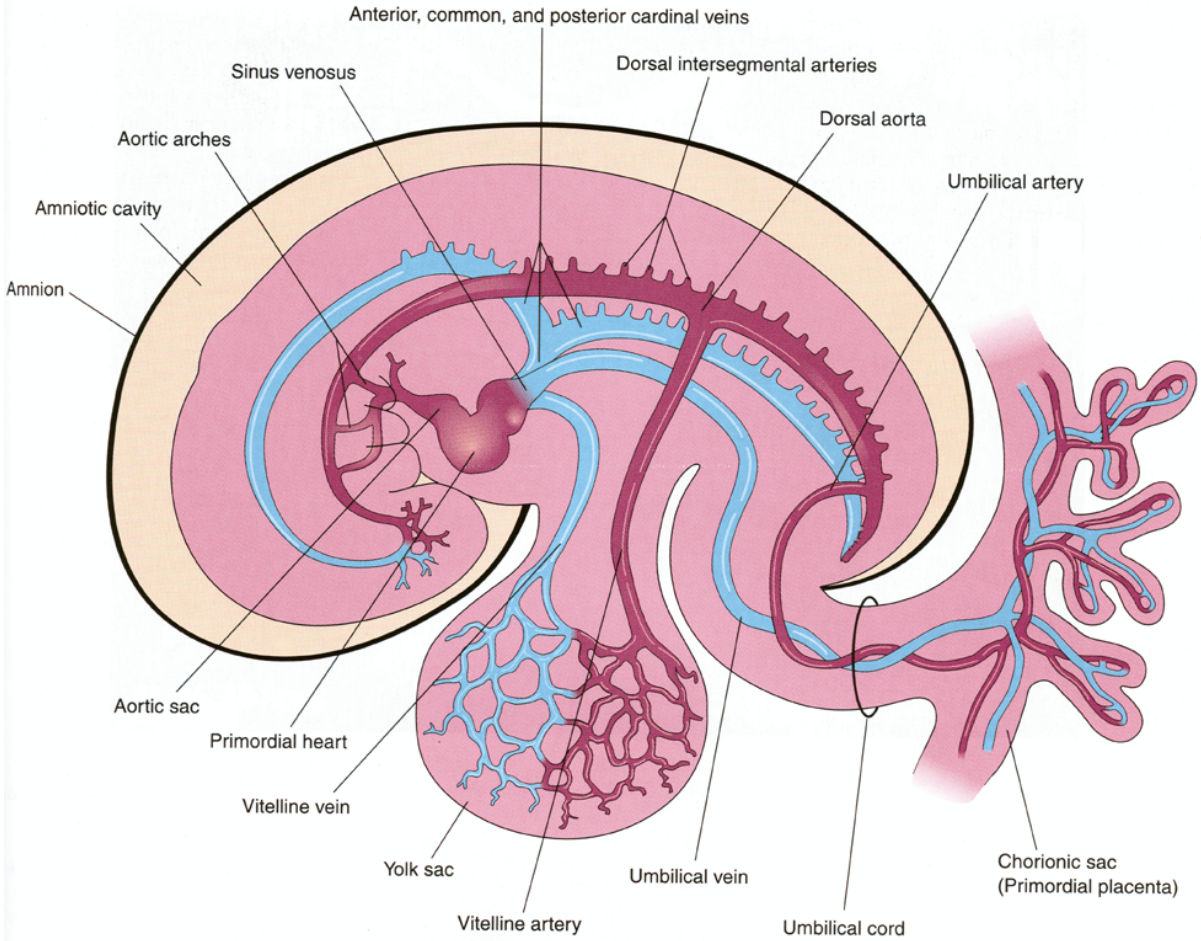
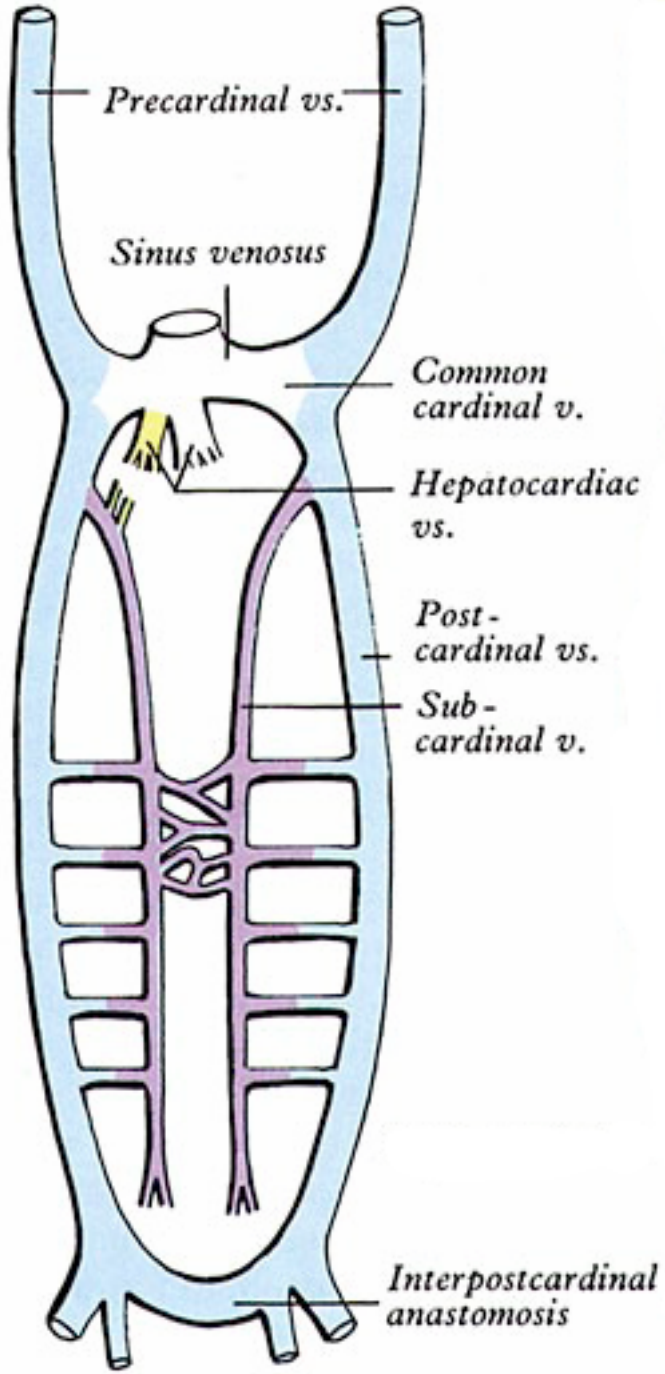
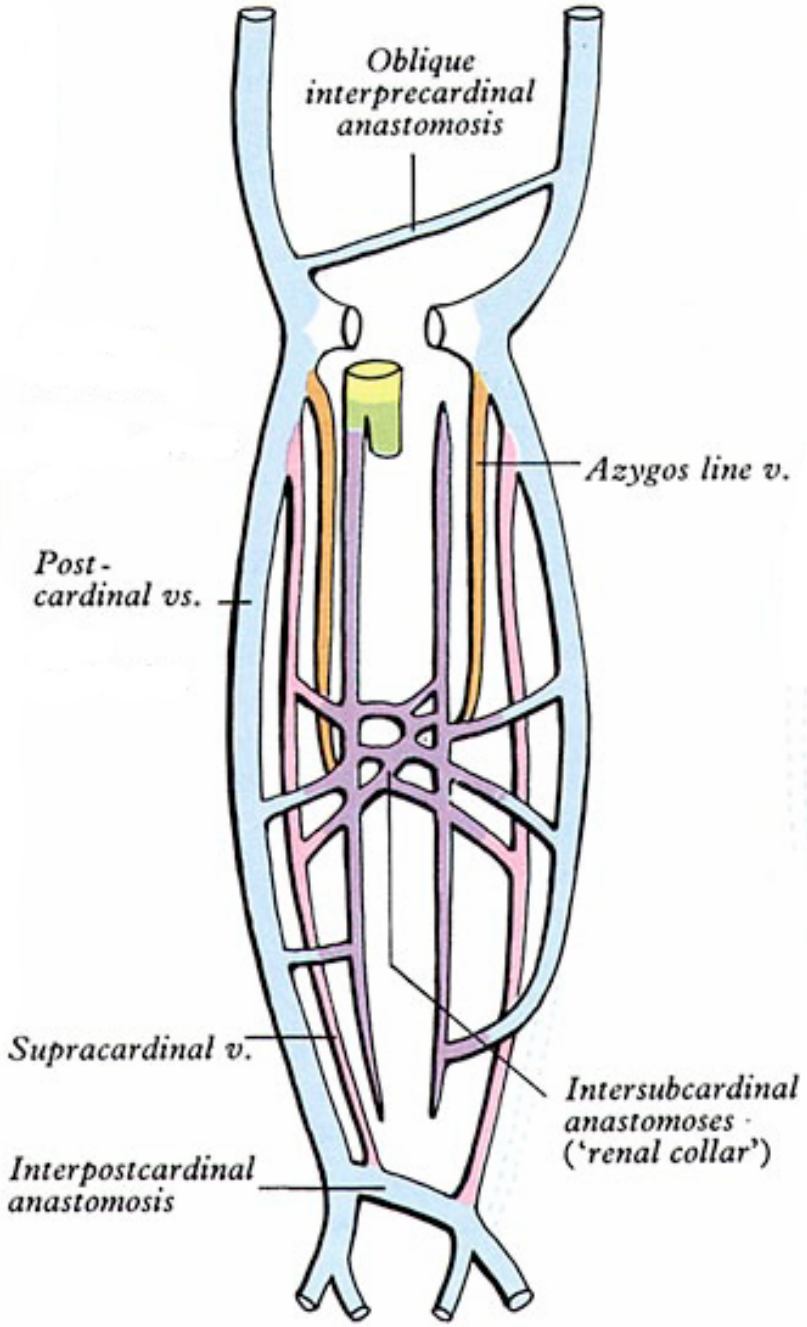
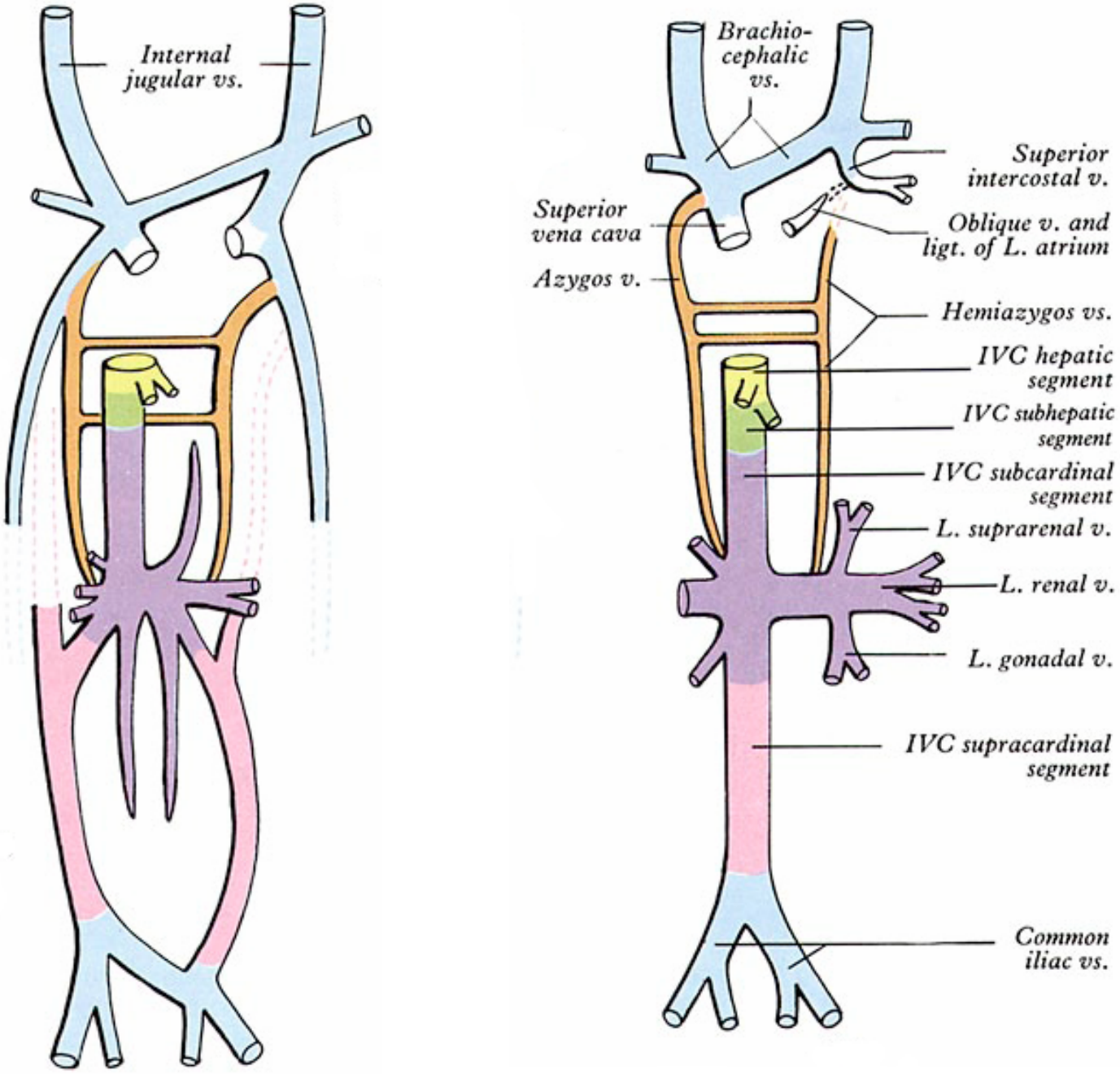

Anterior, common, and posterior cardinal veins
Sinus venosus
Dorsal intersegmental arteries
Dorsal aorta
Aortic arches
Umbilical artery
Amniotic cavity
Amnion
Aortic sac
Primordial heart
Vitelline vein
Yolk sac
Vitelline artery
Umbilical vein
Umbilical cord
Chorionic sac
(Primordial placenta)


Precardinal vs.
Sinus venosus
Common cardinal v.
Hepatocardiac vs.
Post-cardinal vs.
Sub-cardinal v.
Interpostcardinal anastomosis


Oblique interprecardinal anastomosis
Azygos line v.
Post-cardinal vs.
Supracardinal v.
Intersubcardinal anastomoses ('renal collar')
Interpostcardinal anastomosis


Internal jugular vs.
Brachio-cephalic vs.
Superior intercostal v.
Superior vena cava
Oblique v. and ligt. of L. atrium
Azygos v.
Hemiazygos vs.
IVC hepatic segment
IVC subhepatic segment
IVC subcardinal segment
L. suprarenal v.
L. renal v.
L. gonadal v.
IVC supracardinal segment
Common iliac vs.

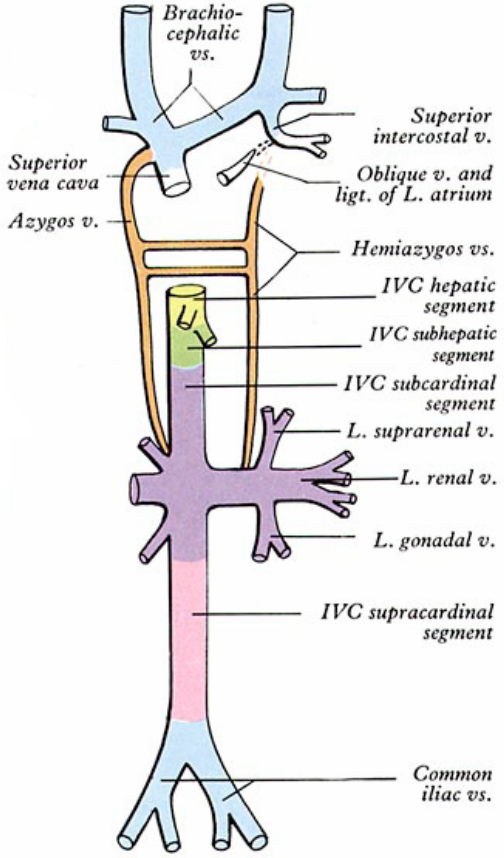
Development of Inferior vena cava

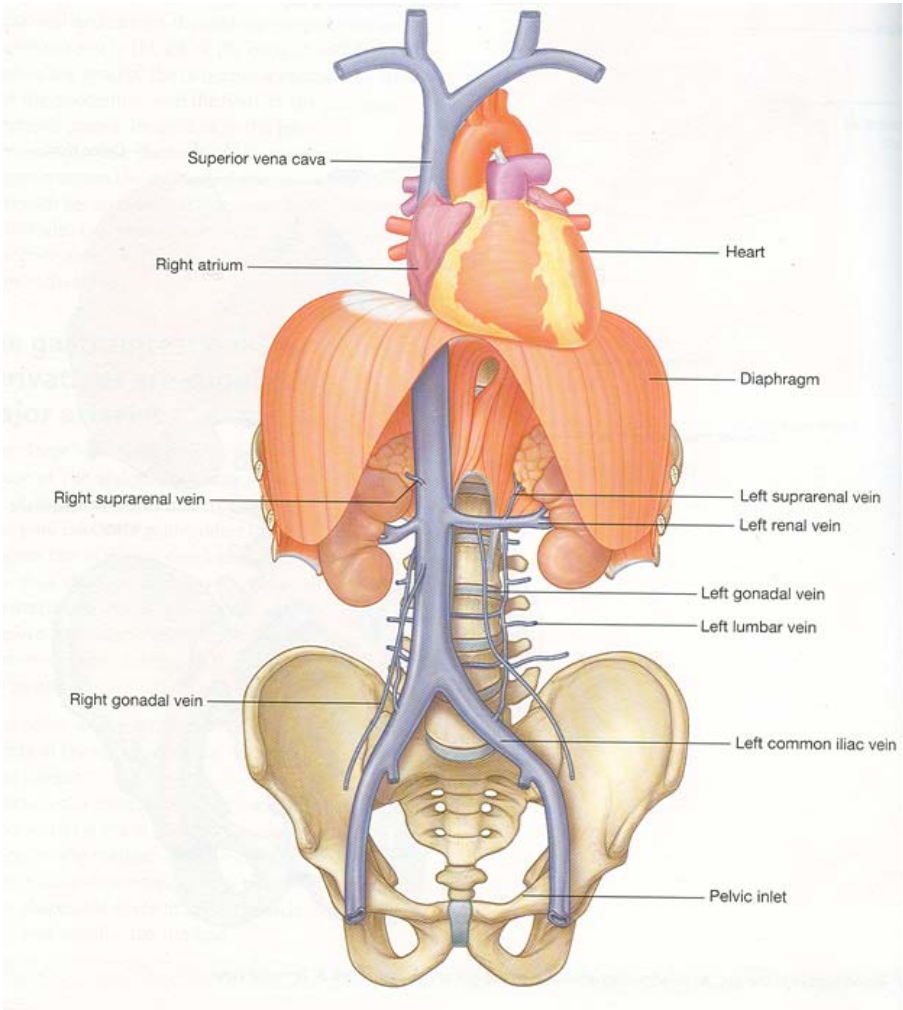
Inferior vena cava is formed, from below upwards by:

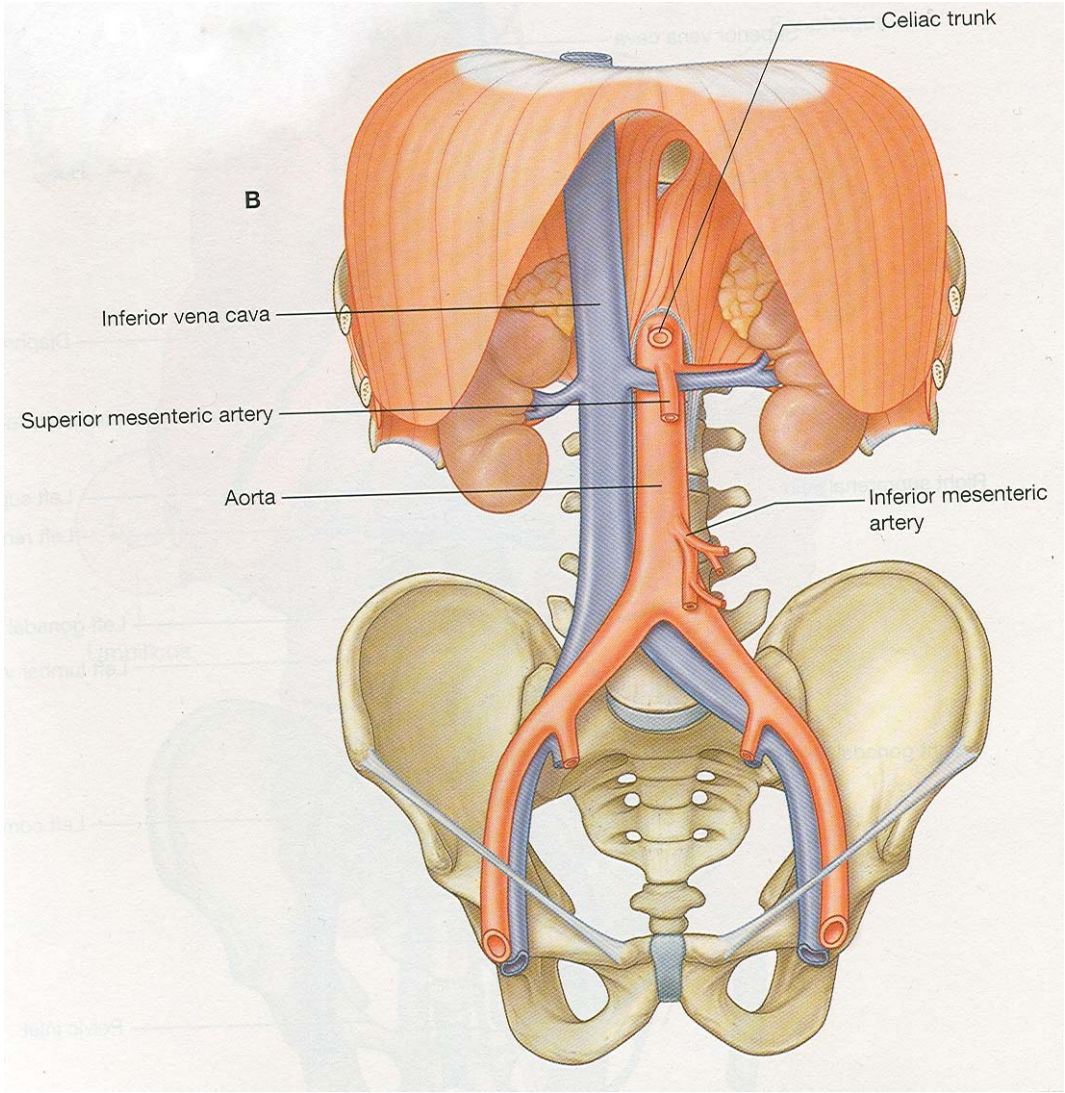
1. Begins by the union of the two common iliac veins,
2. Right supracardinal,
3. Right supra-subcardinal anastomosis,
4. Right subcardinal,
5. New formation (hepatic segment)

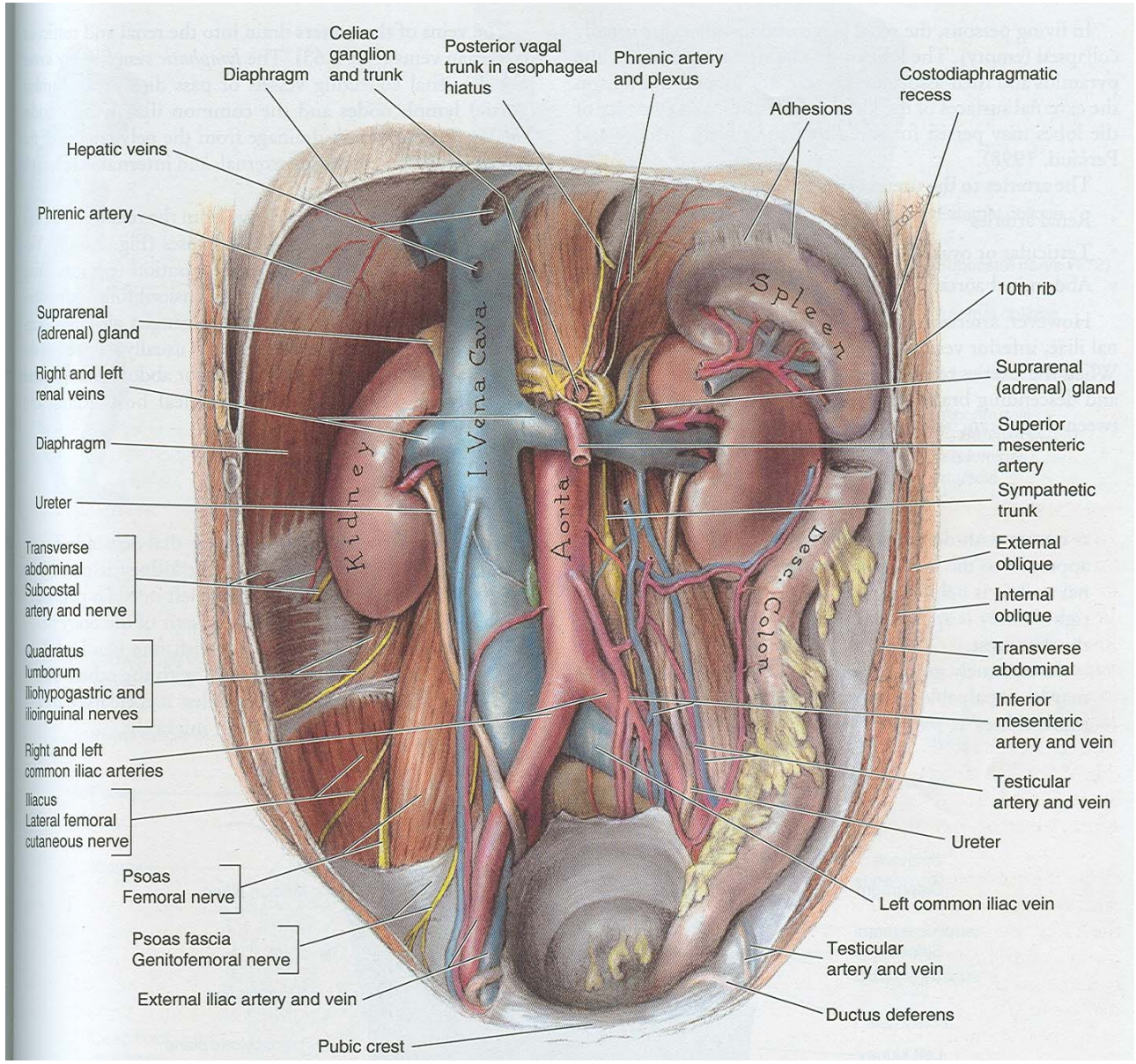
and

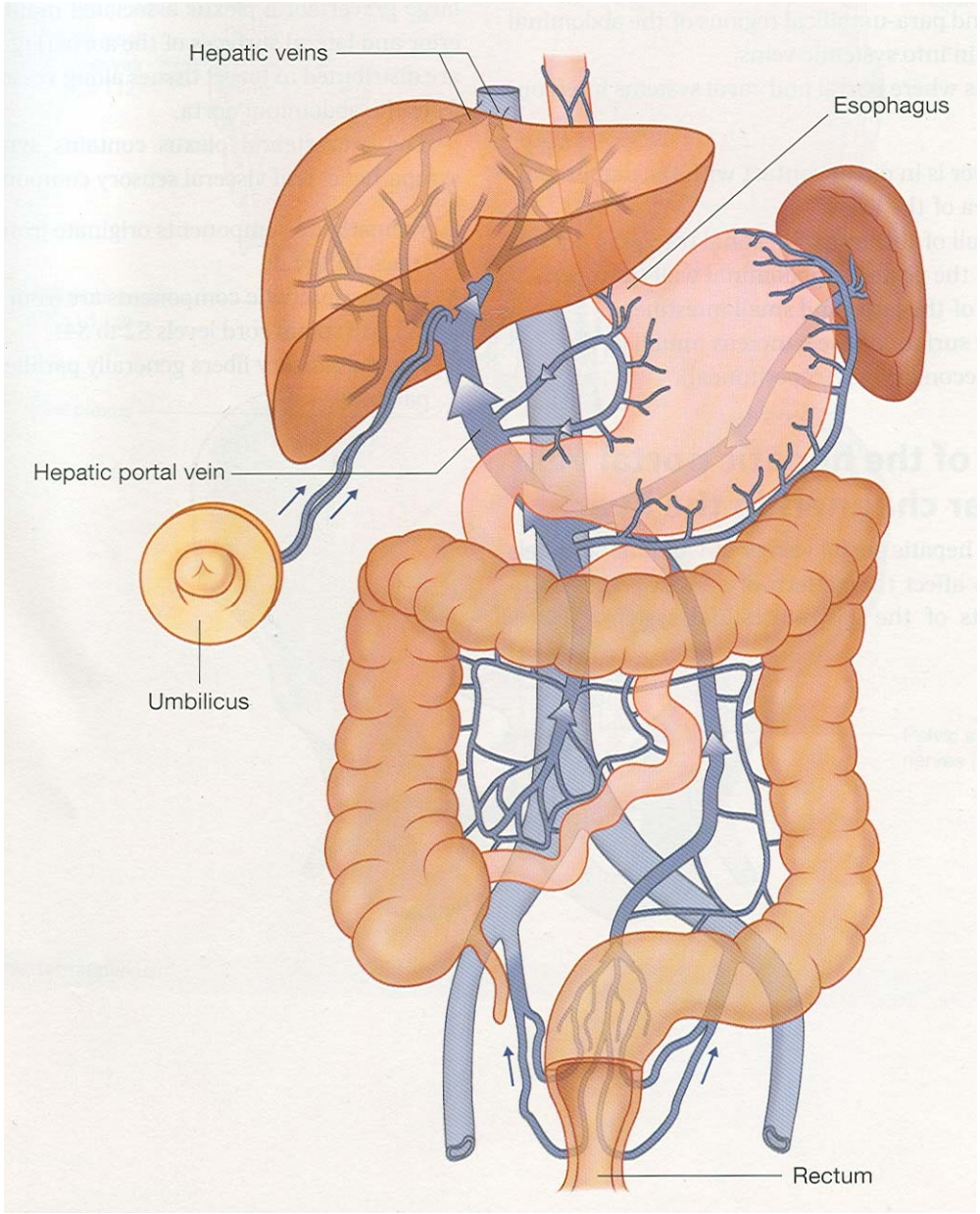
6. Hepatocardiac channel (terminal part of right vitelline vein).

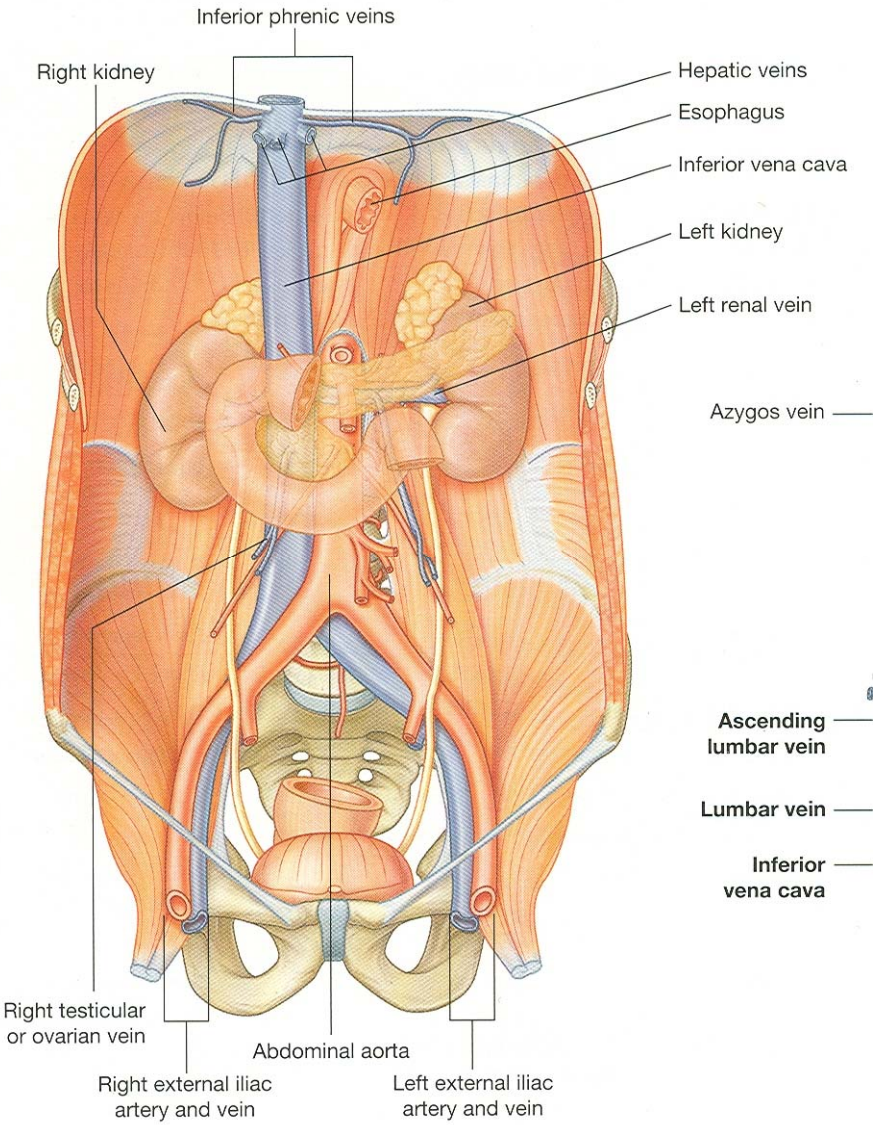



Superior vena cava
Right atrium
Heart
Diaphragm
Right suprarenal vein
Left suprarenal vein
Left renal vein
Left gonadal vein
Left lumbar vein
Right gonadal vein
Left common iliac vein
Pelvic inlet


B
Celiac trunk
Inferior vena cava
Superior mesenteric artery
Aorta
Inferior mesenteric artery


Celiac ganglion and trunk
Diaphragm
Posterior vagal trunk in esophageal hiatus
Phrenic artery and plexus
Adhesions
Costodiaphragmatic recess
Hepatic veins
Phrenic artery
Suprarenal (adrenal) gland
Right and left renal veins
Diaphragm
Ureter
Transverse abdominal Subcostal artery and nerve
Quadratus lumborum Iliohypogastric and ilioinguinal nerves
Right and left common iliac arteries
Iliacus Lateral femoral cutaneous nerve
Psoas Femoral nerve
Psoas fascia Genitofemoral nerve
External iliac artery and vein
Pubic crest
Kidney
I. Vena Cava
Aorta
Spleen
Desc. Colon
10th rib
Suprarenal (adrenal) gland
Superior mesenteric artery
Sympathetic trunk
External oblique
Internal oblique
Transverse abdominal
Inferior mesenteric artery and vein
Testicular artery and vein
Ureter
Left common iliac vein
Testicular artery and vein
Ductus deferens

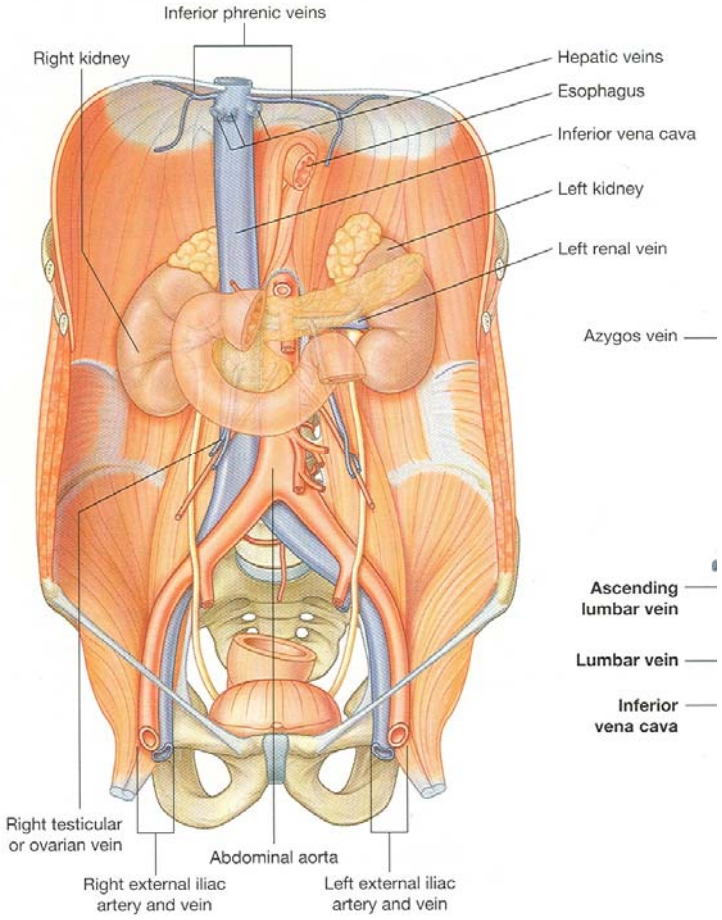

Hepatic veins
Esophagus
Hepatic portal vein
Umbilicus
Rectum


Inferior phrenic veins
Right kidney
Hepatic veins
Esophagus
Inferior vena cava
Left kidney
Left renal vein
Azygos vein
Ascending lumbar vein
Lumbar vein
Inferior vena cava
Right testicular or ovarian vein
Abdominal aorta
Right external iliac artery and vein
Left external iliac artery and vein

Relations

Anterior:

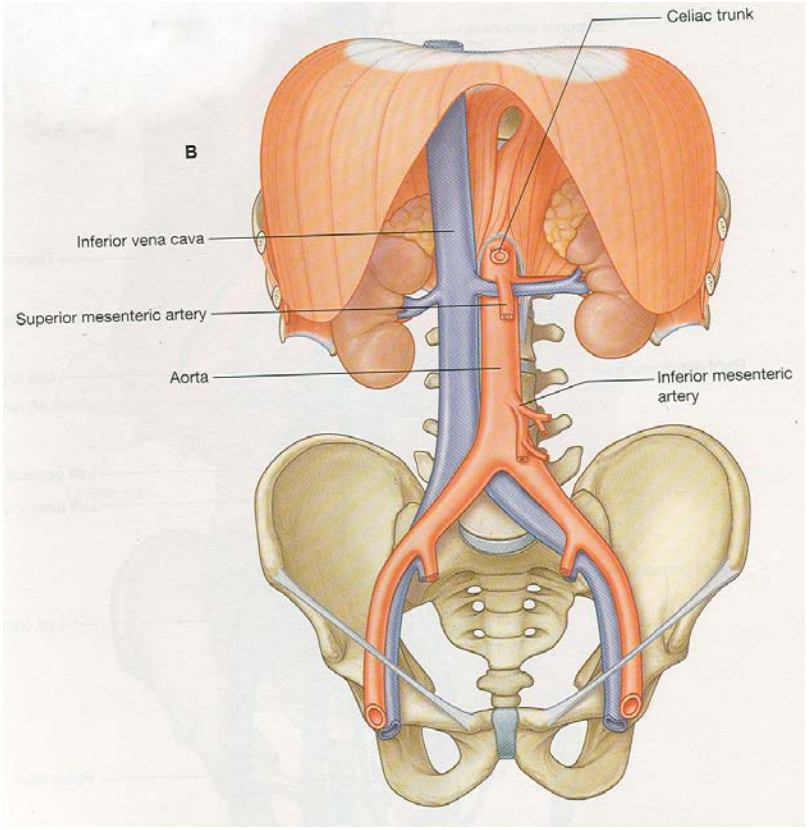
- Right common iliac a.
- Posterior parietal peritoneum
- Crossed by root of mesentery
- Right gonadal a.
- 3rd part of duodenum
- Head of pancreas
- Ist part of duodenum
- Posterior wall of epiploic foramen
- Liver.



Relations

Posterior

- L 3, 4, 5 vertebrae
- Right psoas major
- Right sympathetic trunk
- Right lumbar veins
- Right crus of diaphragm
- Medial part of right suprarenal
- Right renal, suprarenal, inferior phrenic a.



Relations

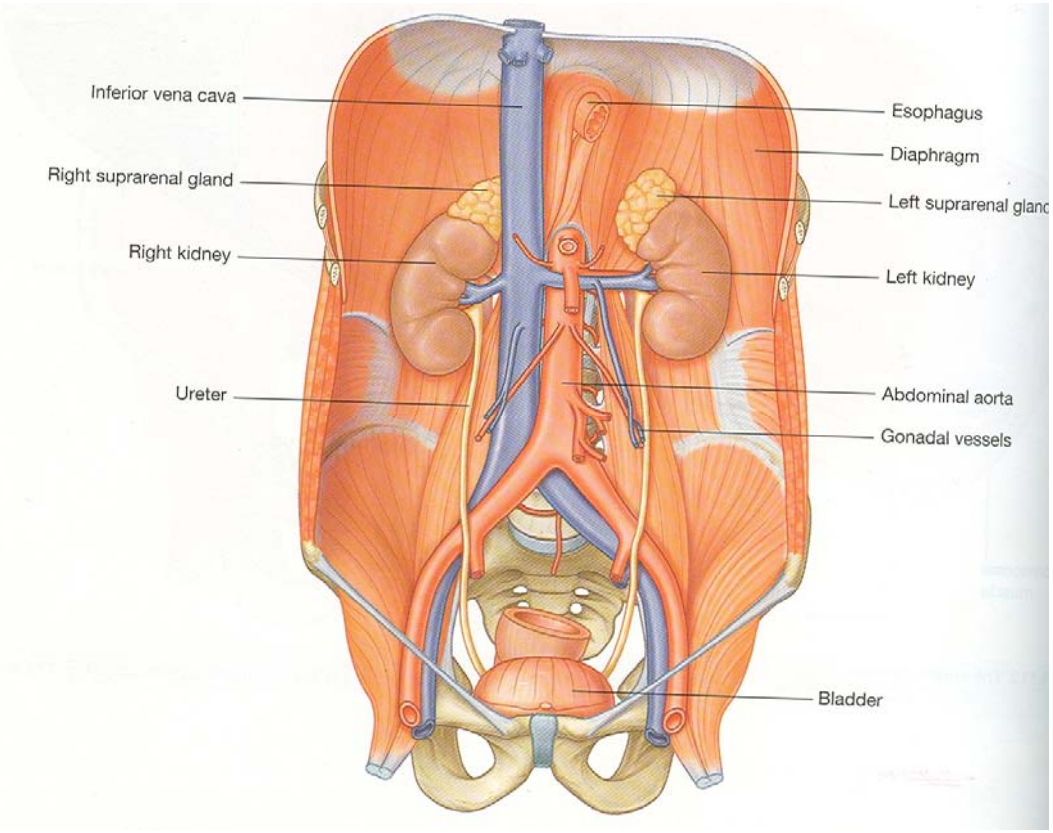
Lateral:

Right:

- Right ureter
- 2nd part of duodenum
- Right kidney
- Right lobe of liver

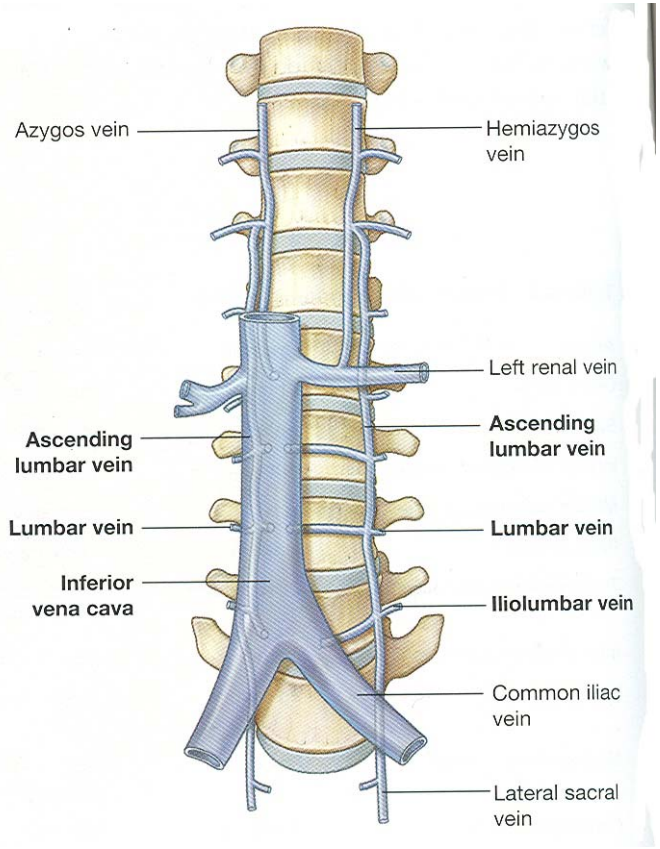
Left:

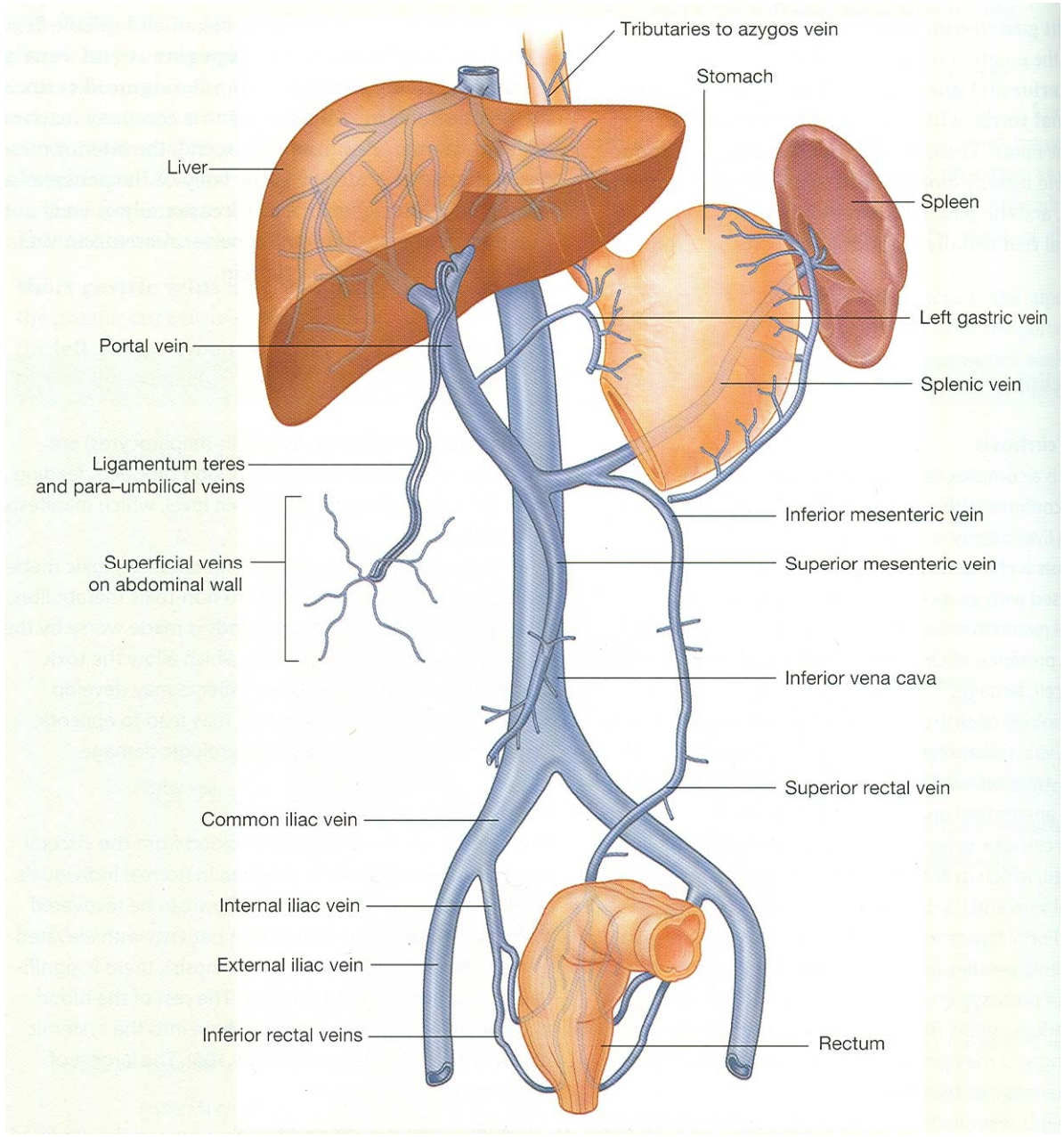
- Right crus of diaphragm
- Caudate lobe
- Aorta



Tributaries

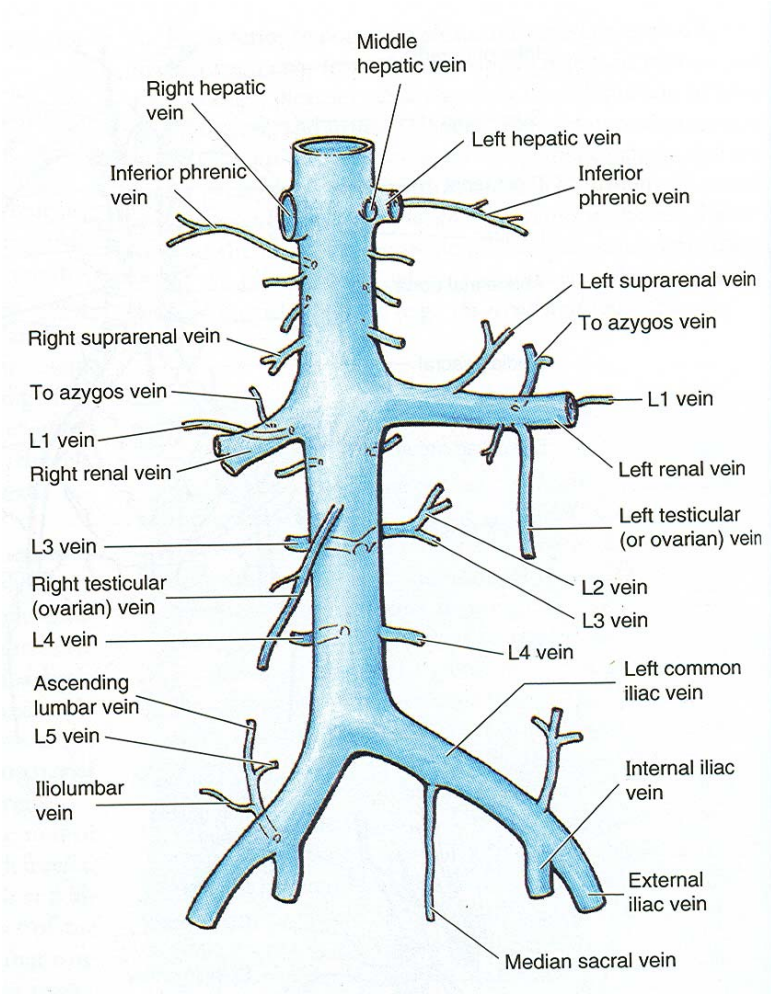
- Lumbar – 4 pairs
- Ascending lumbar
- Right gonadal
  - Testicular: from pampiniform plexus, drains testis, epididymis joins IVC at an acute angle
  - Ovarian : from ovarian plexus




Tributaries to azygos vein
Stomach
Liver
Spleen
Left gastric vein
Portal vein
Splenic vein
Ligamentum teres
and para–umbilical veins
Inferior mesenteric vein
Superficial veins
on abdominal wall
Superior mesenteric vein
Inferior vena cava
Superior rectal vein
Common iliac vein
Internal iliac vein
External iliac vein
Inferior rectal veins
Rectum

Tributaries

- Renal : open at right angle
  Right – 2.5 cm
  Left – 7.5 cm;
  receives left gonadal,
  left suprarenal and some
  times inferior phrenic
- Right suprarenal
- Inferior phrenic
- Hepatic: sinusoids → intra lobular
  → sub-lobular → hepatic;
  in two groups: upper & lower
  No valves



Congenital Anomalies

- Double IVC
- Left sided IVC
- Absence (of hepatic segment)

Applied Anatomy

In case of obstruction/ligation, collateral venous channels enlarge:

- Lumbar vein→ ascending lumbar→ azygos
- Inferior epigastric v. → superior epigastric → internal thoracic
- Thoracoepigastric v. :

Superficial epigastric/superficial circumflex iliac → lateral thoracic v. → axillary v.