

Unidad de Anatomía Veterinaria UST. Santiago

Anatomía II (Comparativa)



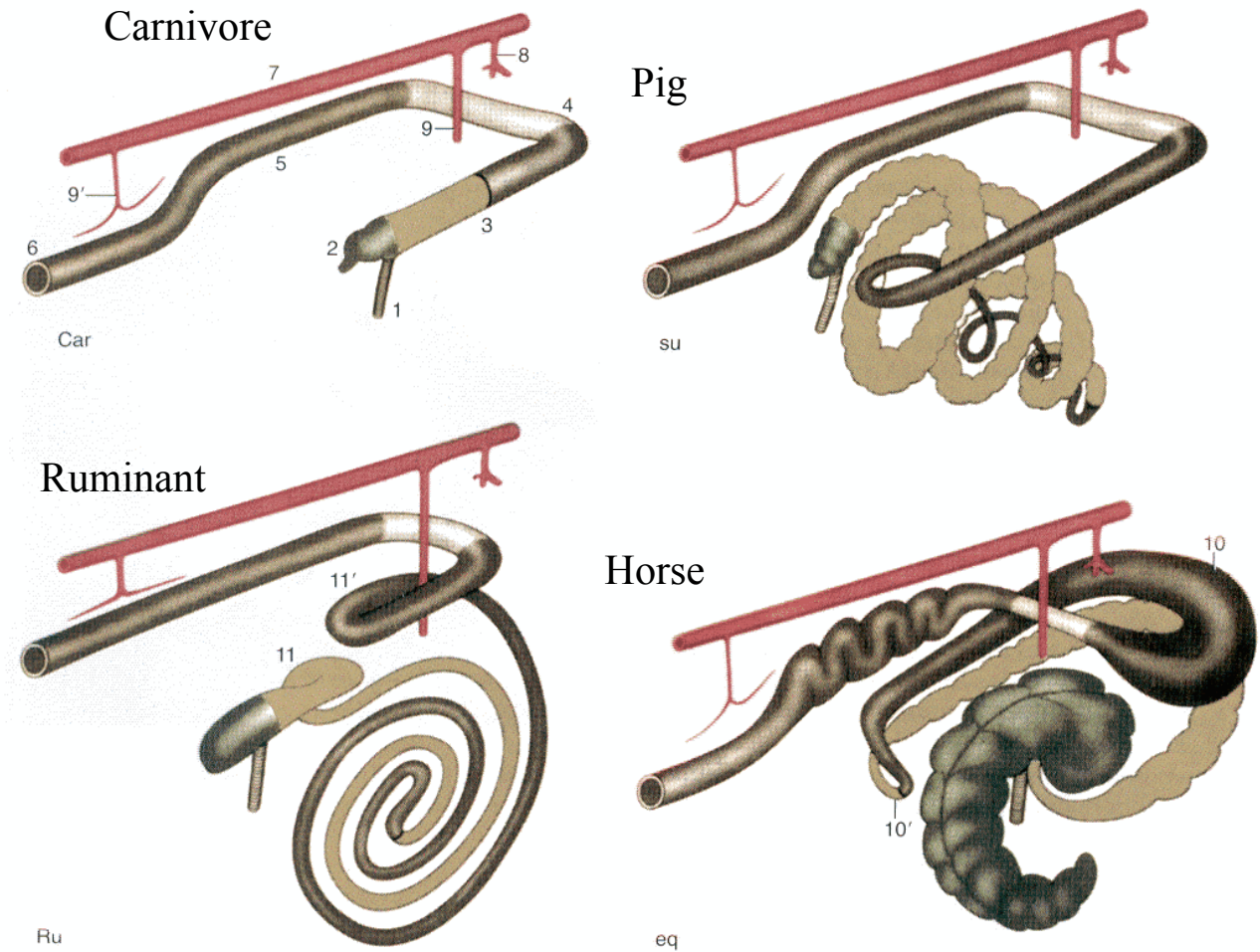
Sesión 13

Irrigación e inervación de abdomen y pelvis.

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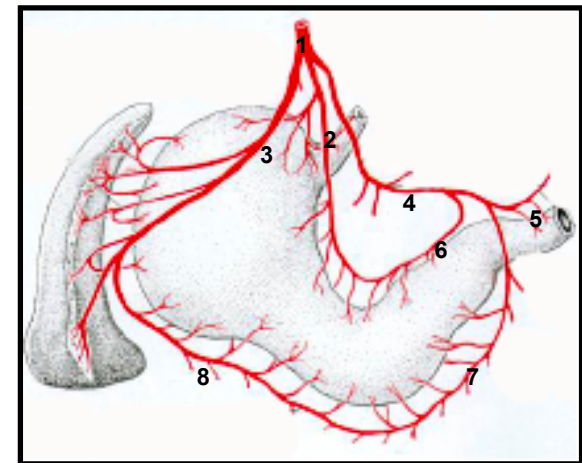
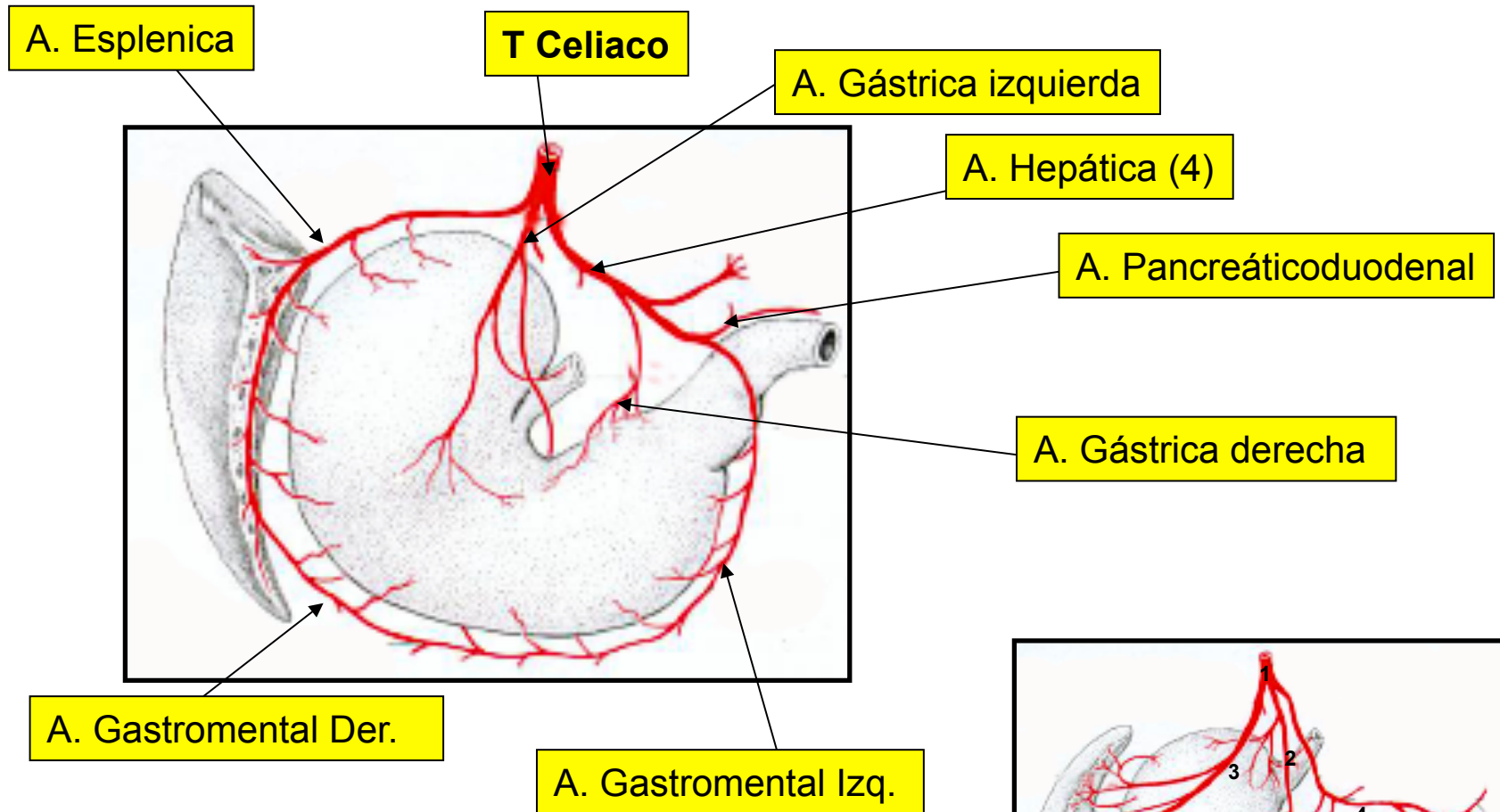
1. Ileum
2. Cecum
3. Colon ascendente
4. Colon transverso
5. Colon descendente
6. Recto
7. Aorta
8. Tronco celiaco
9. Arteria mesentérica craneal
- 9'. Arteria mesentérica caudal



Aporte sanguíneo al tracto digestivo

- Tronco celiaco
 - Aporta irrigación a estómago, páncreas, bazo, hígado, duodeno, esophagus, omentum
- Arteria mesentérica craneal
 - Aporta a intestino delgado y grueso, páncreas
- Arteria mesentérica caudal
 - Aporta a intestino grueso

Irrigación estómago



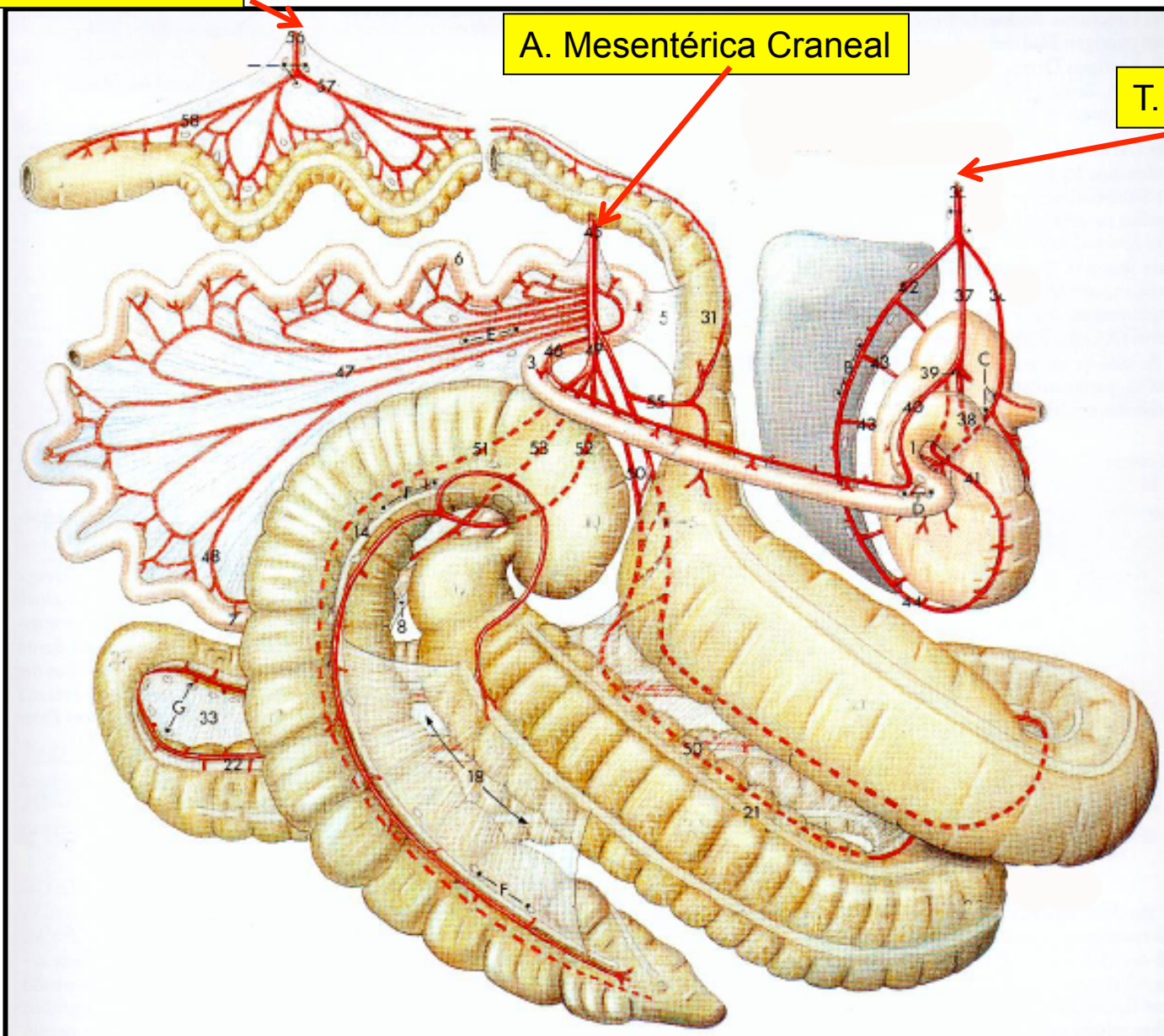
Canino

Irrigación intestino

A. Mesentérica Caudal

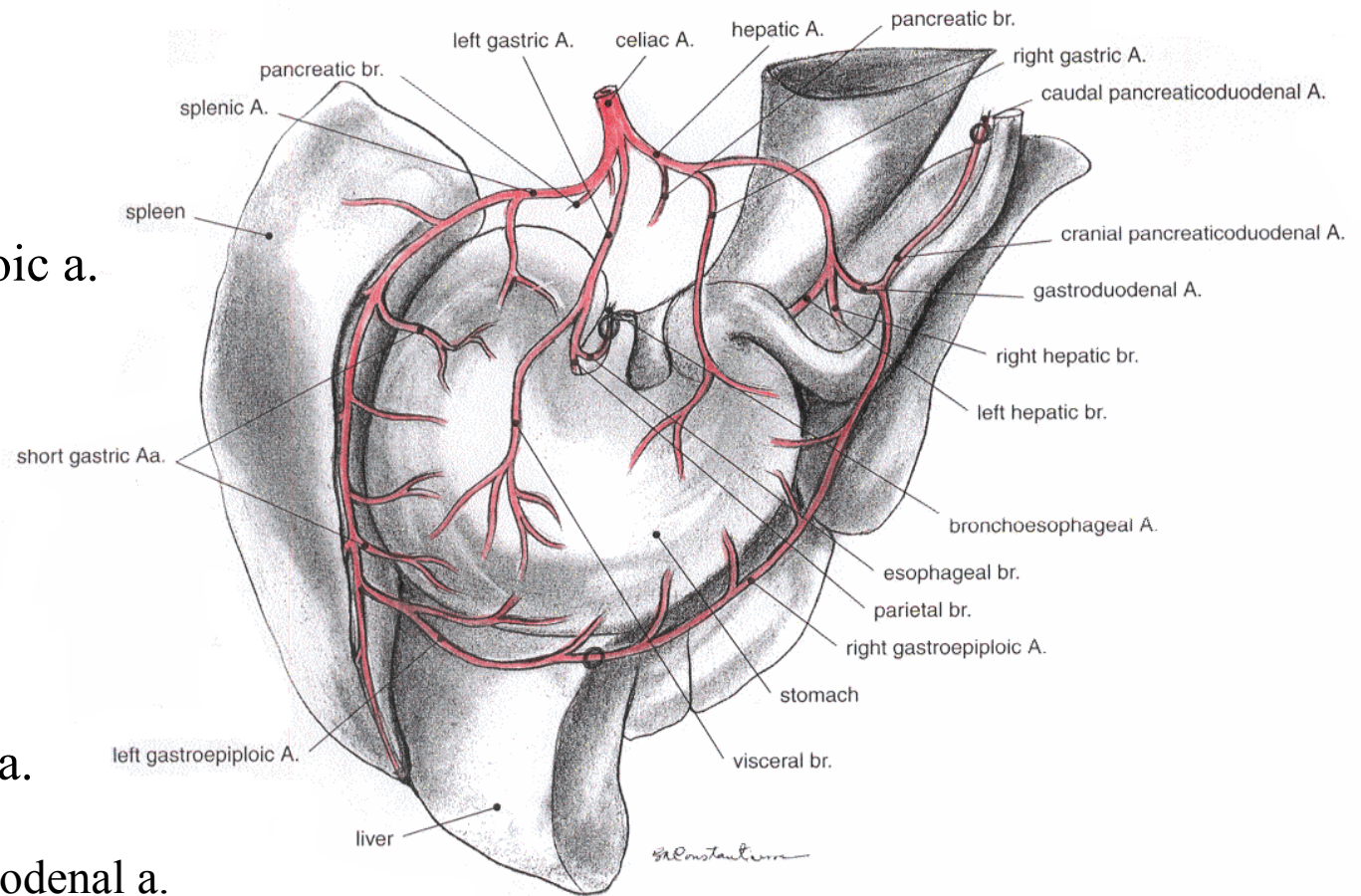
A. Mesentérica Craneal

T. Celiaco



Tronco celiaco en el equino

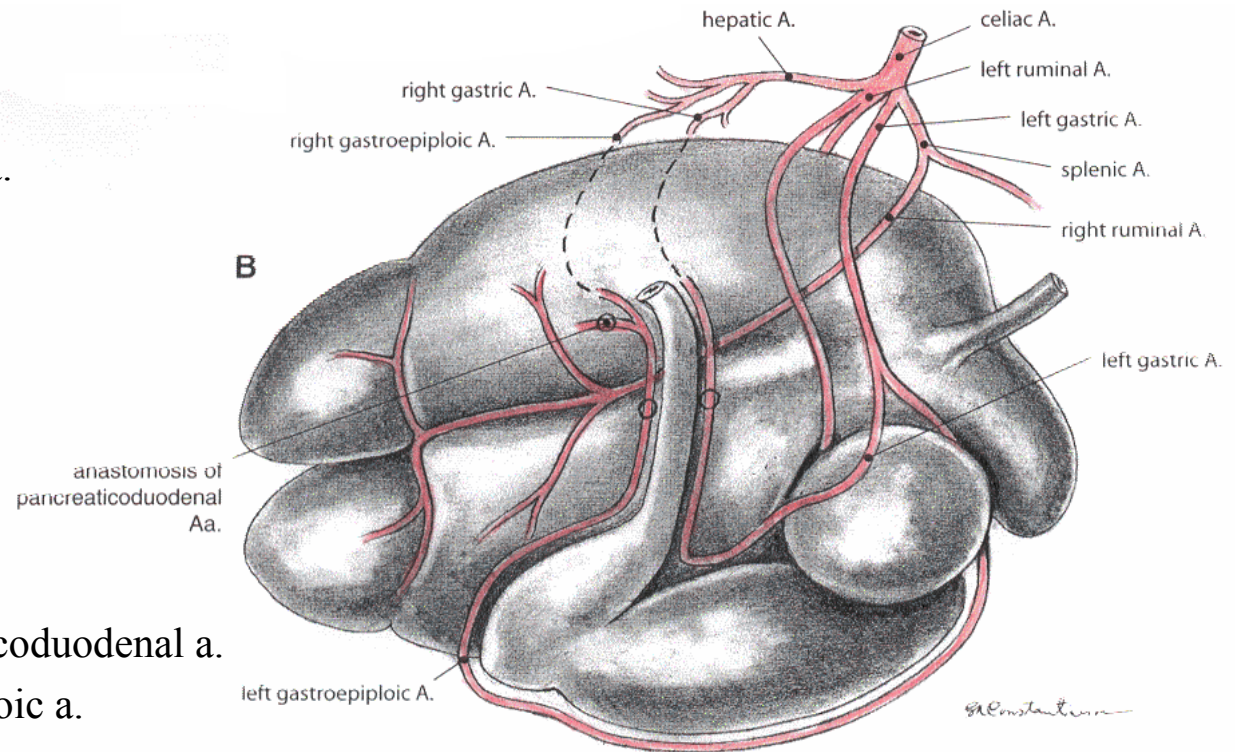
- Splenic a.
 - Pancreatic brs.
 - Splenic brs.
 - Short gastric aa.
 - Left gastroepiploic a.
- Left gastric a.
 - Esophageal brs.
- Hepatic a.
 - Pancreatic brs.
 - Hepatic brs.
 - Right gastric a.
 - Gastroduodenal a.
 - Cranial pancreaticoduodenal a.
 - Right gastroepiploic a.

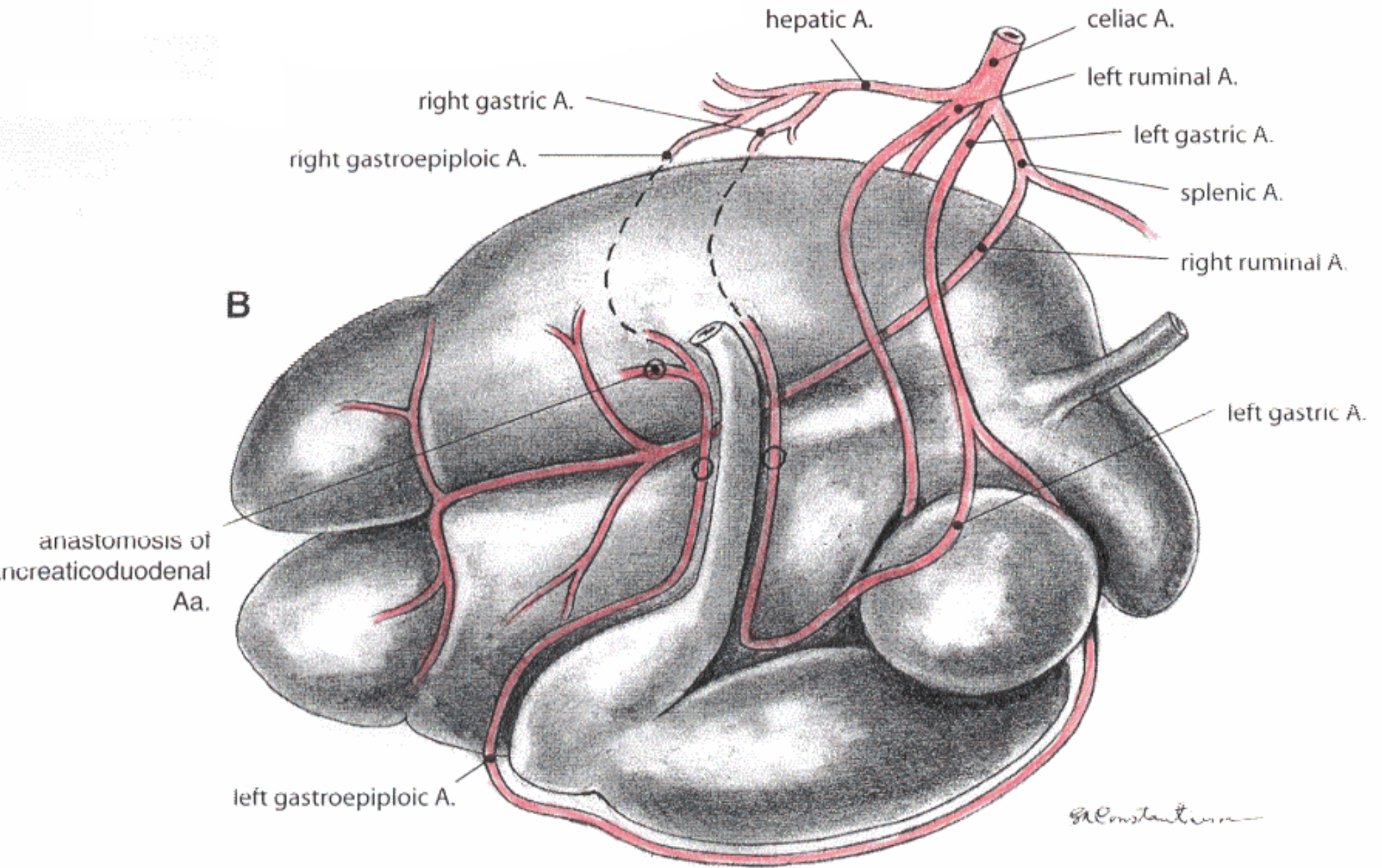


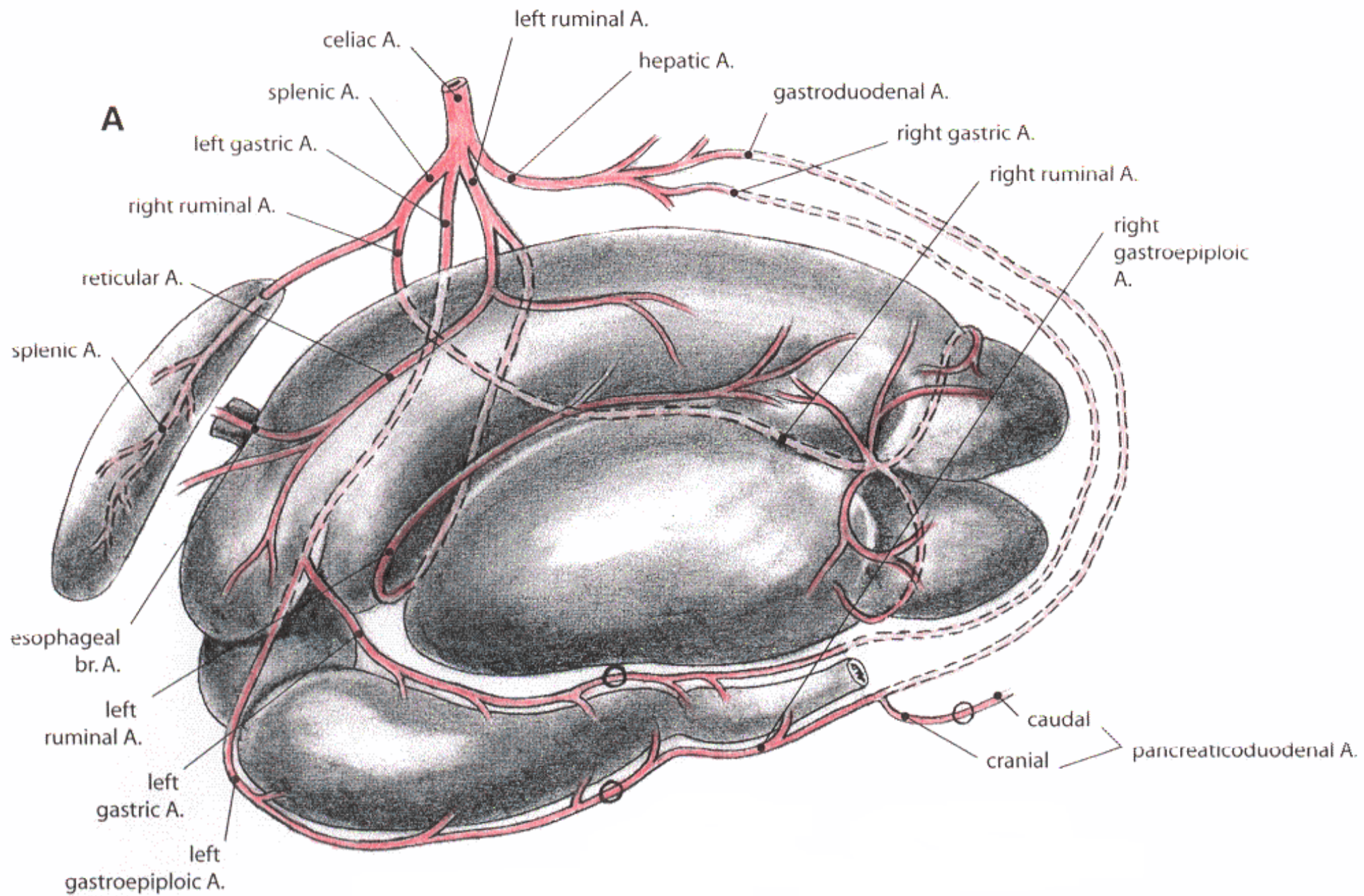
Constantinescu Fig. H3.18

Tronco celiaco en Ruminantes

- Splenic a.
 - Right ruminal a.
 - +/- Reticular a.
 - +/- Left ruminal a.
- Hepatic a.
 - Pancreatic brs.
 - Hepatic brs.
 - Cystic a.
 - Right gastric a.
 - Gastroduodenal a.
 - Cranial pancreaticoduodenal a.
 - Right gastroepiploic a.
- Left gastric a.
 - +/- Left ruminal a.
 - Left gastroepiploic a.

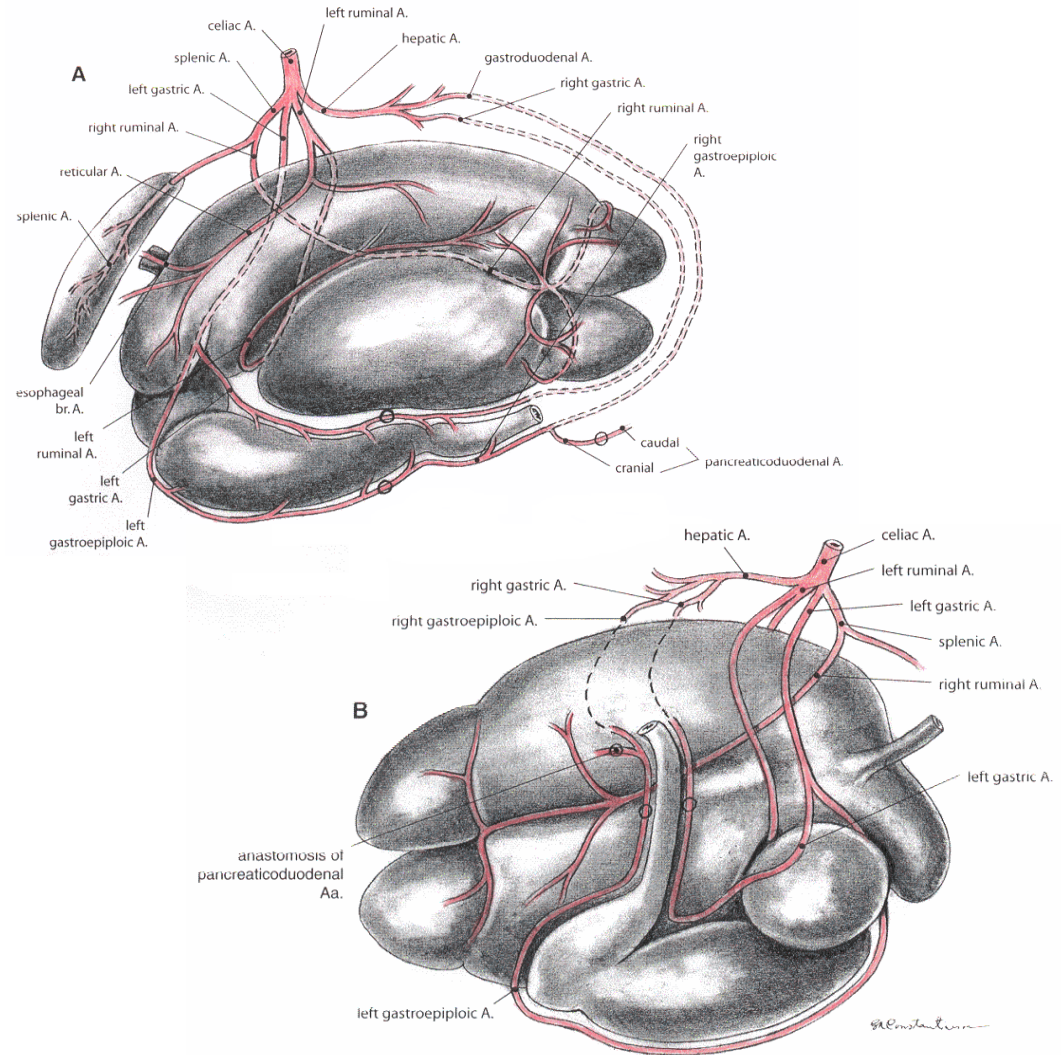






Irrigación de proventrículos y estómago en Ruminantes

- Right ruminal a.
- Left ruminal a.
- Reticular a.
- Left gastric a.
- Right gastric
- Left gastroepiploic a.
- Right gastroepiploic a.



Constantinescu Fig. R3.15

Arteria hepática en rumiantes

- Hepatic a.
 - Pancreatic brs.
 - Hepatic brs.
 - Cystic a.
 - Right gastric a.
 - Gastroduodenal a.
 - Cranial pancreaticoduodenal a.
 - Right gastroepiploic a.

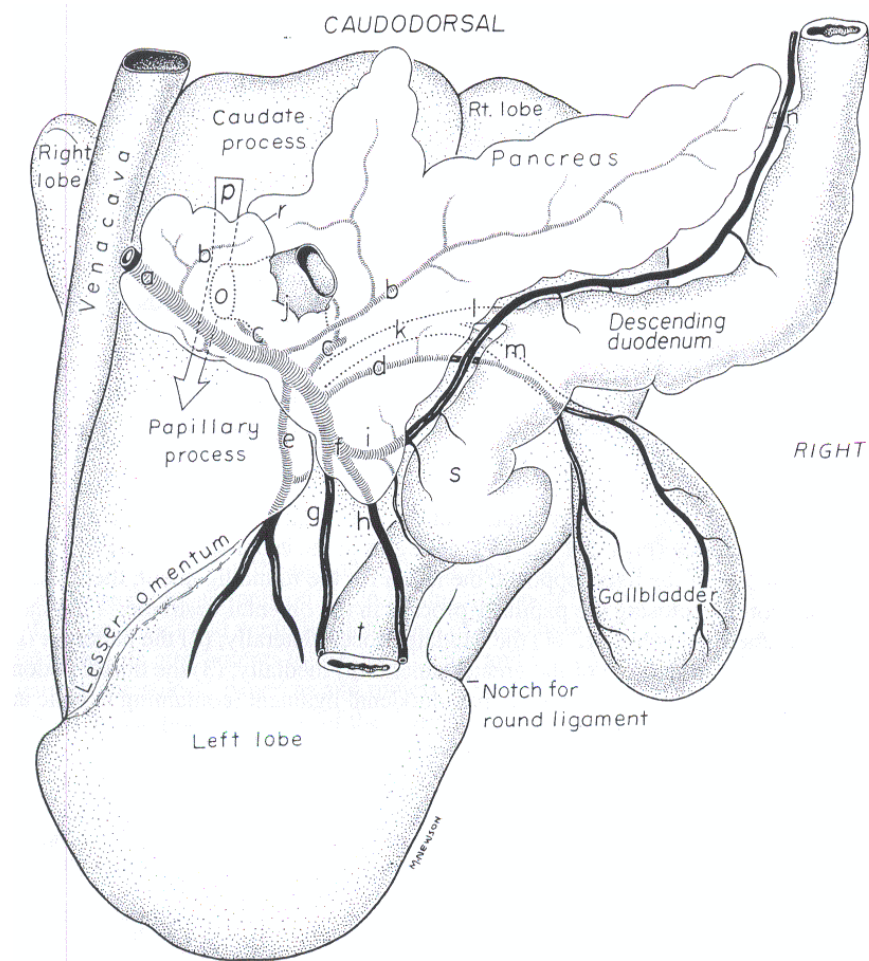
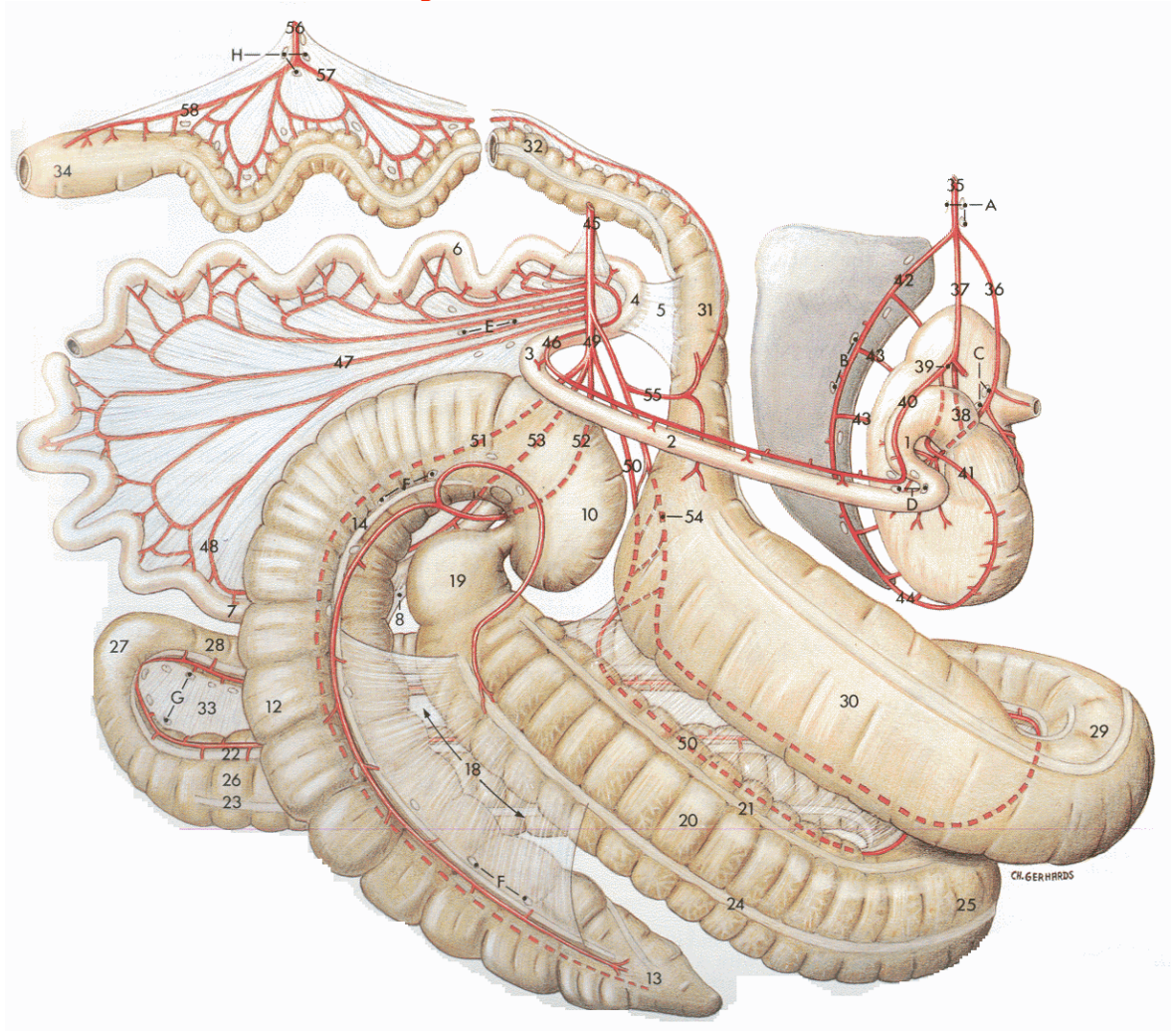


Fig. 2-14. Visceral surface of liver, cow. *a*, hepatic artery; *b*, pancreatic branches; *c*, right hepatic branches; *d*, cystic a.; *e*, left hepatic branch; *f*, gastroduodenal a.; *g*, right gastric a.; *h*, right gastroepiploic a.; *i*, cranial pancreaticoduodenal a.; *j*, portal vein; *k*, common hepatic duct; *l*, common bile duct; *m*, cystic duct; *n*, accessory pancreatic duct; *o*, splenic vein; *p*, epiploic foramen; *r*, pancreatic notch; *s*, sigmoid flexure; *t*, cranial part of duodenum.

Orsini & Morrison Fig. 2-14

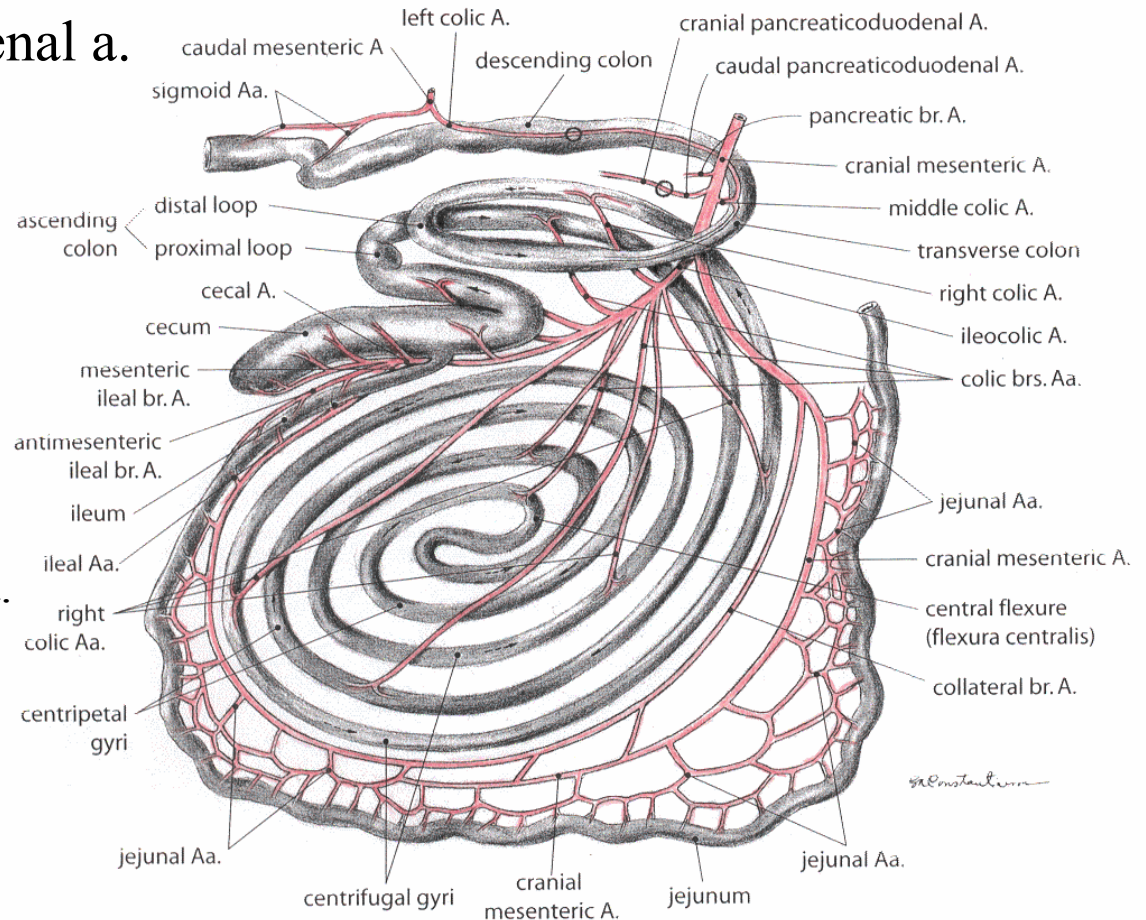
Cranial mesenteric artery in the Horse

- Caudal pancreaticoduodenal a. (46)
- Jejunal aa. (47)
 - Last jejunal a. is ileal a. (48)
- Common trunk
 - Right colic a. (54)
 - Middle colic a. (55)
- Ileocolic a. (49)
 - Mesenteric ileal br. (53)
 - Medial and lateral cecal aa. (51, 52)
 - Colic br. (50)



Cranial mesenteric artery in the Ruminant

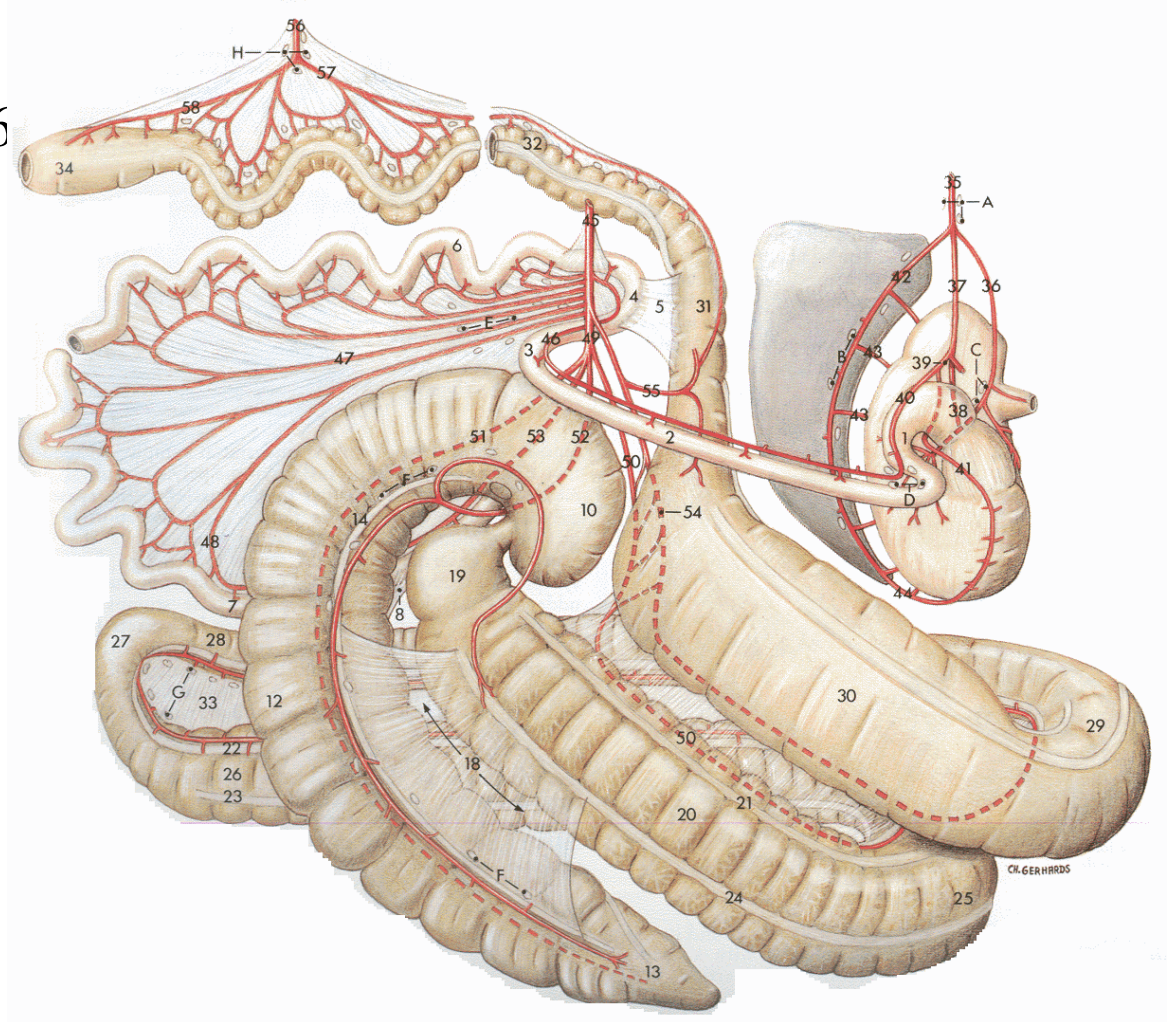
- Caudal pancreaticoduodenal a.
- Middle colic a.
- Ileocolic a.
 - Right colic aa.
 - Colic brs.
 - Mesenteric ileal br.
 - Cecal a.
 - Antimesenteric ileal a.
- Collateral br. (ox)
- Jejunal aa.
- Ileal aa.



Constantinescu Fig. R3.10

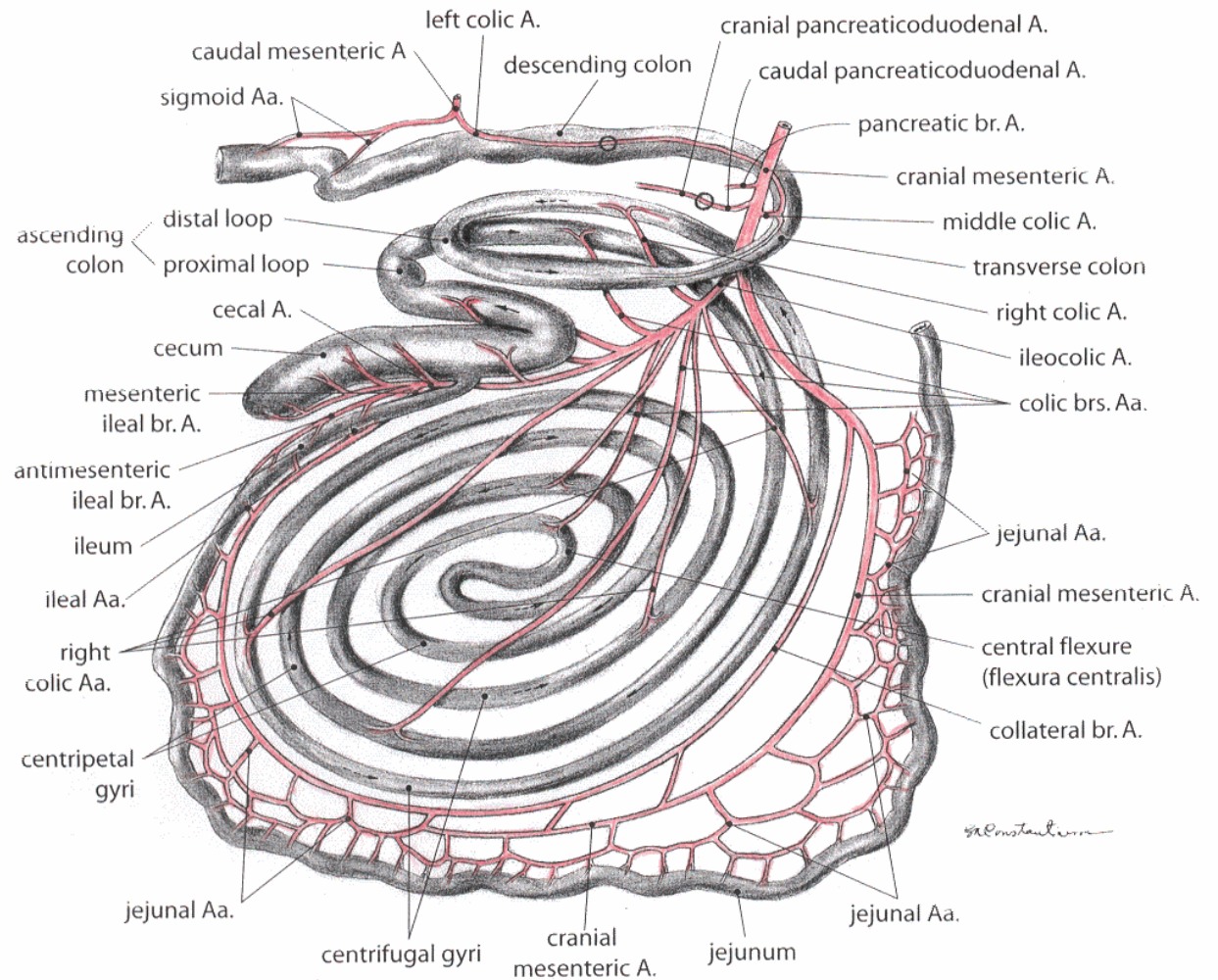
Caudal mesenteric artery in the Horse

- Caudal mesenteric a. (56)
- Left colic a. (57)
- Cranial rectal a. (58)



Arteria mesenteric caudal en Ruminantes

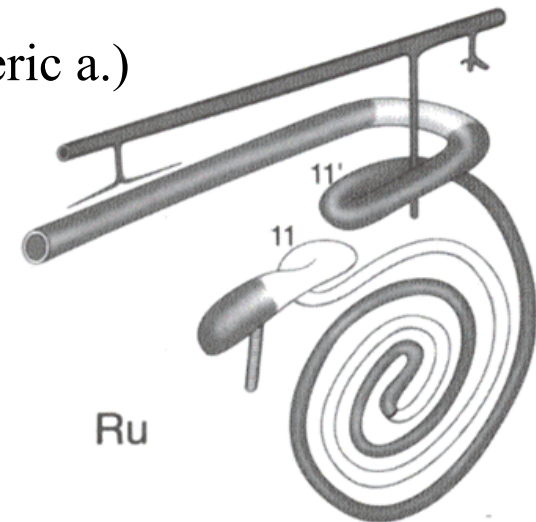
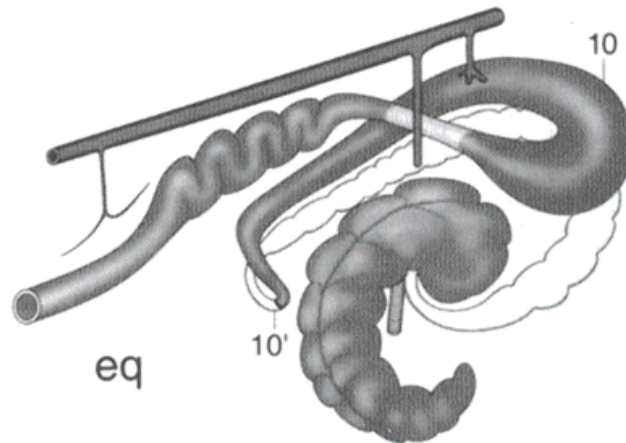
- Left colic a.
- Cranial rectal a.



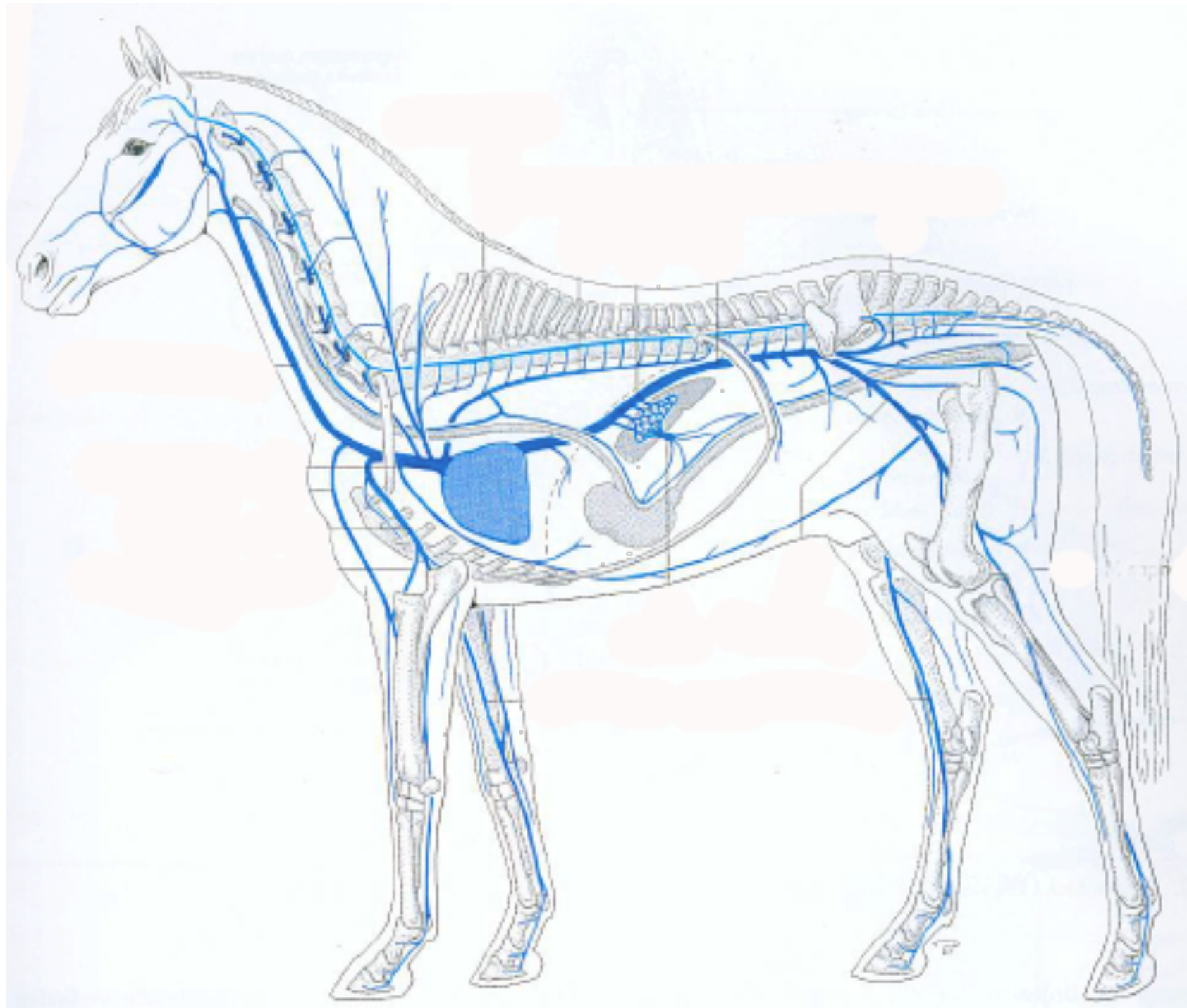
Constantinescu Fig. R3.10

Blood supply to the colon

- Initial half of ascending colon
- Colic br. (from ileocolic a. from cranial mesenteric a.)
 - Terminal half of ascending colon
- Right colic a. (from cranial mesenteric a.)
 - Transverse colon
- Middle colic a. (from cranial mesenteric a.)
 - Descending colon
- Left colic a. (from caudal mesenteric a.)

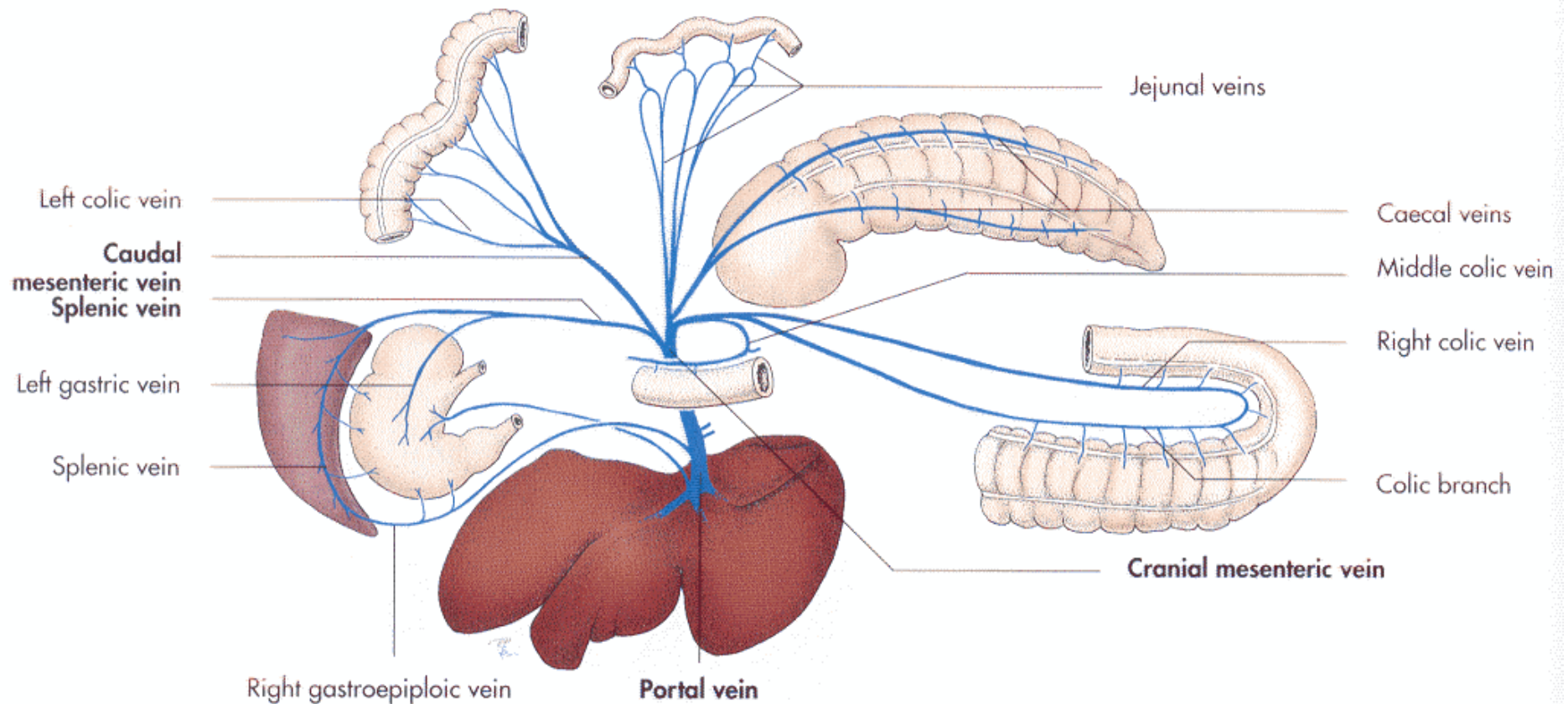


Dyce Fig. 3-44



Sistema portal hepático del Equino

- La sangre de los siguientes órganos es drenada hígado (hepatic) portal vein:
 - Spleen, stomach, pancreas, small intestine, majority of large intestine

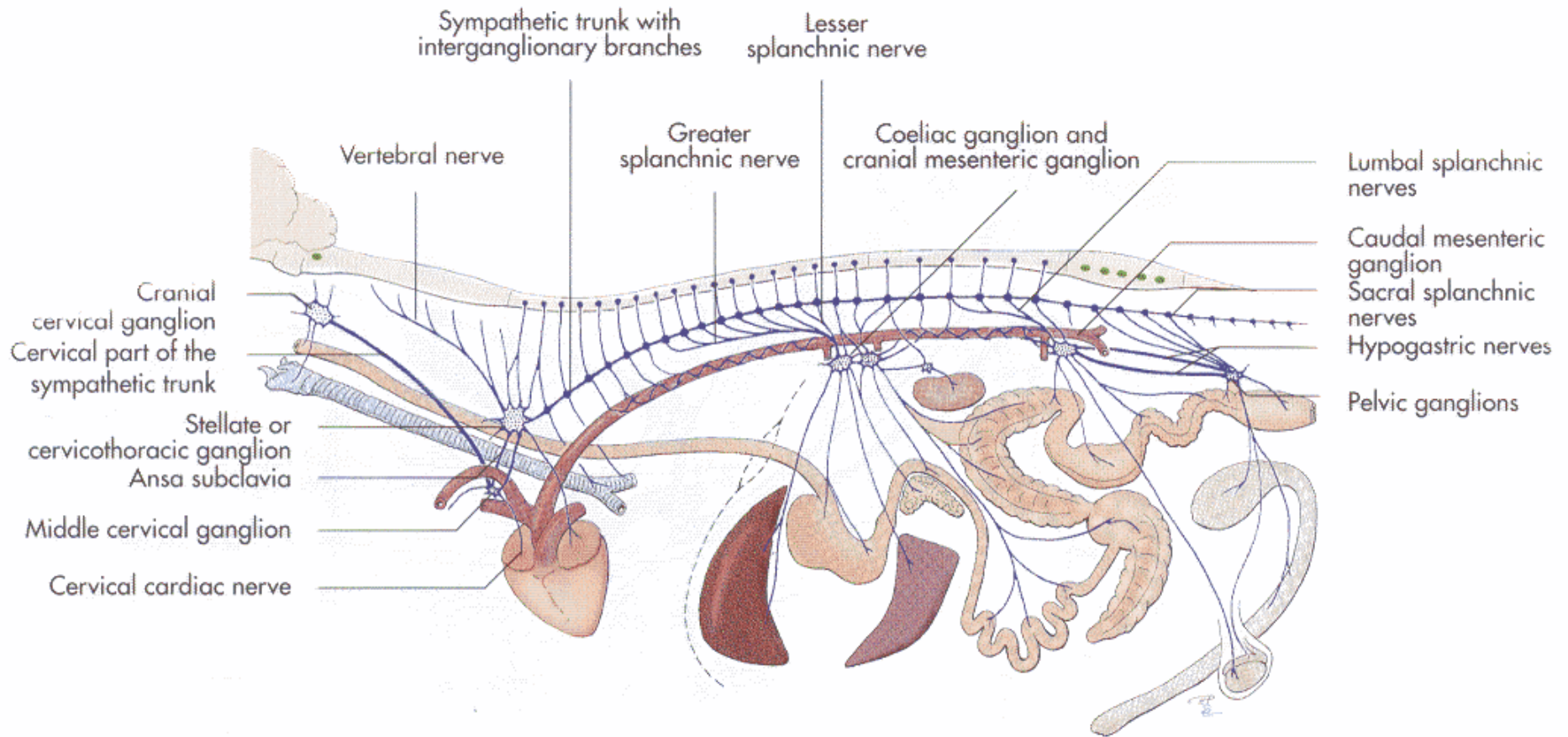


Konig Fig. 12-39

Autonomic plexuses and ganglia of the abdomen

- Adrenal plexus
- Celiacomesenteric plexus and celiac and cranial mesenteric ganglia
 - Abdominal aortic plexus (horse)
 - Gastric plexus (horse)
 - Hepatic plexus (horse)
 - Splenic plexus (horse)
- Aorticorenal ganglia
- Renal plexus
- Testicular plexus and ganglion/ovarian plexus
- Caudal mesenteric plexus and ganglion
 - Colic plexus (horse)
- Abdominal aortic (intermesenteric) plexus

Sympathetic nerves and ganglia in the horse



Konig Fig. 14-80

Vagal innervation of the Ruminant stomach

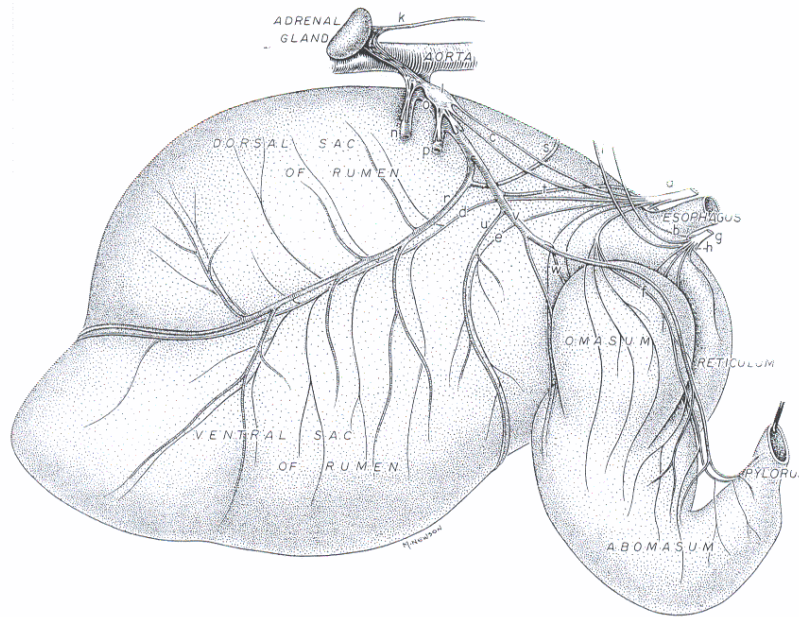


Fig. 2-18. Dorsal vagal trunk, sheep, right side. The omasum and abomasum have been turned forward. The sympathetic plexuses on the gastric arteries are not shown. *a*, dorsal vagal trunk; *b*, communicating branch between vagal trunks; *c*, branches to celiac plexus; *d*, right ruminal branch; *e*, branch to plexus on left ruminal artery; *f*, continuation of dorsal vagal trunk; *g*, ventral vagal trunk; *h*, branch to left side of atrium ruminis; *i*, long pyloric and hepatic branches; *k*, greater splanchnic nerve; *l*, celiacomesenteric ganglion; *n*, cranial mesenteric artery; *o*, celiac a.; *p*, hepatic a.; *r*, right ruminal a.; *s*, splenic a.; *t*, reticular a.; *u*, left ruminal a.; *v*, left gastric a.; *w*, left gastroepiploic a. (From Habel, 1956b.)

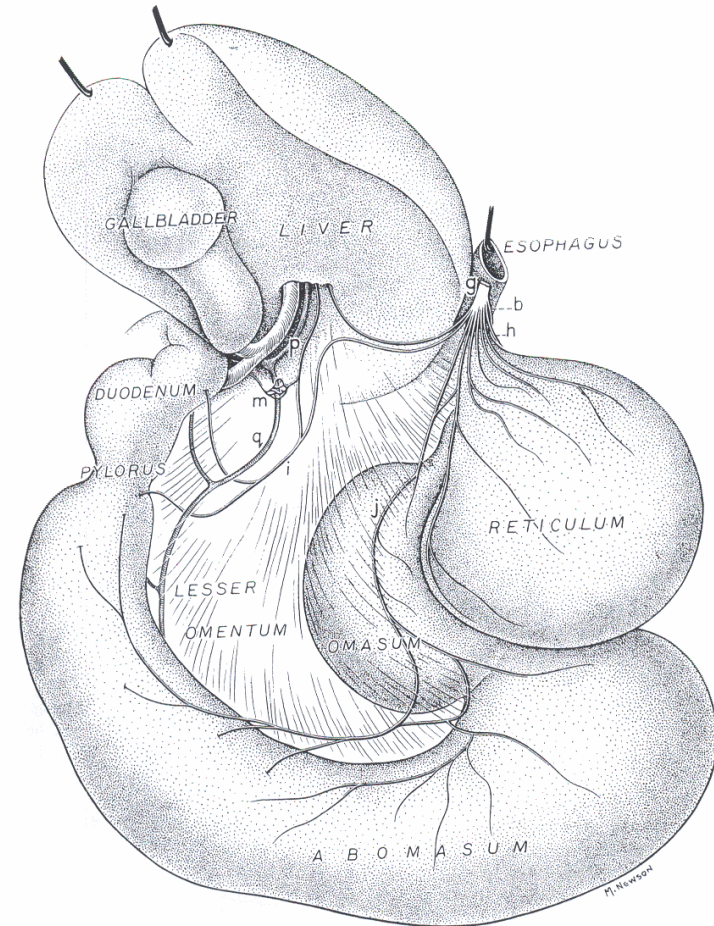


Fig. 2-17. Ventral vagal trunk, sheep, right cranial aspect. *b*, communicating branch to dorsal vagal trunk; *g*, ventral vagal trunk; *h*, branch to left side of atrium ruminis; *i*, long pyloric branch; *j*, continuation of ventral vagal trunk; *m*, indicates sympathetic plexus along right gastric a.; *p*, left branch of hepatic a.; *q*, right gastric a. (From Habel, 1956b.)

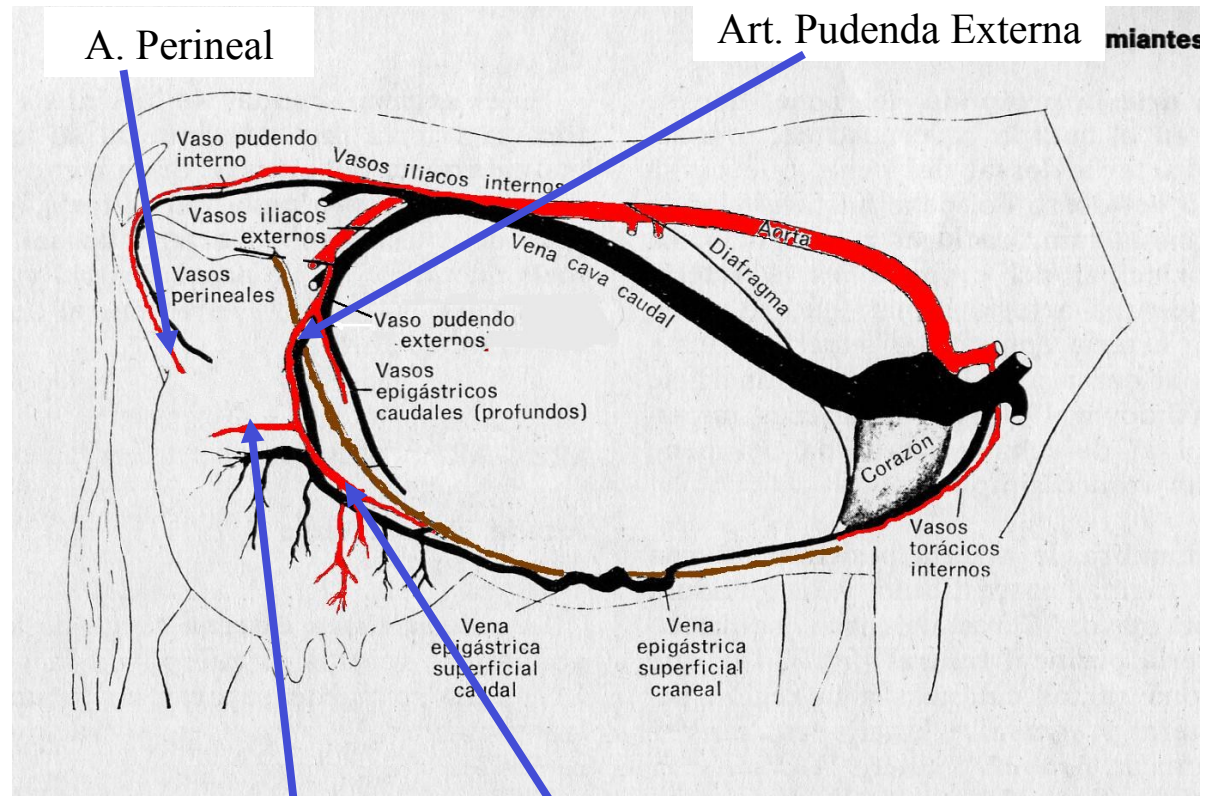
Vagal innervation of the **Ruminant** stomach is involved in:

- Ruminoreticular contraction cycle
- Omasal cycle
- Eructation
- Regurgitation of the cud in rumination
- Reflex closure of the reticular groove in the suckling animal (and in the adult)
- Some abomasal motility and secretion

GLANDULA MAMARIA: IRRIGACION

Deriva de arteria femoral profunda, del tronco pudendo epigástrico. Esta sale de abdomen por el anillo inguinal y se divide en dos: Arteria Labial Ventral (o Mamaria Caudal en Ru y Eq) y Art. Epigástrica caudal superficial (o Mamaria Craneal en Ru y Eq).

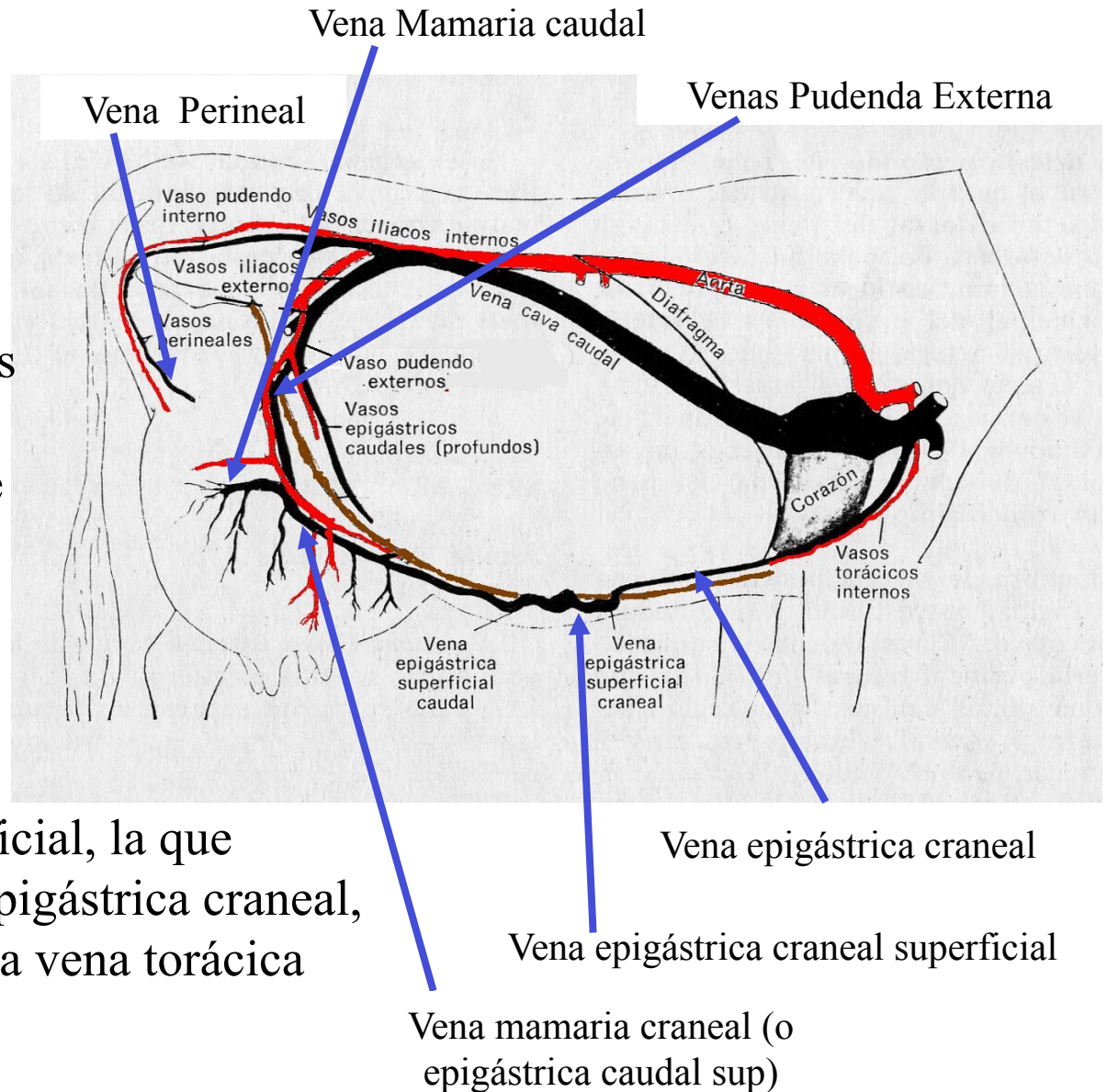
Además desde A. Iliaca Interna, deriva la A. Pudenda Interna, la que origina a la A. Perineal, que se anastomosa con a. mamaria caudal.

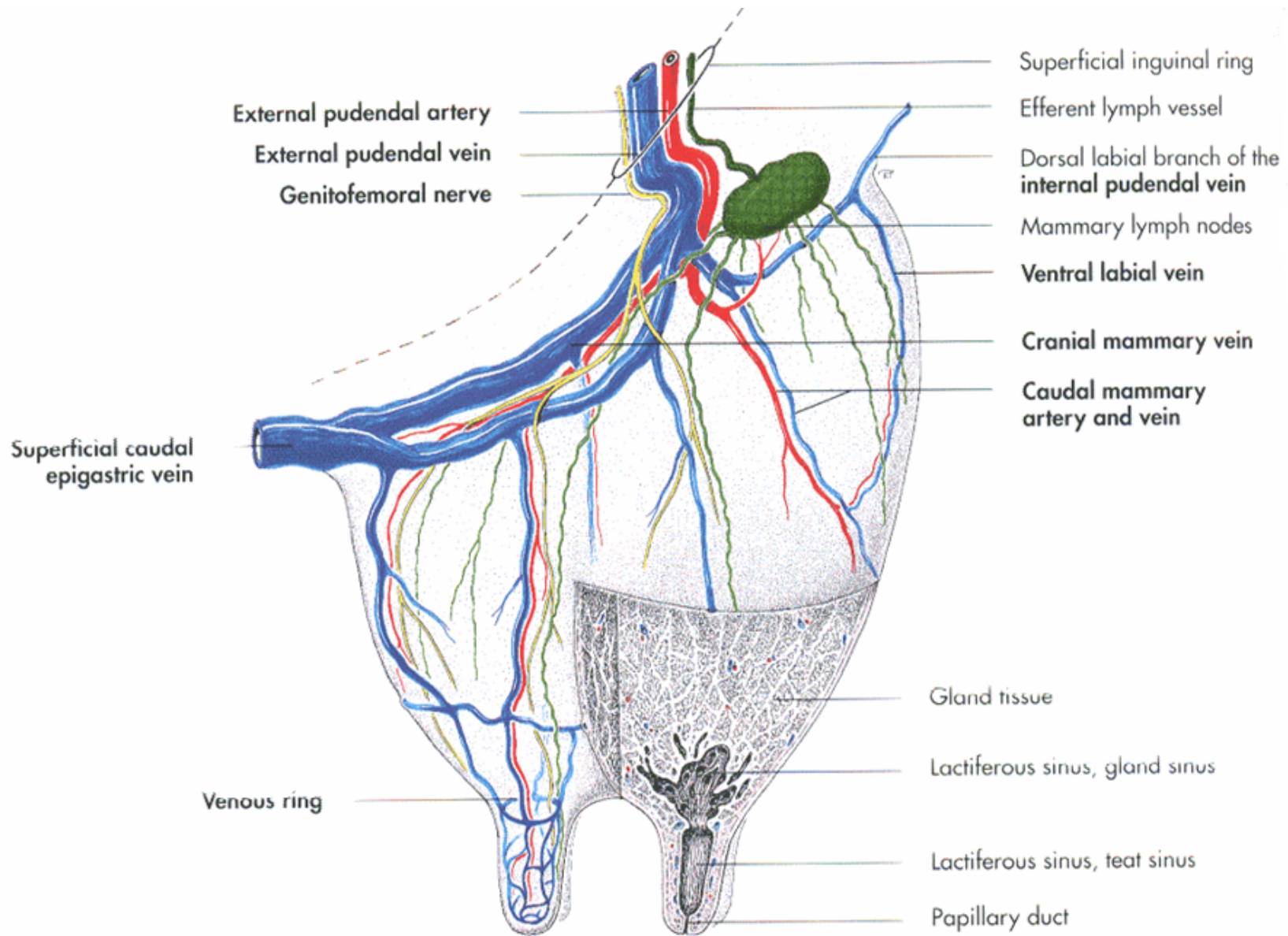


Art., Mamaria caudal (o labial ventral)

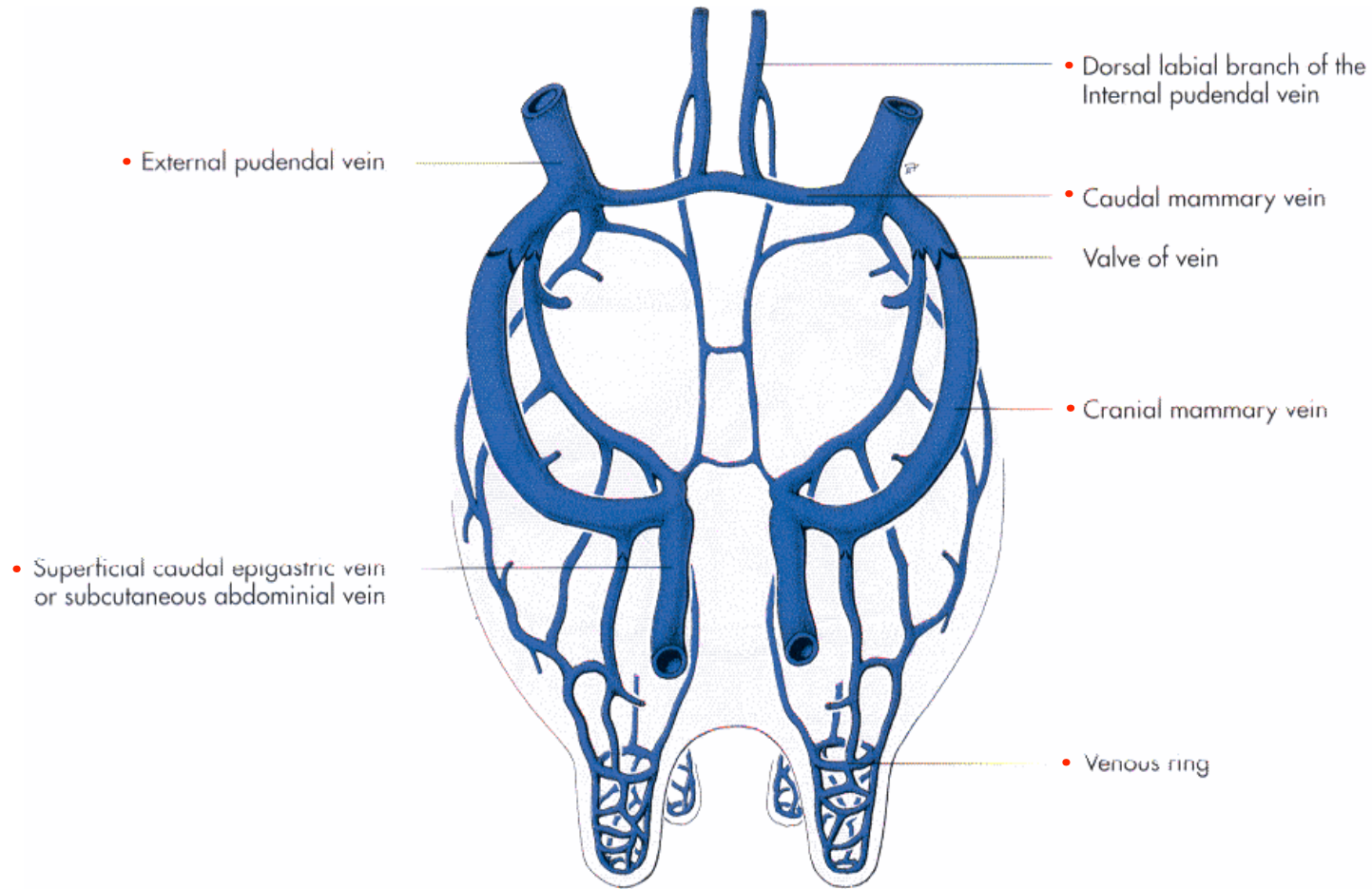
GLANDULA MAMARIA: DRENAJE

Drenaje profundo es similar a la irrigación (venas femoral profunda, tronco pudendo epigástrico, pudenda externa, venas mamarias caudal y craneal). Además existe un importante drenaje superficial, donde la v. epigástrica caudal superficial se continúa cranealmente, en forma subcutánea para anastomosarse con la vena epigástrica craneal superficial, la que continua con de la vena epigástrica craneal, que a su vez drena hacia la vena torácica interna





Drenaje venoso de la ubre del bovino



König Fig. 18-31

INERVACION DE GLANDULA MAMARIA

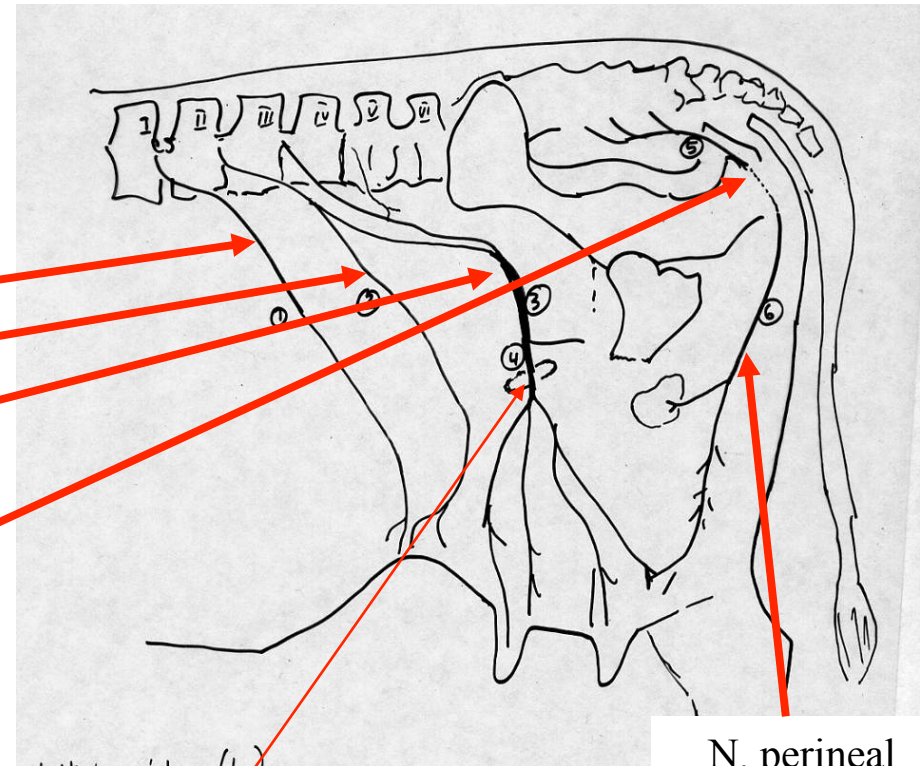
Deriva de nervios lumbares y sacrales.

N. Iliohipogástrico (L1)

N. Ilioinguinal (L2)

N. Génitofemoral (L2-L3)

N. Pudendo (S2/3/4)



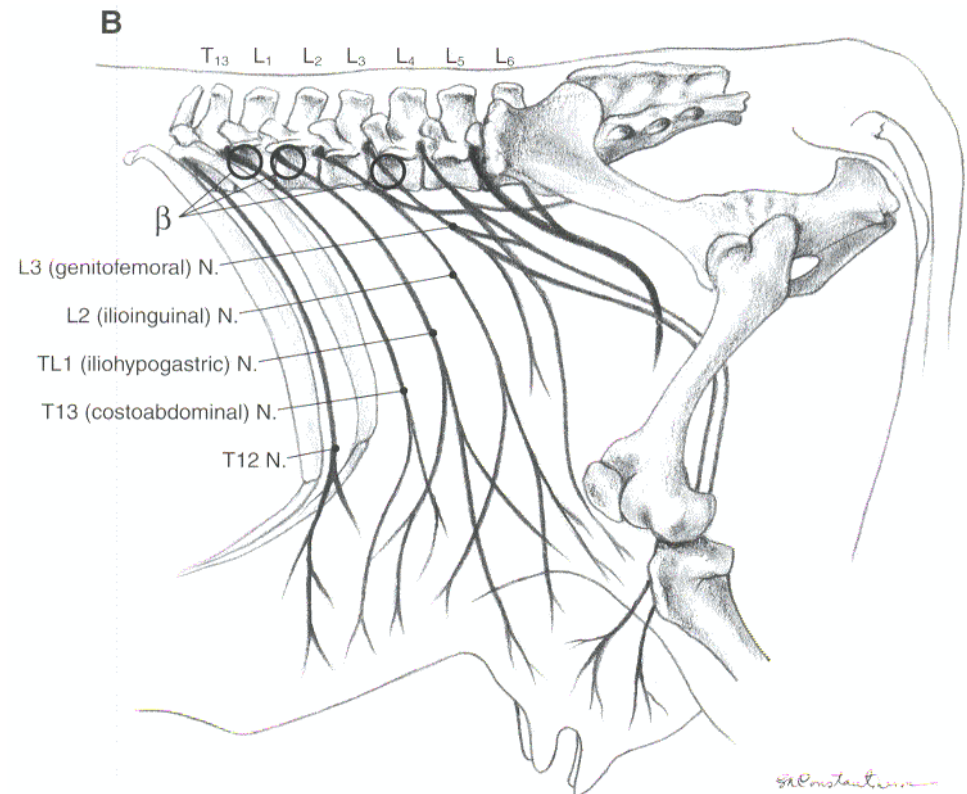
Anillo inguinal

N. perineal

Nervio pudendo está formado por:
Caninos (S1 a S3), Felino y cerdo
(S2-3), Equino S3-4

Anestesia del flanco del rumiante

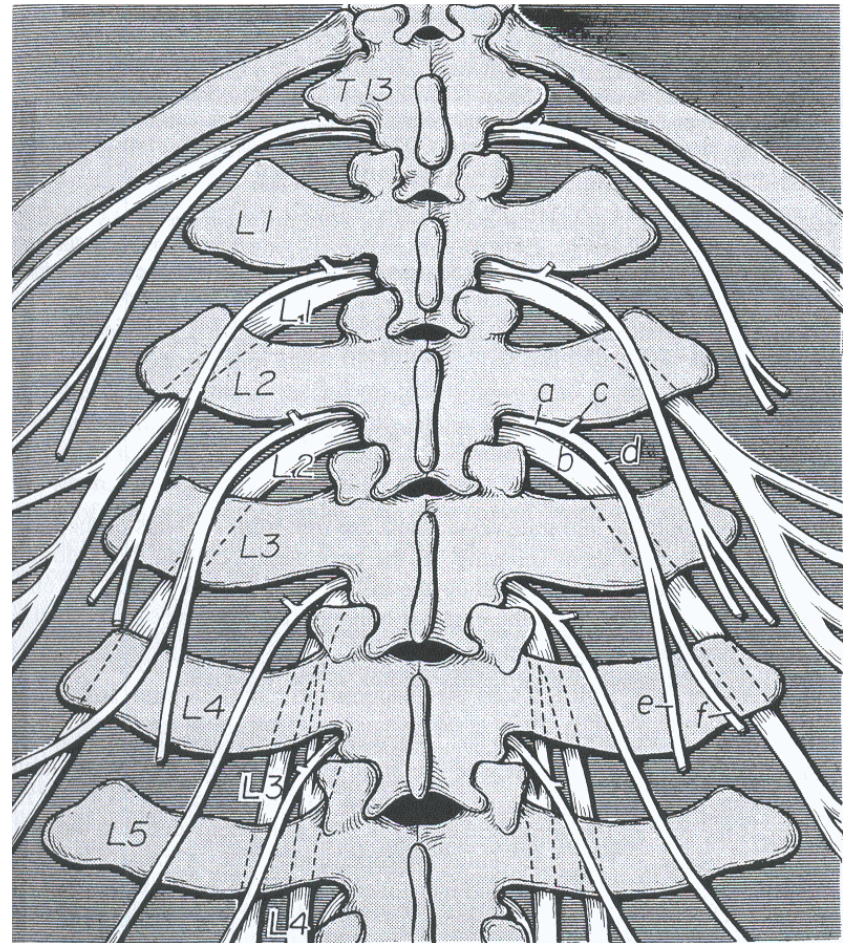
- Anesthesia of dorsal and ventral branches of T13, L1 and L2 spinal nerves
- Ventral brs.
 - T13 – costoabdominal n.
 - L1 – iliohypogastric n.
 - L2 – ilioinguinal n.
 - L3 – genitofemoral n.



Constantinescu Fig. R3.3 B

Paravertebral block

- T13 spinal n.
 - Palpate last rib and transverse processes of L1 and L2
 - Insert needle vertically 5 cm in ox (3 cm in sheep and goat) from dorsal midline in a transverse plane at the cranial angles of the tips of the transverse process of L1.
 - Inject both dorsal and ventral branches of T13
- L1 and L2 spinal nn.
 - Make similar injections at the transverse planes at the caudal borders of the transverse processes of L1 and L2



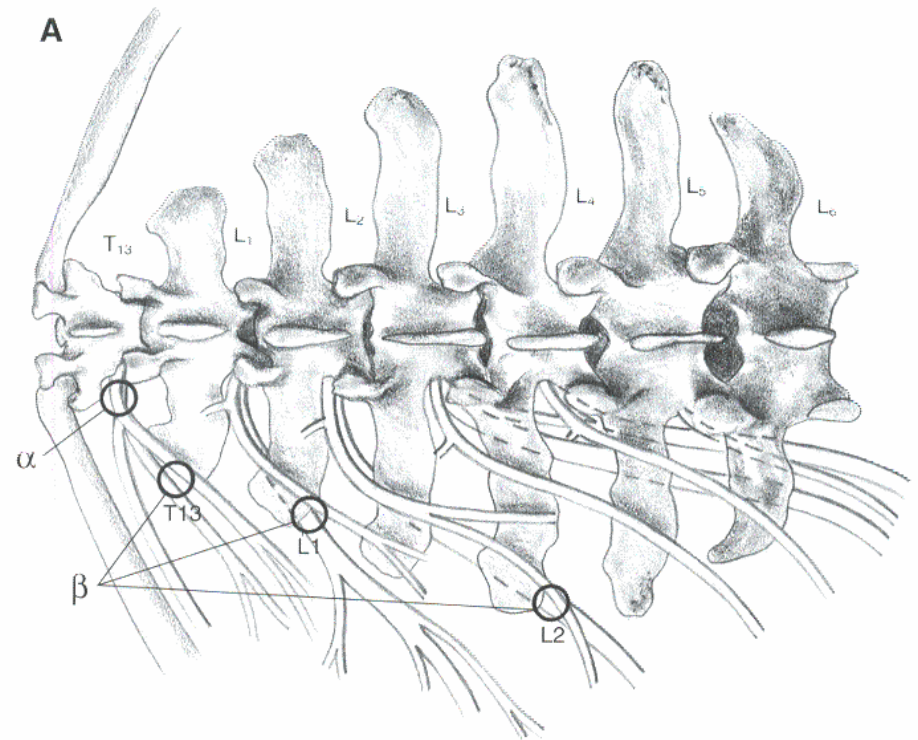
Orsini & Morrison Fig. 2-2

Bloqueo paravertebral

- Nerves are infiltrated close to the vertebrae
- Advantages:
 - Uniform anesthesia of all structures of the paralumbar fossa including the peritoneum
 - Good muscle relaxation
- Disadvantages:
 - Technique important to avoid puncturing the aorta, caudal vena cava or azygous v.
 - Paralyzes back muscles on the side of the operation causing a convexity of the trunk
 - Viscera may bulge out of the incision
 - Closure is more difficult

Bloqueo paralumbar

- T13 spinal n.
 - Dorsal and ventral to the tip of L1 transverse process and between last rib and transverse process
- L1 spinal n.
 - Dorsal and ventral to the caudal edge of L2 transverse process
- L2 spinal n.
 - Dorsal and ventral to the caudal edge of L4 transverse process
- May need additional injection midway between L3 and L4



Constantinescu Fig. R3.3 A

Bloqueo paralumbar

- Nerves are blocked at the tips of the transverse processes
- Advantages:
 - Uniform anesthesia of all structures of the paralumbar fossa including the peritoneum
 - Good muscle relaxation
 - Back muscles are not paralyzed
- Disadvantages:
 - Possible individual variation in position of spinal nerves may necessitate additional injections

Additional procedures for anesthesia of the flank region

- Lumbar epidural anesthesia
 - Block T13, L1, L2 spinal nerves
 - Site of injection – between L1 and L2 vertebrae
- Anesthesia of the udder
 - Cow - block ventral brs of L1-L4 spinal nerves
 - Ewe and doe - block ventral brs of L2-L4 spinal nerves