

Kidney

Chapter 7

New Terminology

Combining Form	Meaning	Example	Meaning of New Term
Azot/o	Nitrogenous	Azoturia	Nitrogenous compounds in the urine
Bacteri/o	Bacteria	Bacteriuria	Bacteria in the urine
Cyst/o	Bladder	Cystitis	Inflammation of the bladder
Glomerul/o	Glomerulus	Glomerulopathy	Disease of the glomerulus
Gluc/o	Glucose, sugar, sweet	Glucogenesis	Creation of sugar
Glucos/o		Glucosuria	Sugar in the urine
Glyc/o		Glycemia	Sugar in the blood

New Terminology

Combining Form	Meaning	Example	Meaning of New Term
Glycos/o	Glucose, sugar, sweet	Glycosuria	Sugar in the urine
Keton/o	Ketone bodies (acids/acetones)	Ketonuria	Ketone bodies in the urine
Lith/o	Stone	Nephrolithiasis	Pathological condition of kidney stones
Meat/o	Meatus, opening	Meatotome	Cutting instrument for a meatus
Nephr/o	Kidney	Nephritis	Inflammation of the kidney
		Nephropathy	Disease of the kidney

New Terminology

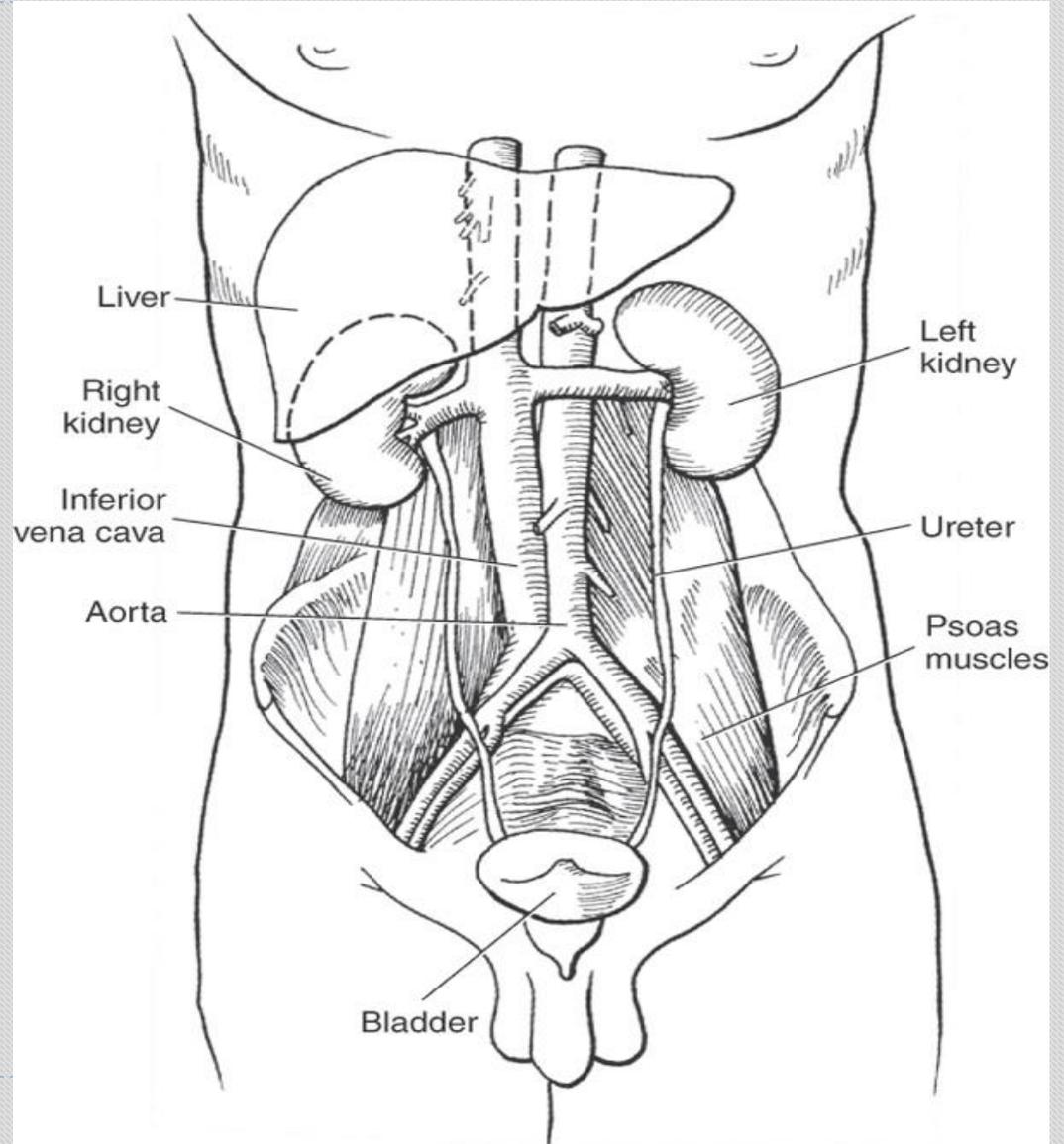
Combining Form	Meaning	Example	Meaning of New Term
Noct/o	Night	Nocturia	Urination at night
Olig/o	Deficiency	Oliguria	Deficiency of urine
Peritone/o	Peritoneum	Peritoneal	Pertaining to the peritoneum
Py/o	Pus	Pyuria	Pus in the urine
Pyel/o	Renal pelvis	Pyelonephritis	Inflammation of the renal pelvis and kidney
Pelv/l	Pelvis	Pelvis	Pertaining to the pelvis

New Terminology

Combining Form	Meaning	Example	Meaning of New Term
Ren/o	Kidney	Renal	Pertaining to the kidneys
Ur/o	Urine	Urology	Study of disorders of the urinary tract
Urin/o		Urinometer	Measuring instrument for urine
Ureter/o	Ureter	Ureterostenosis	Narrowing or stricture of the ureter
Urethr/o	Urethra	Urethropexy	Surgical fixation of the urethra
Vesic/o	Bladder	Vesicocele	Hernia of the bladder

Urinary System

- ▶ **Kidneys**
- ▶ **Ureters**
- ▶ **Bladder**
- ▶ **Urethra**



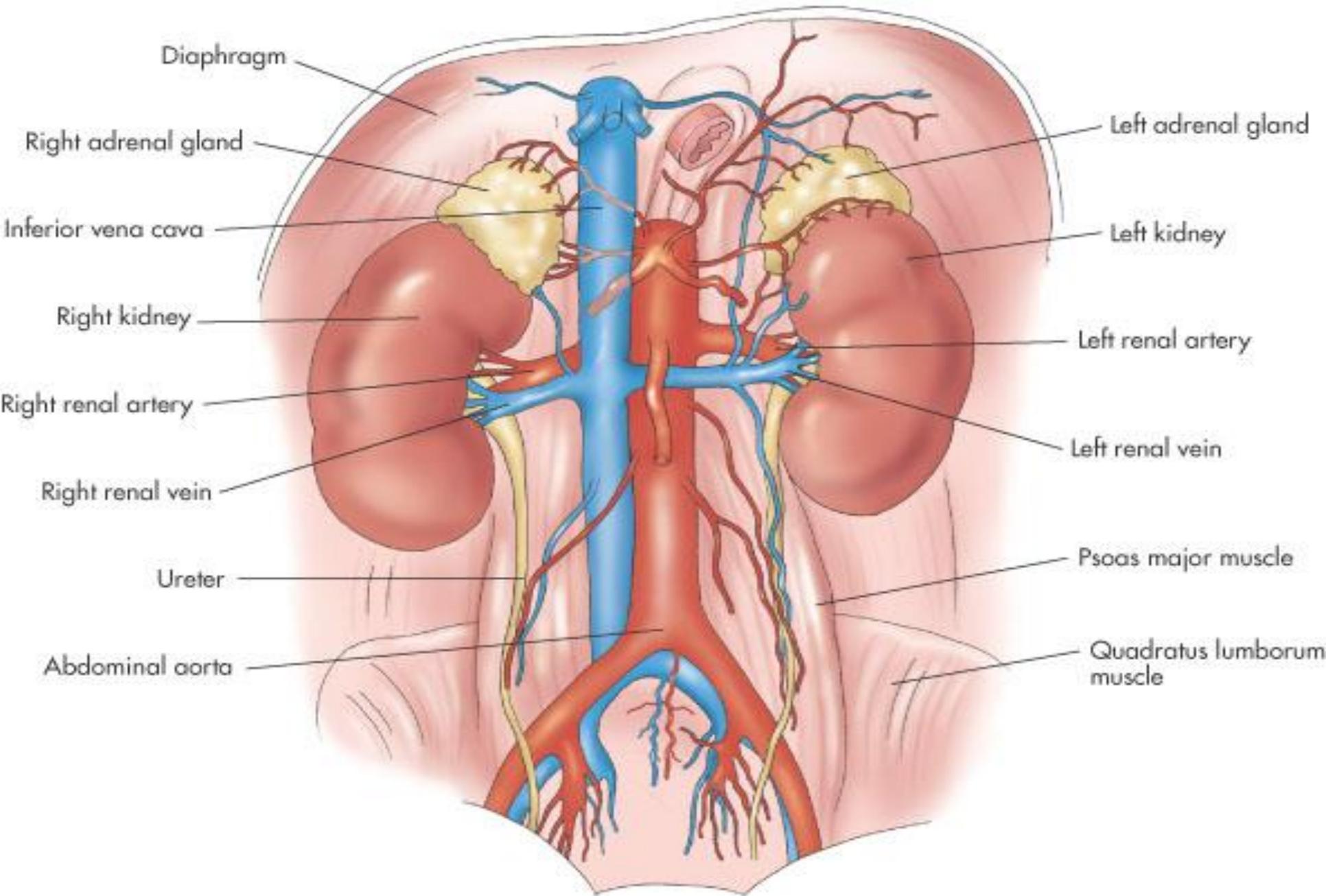


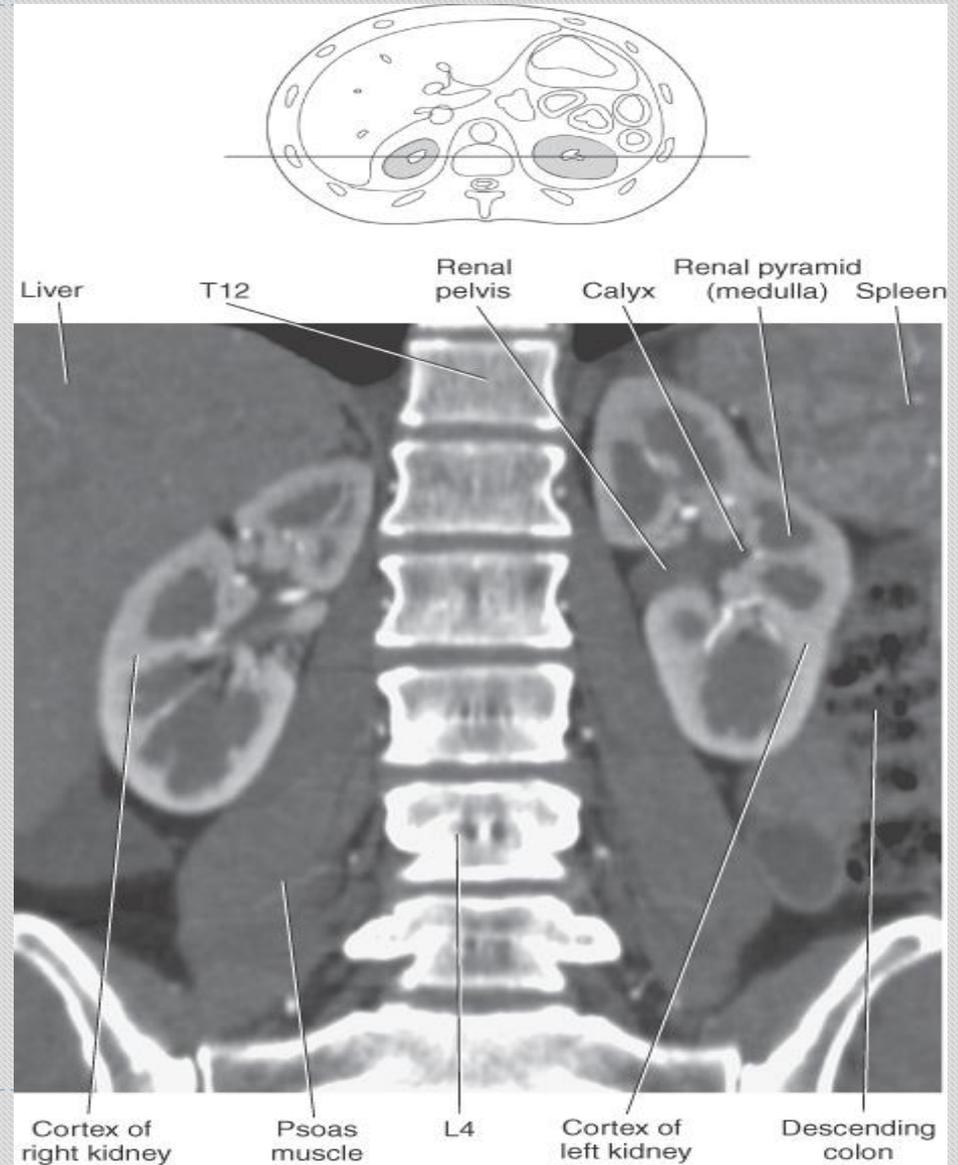
Figure 19-1 Relationship of the kidneys, suprarenal glands (adrenal), and vascular structures to one another.

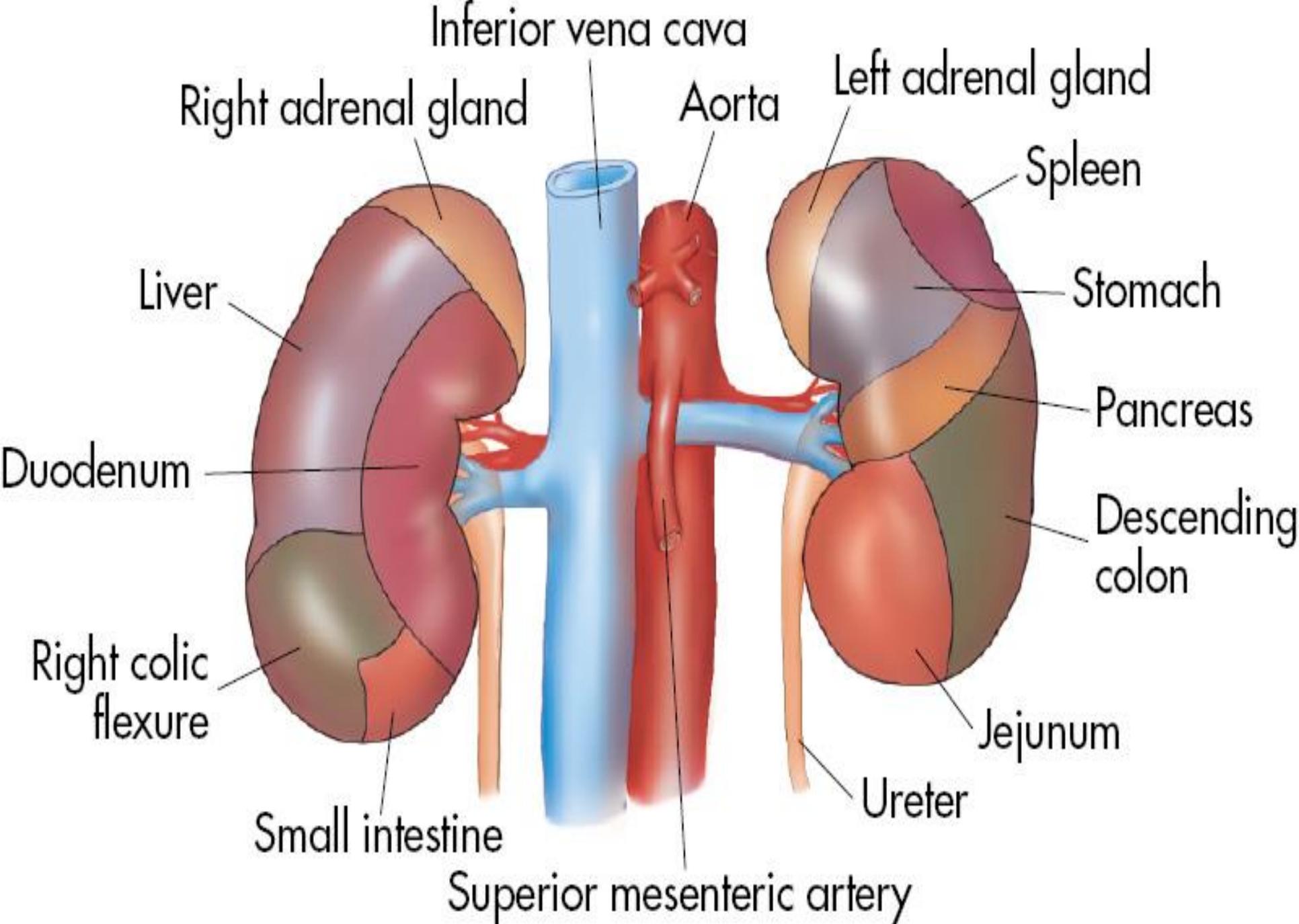
Kidneys

- ▶ **Retroperitoneal**
- ▶ **Bean-shaped (kidney bean)**
- ▶ **Lie in the paravertebral gutters against the posterior abdominal wall**
- ▶ **Lie obliquely**
- ▶ **Upper poles**
 - ▶ **More medial**
 - ▶ **More posterior than lower poles**

Kidneys

- ▶ **Right kidney**
- ▶ **Slightly lower or more inferior than LK**





Kidneys

- ▶ **Posterior**
- ▶ **Embedded in perirenal fat**
- ▶ **Composed of cortex and medulla**
- ▶ **Renal cortex**
 - ▶ **Outer 1/3 of renal tissue**
 - ▶ **Extensions between the renal pyramids of the medulla**
 - ▶ **Functional part of kidney**
 - ▶ **Responsible for filtration of urine**

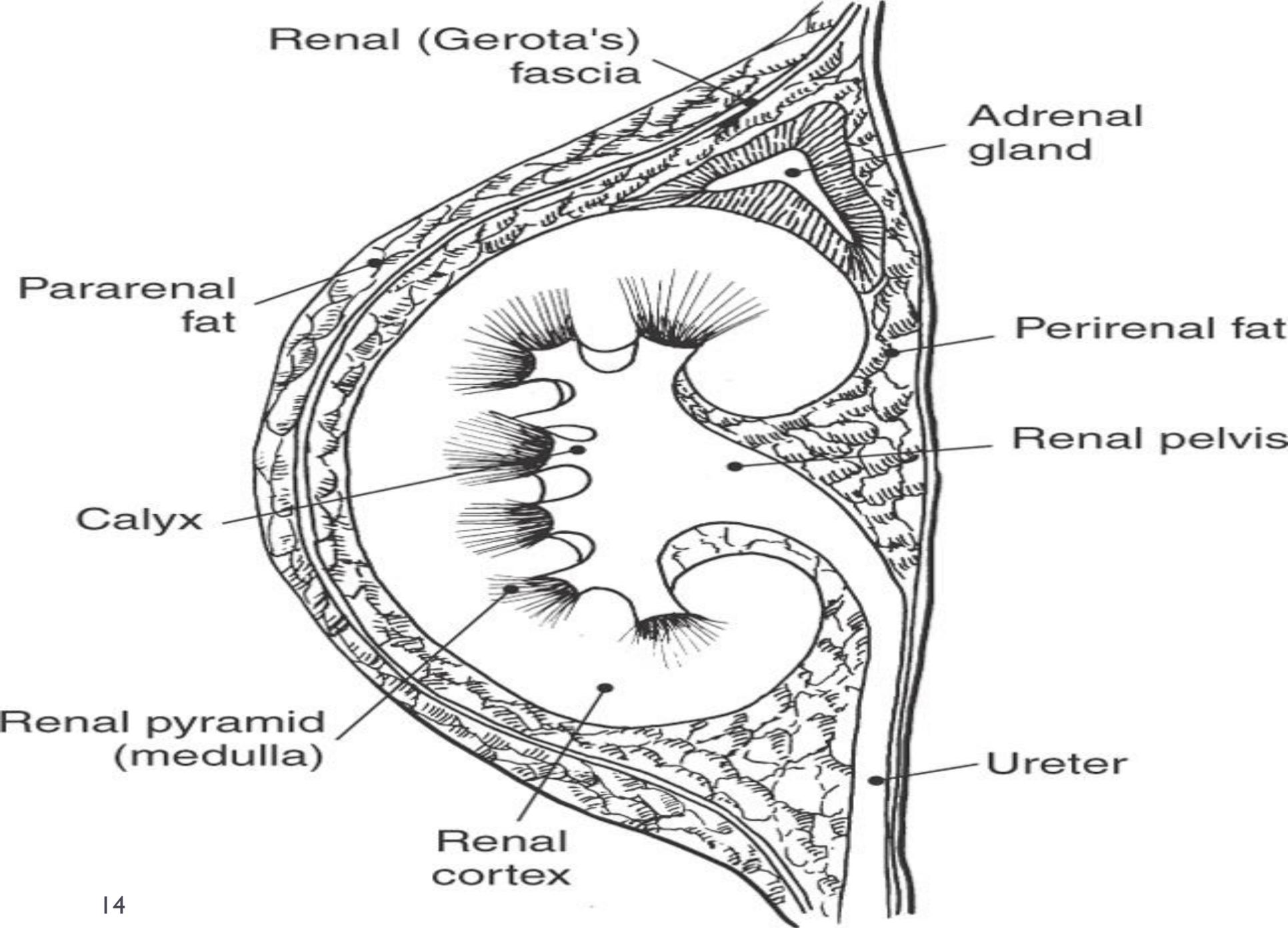
Kidneys

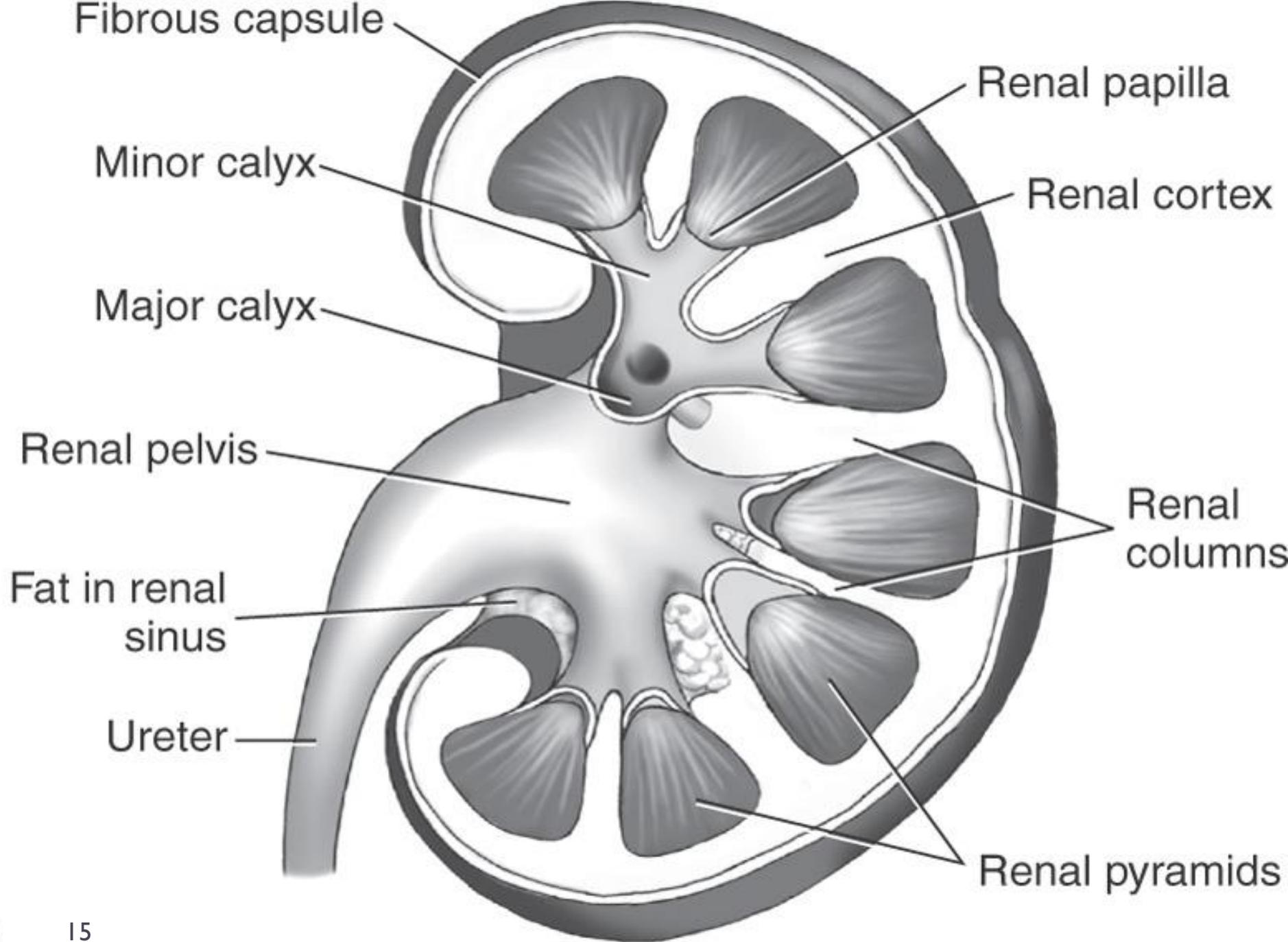
- ▶ **Renal medulla**
 - ▶ Renal pyramids radiate from renal sinus
- ▶ **Minor calyces > Major calyces > renal pelvis**
- ▶ **Renal pelvis**
 - ▶ Largest dilated portion
 - ▶ Continuous with ureters
- ▶ **Renal sinus**
 - ▶ Fat-filled cavity surrounding renal pelvis

Kidneys

- ▶ **Also surrounded by renal fascia**
 - ▶ **Called Gerota's fascia (protective layer)**
 - ▶ **Functions to anchor kidneys to surrounding structures (prevents bumps/jolts to the body from injuring the kidneys)**
 - ▶ **Acts as a barrier, limiting spread of infection**
 - ▶ **(surrounded by perirenal fat and renal fascia)**

- ▶ **Hilum**
 - ▶ **Artery enters**
 - ▶ **Vein exits**
 - ▶ **Ureter exits**





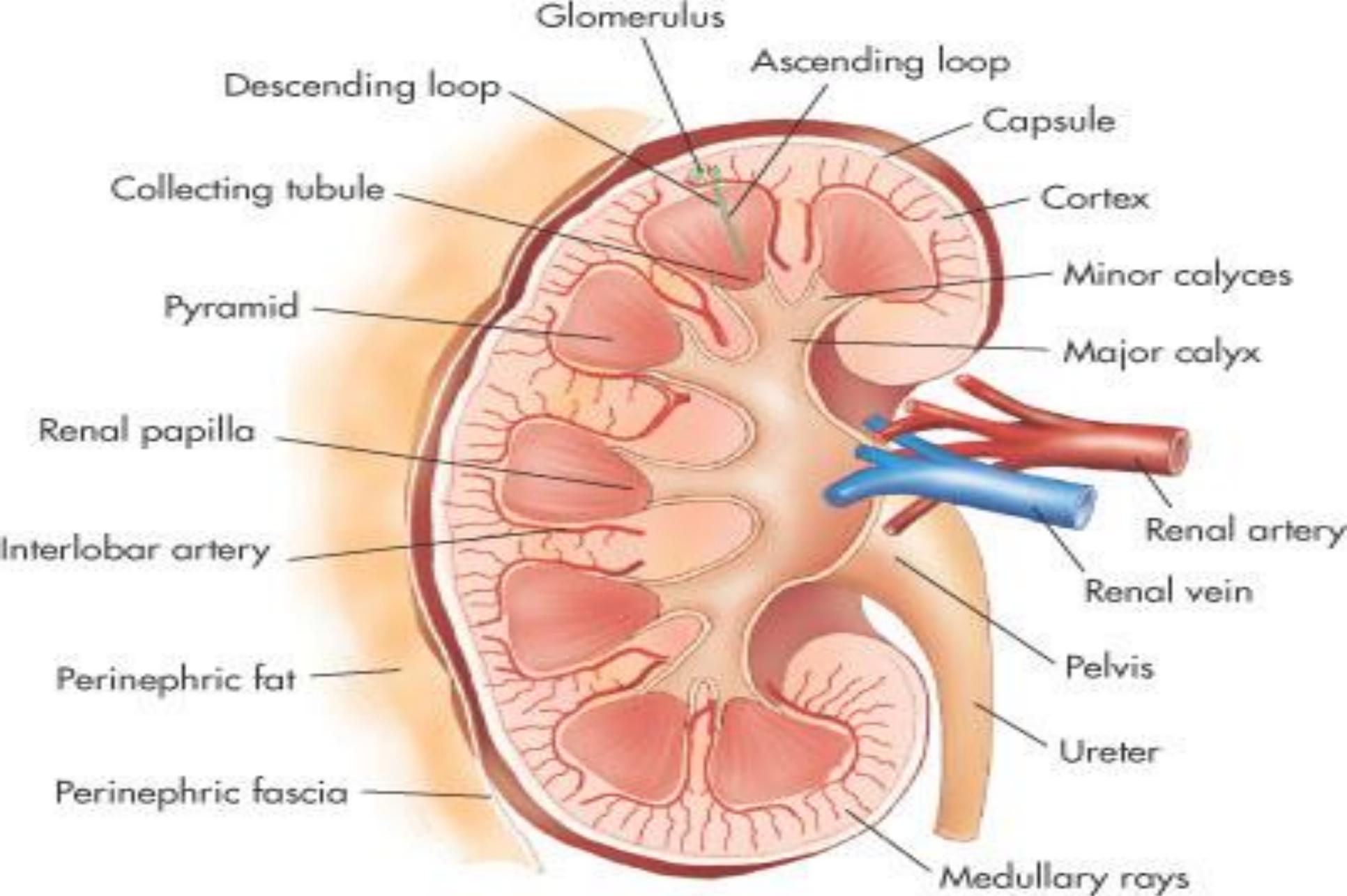


Figure 10-2 The kidney cut longitudinally to show the internal structure.

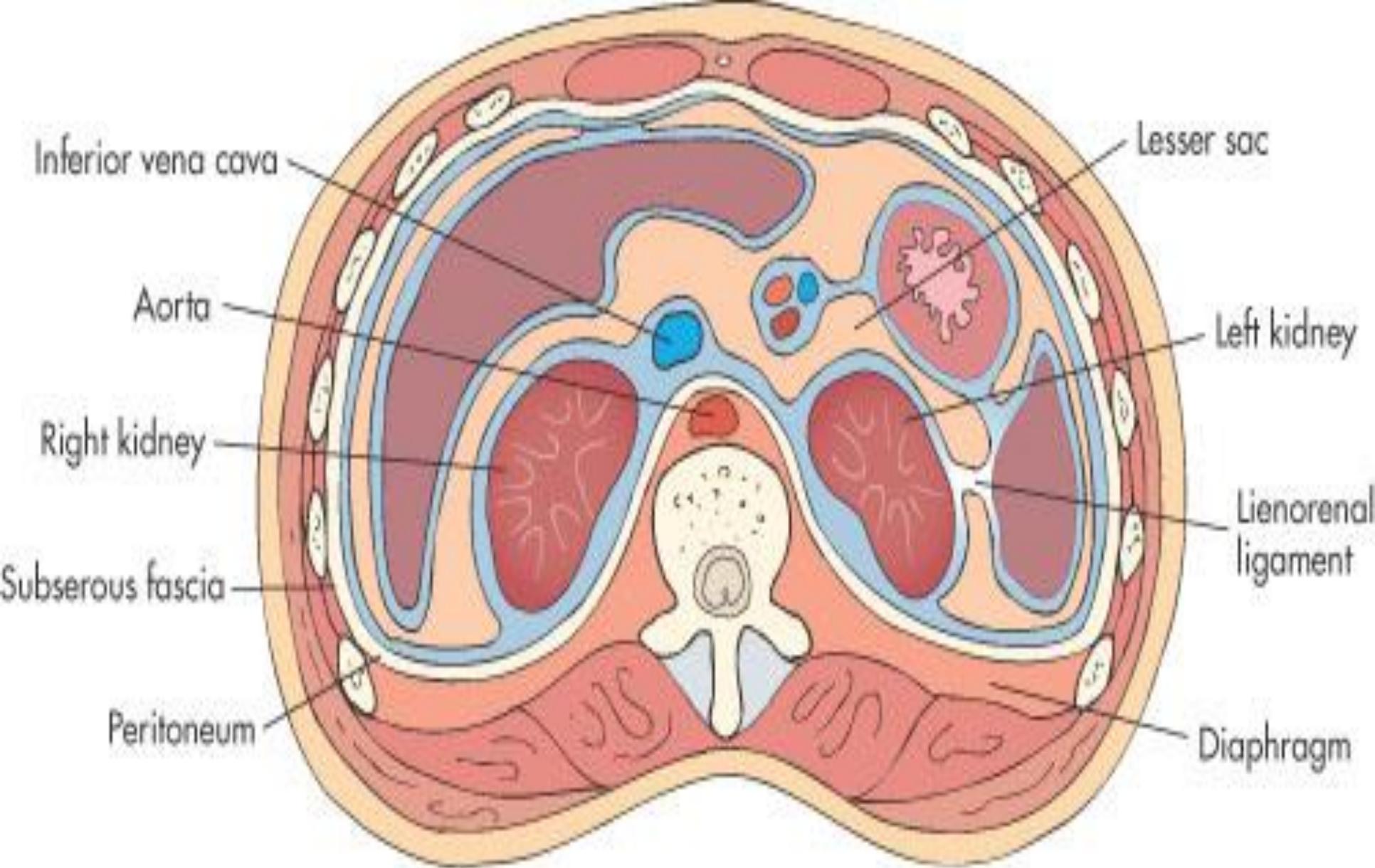
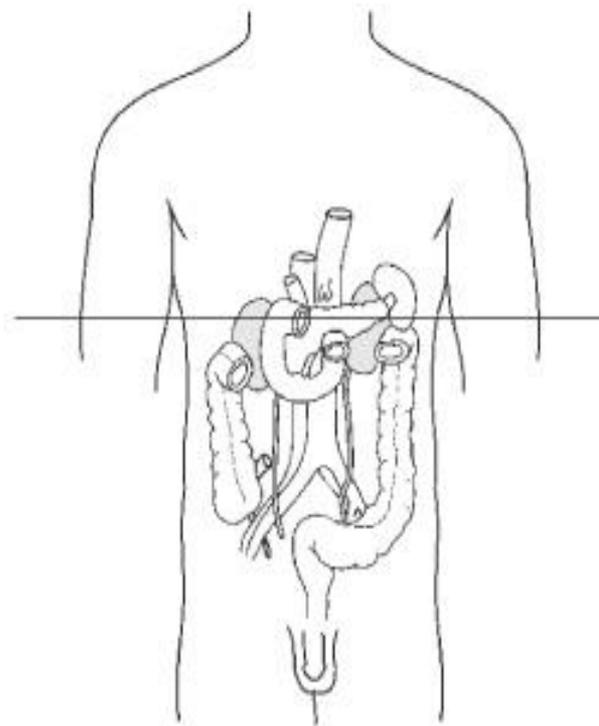
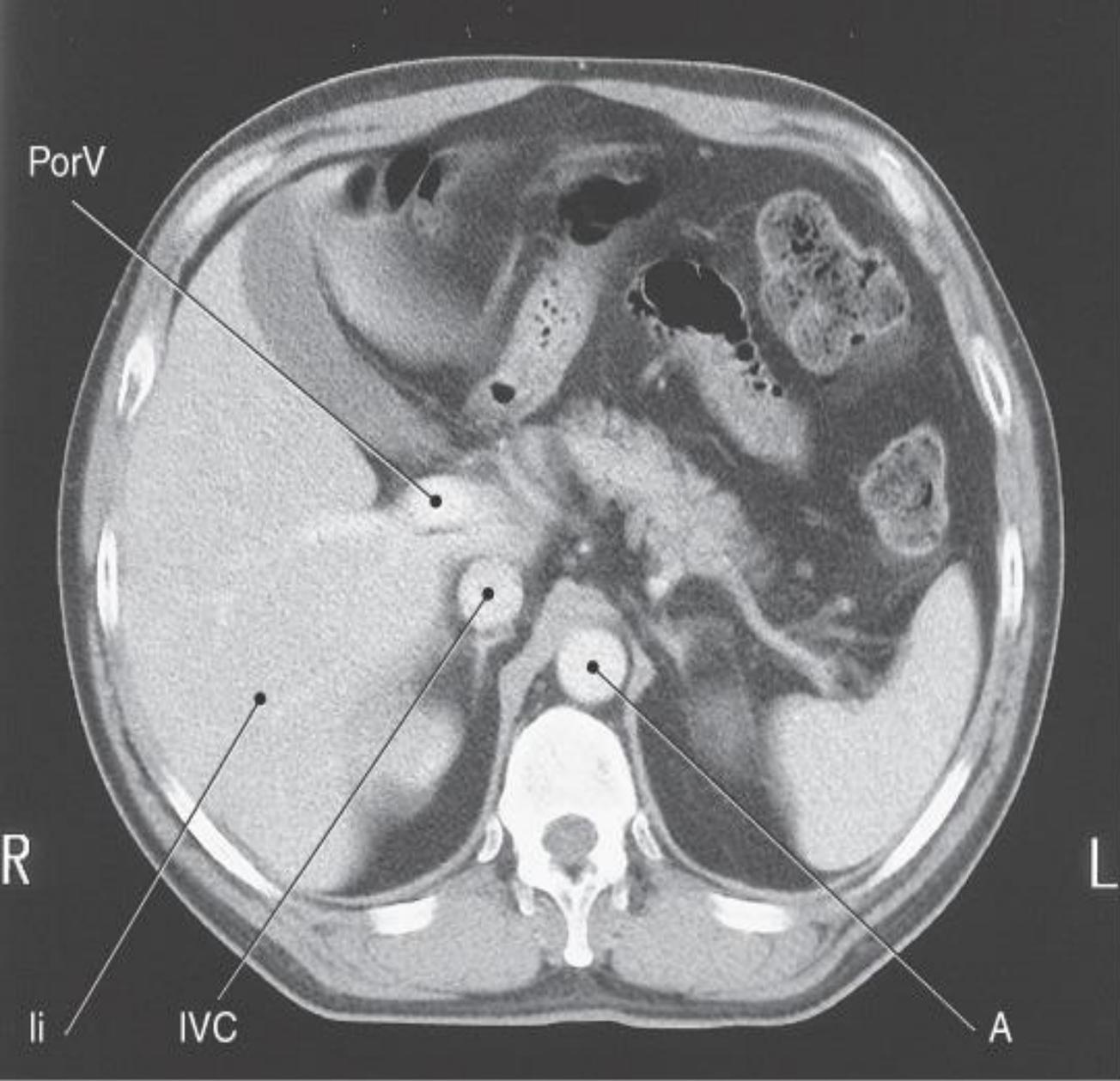
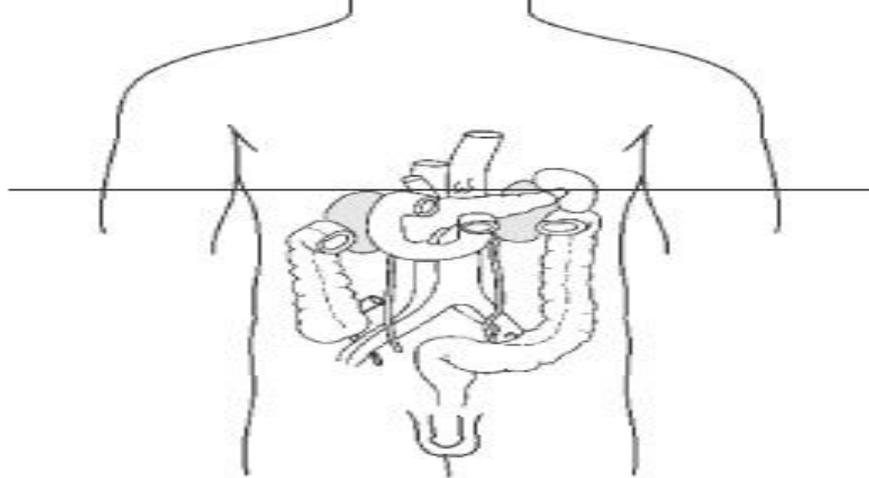


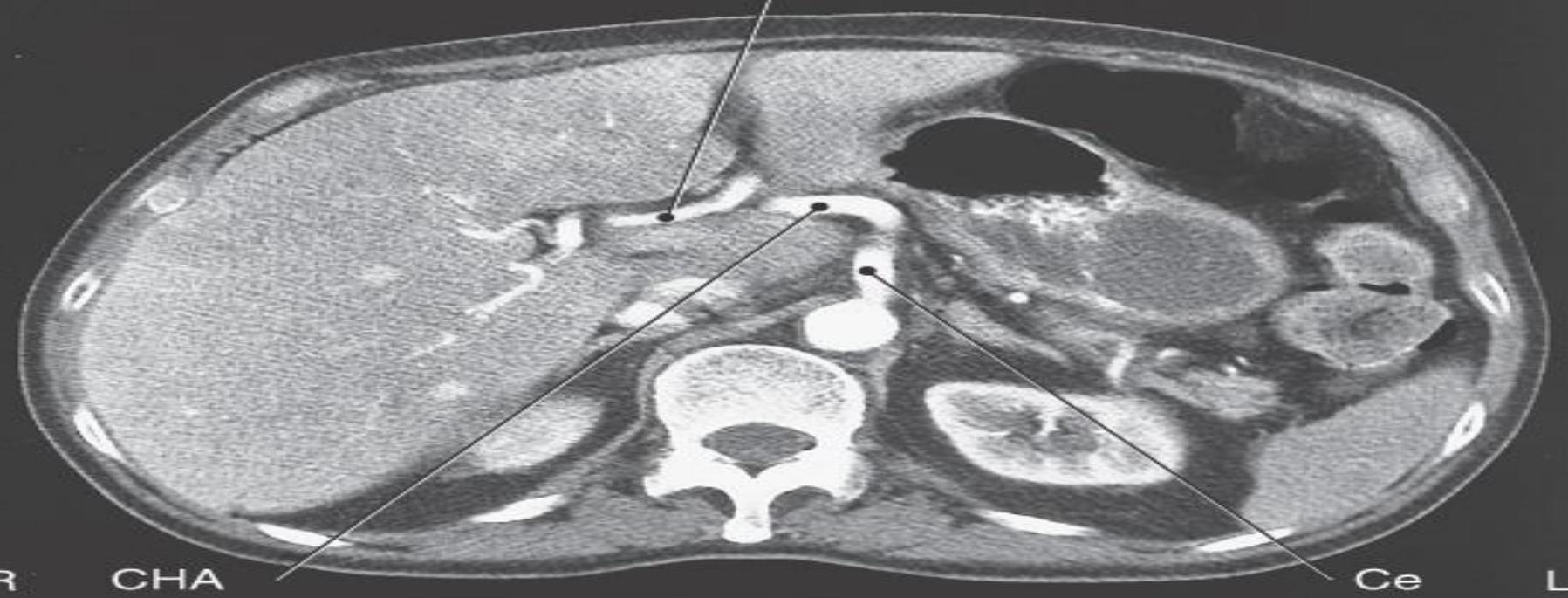
Figure 10-5 Transverse section of the abdominal cavity through the epiploic foramen.



KEY: PorV, Portal vein; li, liver; IVC, inferior vena cava; A, aorta.

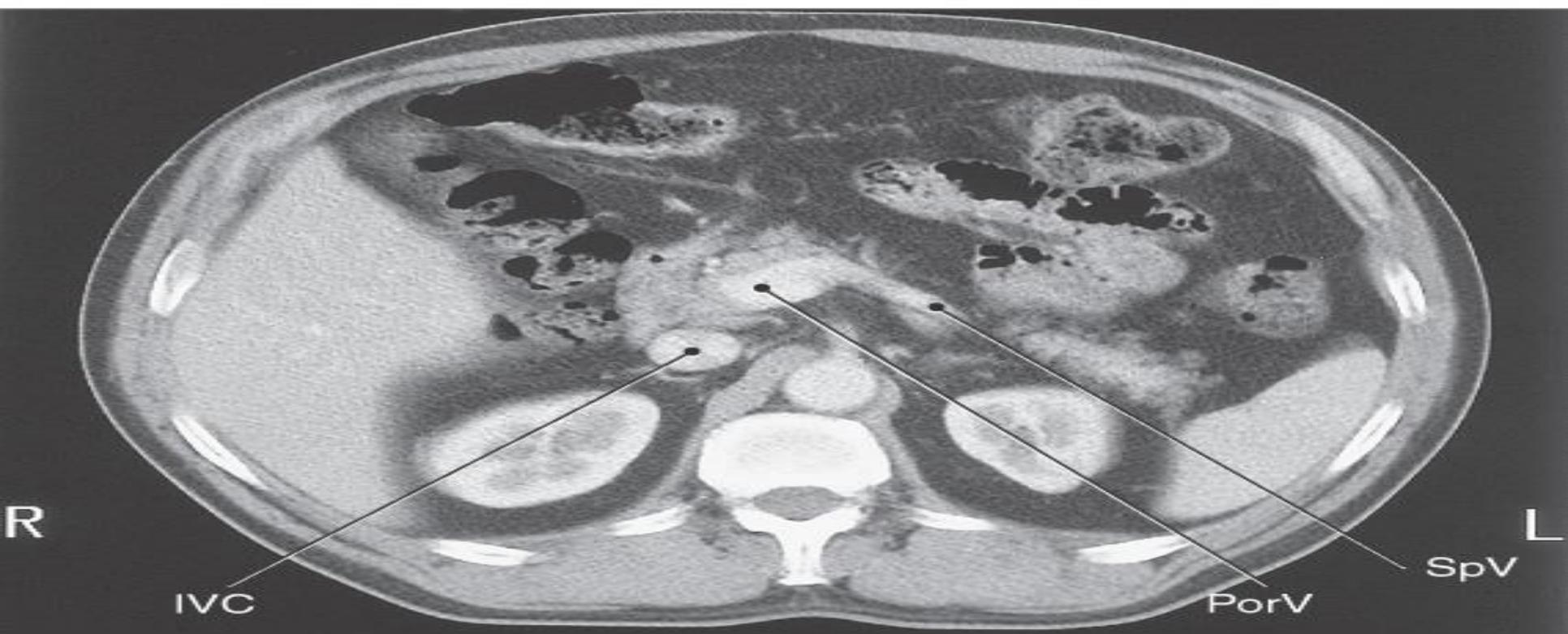
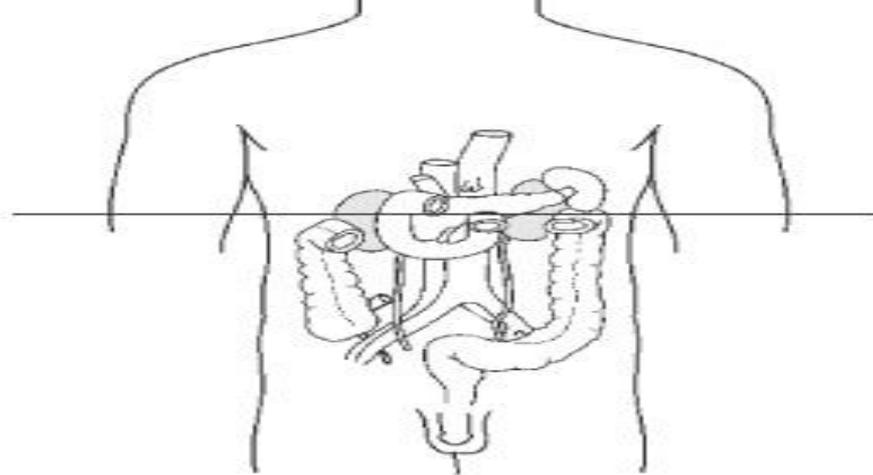


Right hepatic artery



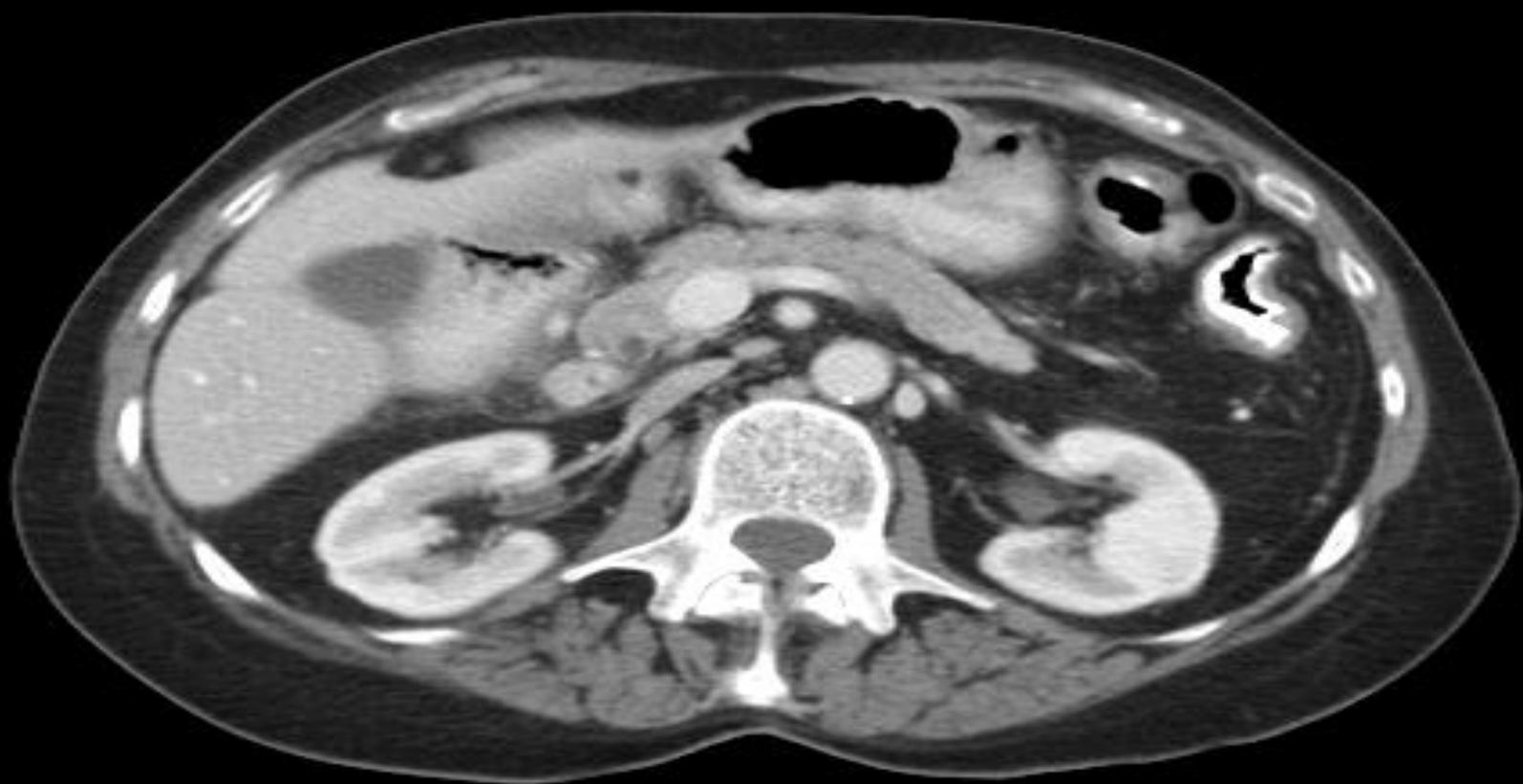
R CHA Ce L

KEY: ¹⁹CHA, Common hepatic artery; Ce, celiac axis.

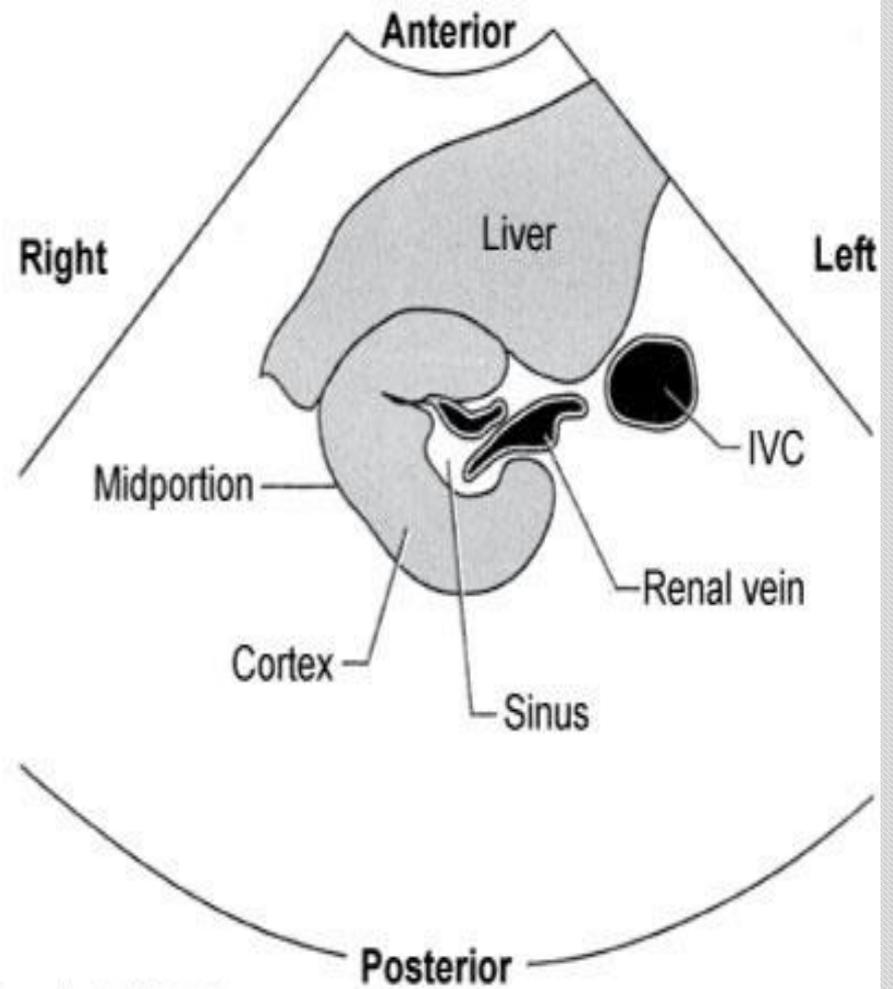


KEY: PorV, Portal vein; IVC, inferior vena cava; SpV, splenic vein.²⁰









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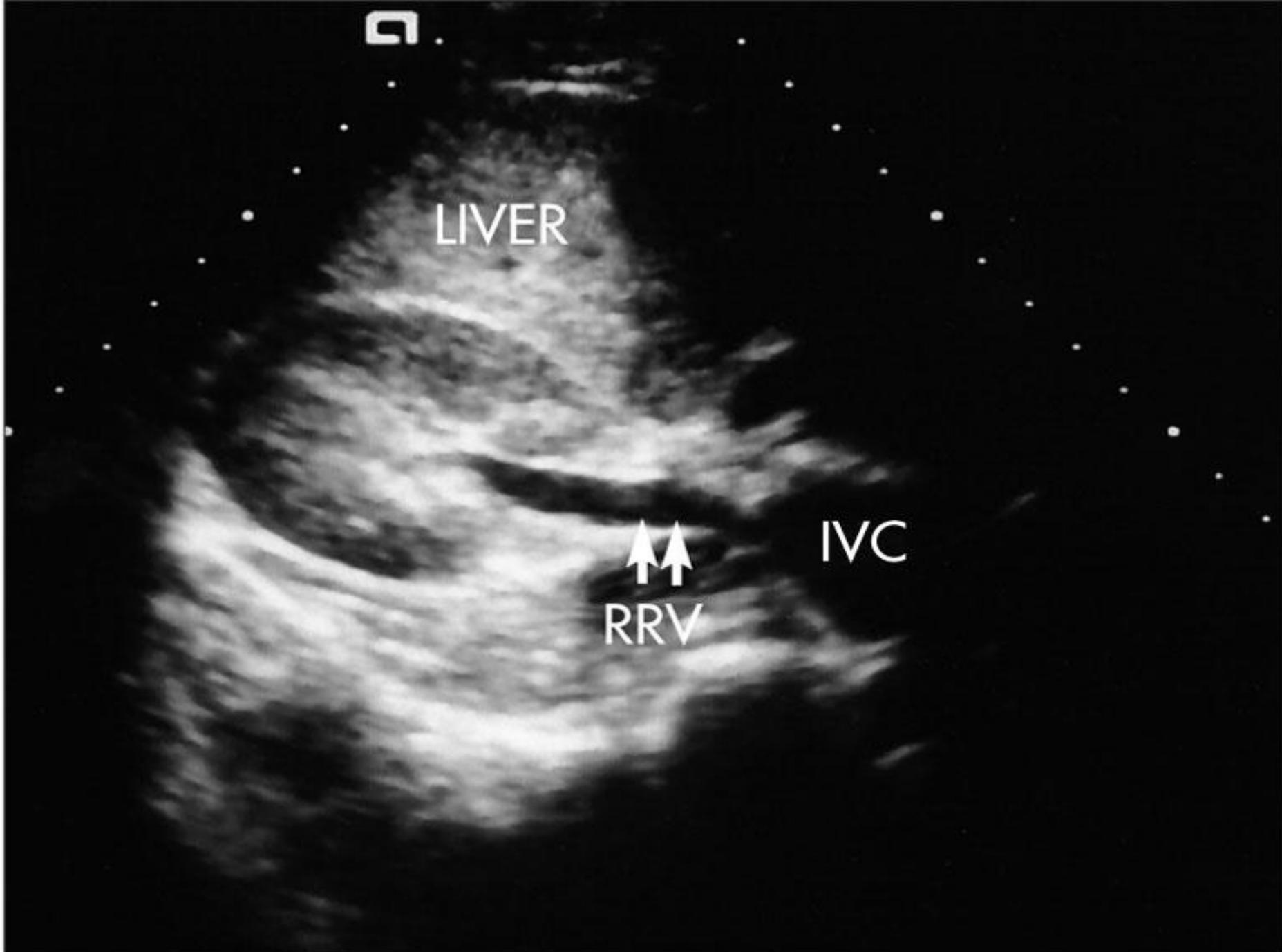
LIVER

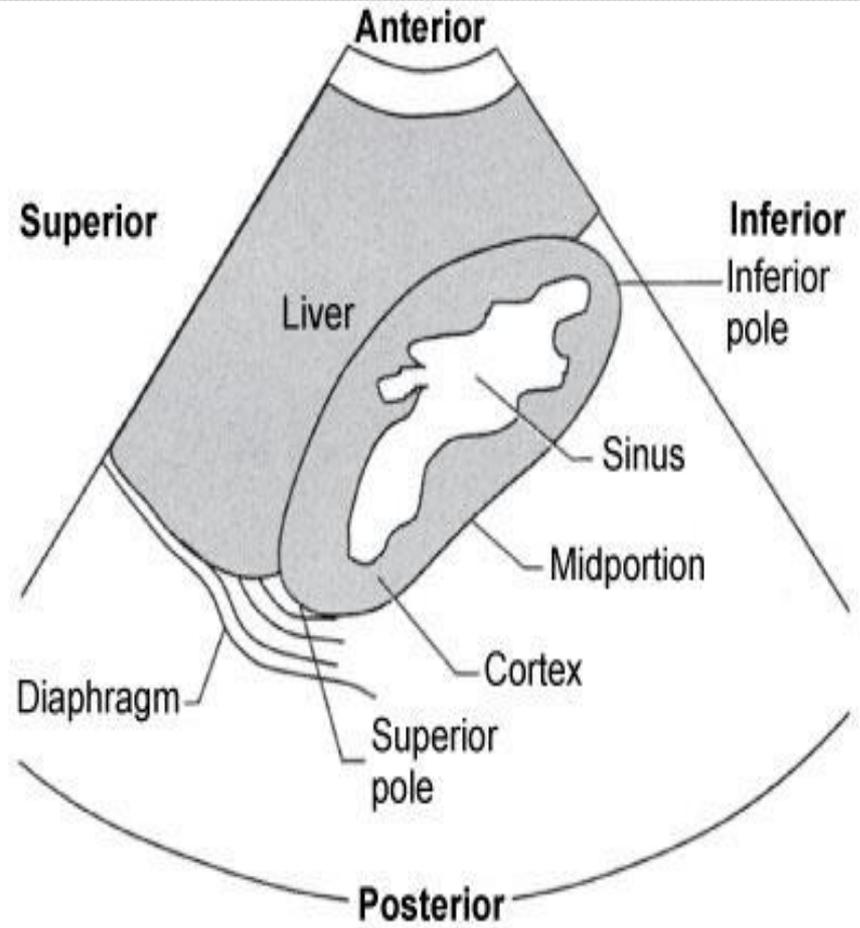
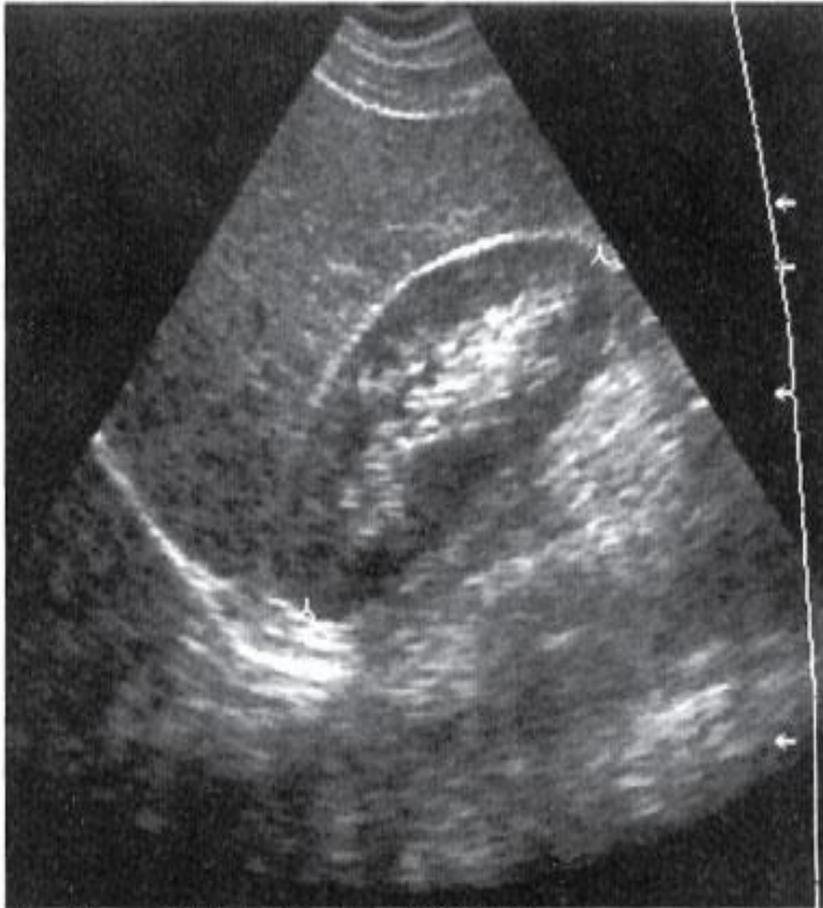
IVC

RRV

B

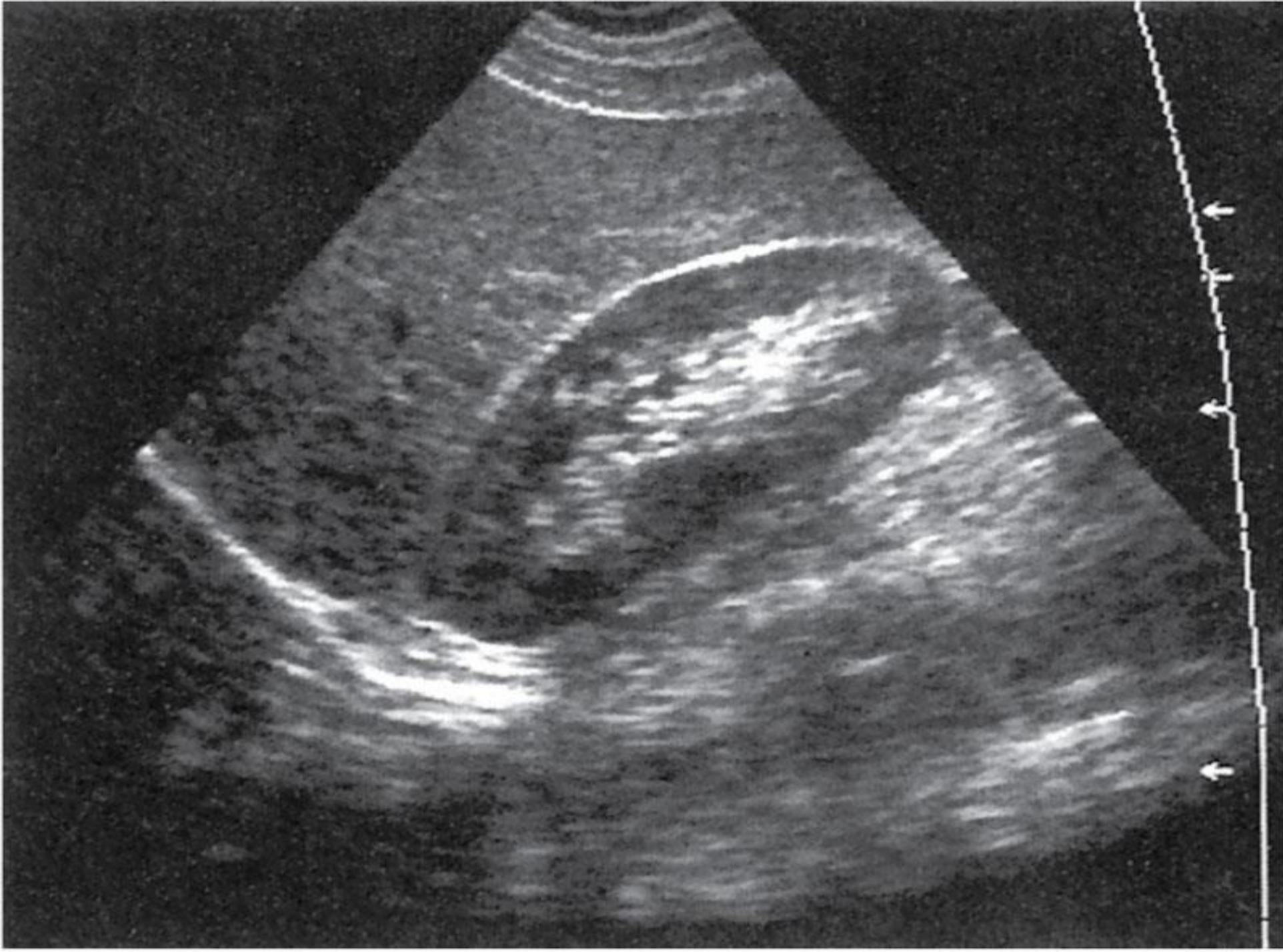
(Courtesy Shpetim Telegrafi, New York University.)





Unn. Fig. 9-21. RT KID SAG LONG AXIS

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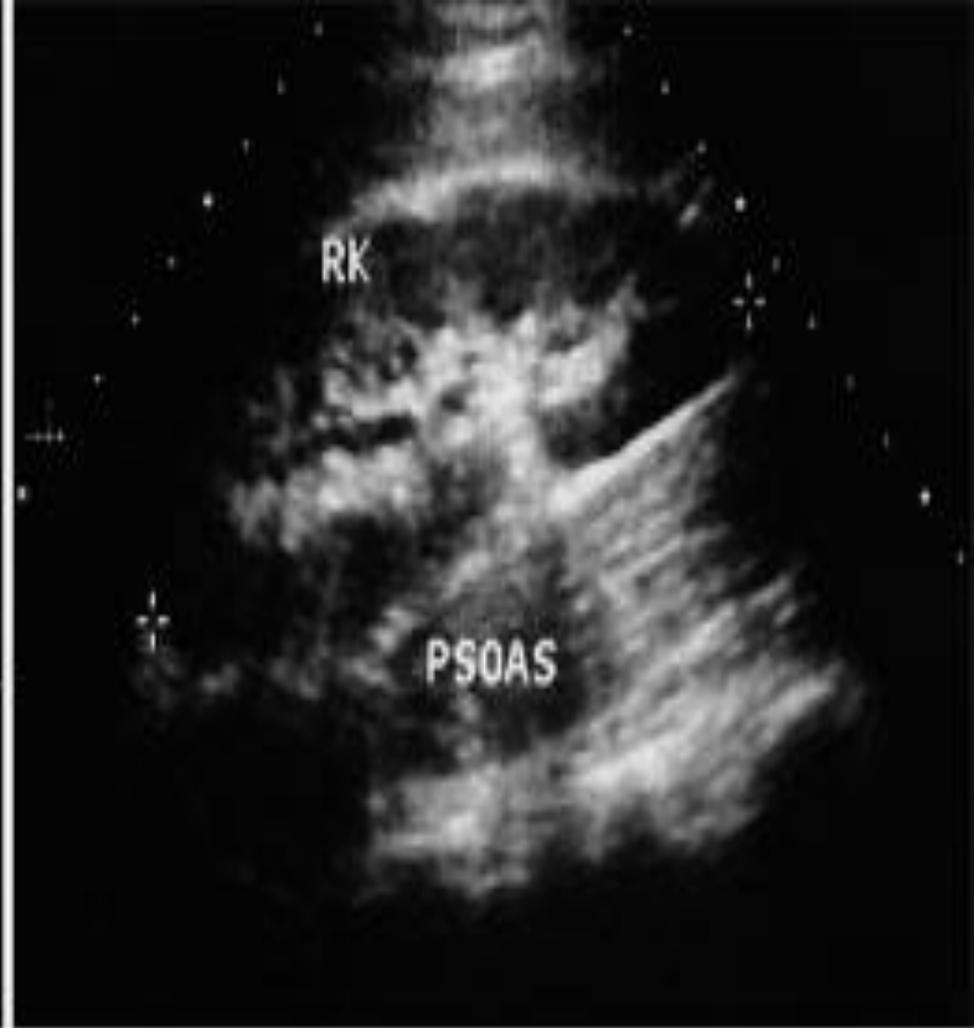


Figure 10-7 Longitudinal scans through the long axis of the right kidney (*RK*) and psoas muscle. Measurements are made along the maximum length of the right kidney from upper pole to lower pole.



Figure 10-8A A, Longitudinal scan of the normal left kidney as imaged through the homogeneous spleen. The psoas muscle is the posterior medial border of the kidney. **B**, Measurements are made along the maximum length of the kidney from the upper pole to lower pole. **C**, The patient may be rolled into a right lateral decubitus position for better visualization of the renal medullary pyramids and parenchyma. **D**, Splenomegaly (*S*) aids in the visualization of the upper pole of the left kidney (*LK*).

(Courtesy Shpetim Telegrafi, New York University.)