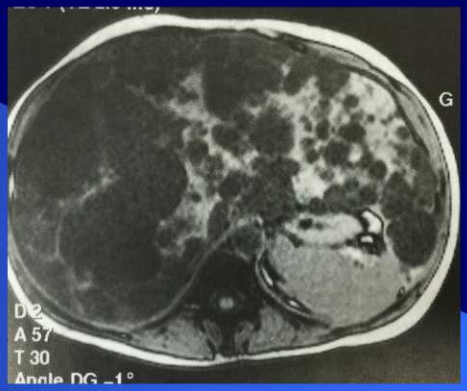
hepatic hydatidosis

Nonparasitic Hepatic Cysts

1.Types

- ▲ single hepatic cyst
- ▲ multiple hepatic cysts
- ▲ polycystic liver is often associated with polycystic kidney





2.Clinic findings and Diagnosis

▲ upper abdominal mass or discomfort

▲ some symptoms induced by oppression

▲ ultrasound, CT

Nonparasitic Hepatic Cysts

3.Treatments

3.1 Small and asymptomatic cysts : no treatment

3.2 Large symptomatic cysts:

▲ open-window operation

▲ drained by a Roux-en-Y limb of jejunum

▲ hepatectomy

▲ percutaneous puncture exsuction

门静脉高压症

PORTAL HYPERTENSION

SUMMARY

Definition: 指由于门静脉血流受阻、血液淤滞而导致门静脉压力高于正常，临床表现为脾肿大、脾功能亢进，进而发生食管胃底静脉曲张、呕血及黑便、腹水等症状。

Normal pressure: 13～24cmH_2O

Types: 1. 肝内性 (Hepatic)

2. 肝前性 (Prehepatic)

3. 肝后性 (Posthepatic)

SURGICAL ANATOMY

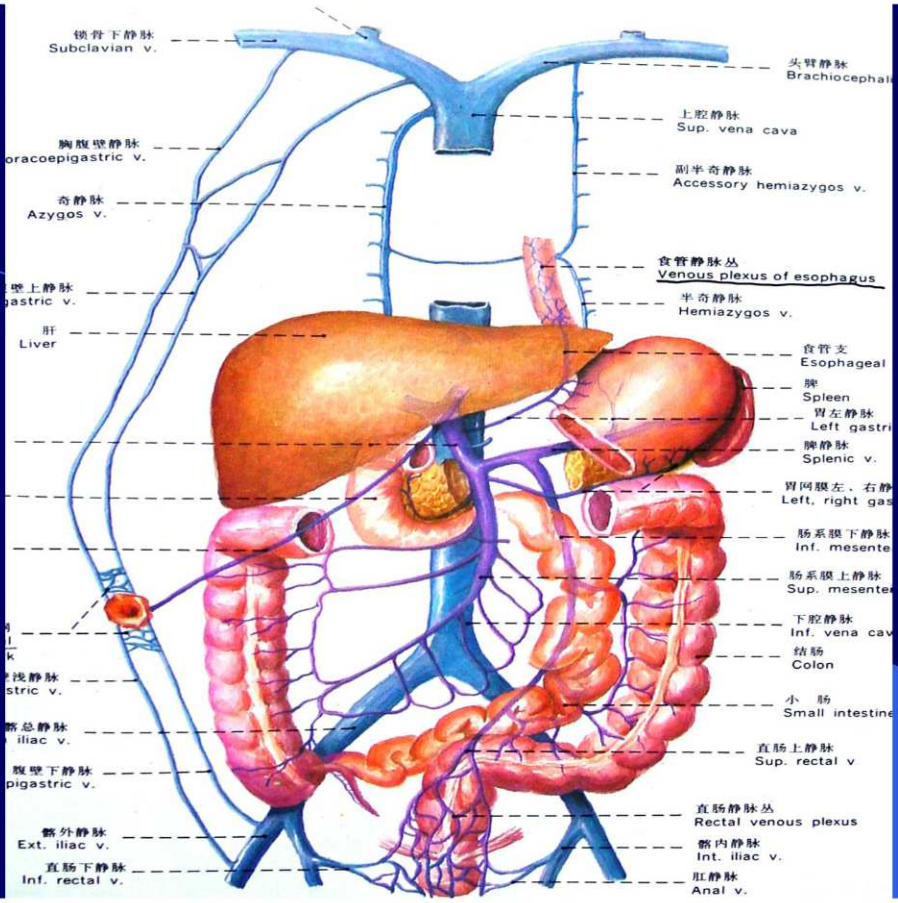
1. Characteristics of portal vein：

①两端均为毛细血管

②无静脉瓣膜

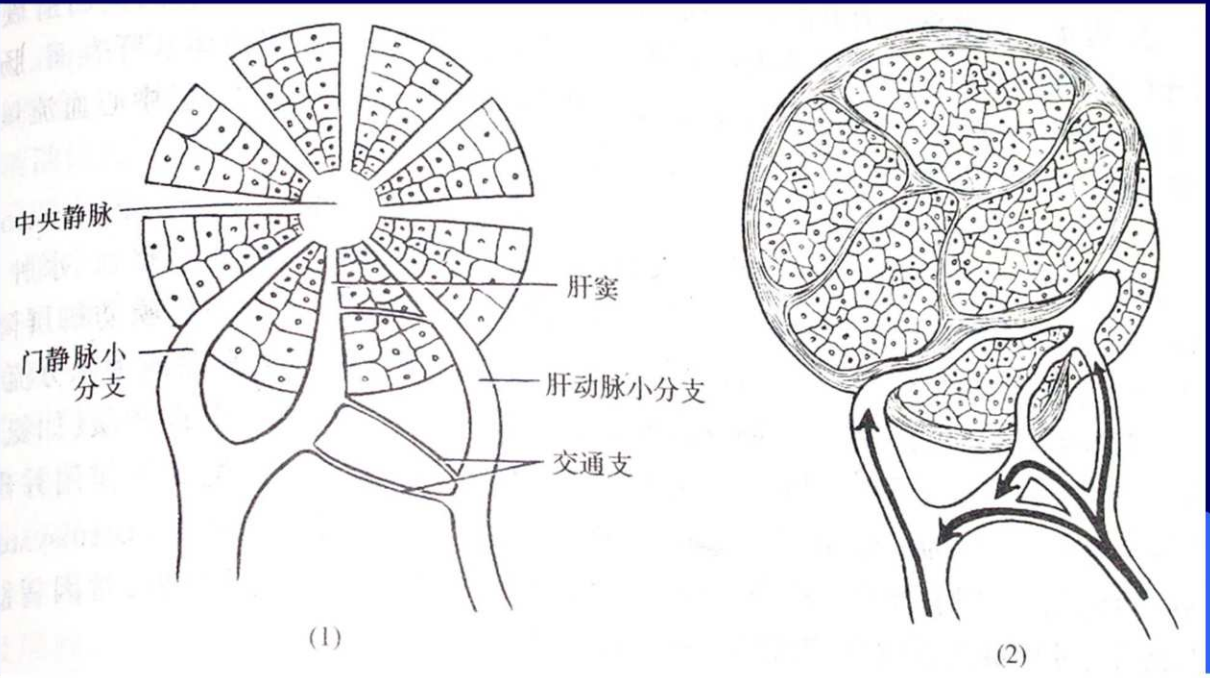
③具有肝动脉缓冲反应

2. Four collaterals between portal and systemic circulation：


锁骨下静脉
Subclavian v.
胸腹壁静脉
oracoepigastric v.
奇静脉
Azygos v.
肝
Liver
头臂静脉
Brachiocephal
上腔静脉
Sup. vena cava
副半奇静脉
Accessory hemiazygos v.
食管静脉丛
Venous plexus of esophagus
半奇静脉
Hemiazygos v.
食管支
Esophageal
脾
Spleen
胃左静脉
Left gastri
脾静脉
Splenic v.
胃网膜左、右静
Left, right gas
肠系膜下静脉
Inf. mesente
肠系膜上静脉
Sup. mesente
下腔静脉
Inf. vena cav
结肠
Colon
小 肠
Small intestine
直肠上静脉
Sup. rectal v
直肠静脉丛
Rectal venous plexus
髂内静脉
Int. iliac v.
肛静脉
Anal v.
髂外静脉
Ext. iliac v.
直肠下静脉
Inf. rectal v.

PATHOPHYSIOLOGY

1. Mechanism of portal venous occlusion



2. Main pathological changes

①Splenomegaly

②Collateral dilation

③Ascites

④Portal hypertensive gastropathy

⑤Hepatic encephalopathy

CLINIC FINDINGS

1. Main findings:

- ▲Splenomegaly and hypersplenism
- ▲Hematemesis and black stool: 出血不易自止
- ▲Ascites

2. Assistant examination：

- ▲Blood routine
- ▲Liver functions
- ▲B-us
- ▲Gastroscopy and barium swallow
- ▲CT, MRI, portal vein imaging

DIAGNOSIS

1. Diagnosis:

①Ill history

②Main findings

③Examinations

2. Differential diagnosis:

Severe bleeding of gastroduodenal ulcer

TREATMENTS

1. Principles:

①The medical treatments are the first selection.

②Generally, the prophylactic operations should not be chosen.

③Considerations for selecting treatments:

- ▲Causes
- ▲Liver function
- ▲Portal venous conditions
- ▲The skill and experiences of the surgeon

2. Child-Pugh classification of liver function

Item	Score		
	1	2	3
Serum bilirubin (μmol/L)	< 34.2	34.2~51.3	>51.3
Plasma albumin (g/L)	> 35	28 ~35	< 28
PT delayed time (Sec)	1～3	4～6	>6
Ascites	None	Easily controlled	Poorly controlled
Encephalopathy	Without	Mild	Obvious
Classification	A(5～6)	B(7~9)	C(>10)
Operative mortality (%)	2	5	60～70

3. Medical treatments：

Acute haemorrhage, Child C

①Treatments of the shock

②Vasopressin/somatostatin

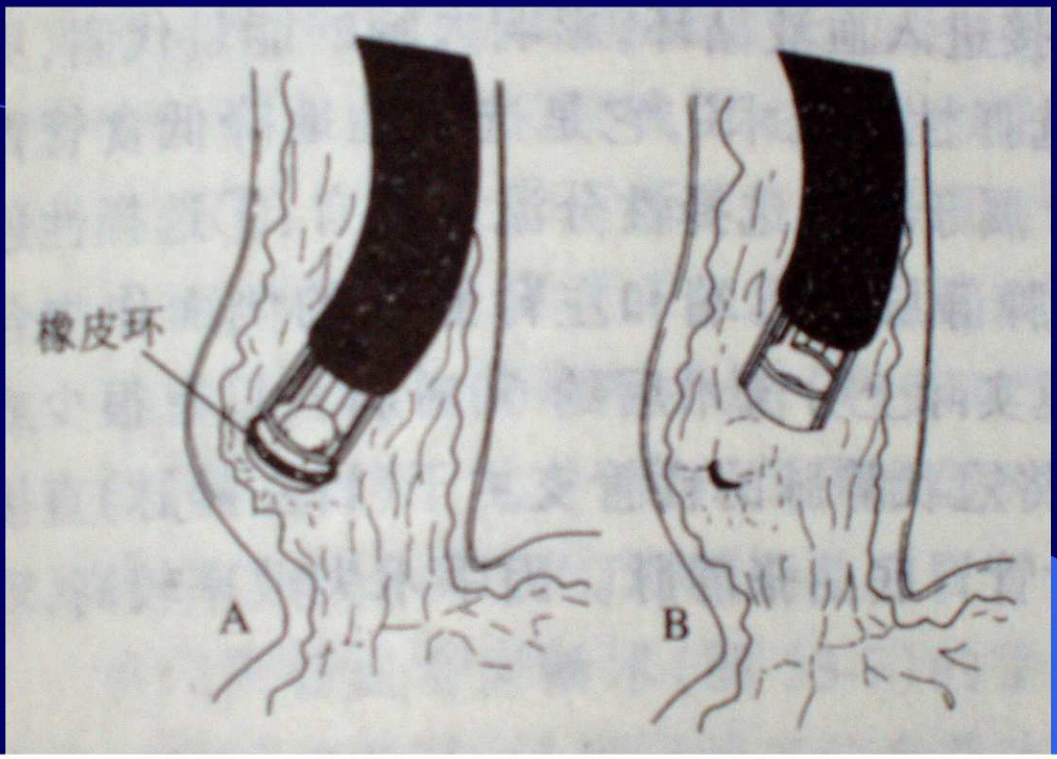
③Treatments under endoscope

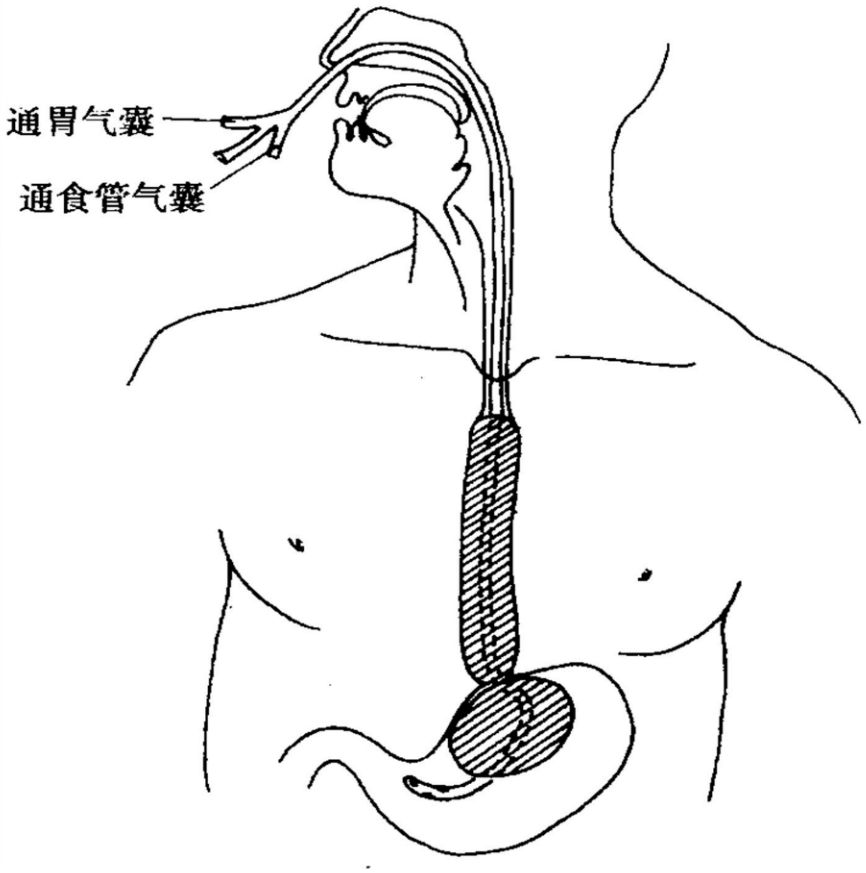
- Injection sclerotherapy
- Esophageal varicies ligation

④Balloon tamponade

⑤TIPS

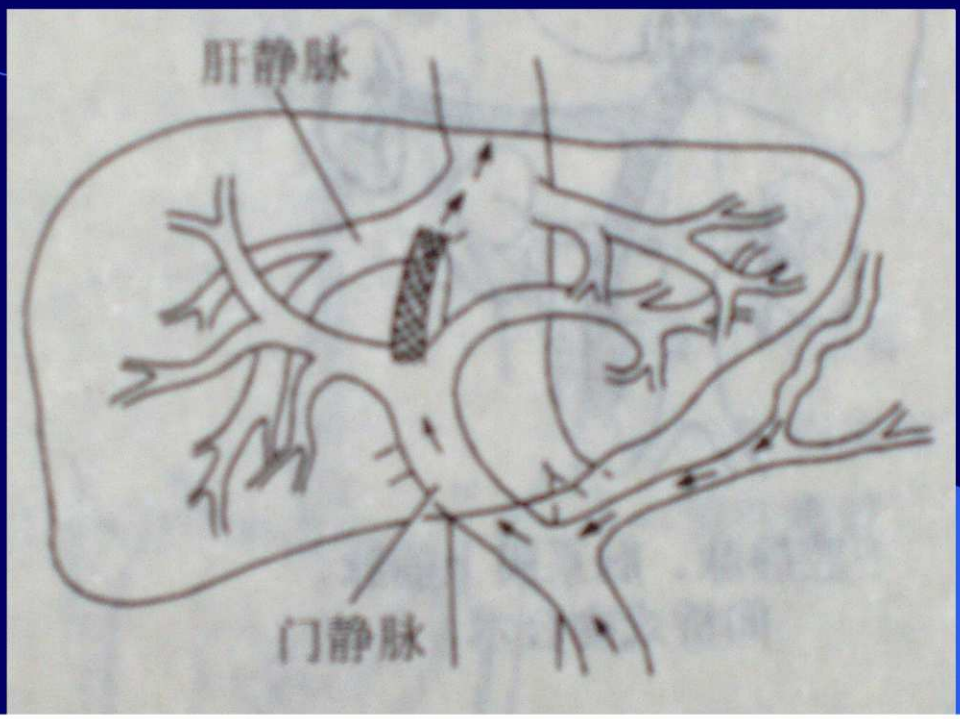
Esophageal varicies ligation via endoscope




通胃气囊
通食管气囊

TIPS

(Transjugular Intrahepatic Portasystemic Stent Shunt)



4. Surgical treatments

急性出血或出血已控制，Child A 、B级的病人。

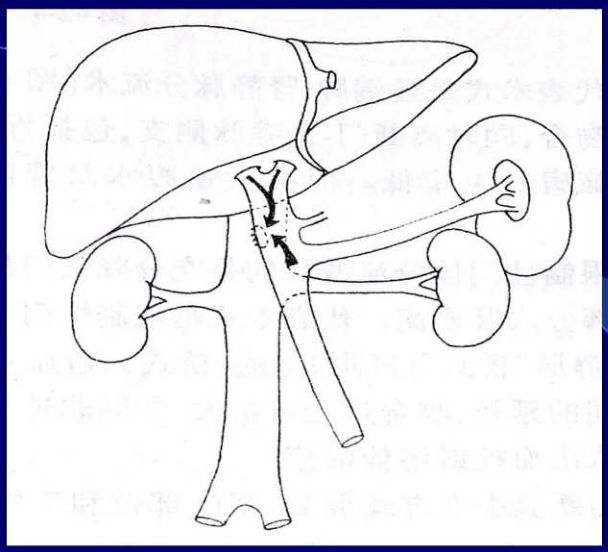
4.1. Surgical types：

▲Portosystemic shunt

优点：降压及止血效果明显，复发出血率低。

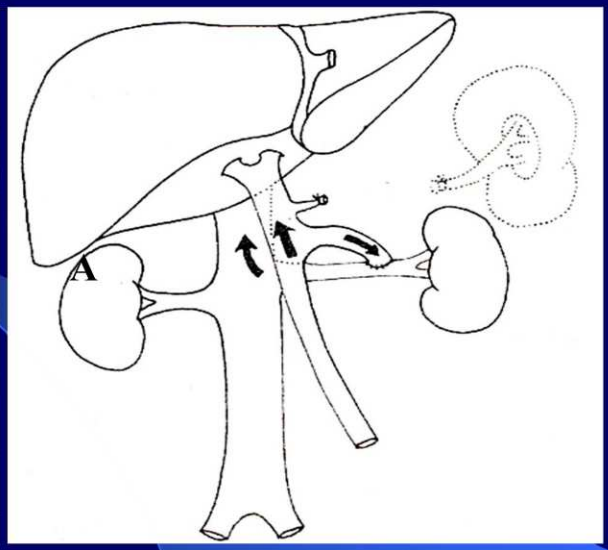
缺点：由于肝脏门静脉血流进一步减少，加重肝功能损害及大量未经肝脏解毒的门静脉血直接进入下腔静脉导致术后肝性脑病、肝功能衰竭及手术死亡率较高。

①Nonselective shunt：



门-腔静脉侧侧分 流术

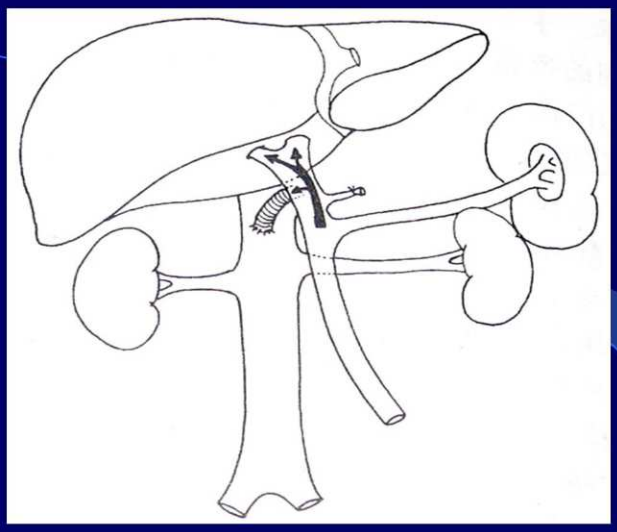
(Side-to-side portacaval shunt）



近端脾-肾静脉分 流术

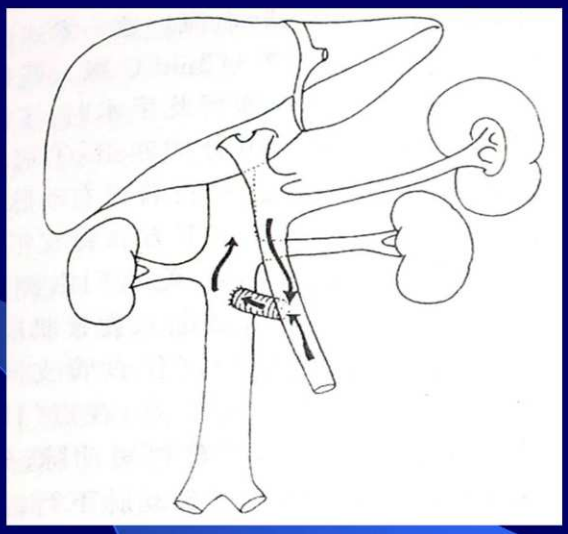
(Central splenorenal shunt）

②Restrictive shunt



限制性门-腔静脉桥式分流术

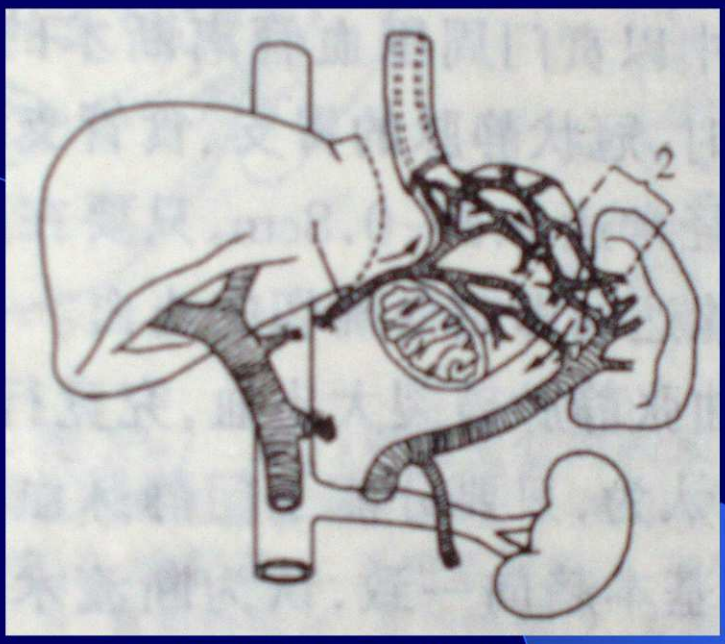
（H-graft portacaval shunt）



肠-腔静脉桥式分 流术

（H-graft mesocaval shunt）

③Selective shunt



远端脾-肾静脉分流术

（Distal splenorenal shunt， DSRS）

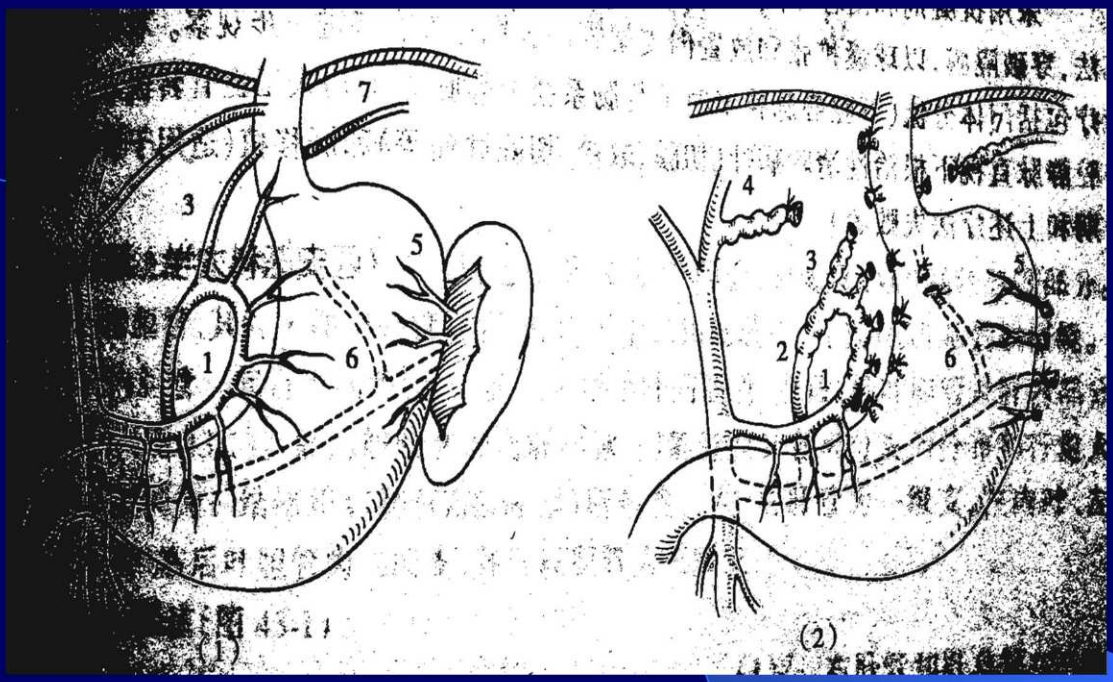
▲Devascularization operation

优点：能有效止血；不影响门静脉向肝血流，术后肝性脑病发生率低；手术适应症较广；操作较简单，适于基层医院开展。

缺点：降压效果不明显，远期复发出血率较分流术高。

贲门周围血管离断术（Hassab术）

(Extensive devascularization around cardia)



贲门周围血管离断术（Hassab术）

- Splenectomy
- Surgical treatments of the obstinate ascites
- Liver transplantation

脾疾病

Splenic Diseases

Summary

▲ rich blood

▲ the biggest lymphatic organ

▲ important immune function

▲ Secondary diseases

Indication of Splenectomy

- ▲Traumatic Splenic Rupture
- ▲ Portal hypertension
- ▲ Primary diseases
  - ● wandering spleen
  - ● splenic cyst
  - ● splenic tumor
  - ● splenic abcess
  - ● splenic tuberculosis

Indication of Splenectomy

▲ Hematological diseases

- hereditary spherocytosis
- hereditary elliptocytosis
- thalassemia
- autoimmune hemolytic anemia
- immune thrombocytopenic purpura
- pyruvate kinase deficiency
- hodgkin diseases
- leukemia

Complications of Splenectomy

- ▲Intraperitoneal hemorrhage
- ▲ Subphrenic infection
- ▲ Embolism of the blood vessel
- ▲ OPSI

  (overwhelming postsplenectomy infection)


谢谢！