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كلية الطب

كليه الطب فرع الجراحه

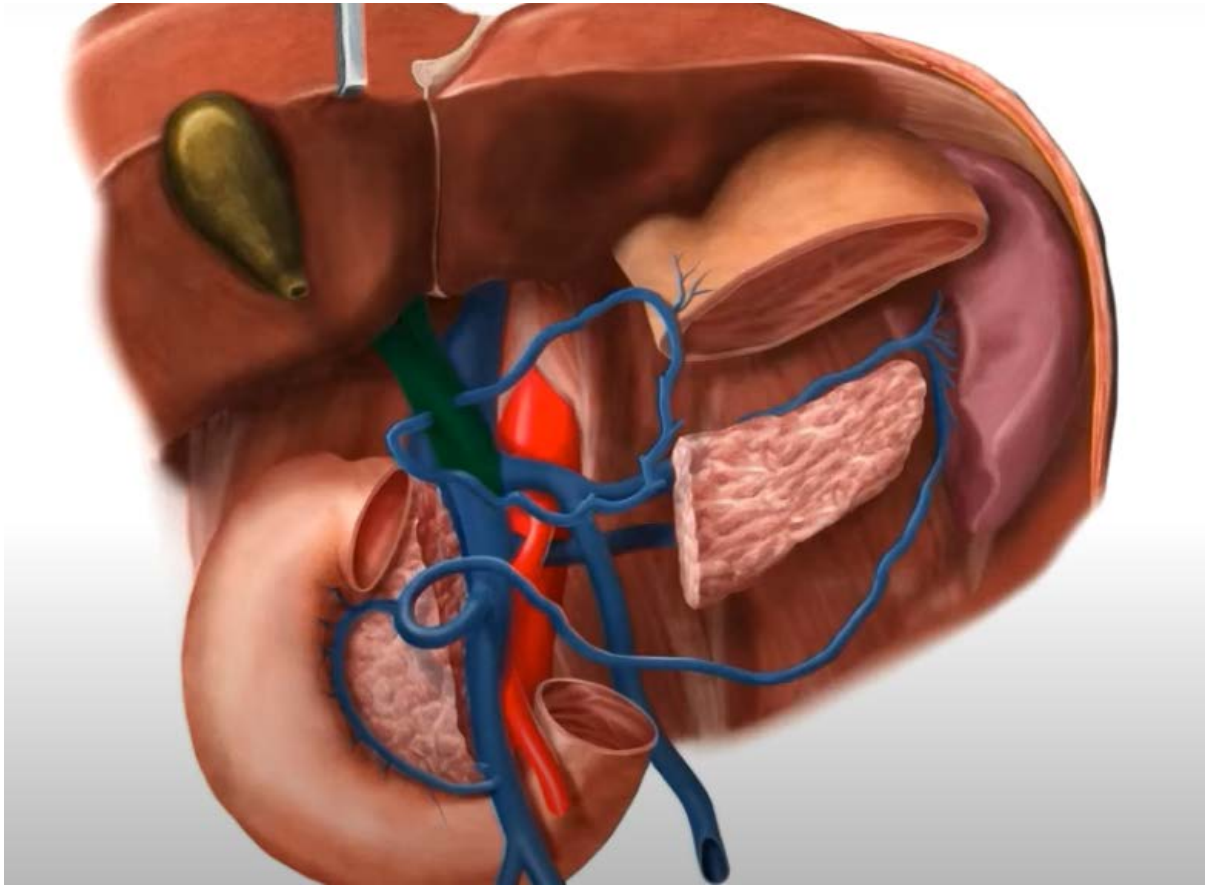
جراح اختصاص

الدكتور ذو الفقار حسن بيعي



Portal hypertension

الدكتور ذو الفقار حسن بيعي



Courtesy https://www.youtube.com/watch?v=10ACWPPQaU0



@MedicalBooksStore 2018 Bailey & Love's Short Practice of Surgery, 27th Edition TRUE PDF with BOOKMARKS & INDEX

#Surgery
Bailey & Love's , Short practice of Surgery, 26th edition

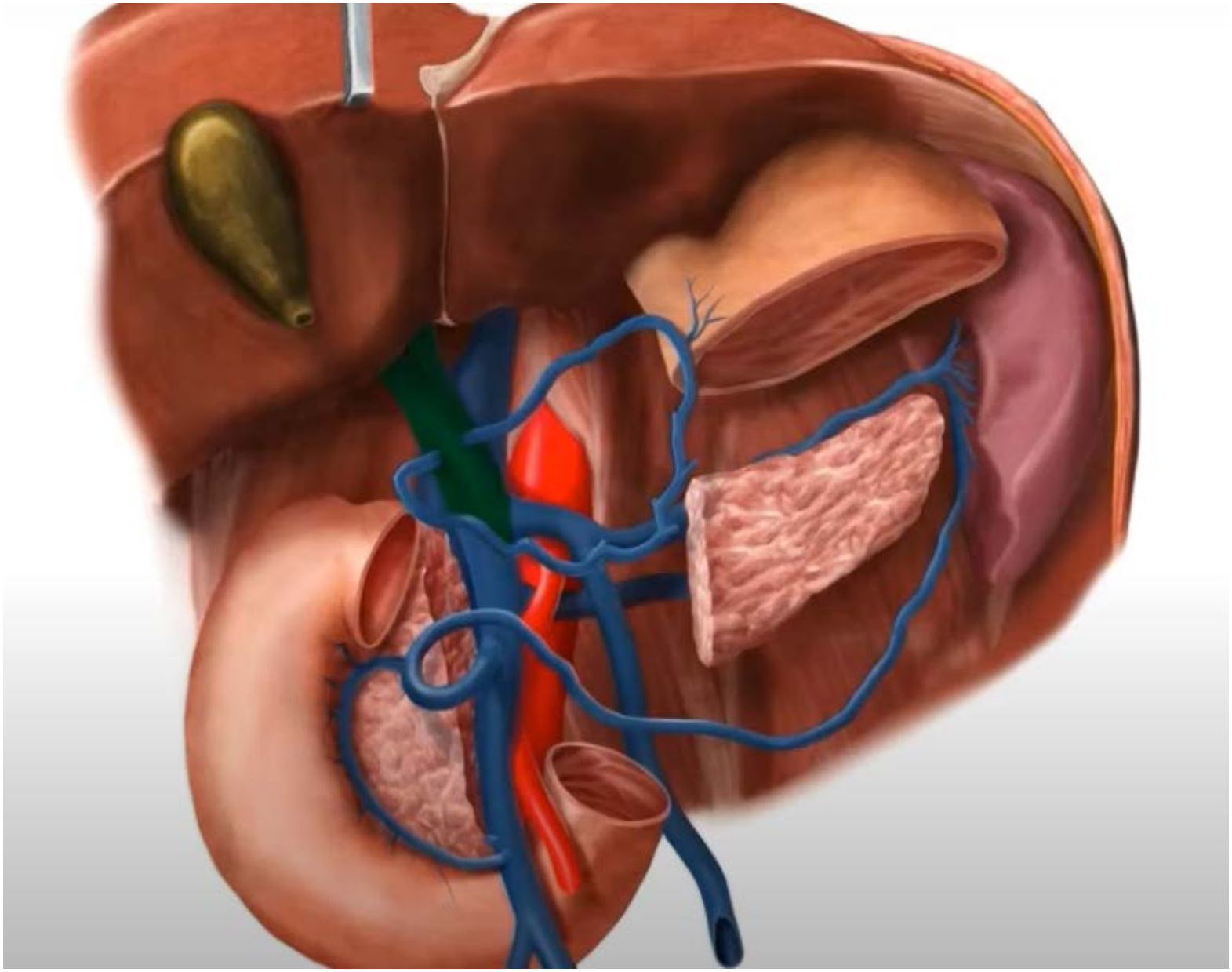
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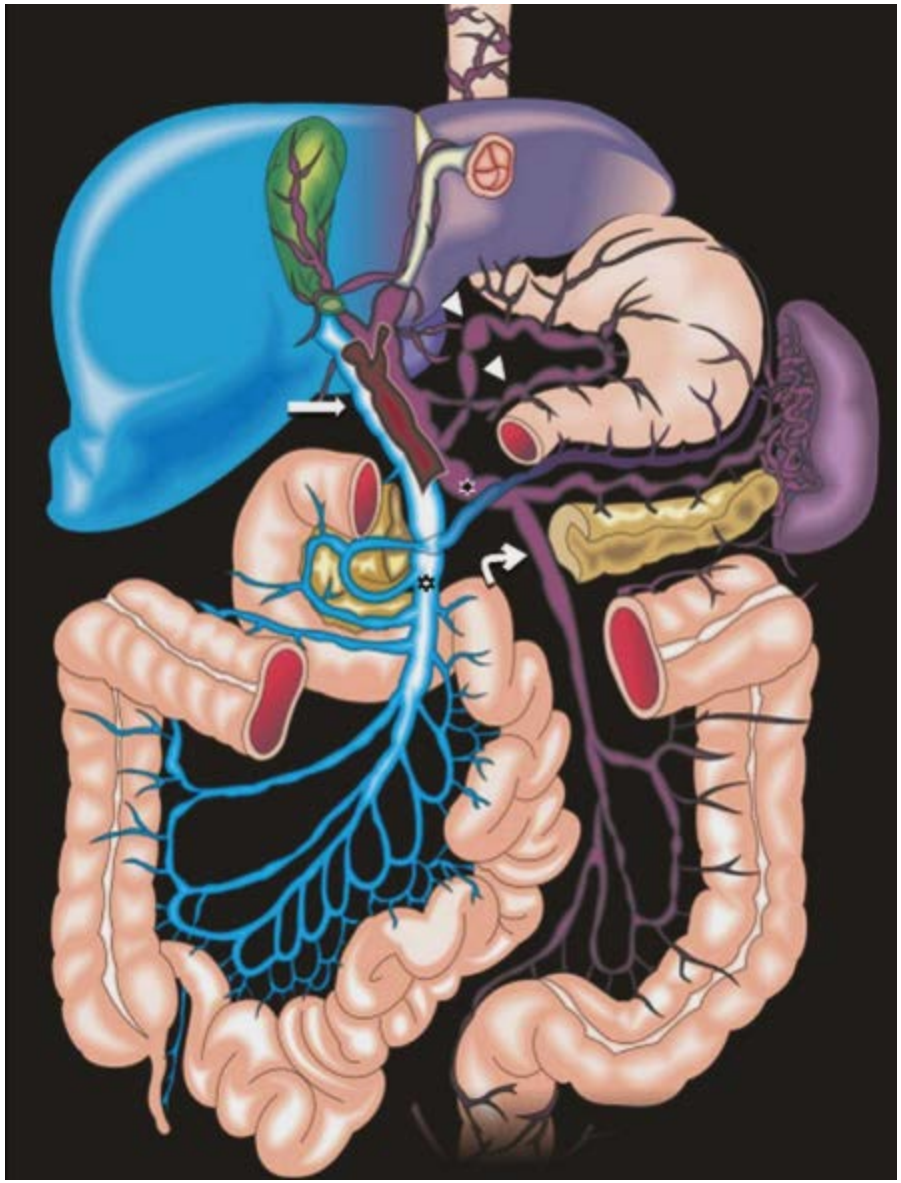
@MedicalBooksStore 2010 Browse's Introduction to the Investigation and Management of Surgical Disease

thulfiqarbaiae@uomustansiriyah.edu.iq

Courtesy Bailey & Love's Short Practice of Surgery



Courtesy https://www.youtube.com/watch?v=10ACWPPQaU0



Courtesy https://www.scielo.br/j/rb/a/YkDcfNSttHQRYdzvpfSdzmn/?lang=en#ModalFigf2

On the lesser curve, the coronary vein is particularly important.

It runs up the lesser curve towards the oesophagus and then passes left to right to join the portal vein.

Chronic pancreatitis can cause thrombosis of the portal vein, in which case, the signs of portal hypertension will be present.

Courtesy Browse' s introduction to the symptoms & signs of surgical disease 6th edition

Anastomoses between the portal and systemic system are only clinically important when there is a blockage in the portal system.

It may be blocked by pathological processes or a congenital abnormality, e.g. portal vein thrombosis, cirrhosis or hepatic vein stenosis. If a block occurs, new anastomotic pathways develop between the portal and systemic venous systems, namely:

- In the submucosa of the lower end of the oesophagus between the left gastric and azygos veins, producing large oesophageal varices that are prone to haemorrhage.
- In the lower part of the anal canal between the superior and inferior rectal veins, resulting in rectal bleeding.

Courtesy Bailey & Love's Essential Clinical Anatomy

● In the umbilical region of the anterior abdominal wall between the anterior abdominal wall veins and the paraumbilical veins in the falciform ligament of the liver.

This causes the development of a paraumbilical collection of dilated subcutaneous veins that look like the hair of the mythological Greek queen, the so-called ‘caput Medusae’.

● In the veins between the bare area of the liver and the diaphragm.

Courtesy Bailey & Love's Essential Clinical Anatomy

The ligamentum teres may recanalize in portal hypertension, resulting in portosystemic anastomoses at the umbilicus and the presence of a caput Medusae.

Courtesy Bailey & Love's Essential Clinical Anatomy

Patients with oesophageal varices secondary to cirrhosis and portal hypertension may require a portosystemic shunt, in which the portal or splenic vein is anastomosed to the inferior vena cava or neighbouring large systemic vein.

The aim of this is to reduce venous congestion and reduce pressure in the haemorrhage-prone oesophageal varices

.

Courtesy Bailey & Love's Essential Clinical Anatomy

Mesenteric venous thrombosis can complicate abdominal trauma, portal vein thrombosis, splenectomy and other causes of a hypercoagulable state.

Courtesy Browse' s introduction to the symptoms & signs of surgical disease 6th edition

AETIOLOGY

Raised portal venous pressure

Prehepatic, intrahepatic and posthepatic

Cardiac

Pulmonary

Courtesy Browse' s introduction to the symptoms & signs of surgical disease 6th edition

AETIOLOGY

Causes of an increased portal venous pressure

Prehepatic

Portal vein thrombosis.

Compression of the portal vein by lymph glands.

Hepatic

Cirrhosis.

Posthepatic

Budd–Chiari syndrome.

Courtesy Browse' s introduction to the symptoms & signs of surgical disease 6th edition

The main blood supply of the liver is derived from the **portal vein**, which supplies **80%**,

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

Hepatic encephalopathy

Flapping tremor is the most obvious clinical sign associated with confusion, memory impairment and personality changes – all features of hepatic encephalopathy brought on by cerebral oedema.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

The severity of chronic liver disease is graded by the MELD score. This is one of scoring system.

This gives the probability of survival based on the patient's international normalised ratio (INR), serum bilirubin and serum creatinine.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

Acute haematemesis from portal hypertension most often occurs from lower oesophageal varices and not gastric varices. The initial definitive treatment is endoscopic sclerotherapy or banding, the latter having a lesser incidence of oesophageal ulceration.

Long-term beta-blocker therapy with endoscopic sclerotherapy or banding is the main treatment for portal hypertension.

When this fails, transjugular intrahepatic portosystemic
stent shunt (TIPSS) is the treatment of choice in preference to the operation
of portocaval anastomosis.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

The management of hepatic encephalopathy

Precipitating factors: GI bleeding, infection, hypokalemia, dehydration, sedatives, or other medications.

Lactulose, to acidify the colonic environment, so decreasing absorption of ammonia and inhibiting growth of the bacteria that produce ammonia.

Lactulose is an osmotic cathartic that helps eliminate toxic substances

Courtesy Rush UNIVERSITY MEDICAL CENTER Review of Surgery 4th edition

PORTAL HYPERTENSION

An elevation in portal pressure.

Courtesy Bailey & Love's Short Practice of Surgery

PORTAL HYPERTENSION/Causes

Liver cirrhosis

Extrahepatic portal vein occlusion

Intrahepatic veno-occlusive disease

Occlusion of the main hepatic veins(Budd–Chiari syndrome (BCS)).

Courtesy Bailey & Love's Short Practice of Surgery

Causes of portal hypertension

Presinuoidal

Extrahepatic

Portal vein thrombosis or atresia

Splenic vein thrombosis

Portal arteriovenous fistula

Pancreatitis

Hypersplenism

Intrahepatic

Schistosomiasis

Cirrhosis

Courtesy BROWSE'S INTRODUCTION TO The Investigation and Management of Surgical Disease

Causes of portal hypertension

Postsinusoidal

Budd–Chiari syndrome

Congestive heart failure/pericarditis

Veno-occlusive disease

Courtesy BROWSE'S INTRODUCTION TO The Investigation and Management of Surgical Disease

PORTAL HYPERTENSION

Portal hypertension produces no symptoms.

it is usually diagnosed following presentation with

Decompensated chronic liver disease and

Encephalopathy,

Ascites or

Variceal bleeding.

Courtesy Bailey & Love's Short Practice of Surgery

Stigmata of liver disease

White nails

Dupuytren's contractures

Liver palms

Liver flap

Spider naevi

Gynaecomastia

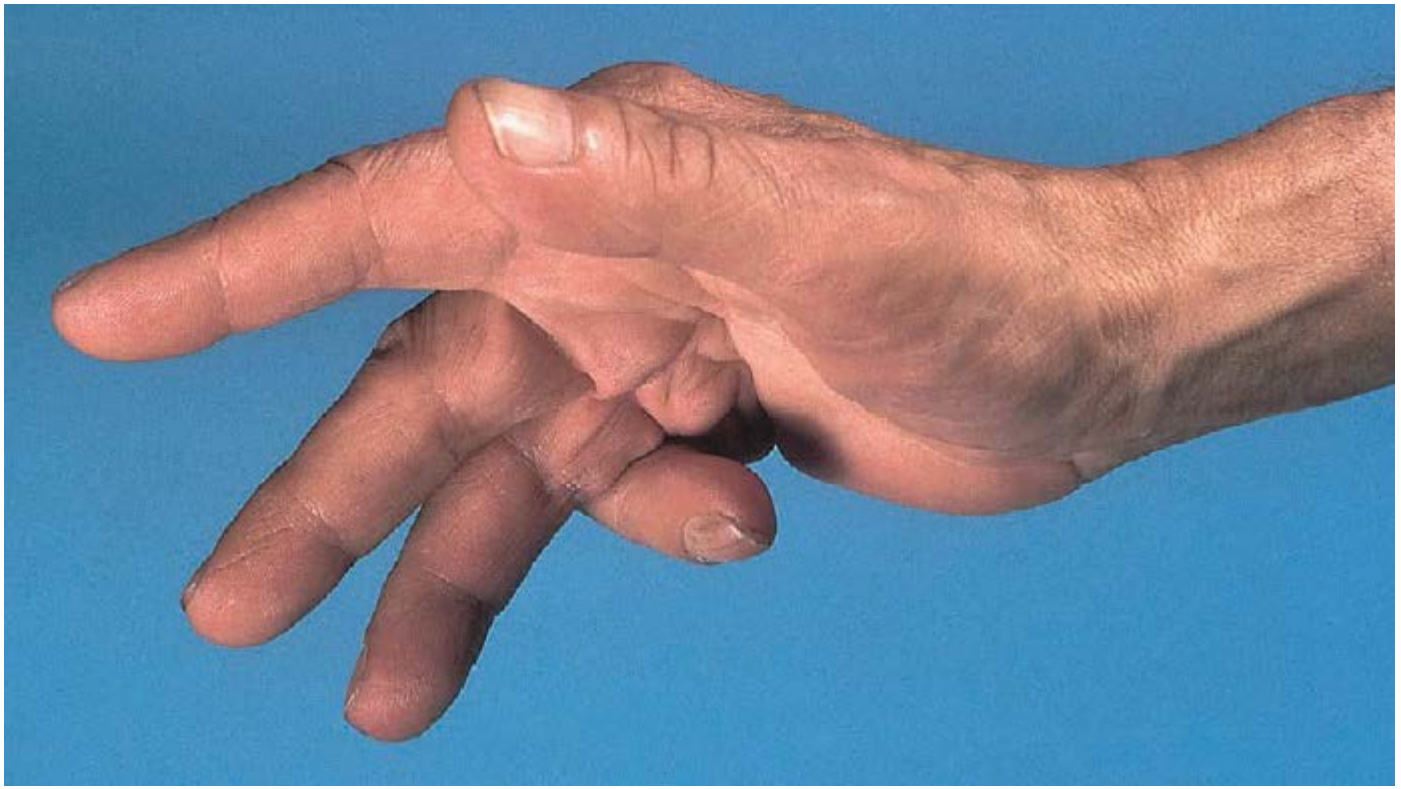
Loss of axillary and pubic hair

Foetor hepaticus

Ascites

Caput medusa

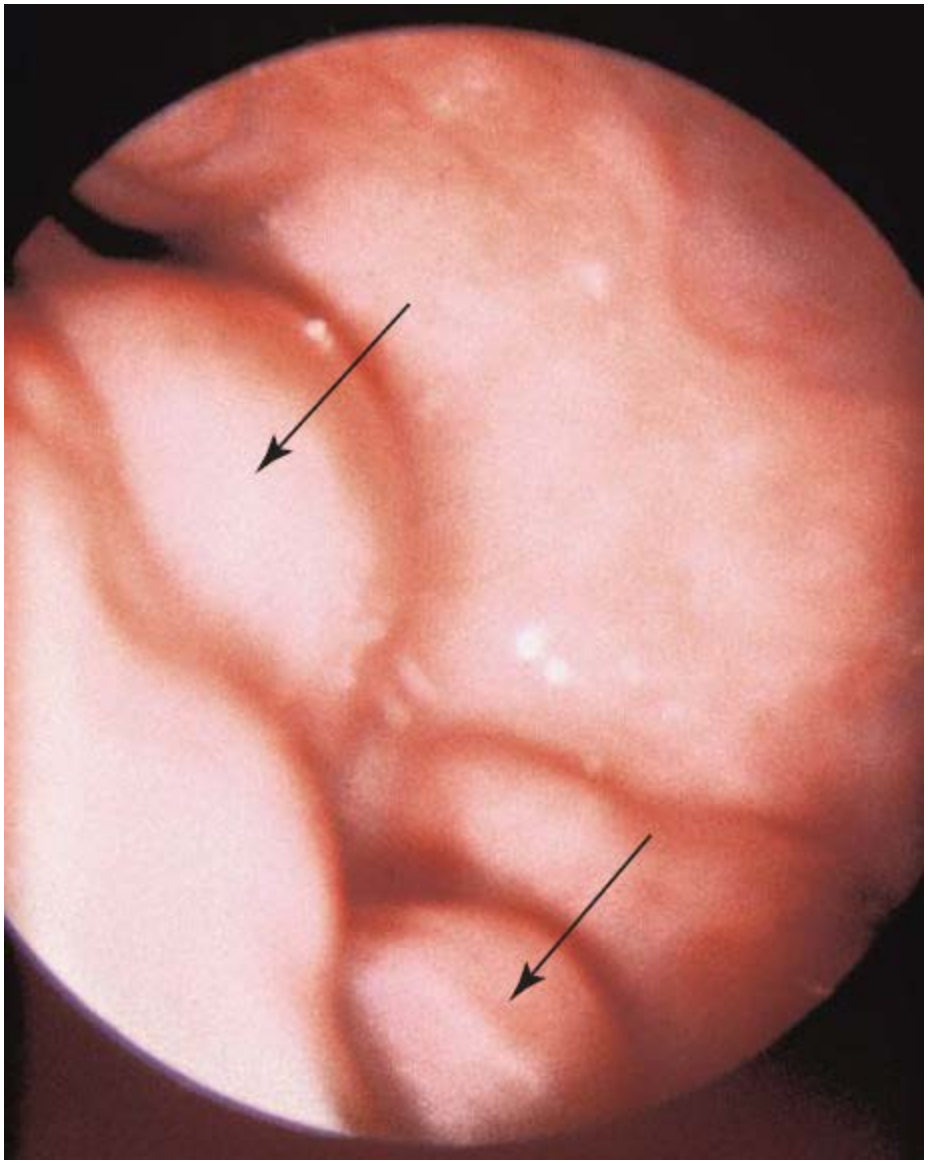
Courtesy BROWSE'S INTRODUCTION TO The Investigation and Management of Surgical Disease



Courtesy *Hamilton Bailey's* Demonstrations of Physical Signs in Clinical Surgery *19th Edition*



Courtesy Bailey & Love's Essential Clinical Anatomy



Courtesy BROWSE'S INTRODUCTION TO The Investigation and Management of Surgical Disease

Sites of portosystemic anastomosis

Site	Portal circulation	Systemic circulation
Oesophagus	Left gastric vein	Azygous vein
Paraumbilical	Paraumbilical vein	Superior epigastric vein
Retroperitoneal	Right, left and middle colic veins	Renal, suprarenal, paravertebral and gonadal veins
Patent ductus venosus	Left branch of portal vein	Inferior vena cava
Rectal	Superior rectal vein	Middle and inferior rectal veins

Courtesy SBAs and EMQs for the MRCS Part A (A Bailey & Love Revision Guide).

Investigations:

Blood

Imaging:
Ultrasound

CT shows :
Portal vein patency, varices with evidence of other sites of portosystemic shunts.

MRA

Courtesy BROWSE'S INTRODUCTION TO The Investigation and Management of Surgical Disease

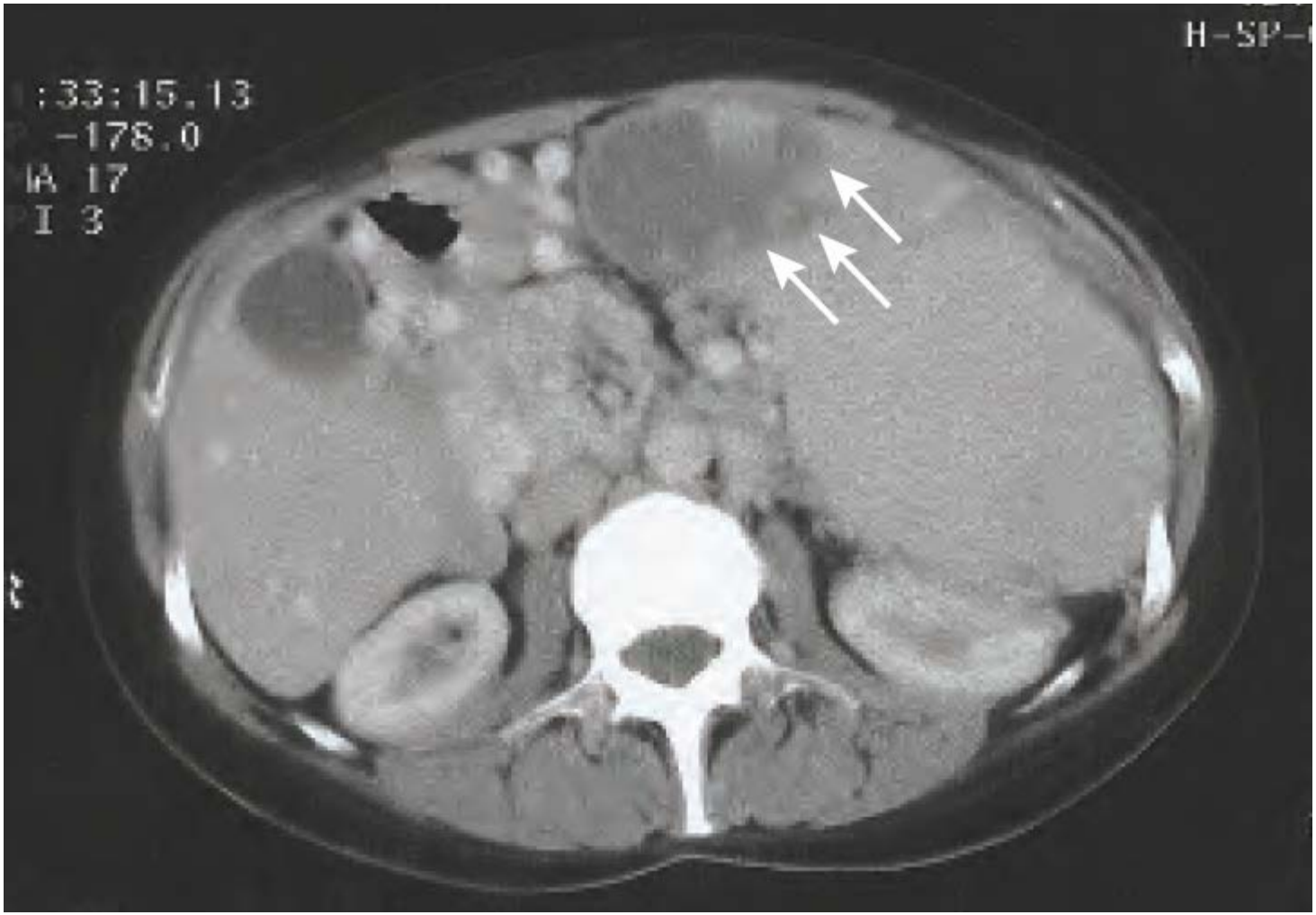
Courtesy Bailey & Love's Short Practice of Surgery

Magnetic resonance angiography (MRA) gives high-definition images of hepatic artery and portal vein without recourse to arterial cannulation.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.



Courtesy https://www.semanticscholar.org/paper/Magnetic-resonance-angiography-of-the-portal-venous-Berden/e6396fd9c74e4266c11cab77de0656e47645cfb9/figure/2



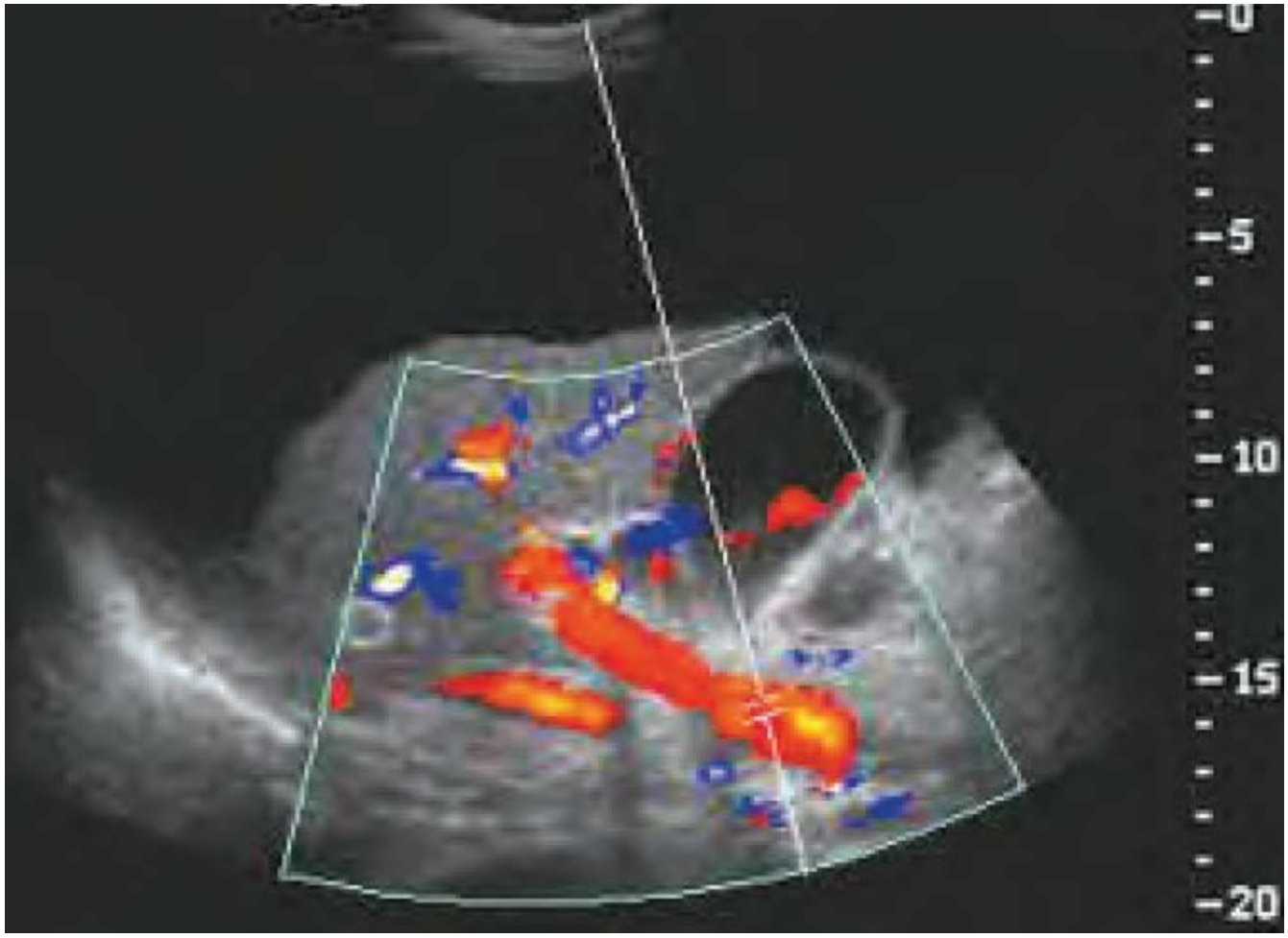
Computed tomography scan of portal hypertension and portal vein thrombosis.

Courtesy Bailey & Love's Short Practice of Surgery



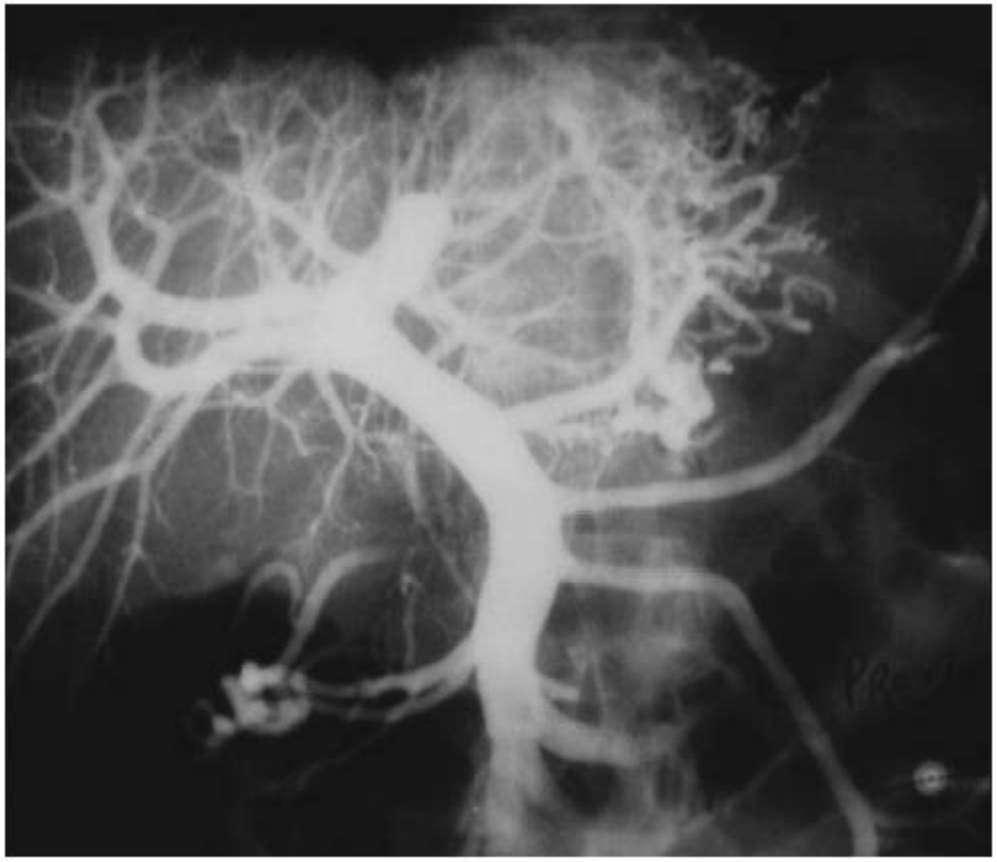
Ultrasound image of the liver in cirrhosis demonstrates nodularity and extensive ascites .

Courtesy Bailey & Love's Short Practice of Surgery



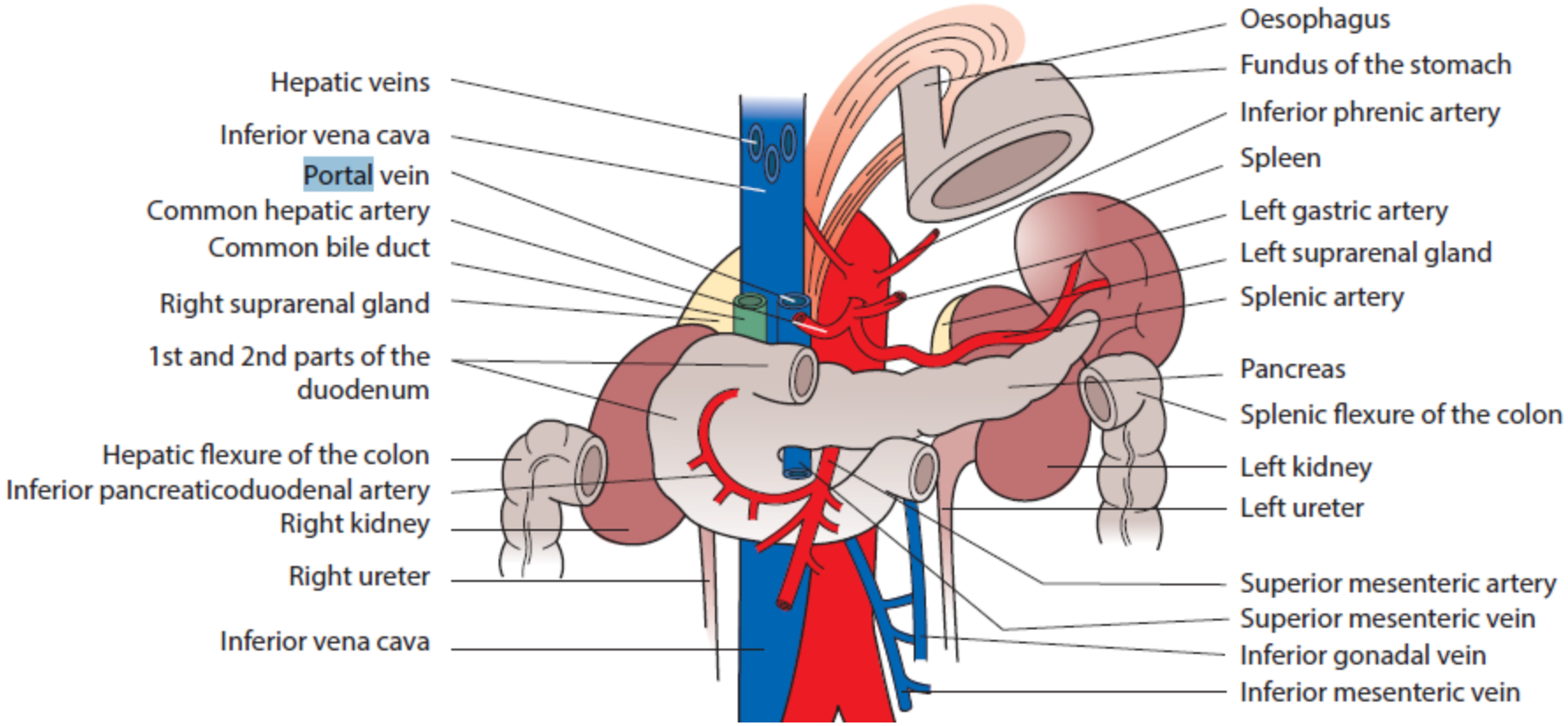
Doppler ultrasound.

Courtesy Bailey & Love's Short Practice of Surgery

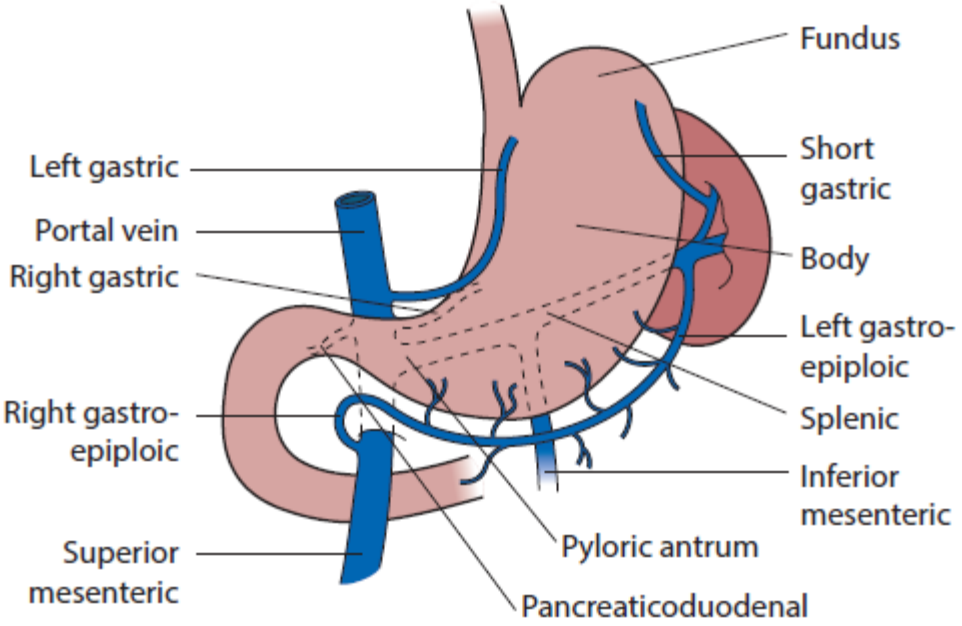


Portal venogram showing portal hypertension.

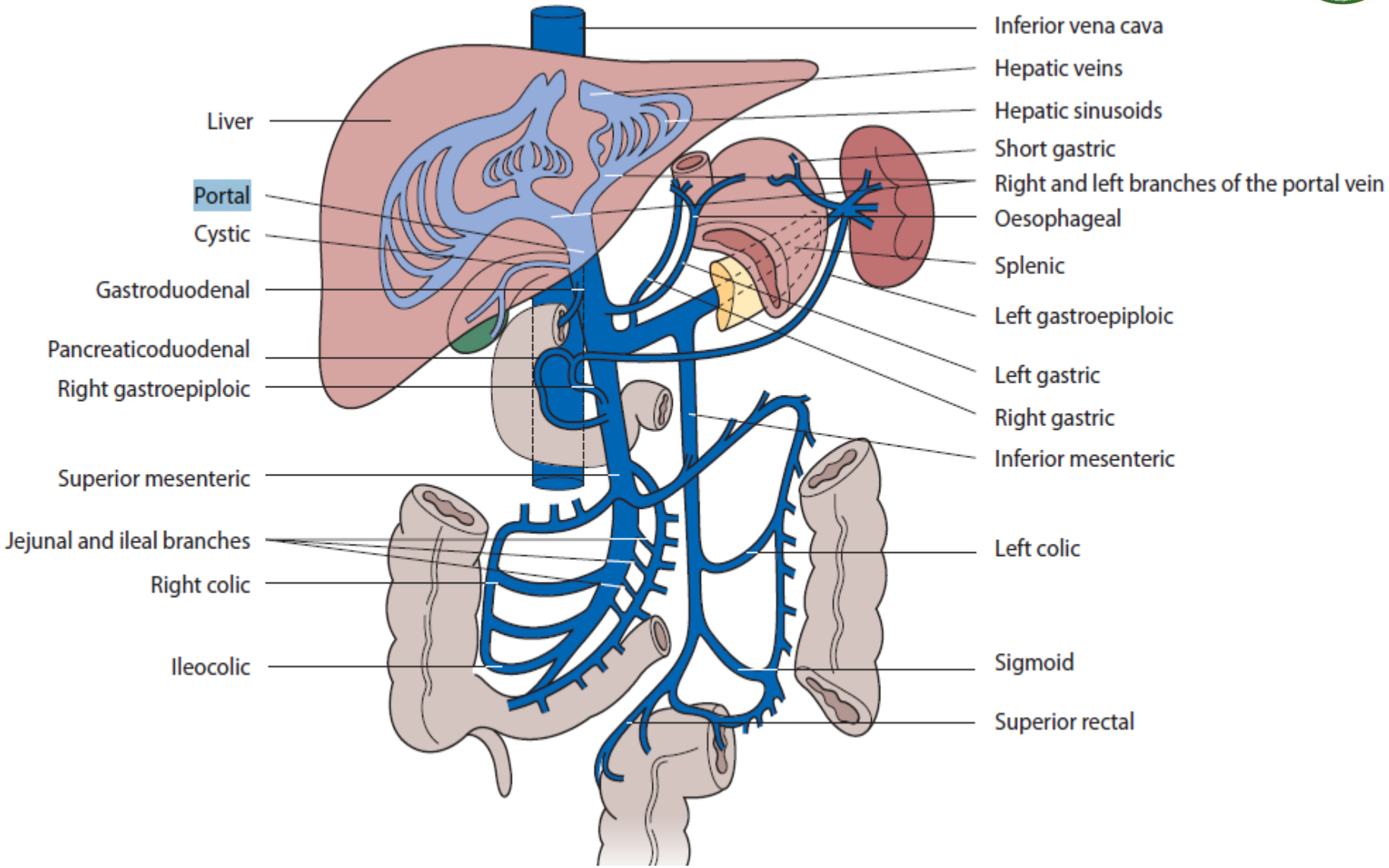
Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.



Courtesy Bailey & Love's Essential Clinical Anatomy



Courtesy Bailey & Love's Essential Clinical Anatomy



Courtesy Bailey & Love's Essential Clinical Anatomy

Options

- Acute haematemesis

The initial definitive treatment is *endoscopic **sclerotherapy** or **banding**.

*Exception for endoscopy

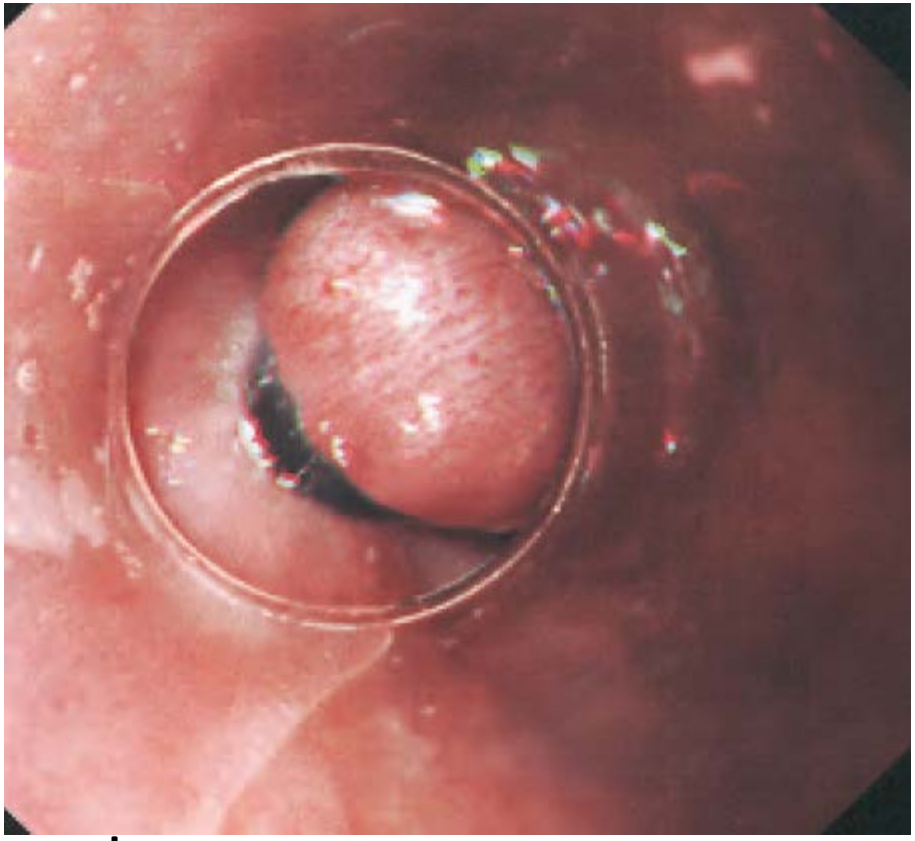
Rate of blood loss might be so severe that endoscopic evaluation by oesophagogastroduodenoscopy (OGD) might not be possible in practice.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.



Grade 2 oesophageal varices

Courtesy Bailey & Love's Short Practice of Surgery



Application of bands

Courtesy Bailey & Love's Short Practice of Surgery

Options

Portal hypertension.

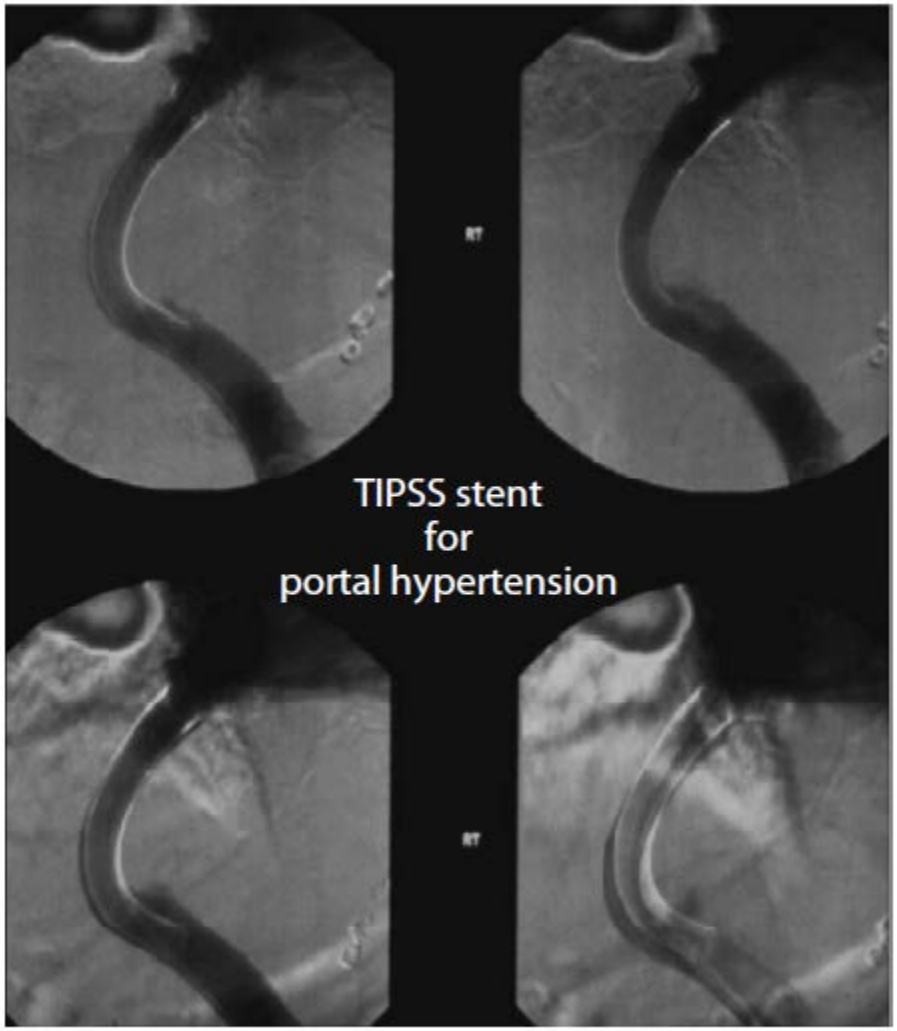
●●Long-term **beta-blocker** therapy with endoscopic sclerotherapy or banding.

Options

●●●Transjugular intrahepatic portosystemic stent shunt **(TIPSS)**

●●●●Classically the operation of **portocaval anastomosis**.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

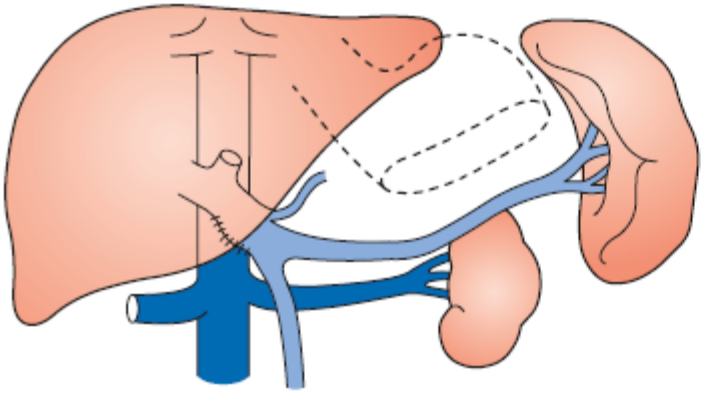


A TIPSS in place.

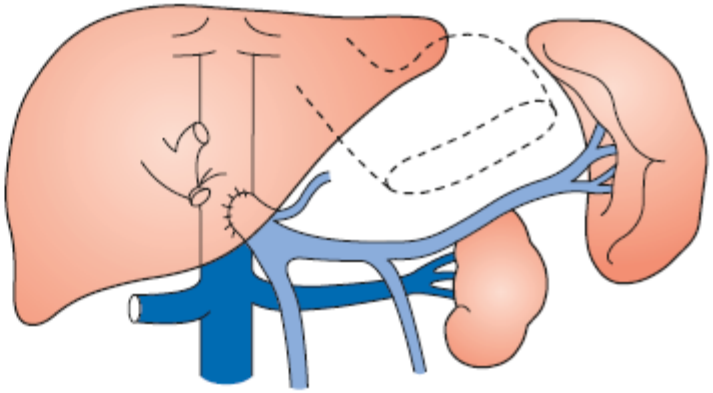
Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.



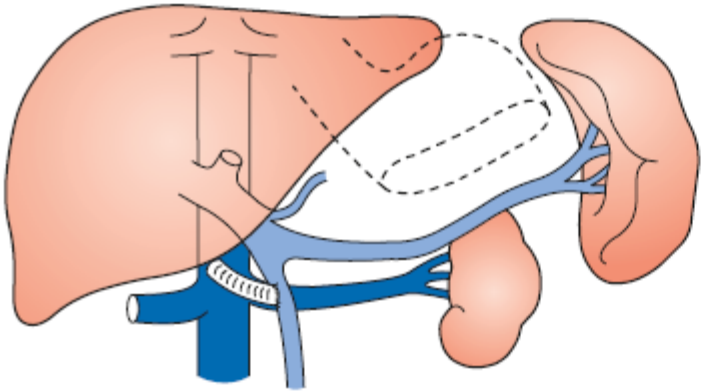
Courtesy Bailey & Love's Short Practice of Surgery



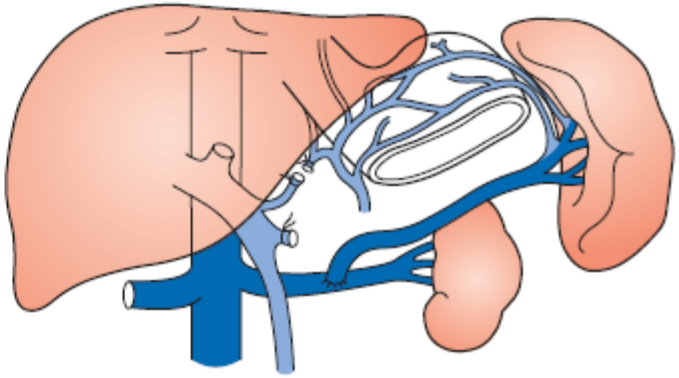
side-to-side portocaval anastomosis



end-to-side portocaval



Mesocaval

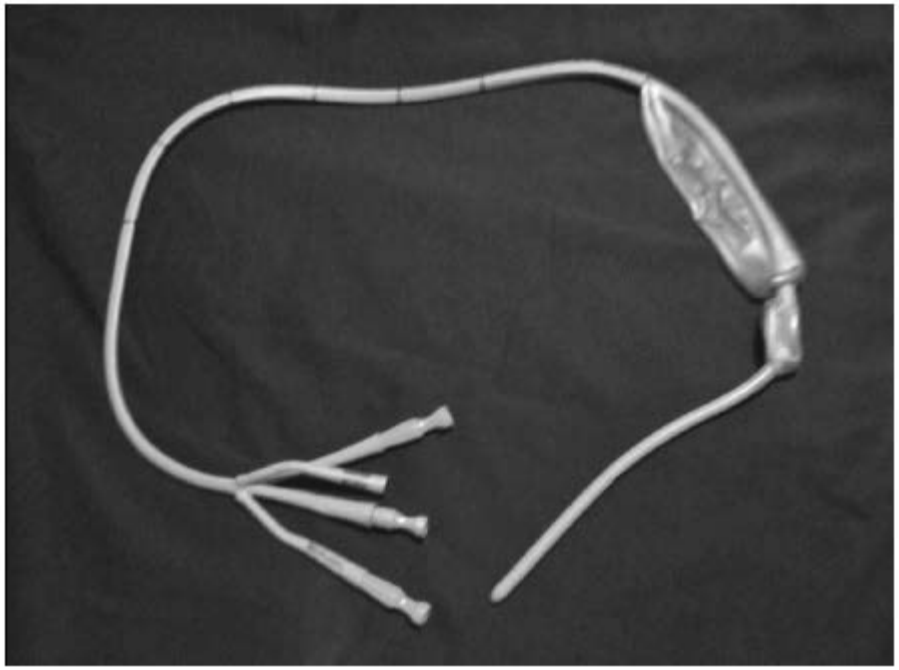


splenorenal anastomosis

Courtesy Bailey & Love's Short Practice of Surgery

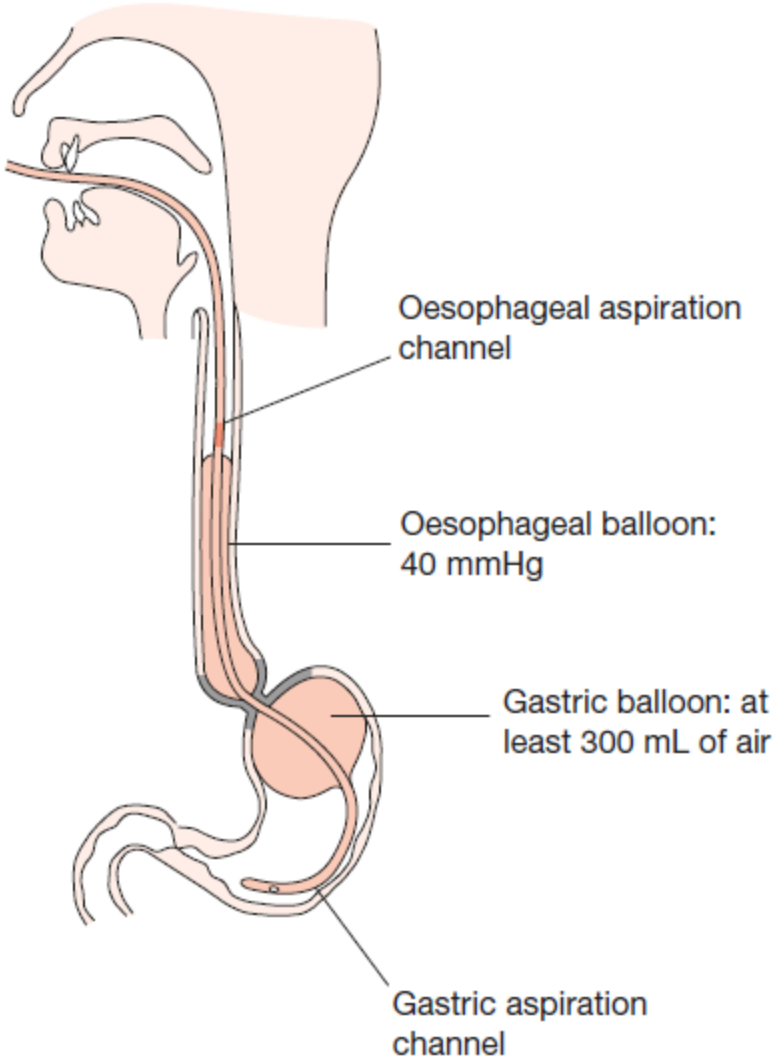
Options

●●●●●**Oesophageal tamponade** by the use of a Sengstaken-Blakemore tube.



Sengstaken-Blakemore tube.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.



Courtesy Bailey & Love's Short Practice of Surgery

The use of a Sengstaken–Blakemore tube in acute haematemesis

Insertion of Sengstaken–Blakemore tube

- Patient in ICU
- Tube kept in refrigerator to stiffen it
- Patient intubated to prevent inadvertent insertion into trachea
- Traction of 1kg applied
- Oesophageal balloon deflated for 10 minutes every 2 hours to prevent necrosis
- Removed after 24 hours
- Complication: rupture of gastro-oesophageal junction

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

Options/others

●●●●●● Embolisation.

●●●●●●● Drugs(vasopressin).

●●●●●●●● Liver transplantation.

Ascites can be treated by insertion of a peritoneovenous shunt –either a Le Veen or Denver shunt.
The latter helps to evacuate any debris blocking the shunt.

Courtesy MCQs and EMQs in Surgery - Datta, Pradip K.

Management of bleeding oesophageal varices

- Blood transfusion
- Correct coagulopathy
- Oesophageal balloon tamponade (Sengstaken–Blakemore tube)
- Drug therapy (terlipressin)
- Endoscopic sclerotherapy or banding
- Assess portal vein patency (Doppler ultrasound or CT)
- Transjugular intrahepatic portosystemic stent shunts (TIPSS)
- Surgery
    - Portosystemic shunts
    - Splenectomy and gastric devascularisation

Courtesy Bailey & Love's Short Practice of Surgery



courtesy أ.م.د جمال الخضيري