

Kidney

Chapter 7

1

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

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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
Neph/r/o	Kidney	Nephritis	Inflammation of the kidney
		Nephropathy	Disease of the kidney

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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

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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

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Urinary System

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

The diagram shows a frontal view of the human torso. The right and left kidneys are located in the upper back. Ureters lead from the kidneys to the bladder. The bladder is situated in the pelvic region. The urethra leads from the bladder. Other labeled structures include the liver, inferior vena cava, aorta, and psoas muscles.

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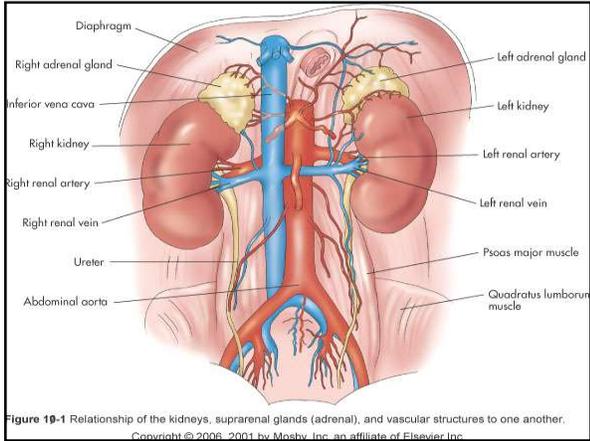


Figure 19-1 Relationship of the kidneys, suprarenal glands (adrenal), and vascular structures to one another. Copyright © 2006, 2001 by Mosby, Inc. an affiliate of Elsevier Inc.

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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**

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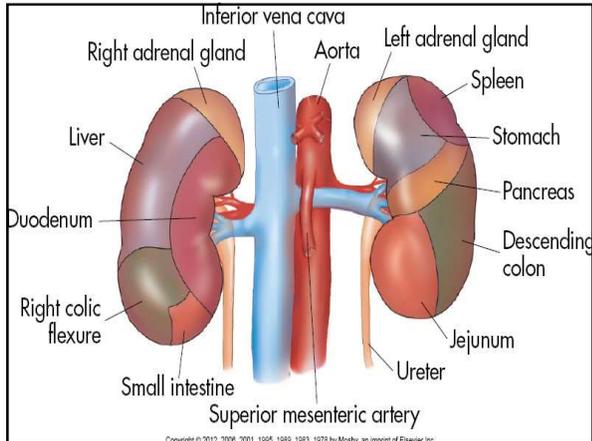
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Kidneys

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

▶ 9

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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

▶ 11

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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

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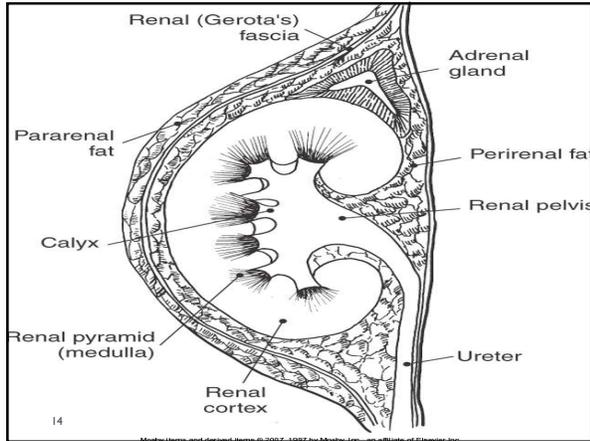
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Kidneys

- ▶ **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

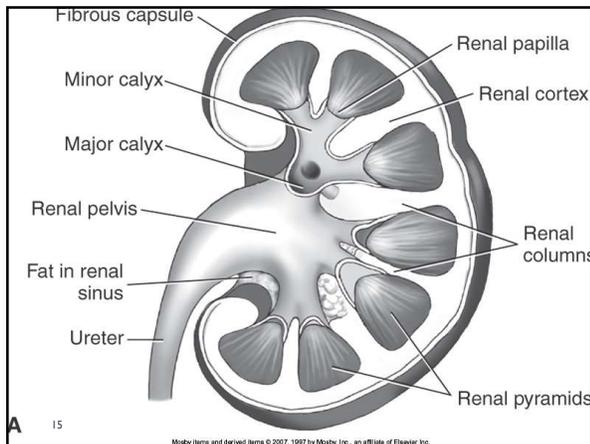
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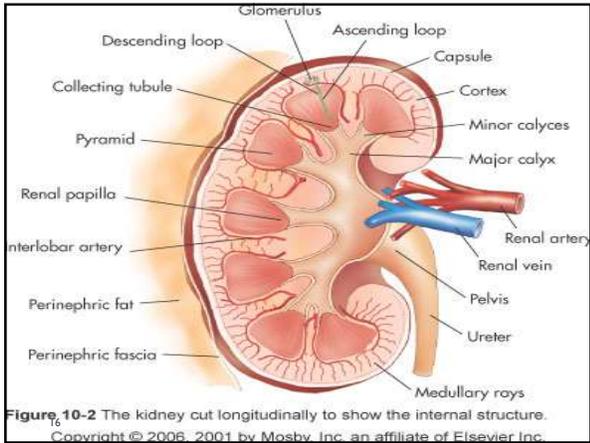


Figure 10-2 The kidney cut longitudinally to show the internal structure.
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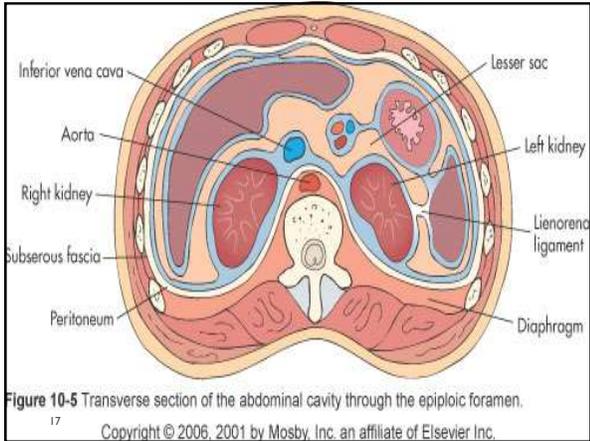
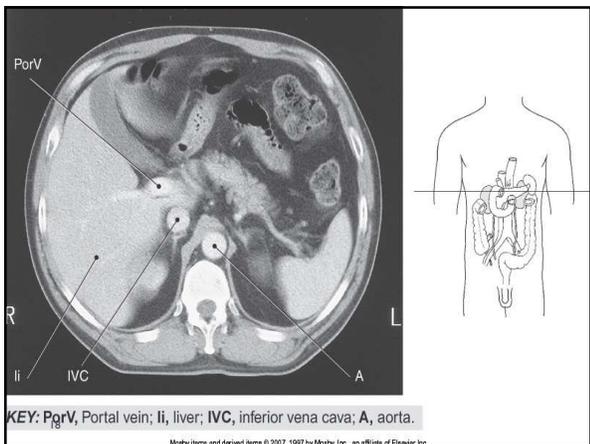


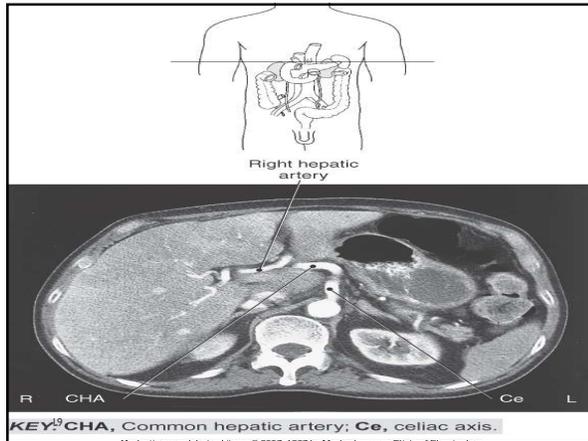
Figure 10-5 Transverse section of the abdominal cavity through the epiploic foramen.
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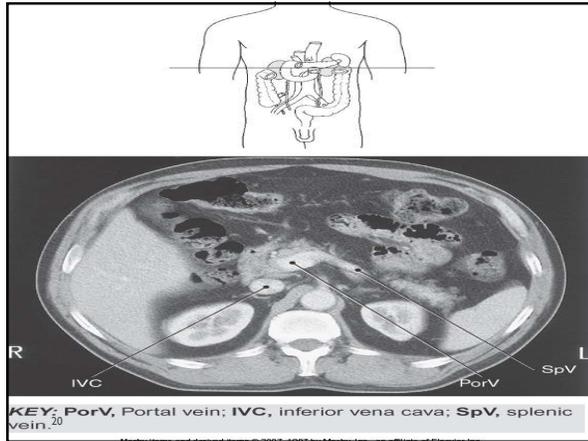


KEY: PorV, Portal vein; li, liver; IVC, inferior vena cava; A, aorta.

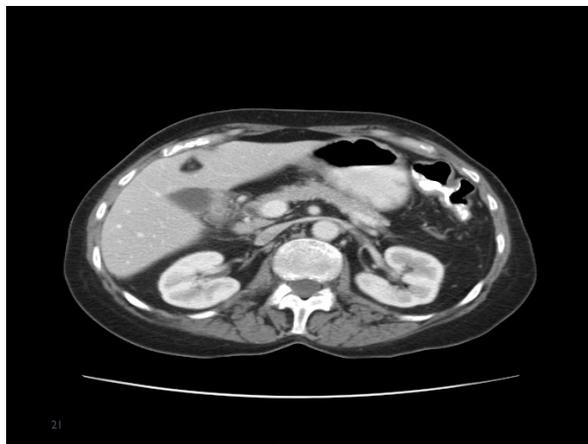
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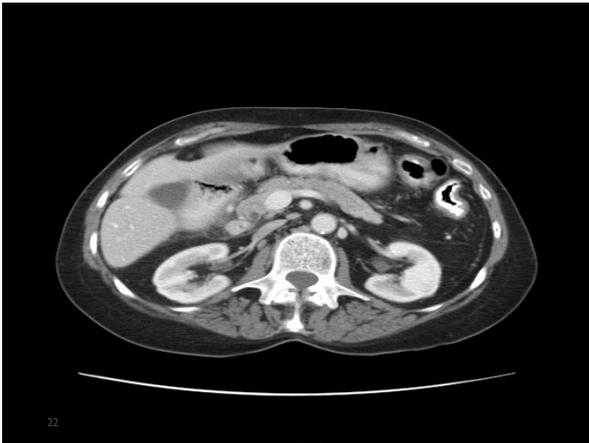
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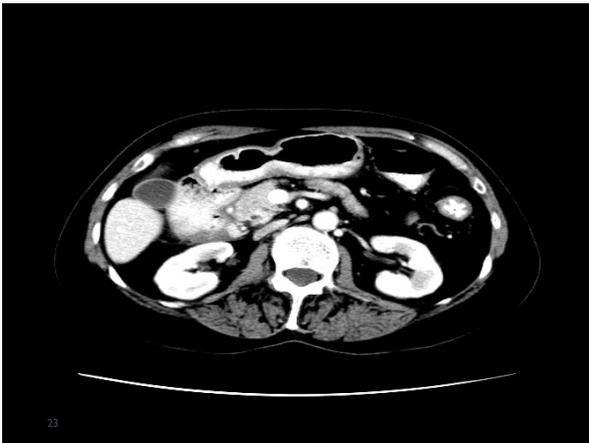
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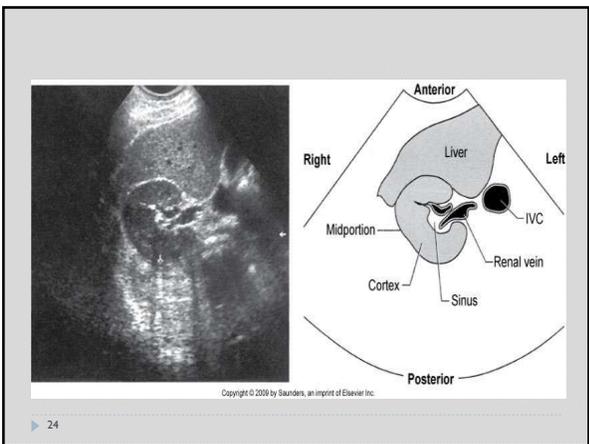
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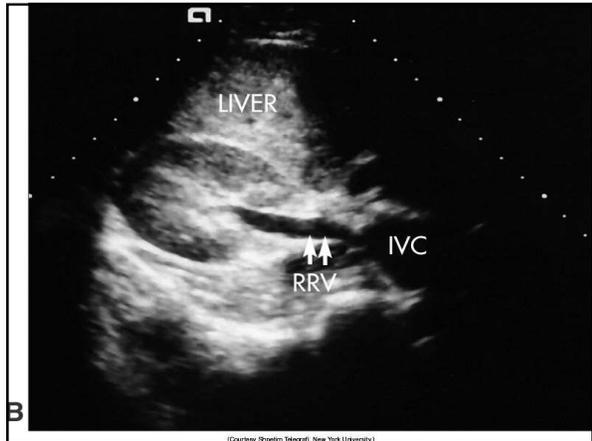
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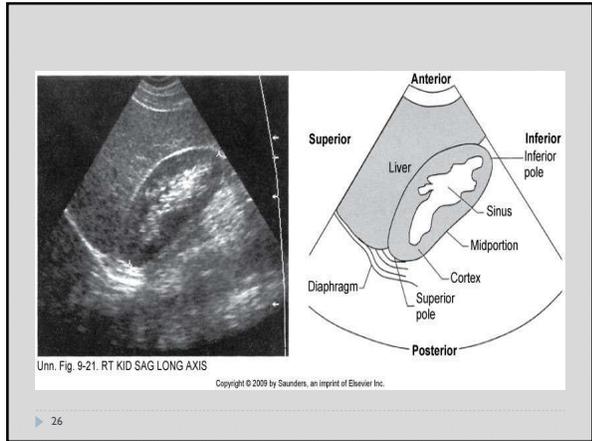
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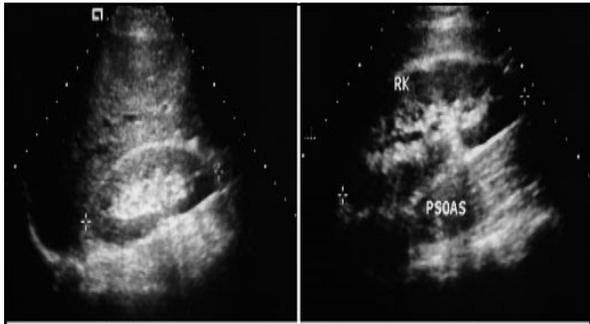


Figure 10-7 Longitudinal scans through the long axis of the right kidney (RK) and psoas muscle. Measurements are made along the maximum length of the right kidney from upper pole to lower pole.

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(Courtesy Shoetim Telegrafi, New York University.)

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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.)

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