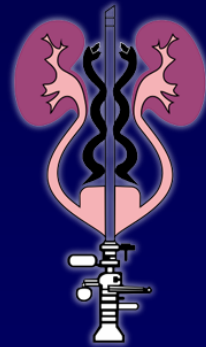


ADRENALLER BÖBREK VE ÜRETER CERRAHİ ANATOMİSİ

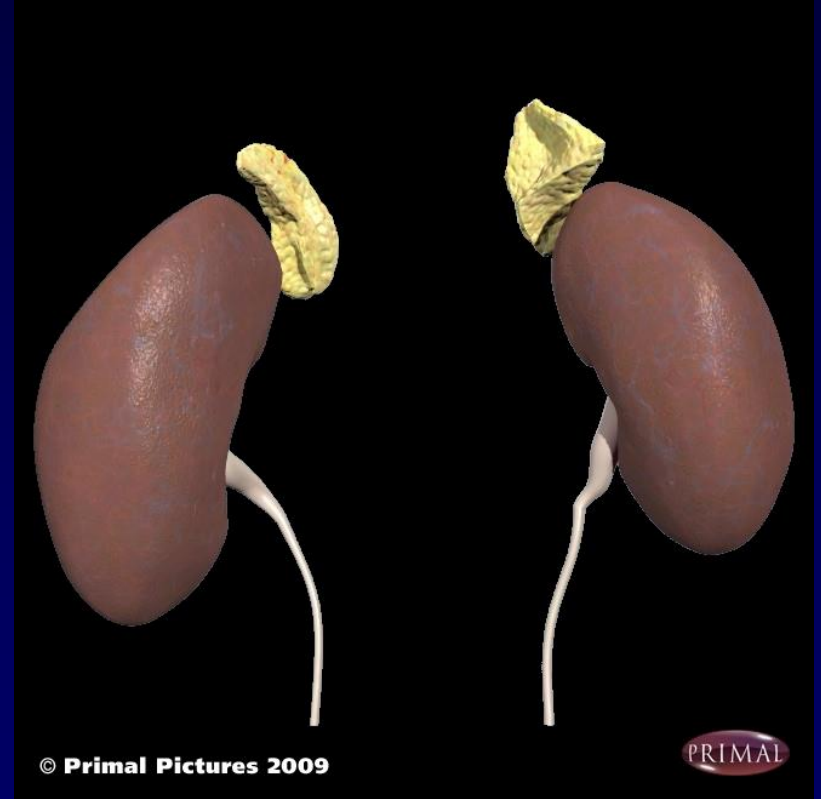


Prof. Dr.
Özcan ATAHAN
Üroloji Uzmanı

Bursa Şevket Yılmaz Eğitim ve Araştırma
Hastanesi Üroloji Kliniği

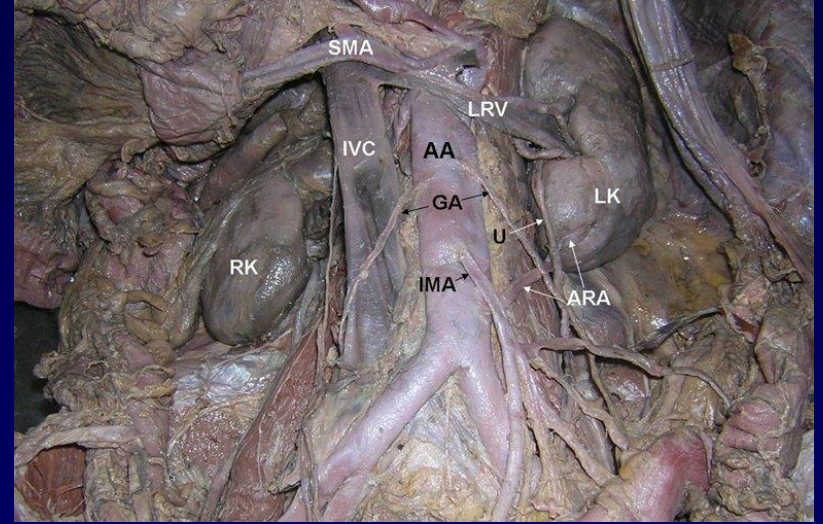
ADRENAL BEZLER

- Endokrin glandüler organ
- Ağırlığı 5 gr, boyu 3-5 cm



Sol adrenal

sağ böbreğin üst
kutbu üzerinde
önden mide
altta pankreas
kuyruğu ve dalak
damarları

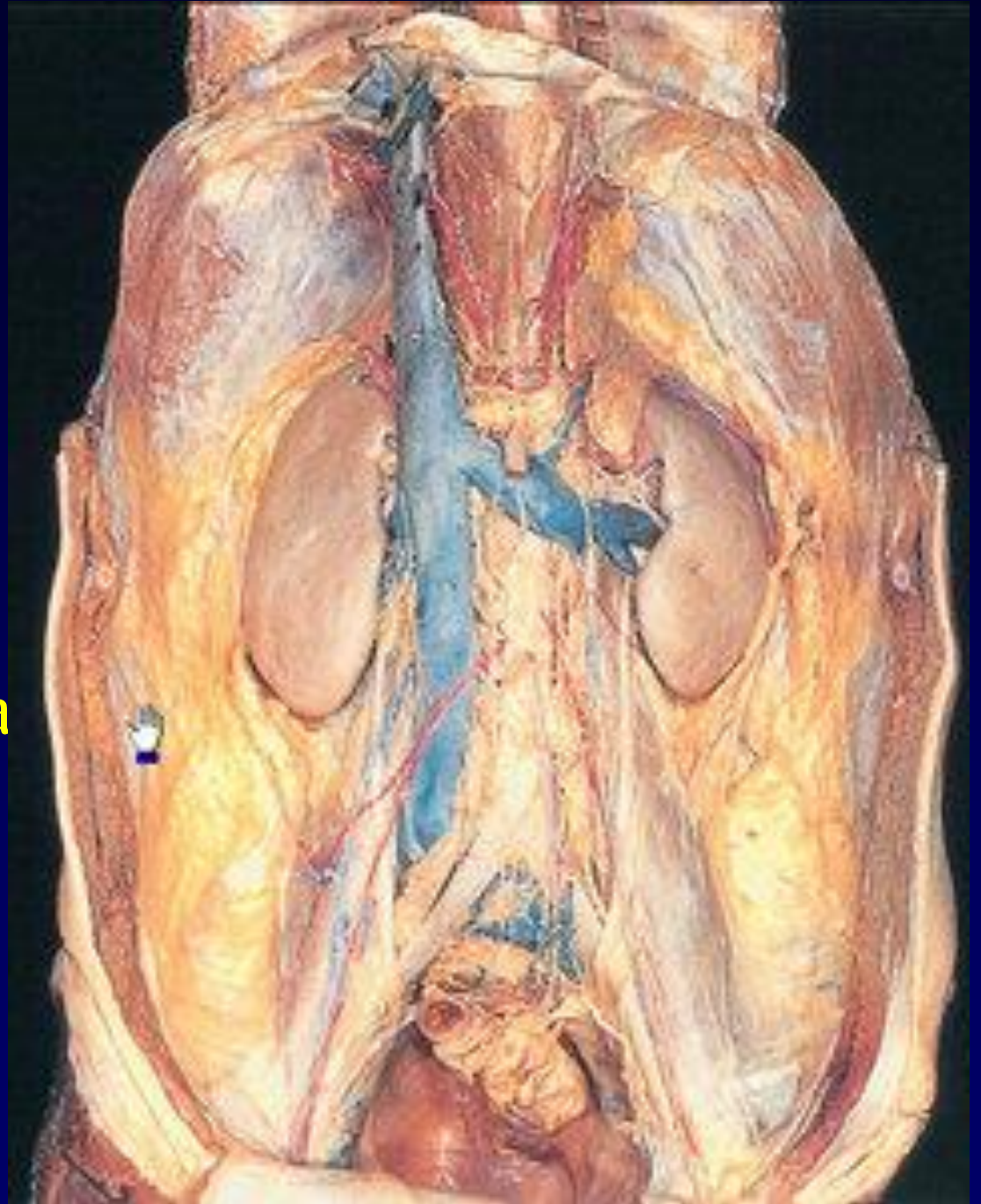


Adrenal Gland

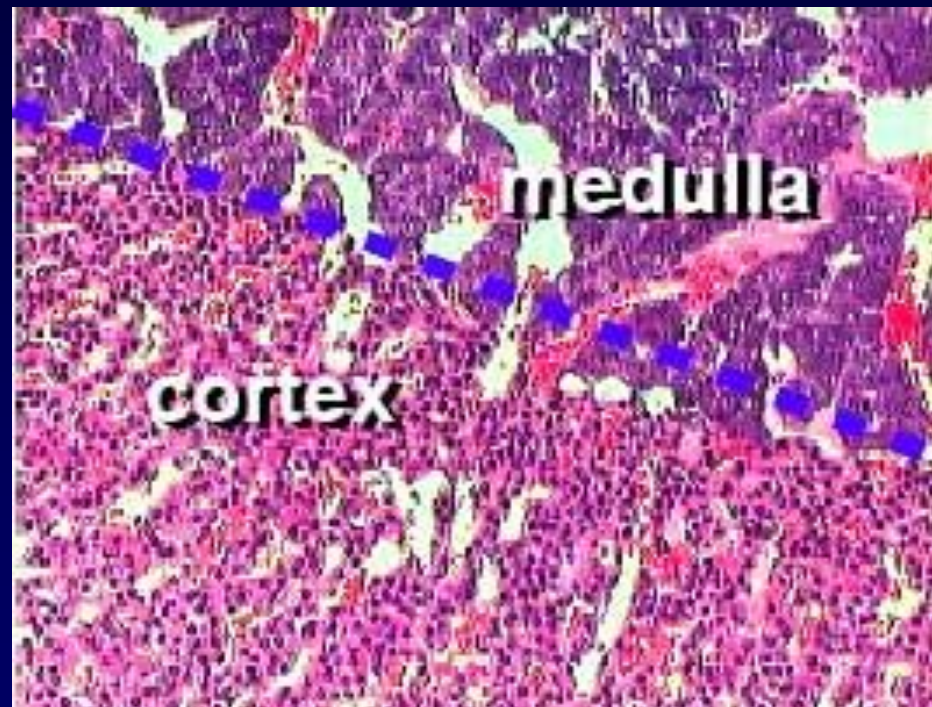


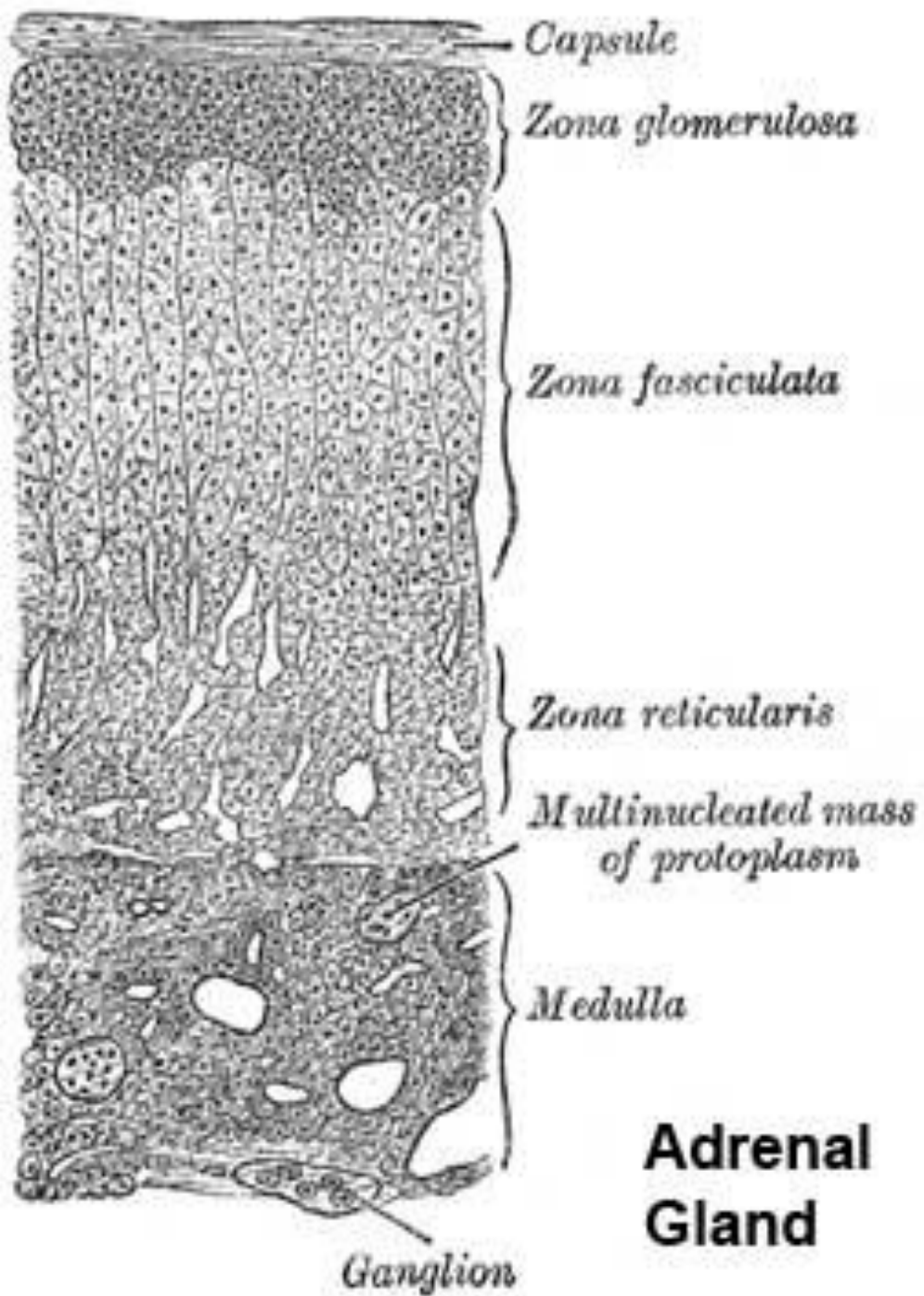
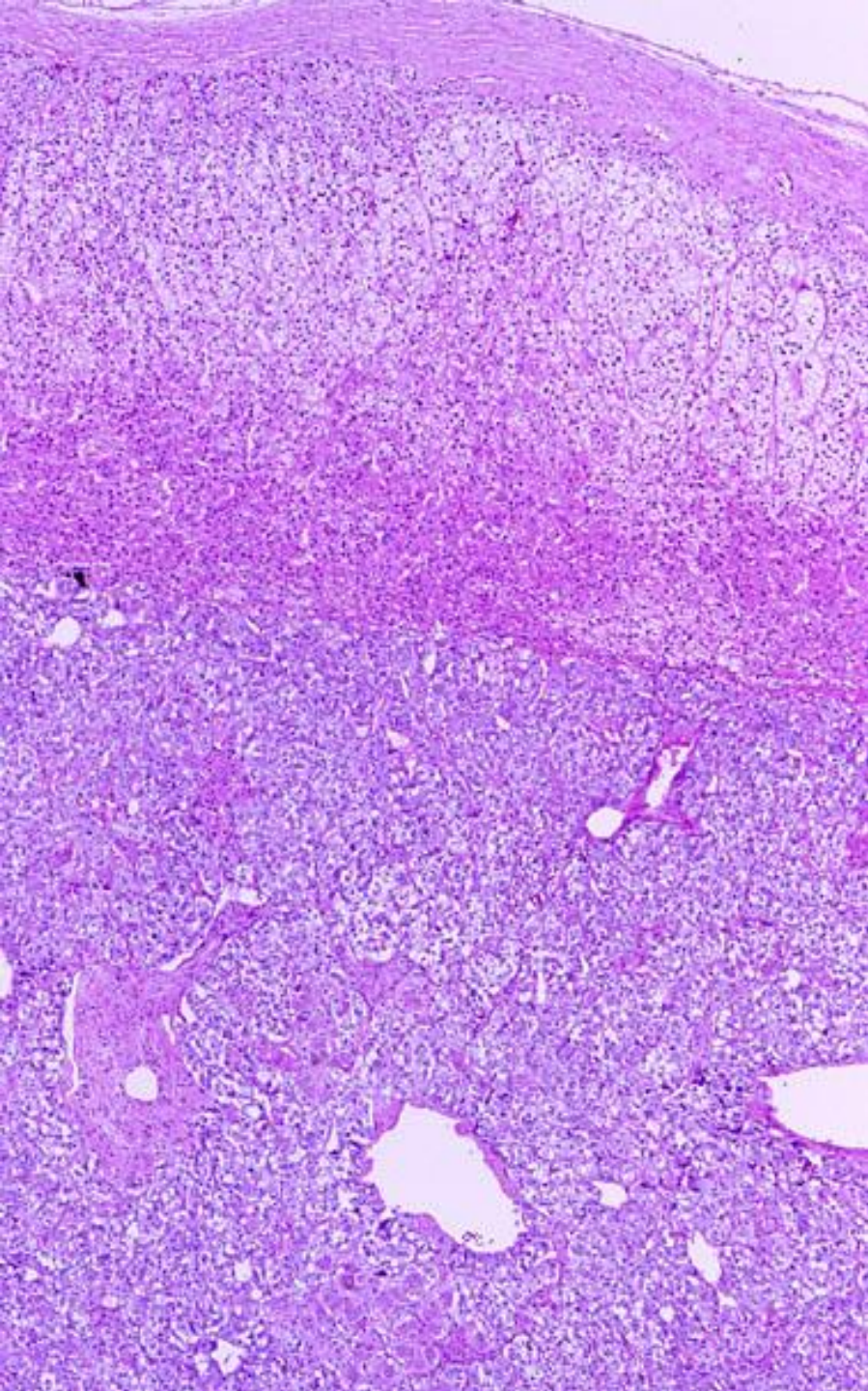
Sağ adrenal

- Önyüzde KC
- Duodenum
- Retrokaval
- Sola göre daha yukarda



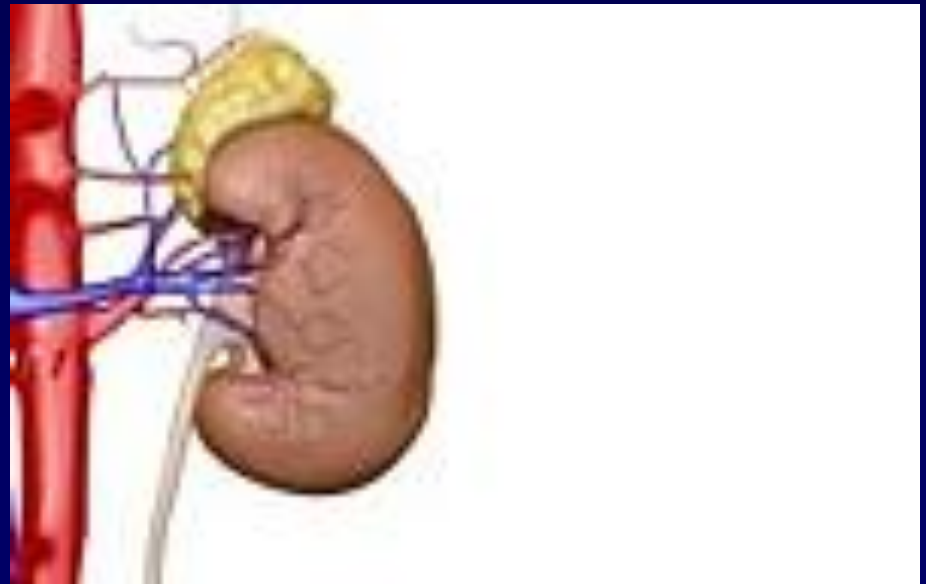
- Kortex
 - Zona glomerulosa
 - aldosteron
 - Zona fassikulata
 - glukokortikosteroid
 - Zona retikularis
 - Seks steroidleri
- Medulla
 - Epinefrin
 - norepinefrin





Adrenal damarları

- İnf frenik arterin superior dal
- Aort
- Renal arter inf dal

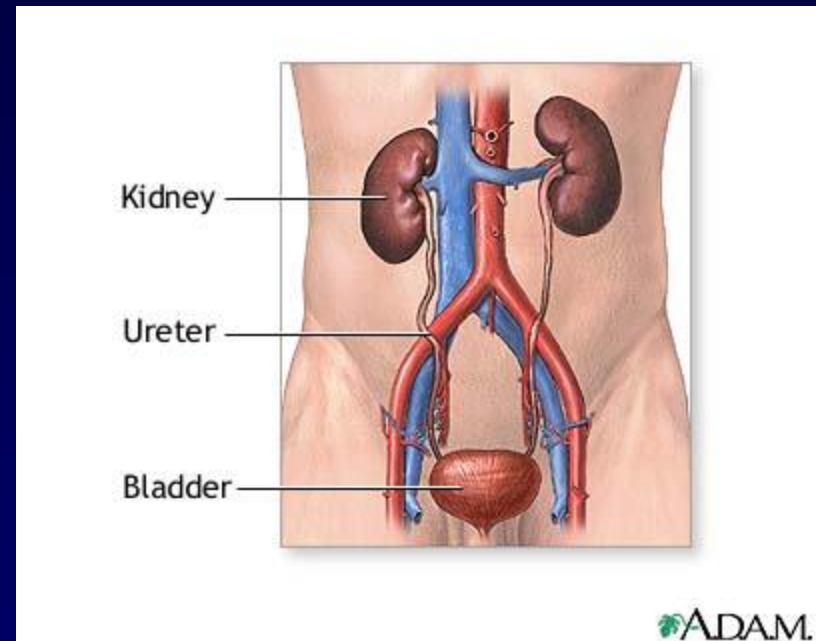


Adrenal venleri

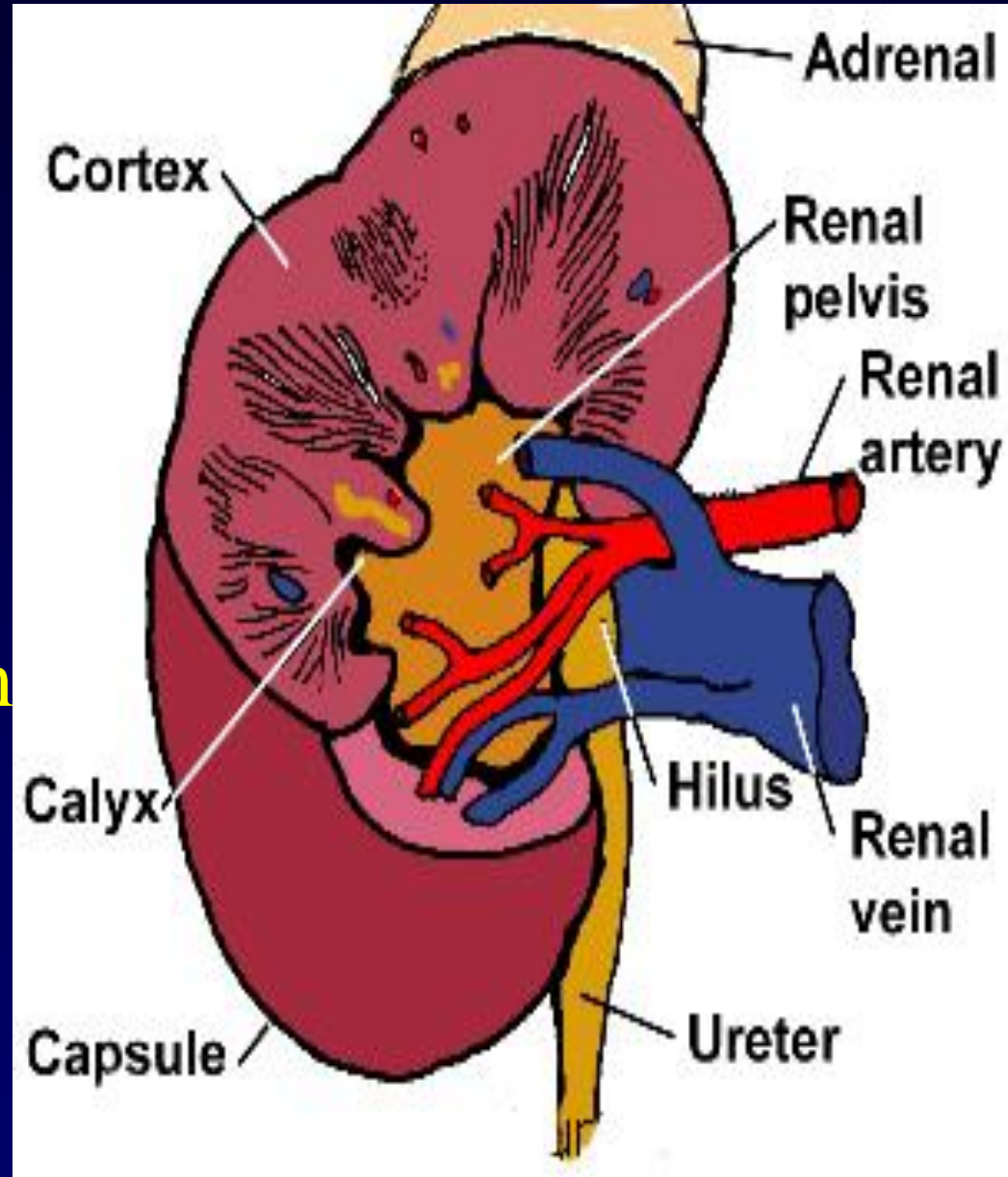
- Gen tek ven
- Sağda kısa direkt v.cava inf.
- Sol uzun inf frenik venle birleşir
- Sol v. renalis
- Lenfatikler & venler
 - Paraaortik lenf nod

BÖBREKLER

- Retroperitonda
- Su-elektrolit
- Asit-baz-dengesinde
- Endokrin rol
 - Renin, eritropoietin
 - D vit met.

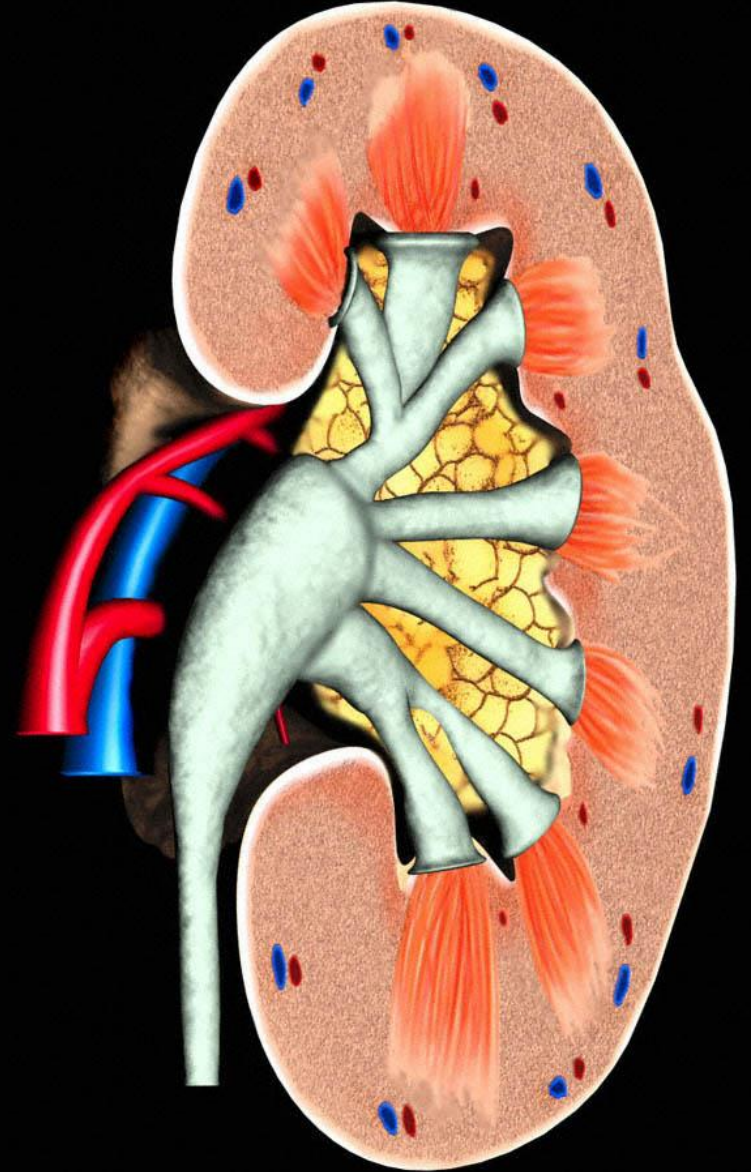


- Parankim
- Renal kapsül
- Ağırlığı 150 gr
- 10-12 x 5-7 x 3 cm



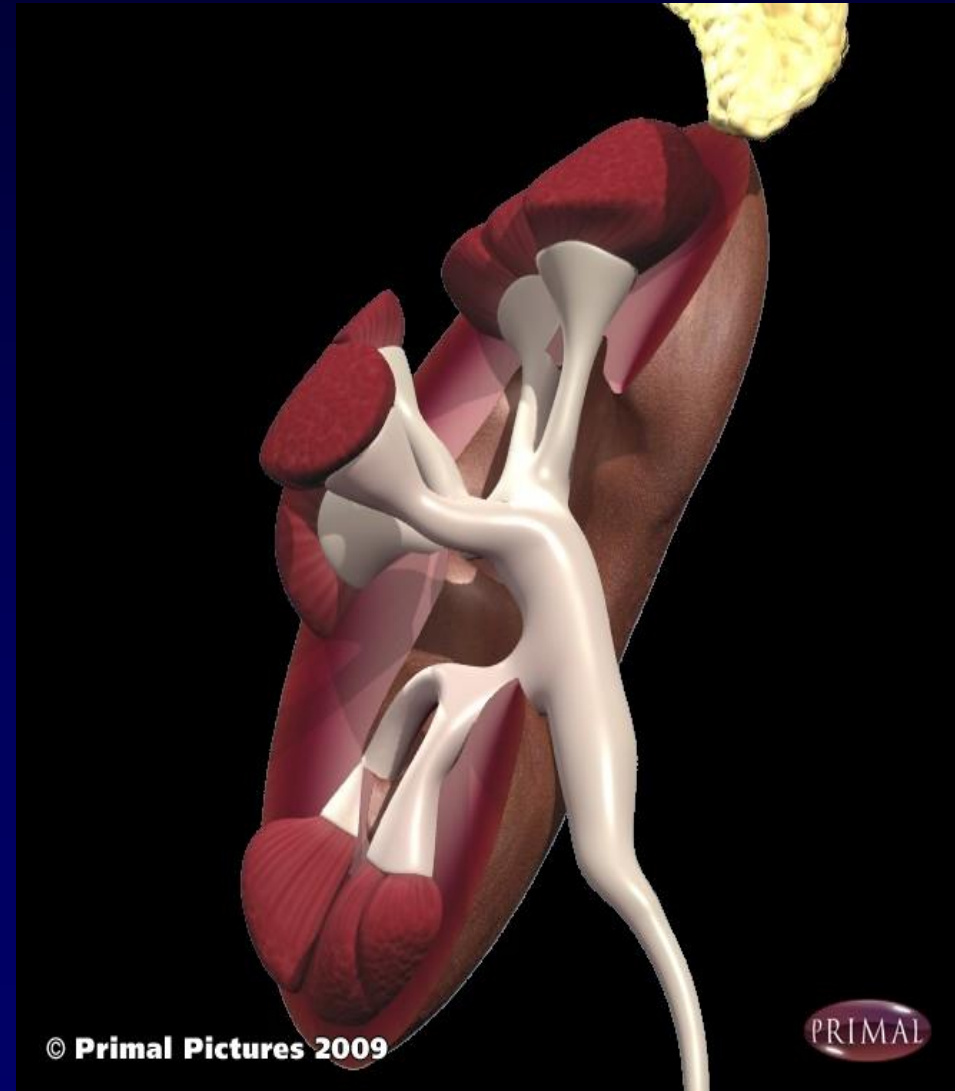
- Renal hilum
- Renal sinüs
 - Toplayıcı sistemler
 - Renal damarlar
 - Yağ dokusu

www.med-ars.it

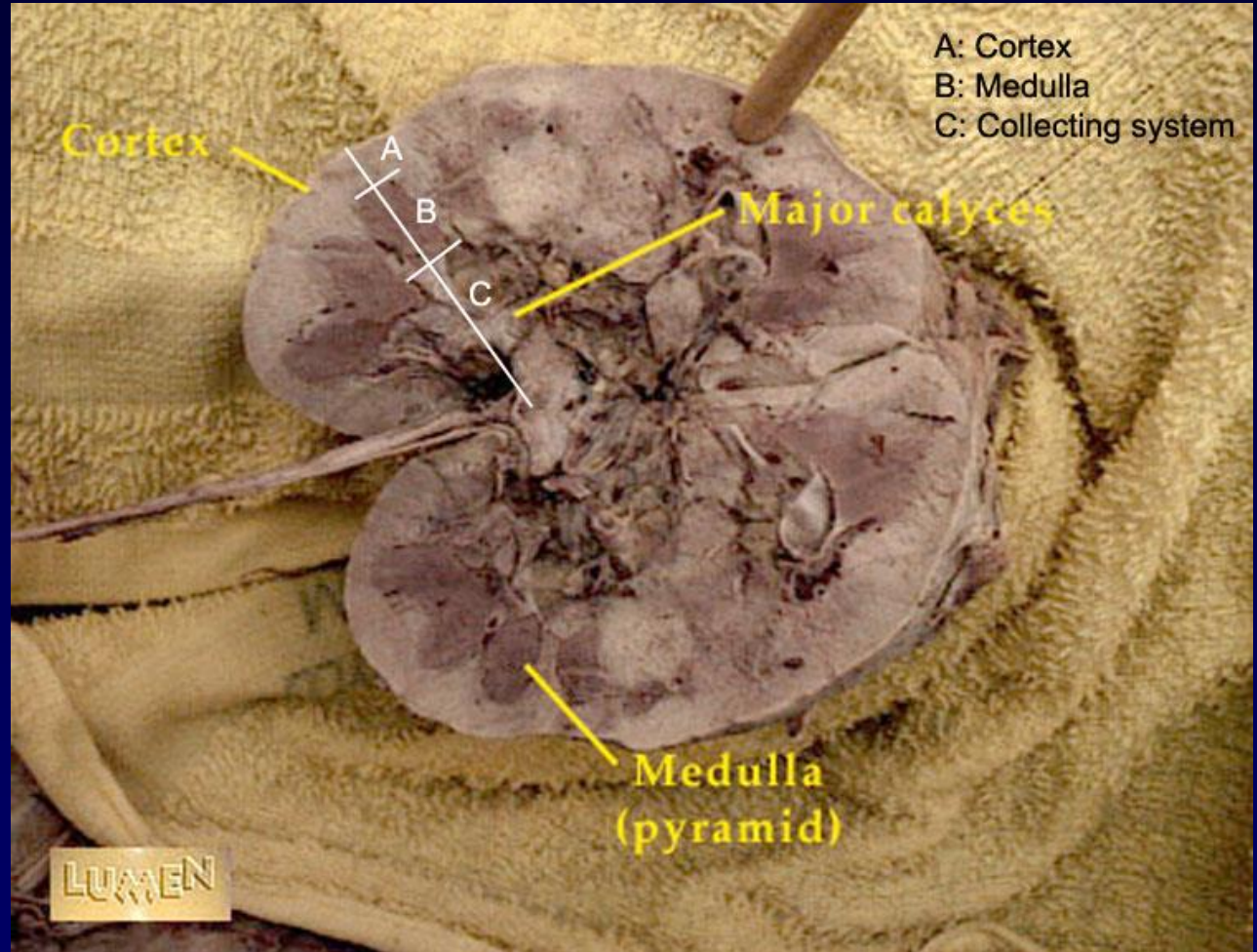


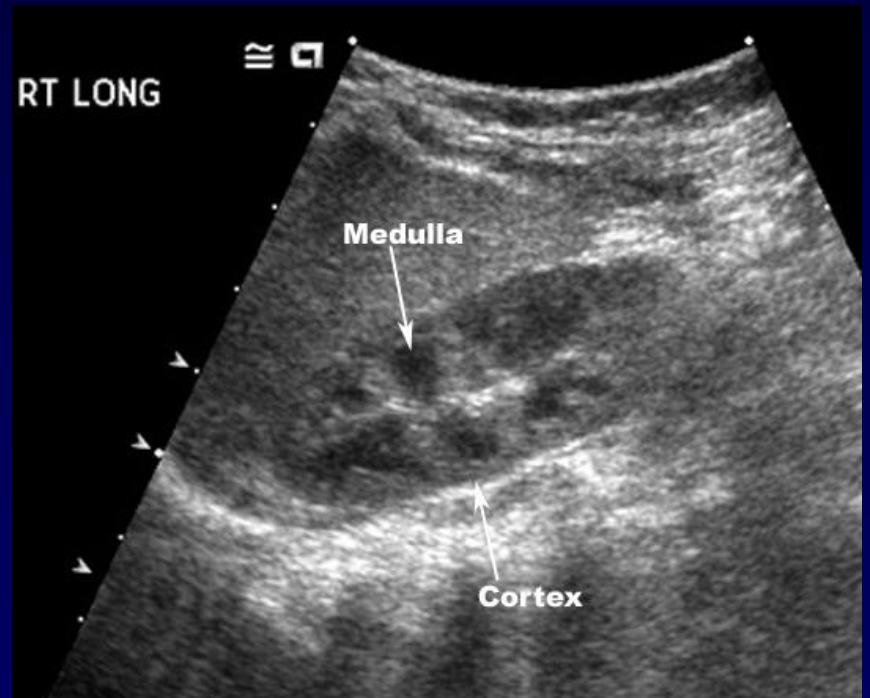
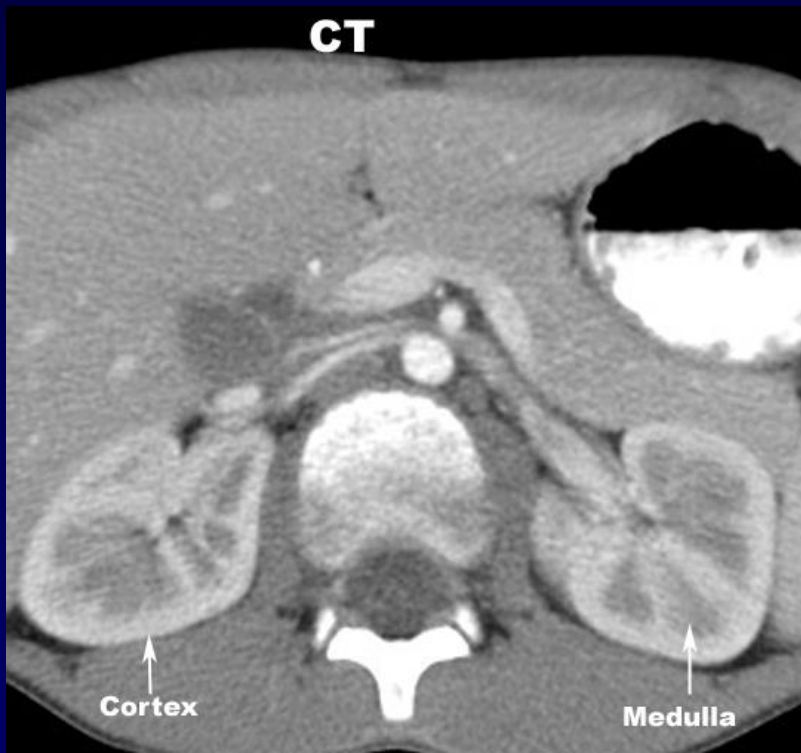
Renal parankim

- Korteks
- Medulla
- Renal kolon

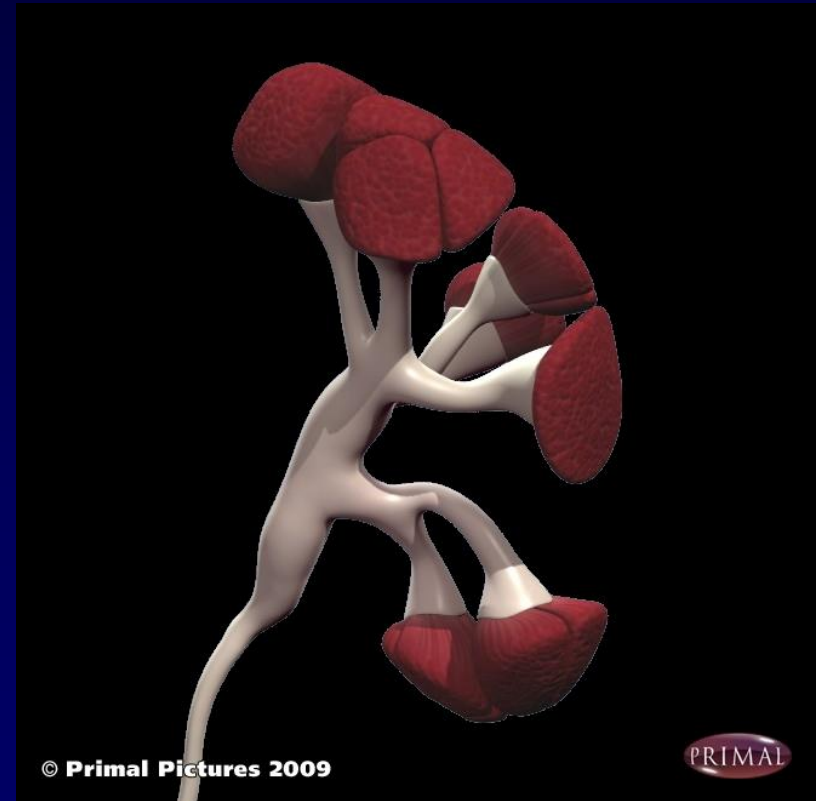


- Parankim
 - Korteks
 - medulla

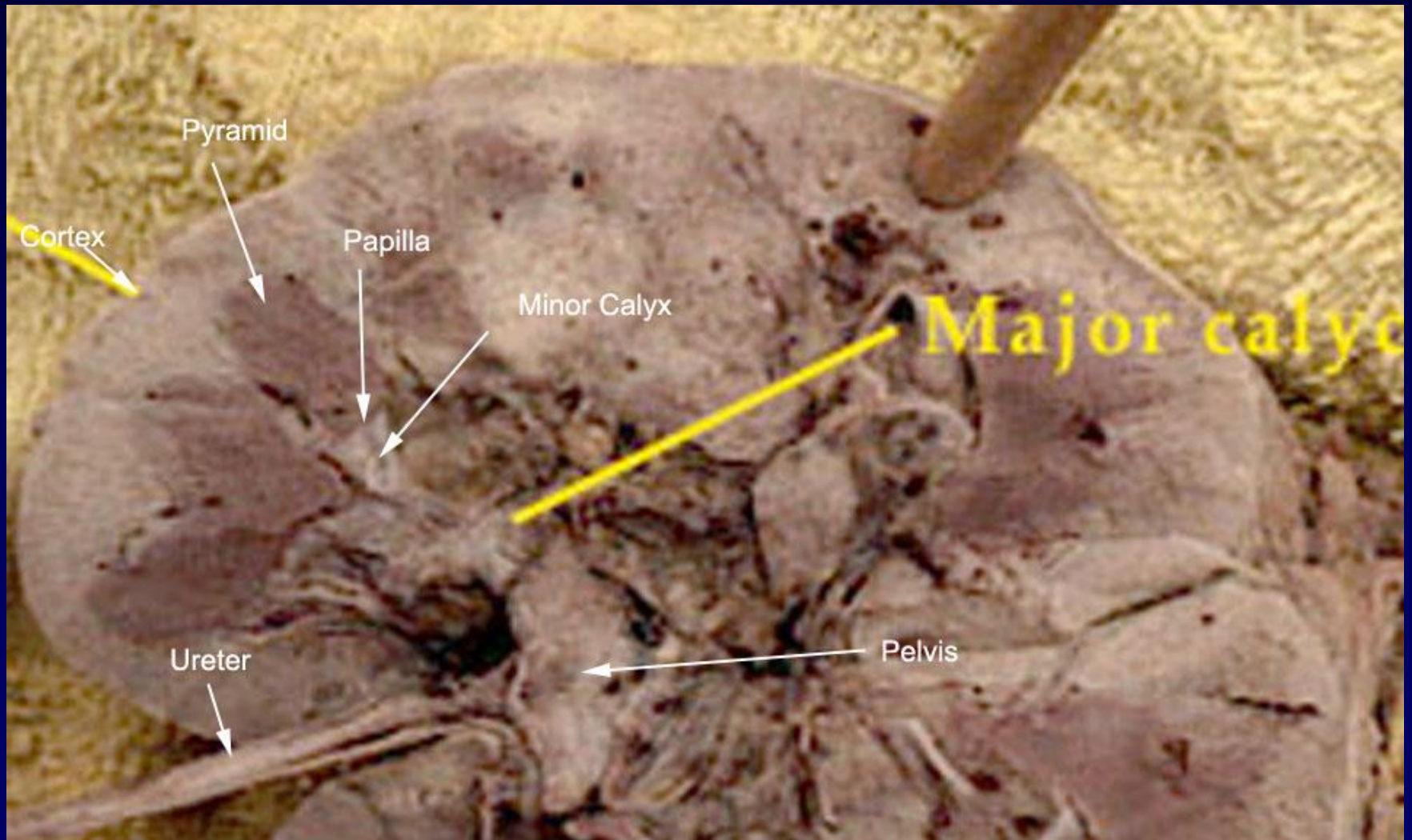




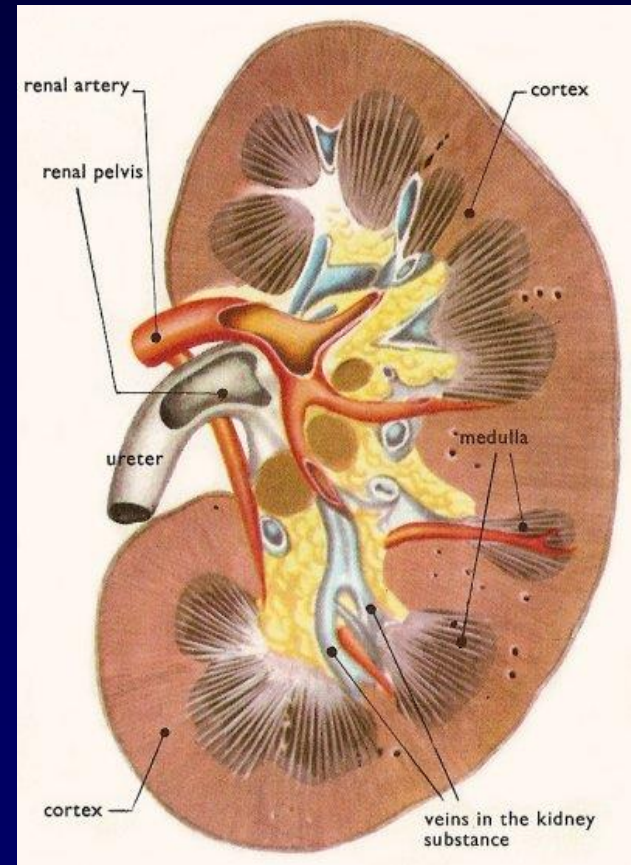
- Renal piramid
 - Papilla
 - Minör kaliks



Papilla-minör kaliks



Renal kolon (Bertini kolumnası)



komşulukları

- Sağ böbrek 1-2cm
- Sol böbrek Th12-L3
- Sağ böbrek L1-L3
- Mobil



Upper pole of left kidney is higher than the upper pole of right kidney.

- Üstte diyafram
- Medialde psoas
- Lat q.lumborum ve trans abd aponevrozu
- Sol böbrek 11.kot

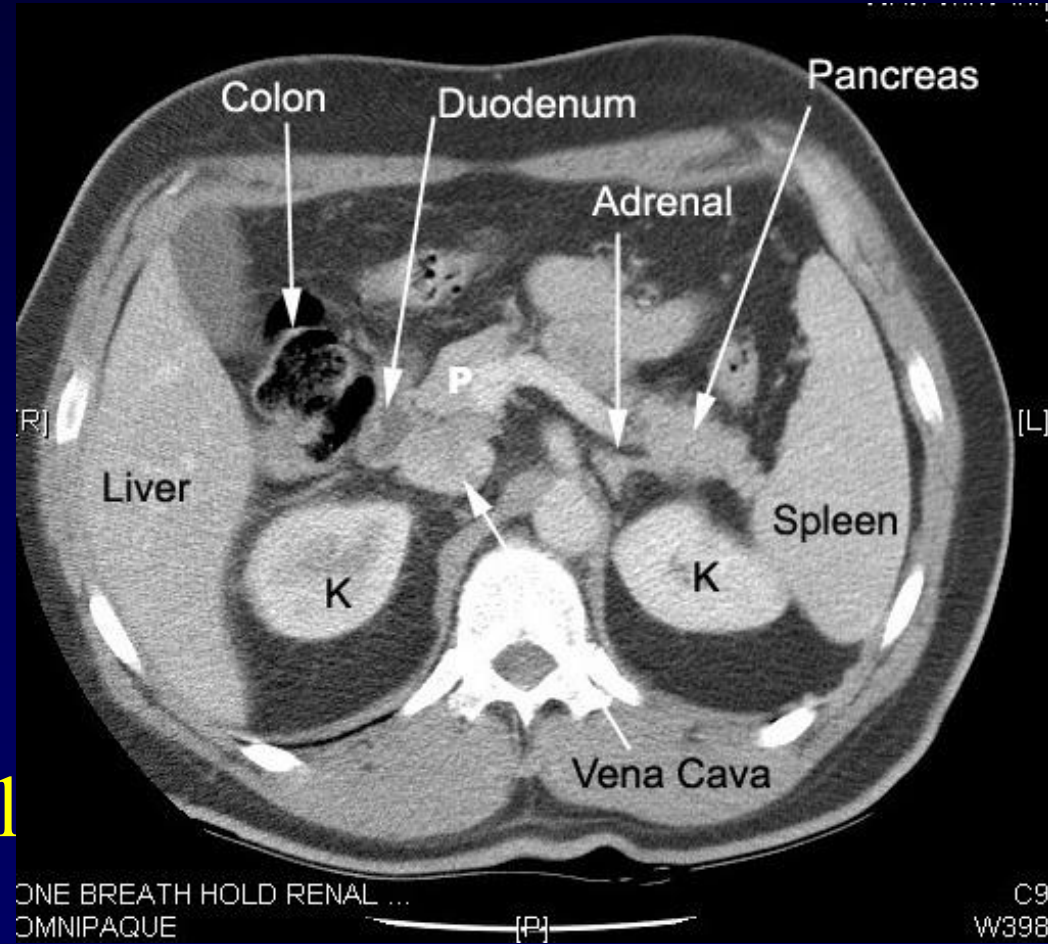


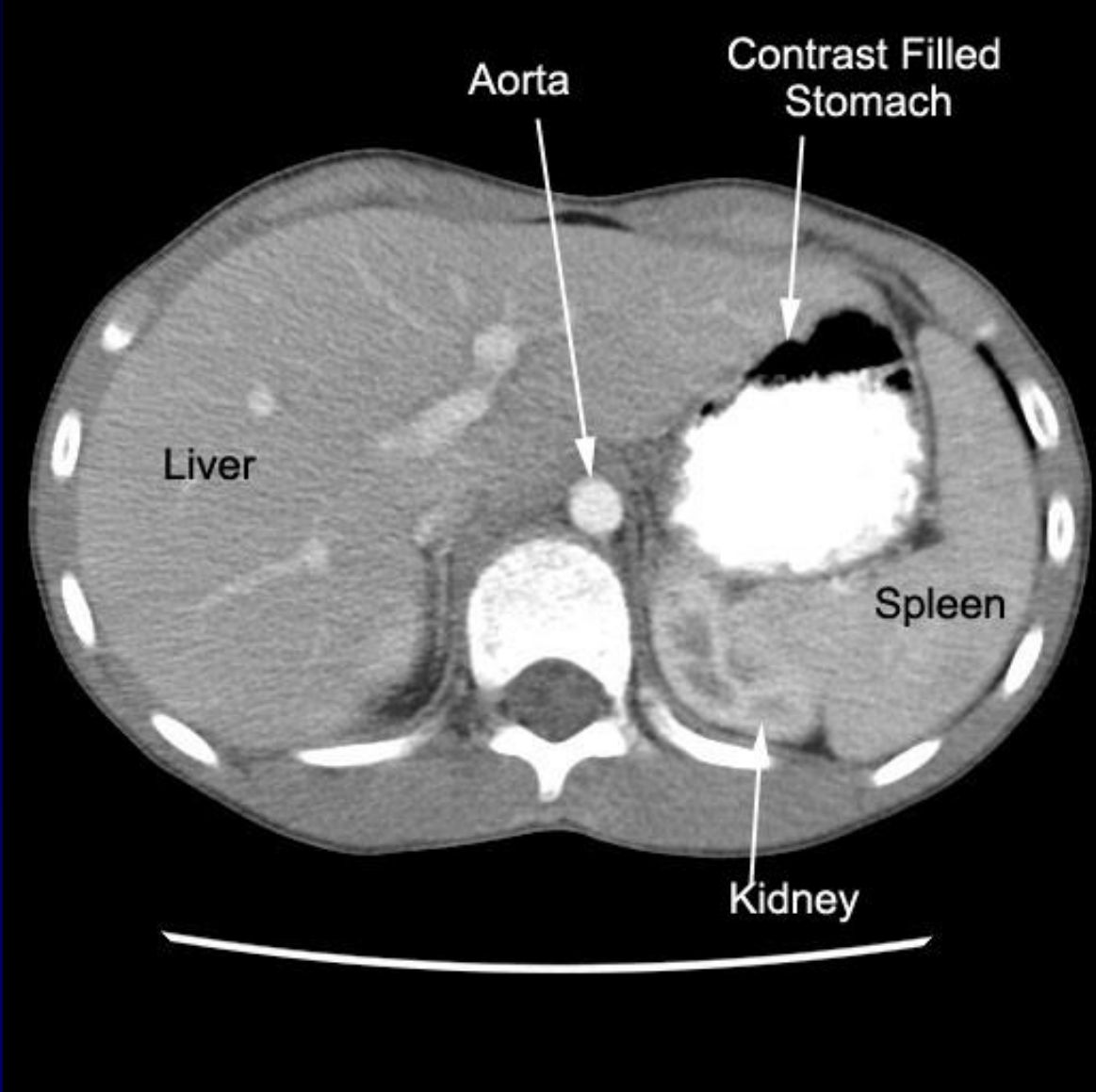
- Bbrek alt kutbu daha lateralde
- Mediali longitudinal aksta ne dođru 30°



sağ böbrek

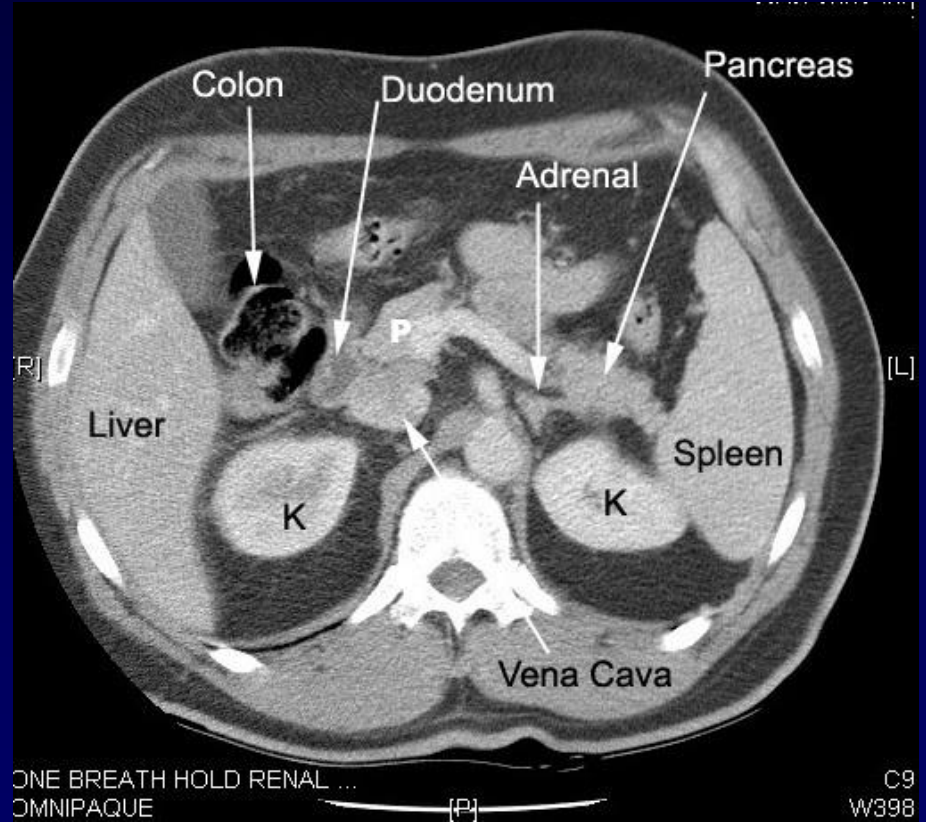
- Kc alt arkasında
- Hepatorenal lig.
- Duodenum
- Kolon hepatic fleksurası
- Üst ortada adrenal





Sol böbrek

- Pankreas kuyruğu
- Dalak damarları
- Mide arka duvarı
- Jejenum
- Splenorenal lig



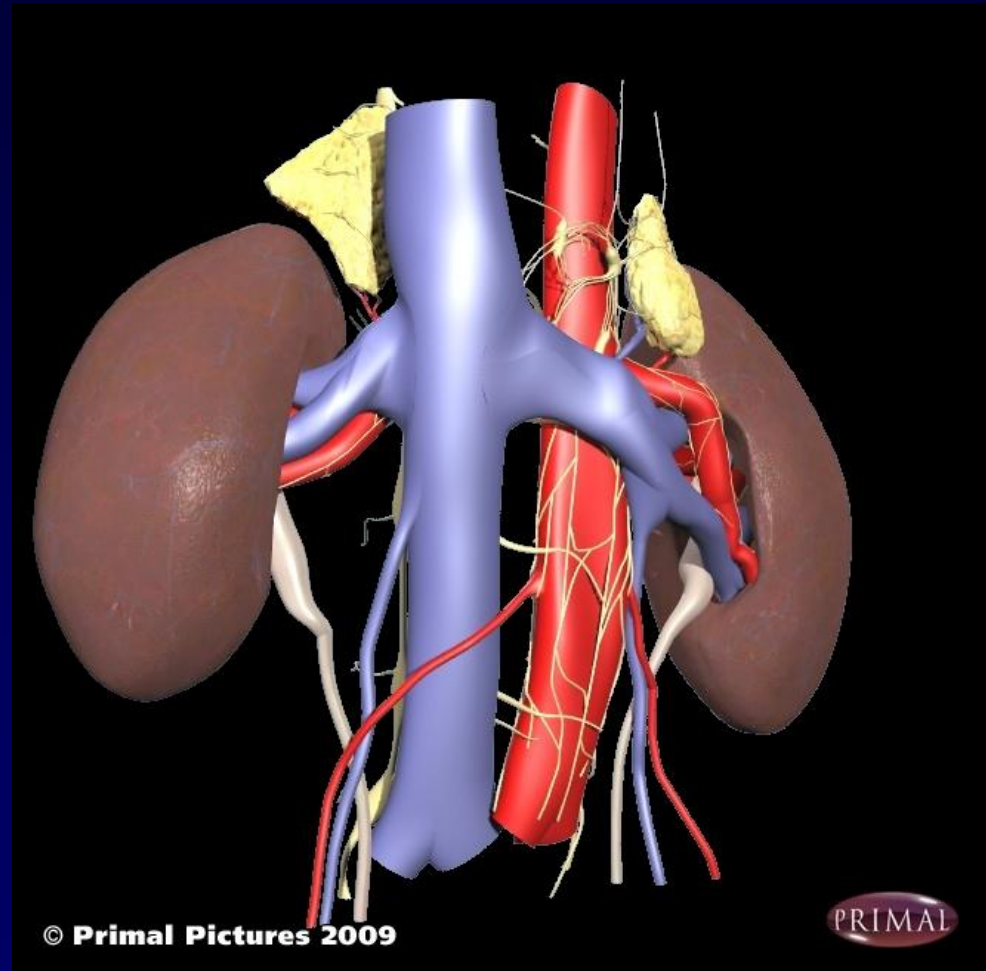
Gerota fasyası

- Böbrekler-adrenal-
çevre yağ dokusu
- Ön-arka yaprak
 - Lateral
 - Medial
 - superior
- Anatomik bariyer



Vasküler pedikül

- Renal hilusdan böbreğe
- A. Renalis
- V. Renalis
- Ven-arter-p.renalis



Se:792
Im:1

[HP]

SPLenic ARTERY

Study
Study Time

**RIGHT
RENAL
VEIN**

**RENAL
ARTERY**

**RENAL
ARTERY**

**RENAL
VEIN**

IMA

[R]

IVC

**COLONIC
BRANCHES**

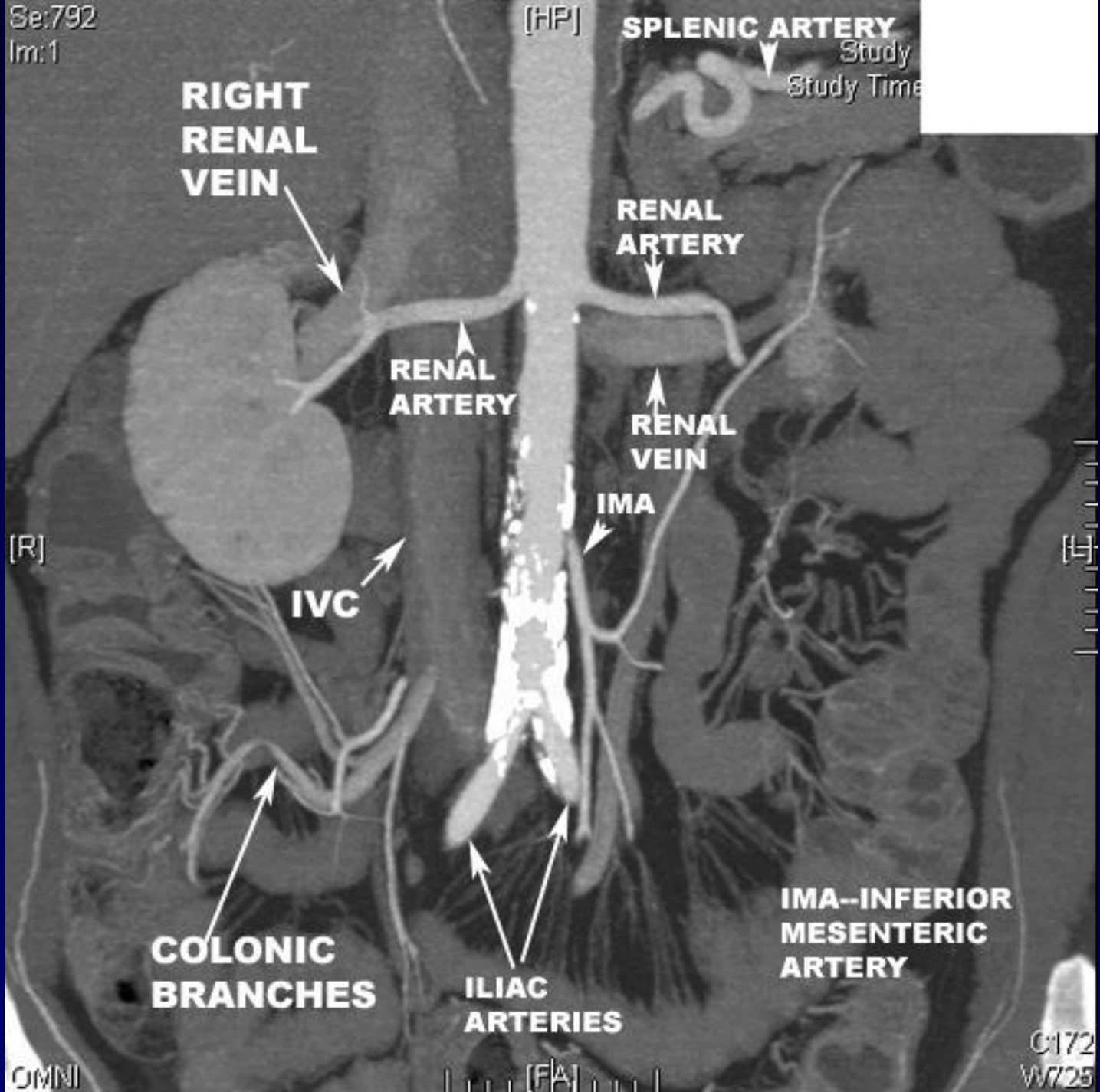
**ILIAC
ARTERIES**

**IMA--INFERIOR
MESENTERIC
ARTERY**

OMNI

[FA]

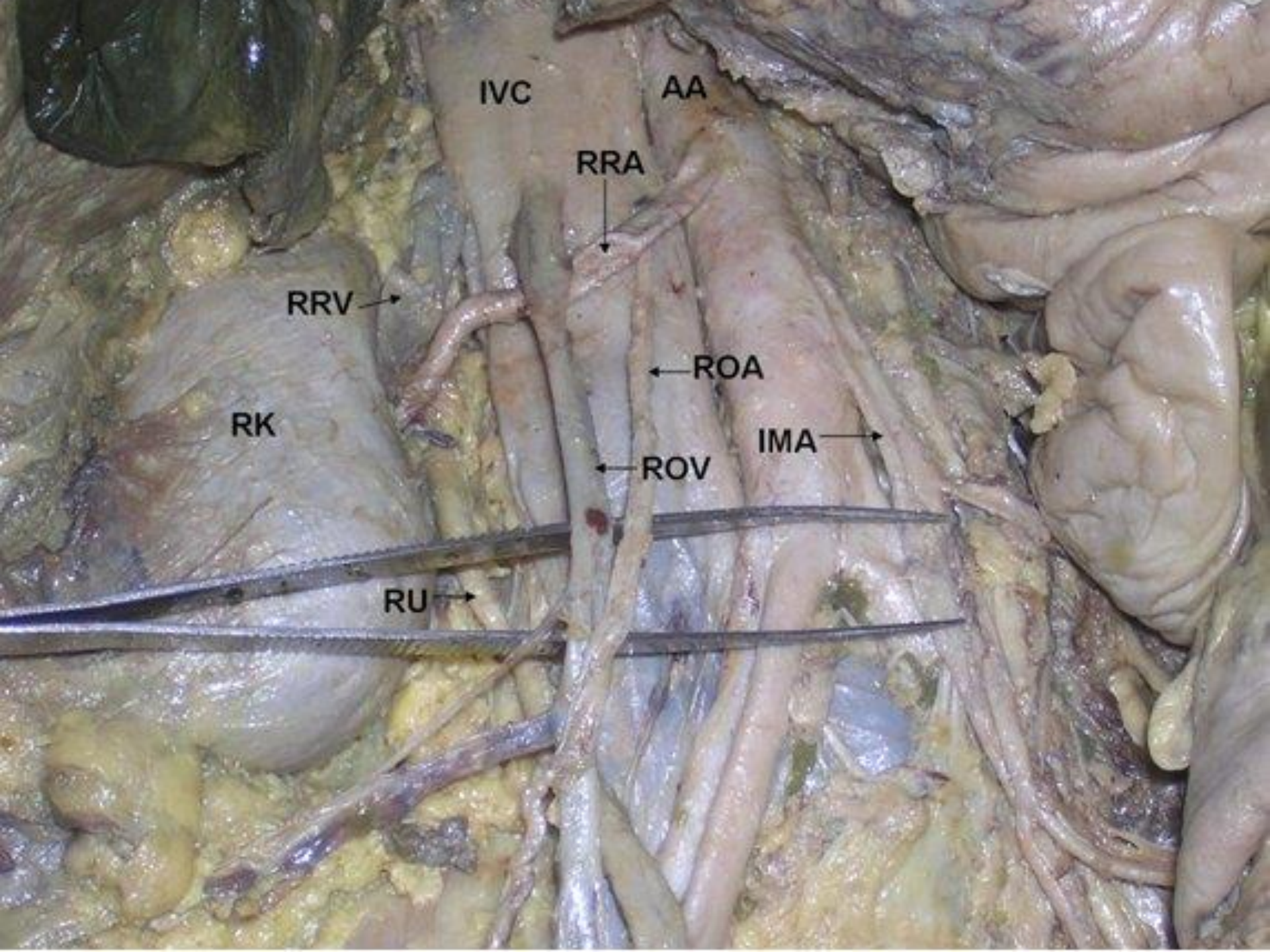
C:172
W:725



renal arter

- Sağ a.renalis daha üstten-uzun
- V.cava inf arkasından
- 4-5 dal
- End arterler





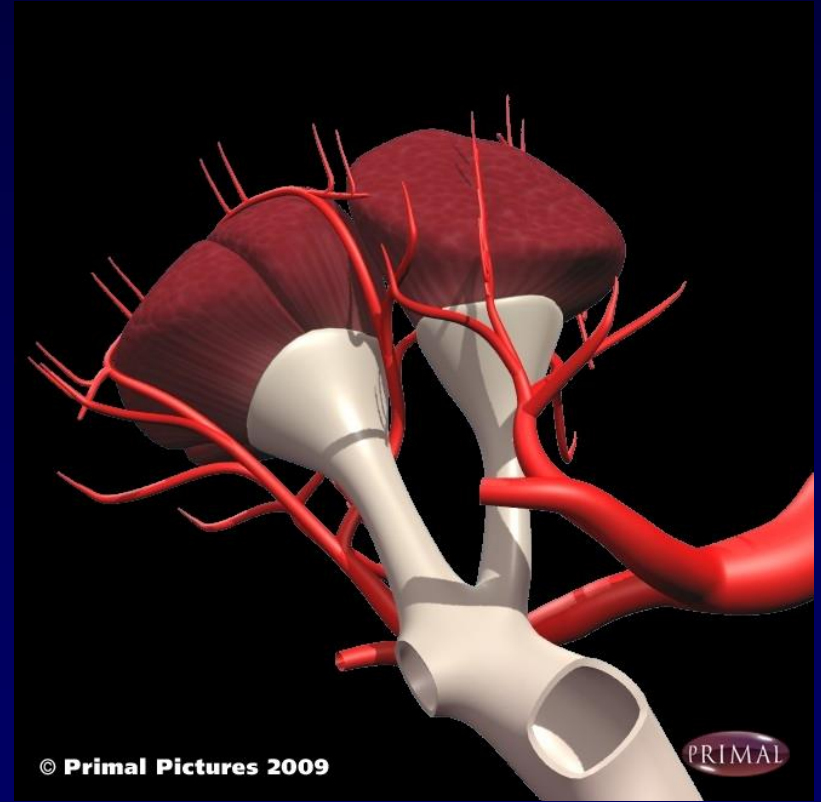
- Segmental arterler
 - Posterior
 - Anterior
- Lobar arter
- İnterlobar a.



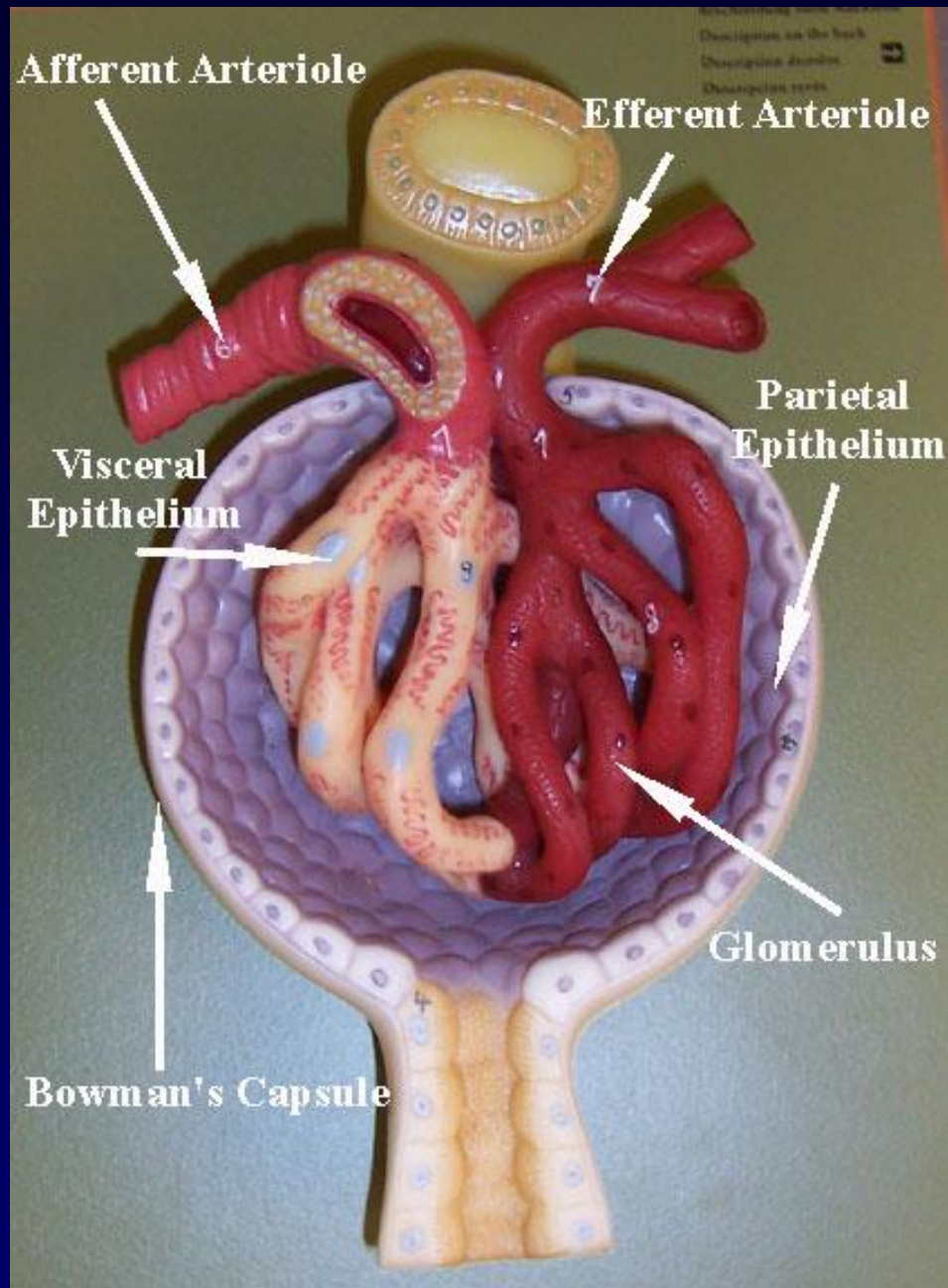
- Inferior suprarenal arter
- Sağ renal arter
 - superior
 - inferior
 - Anterosuperior
 - apikal
 - anteroinferior



- Arkuat arter
- Bu arteriyel dallar
- Minör kaliks infundubuluma yakın

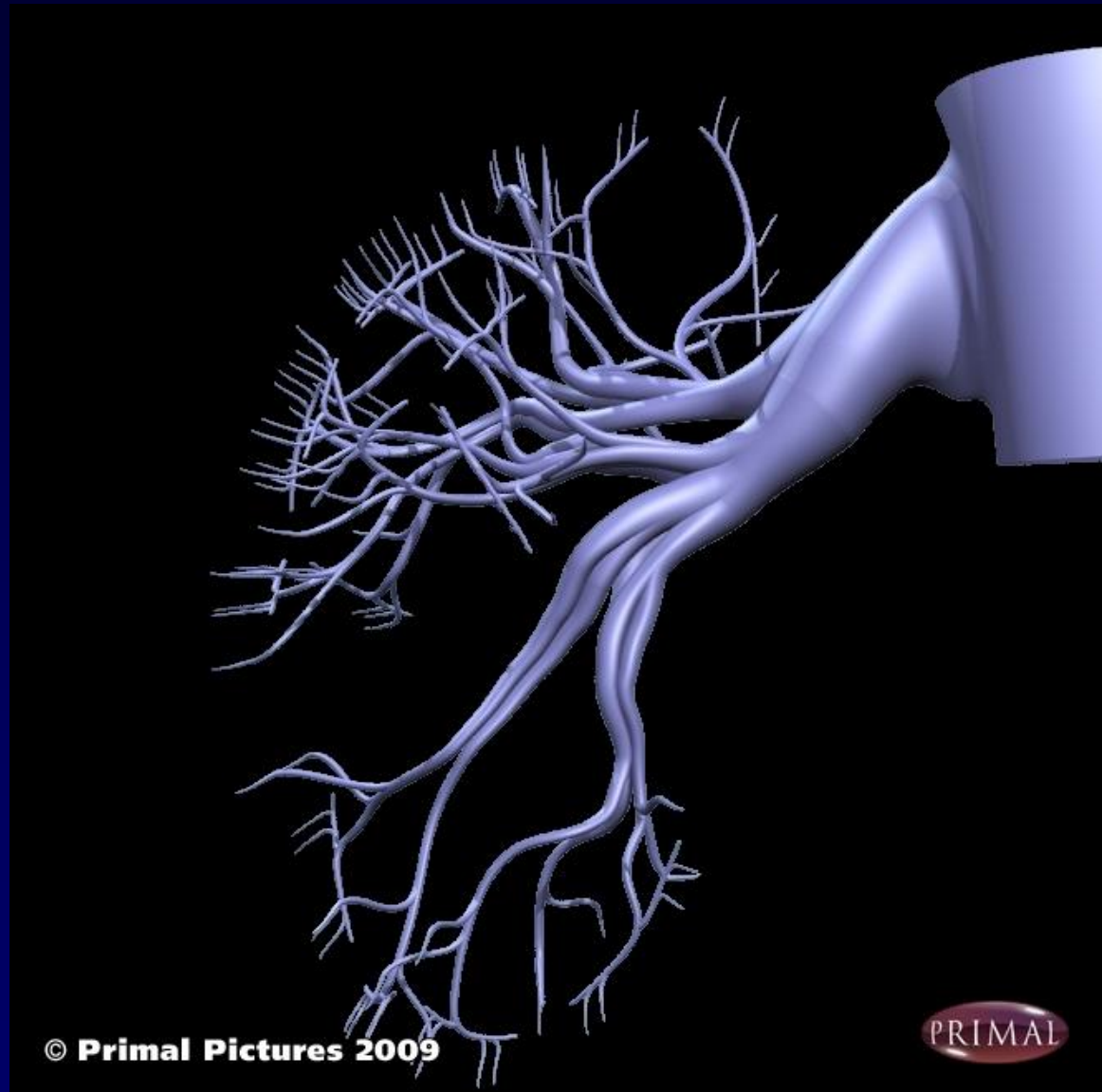


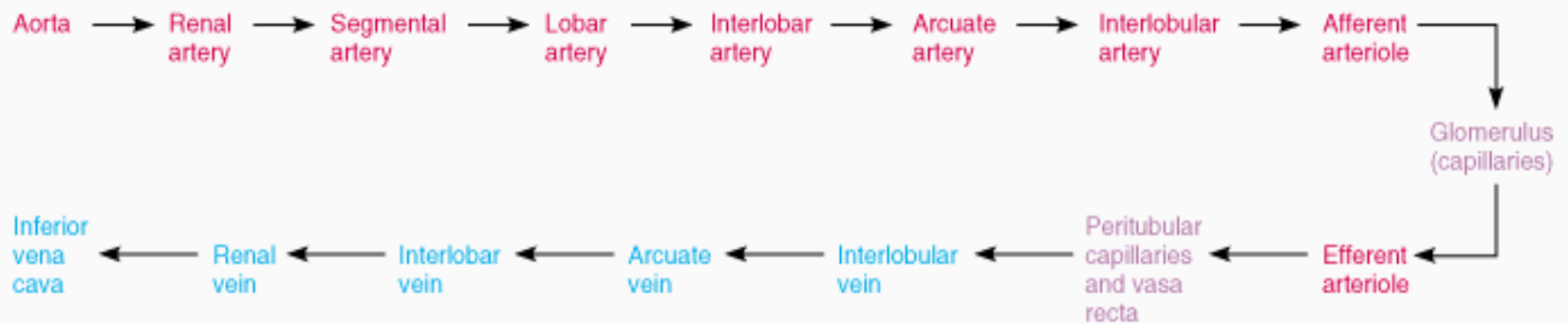
- İnterlobüler a.
- Glomerülün afferent arteriolu
- Efferent arteriol



Renal venler

- Postglomerüler kapiller
- İnterlobular
- Arkuat
- İnterlober
- Lober
- Segmental venler
- Ana renal ven

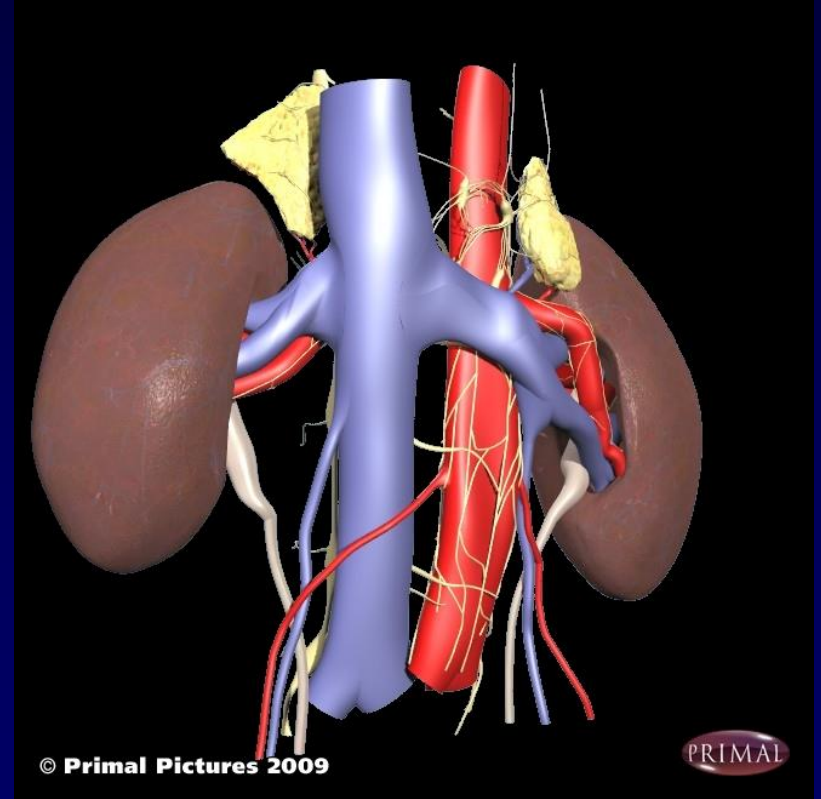




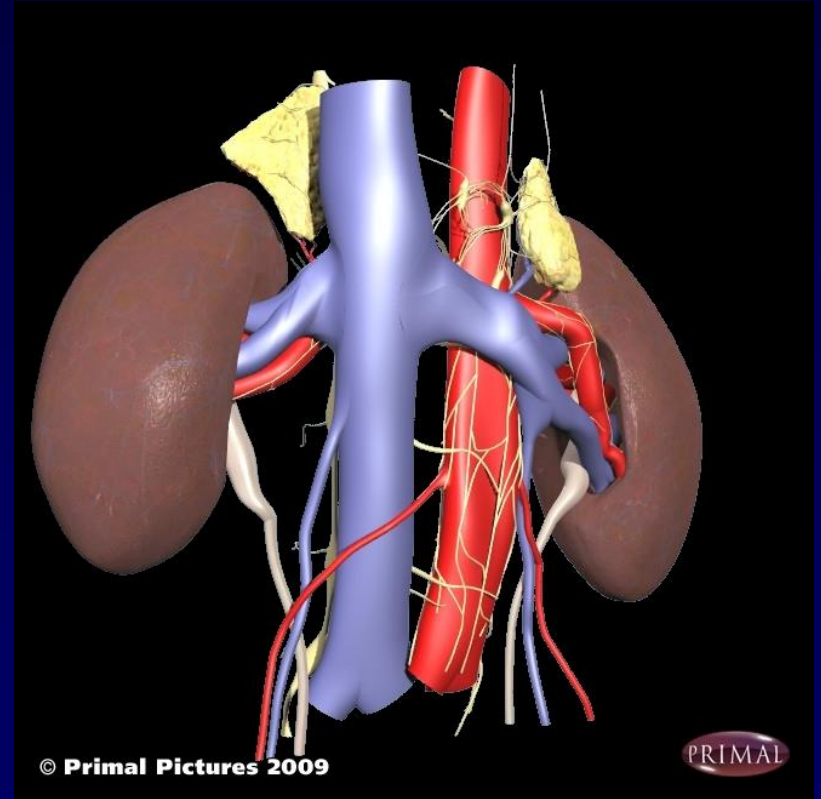
(c)

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- Sađ r.ven kısa 2-4 cm
- Sol r. ven 6-10 cm
- Arter-ven varyasyonları %25-40
- Multiple arter
 - En sık, solda, ektopik
- Multiple ven
 - Sađ renal ven duplikasyonu

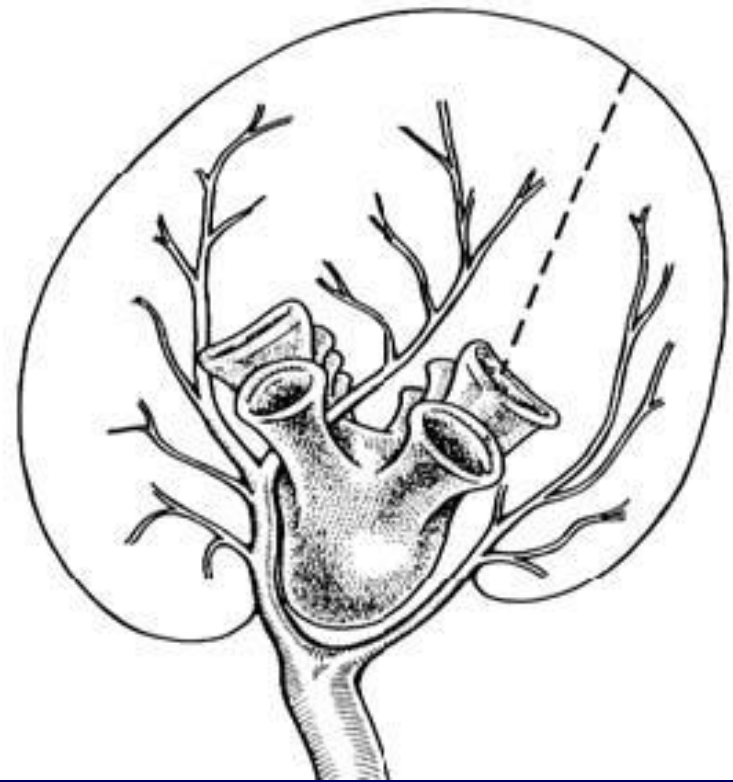
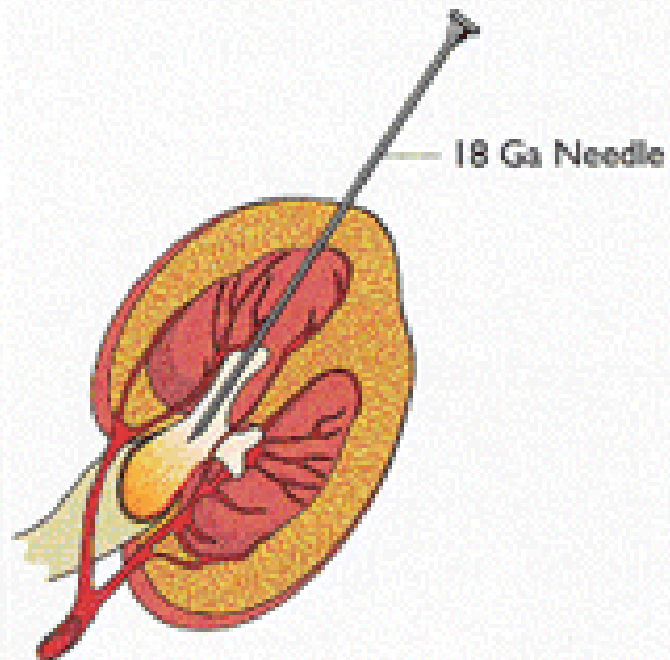


- End arter
- Zengin venöz kollateral yapı
- Perinefrik & subkapsüler pleksus
 - Renal ven obst
 - Sol v. renalis akut lig.
- A. renalis
- Brödel hattı



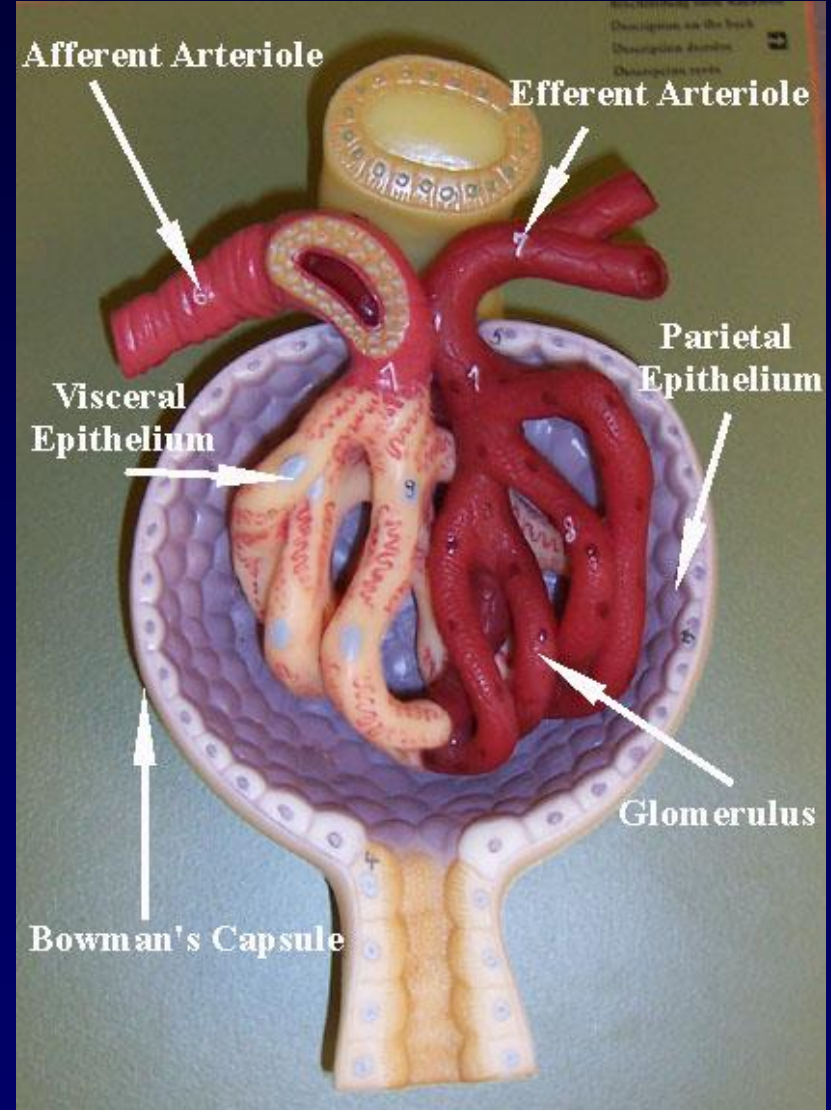
Brödel hattı

PLANE OF ARTERIAL DIVISION

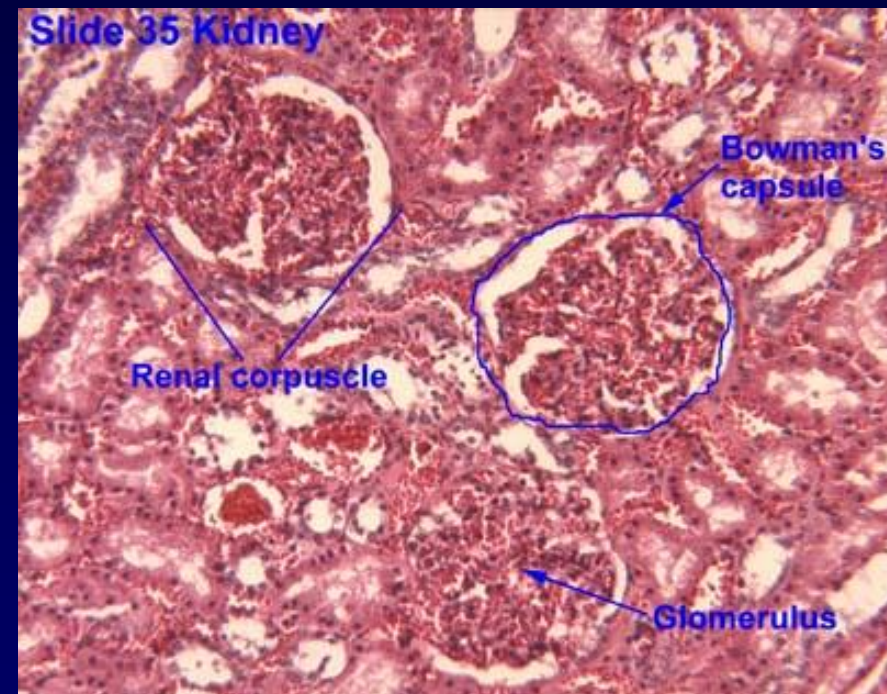
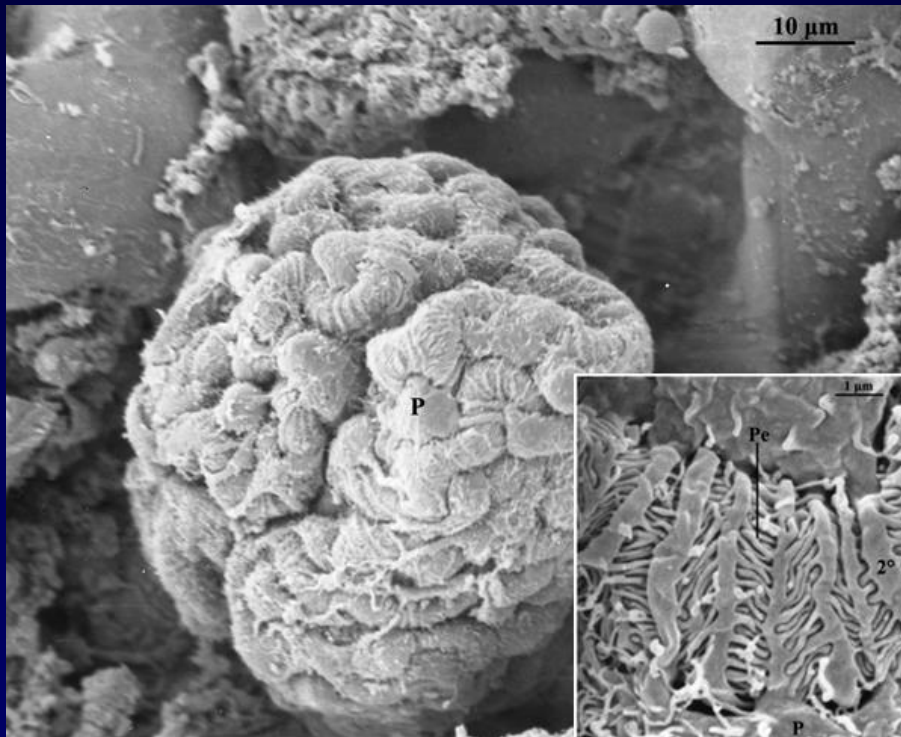


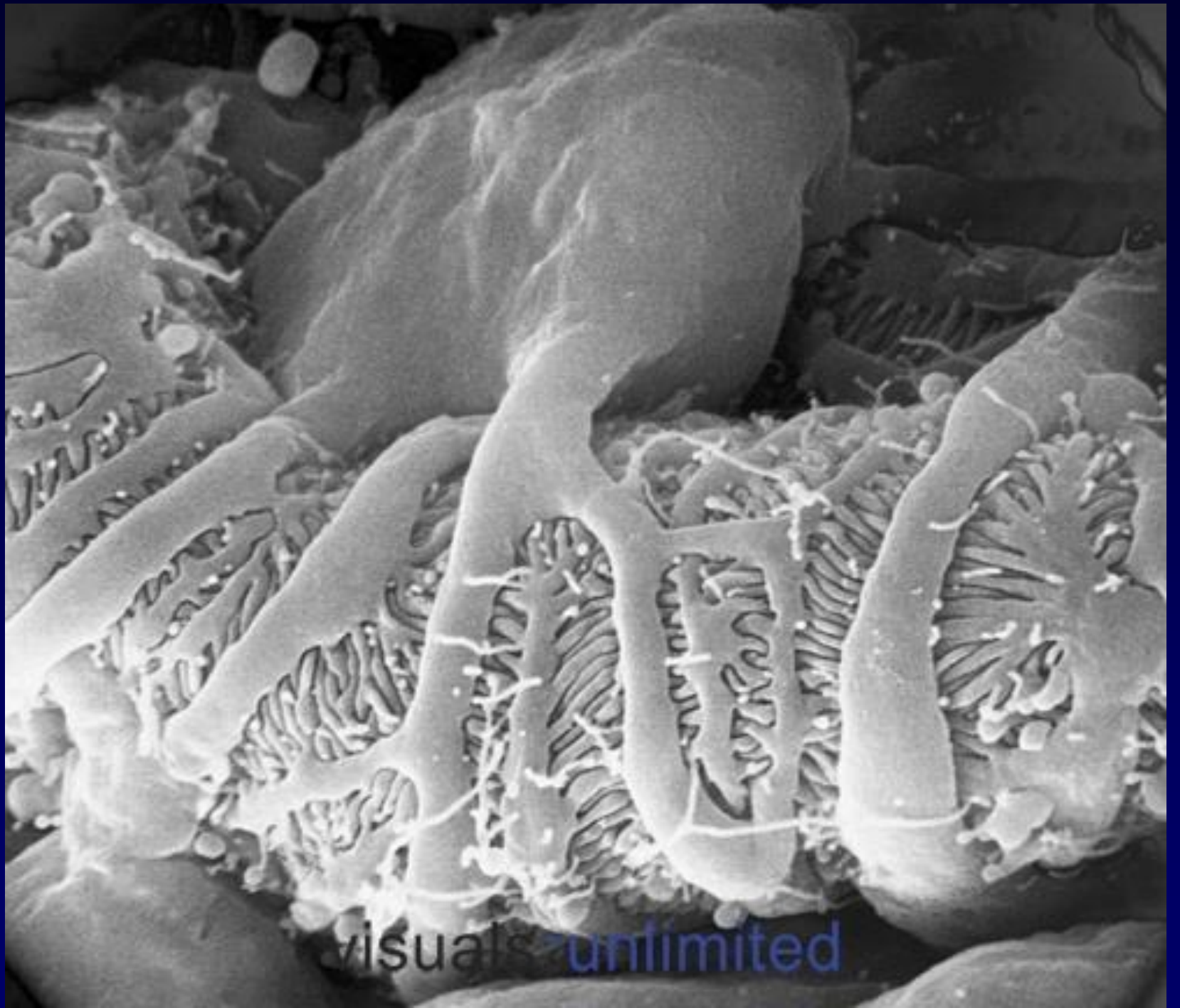
Böbrek toplayıcı sistemi

- Bowman kapsülü ve glomerül
- Glomerüler kapiller ağ + Bowman kapsülü = Renal korpüskül (Malpighi cismi)



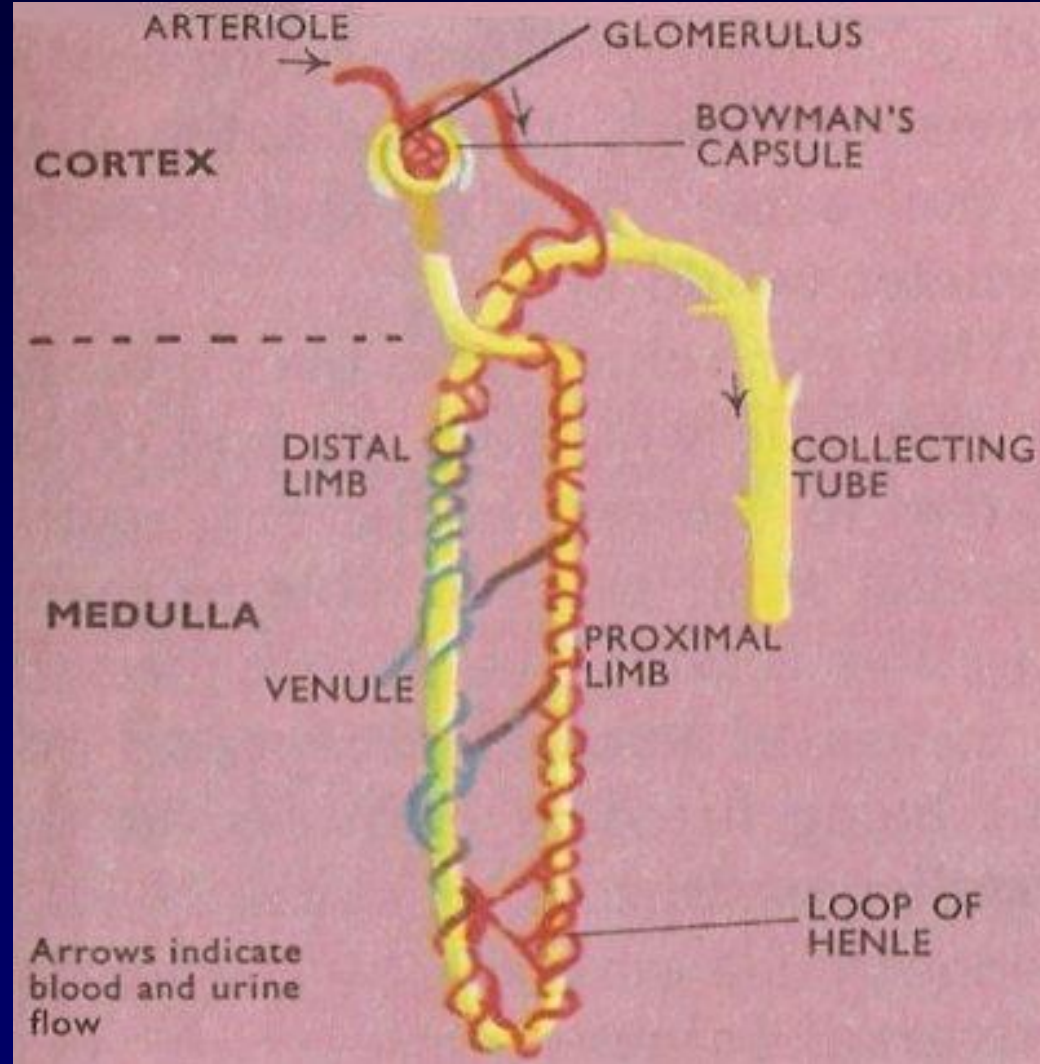
Renal korpüskül



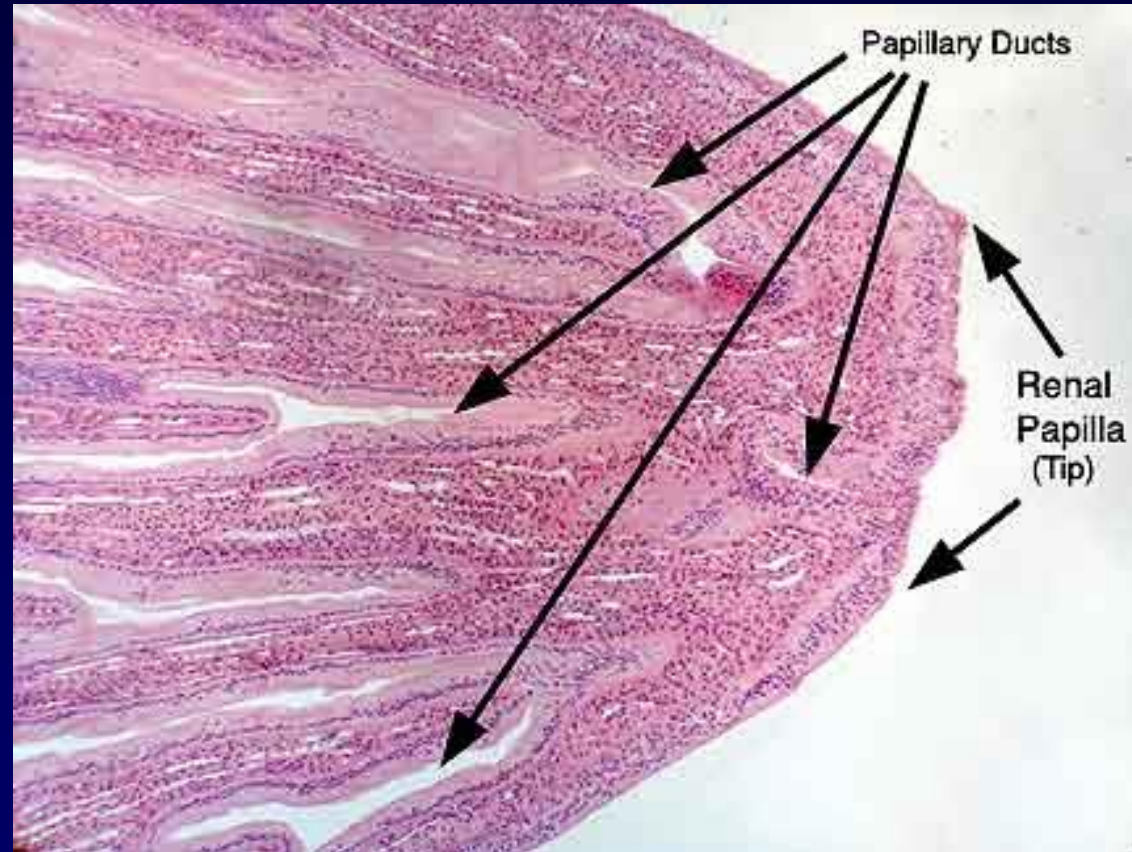


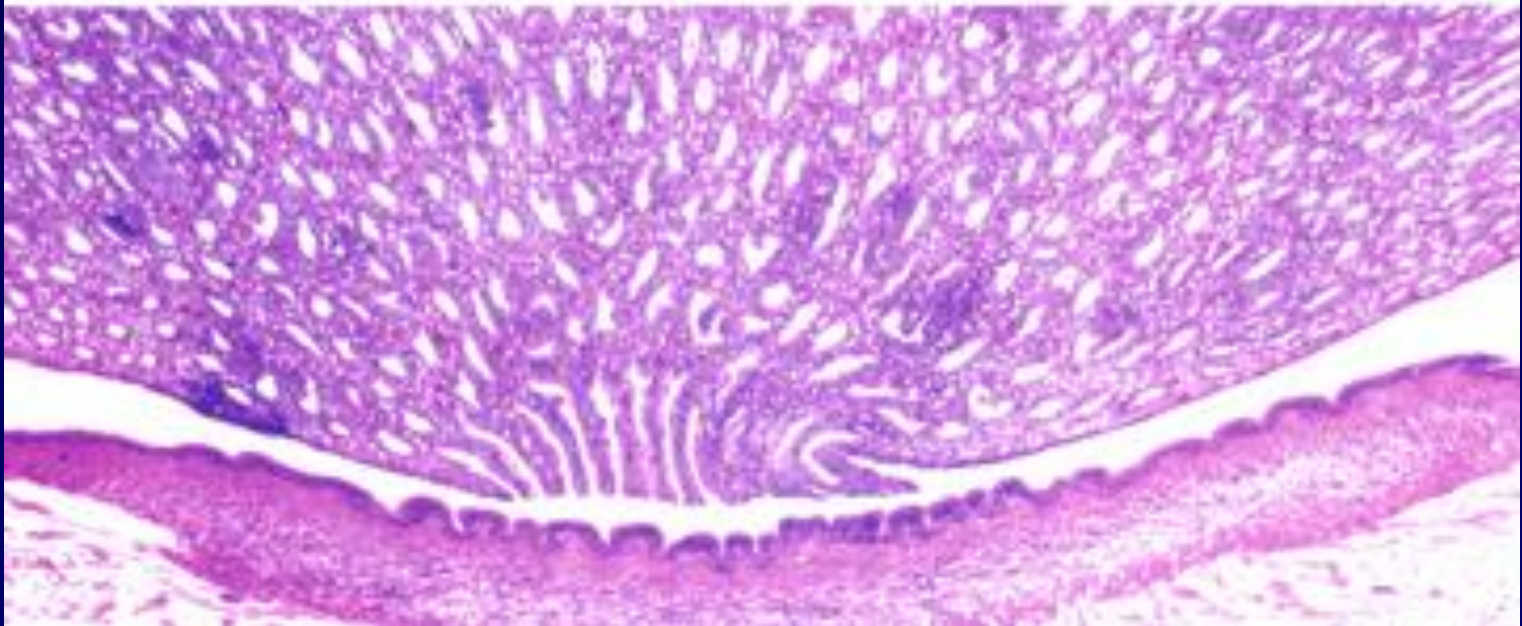
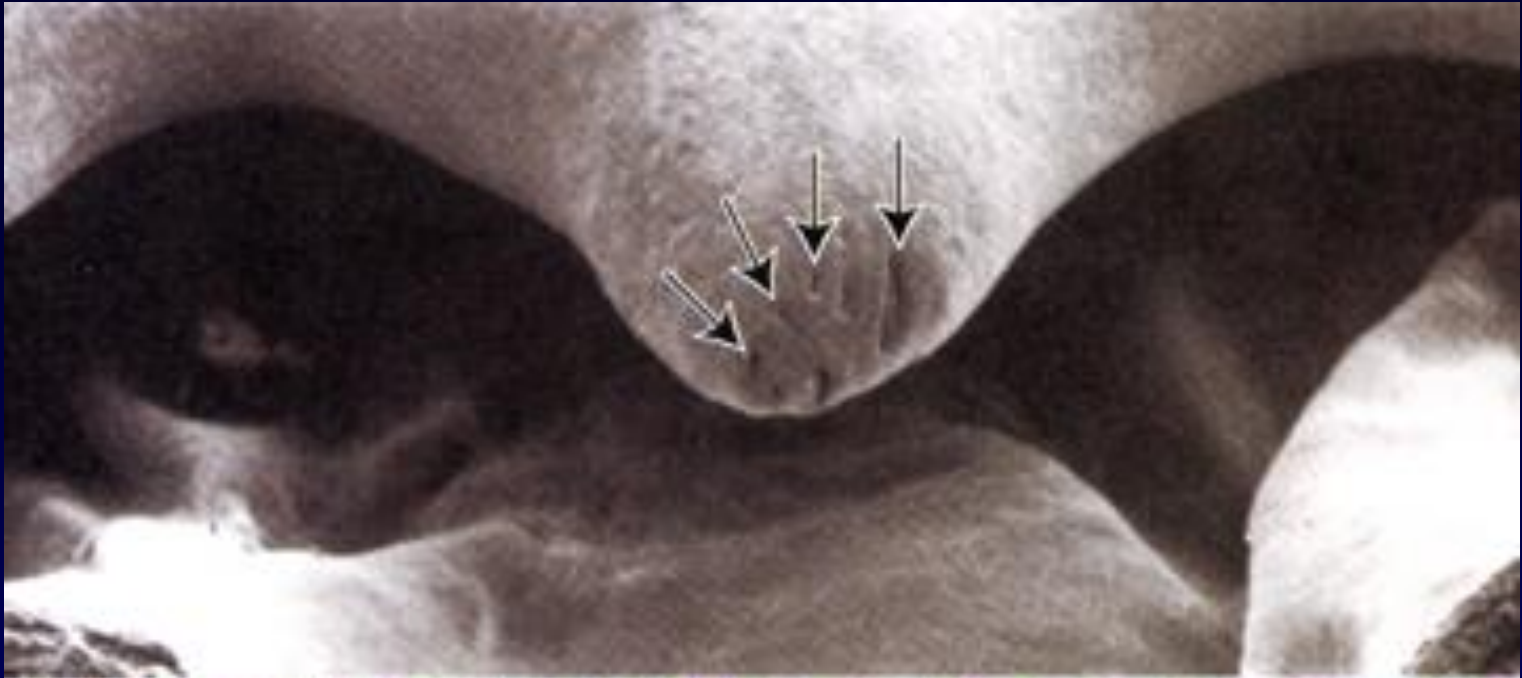
visuals unlimited

- Bowman kapsülü-
proksimal kontorti
tübülü
- Medulla düz bir dal
- Henle loopunun ince
dalı
- Çıkan kolu-distal
kontorti tubülü



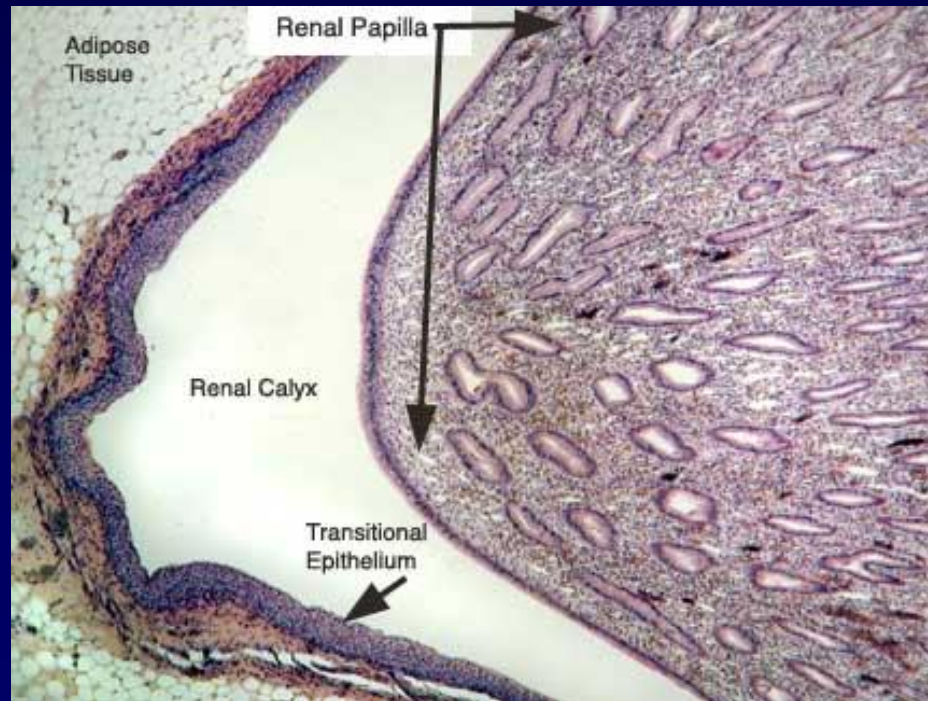
- Üriner filtrat
- Kolektör tubuli
- Renal medulla
- Apeksinde renal papillaya açılır





Renal papilla

- Sayıları 4-18 ort 7-9
- Papilla-minör kalikse



Anterior – posterior kaliks



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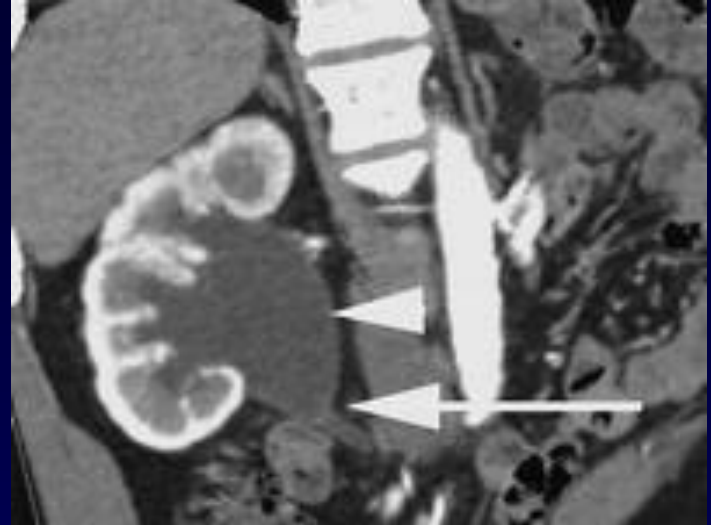
PRIMAL



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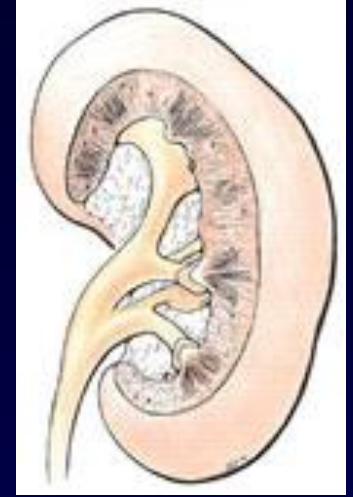
PRIMAL

- Pelvis
 - İnrarenal
 - ekstrarenal
- Kapasite 3-10 ml
- Tabanda parenkim
- Apekte üreter içine piramidal bir yapı



anatomik varyasyonlar

- Renal toplayıcı sistemde ↑
- Sayı pozisyon boy
- Bifid pelvis



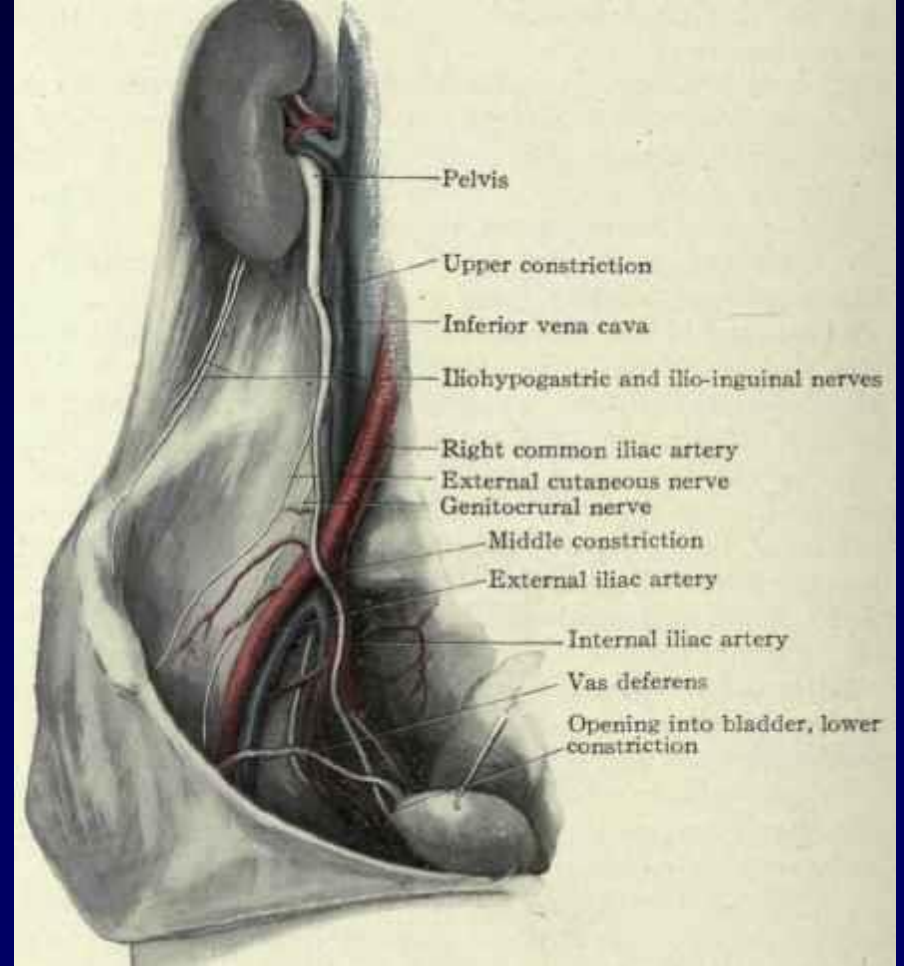
Resim 3: Sol böbrekte bifid renal pelvis

- Üreteral duplikasyon



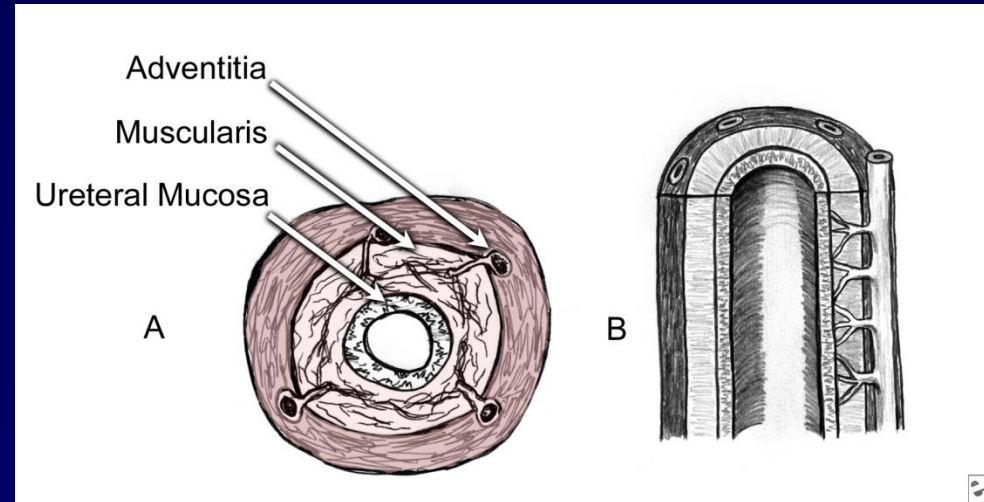
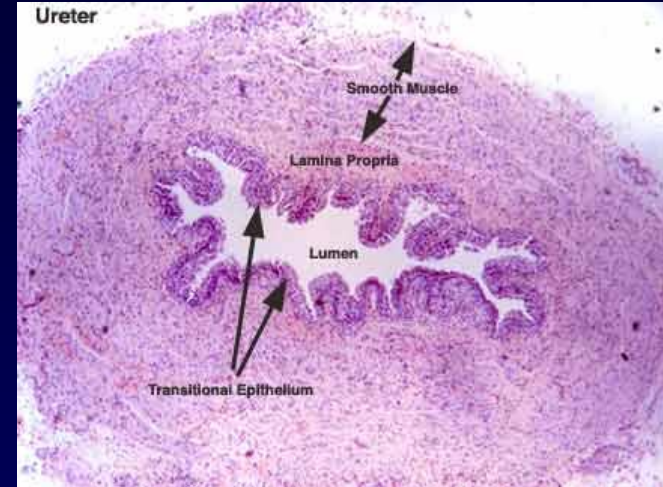
Üreterin seyri

- 22-30 cm uzunluğunda
- Renal pelvisden mesaneye
- S şeklinde



Üreterin mikroskopik anatomisi

- Üreter 3 tabaka
 - Mukoza
 - Tranzisyonel epitel 4-6
 - Lamina propria
 - Muskularis
 - İki longitüdünel
 - Arada orta sirküler
 - Spiral tarzda düzenlenme
 - Seroza (advensisya)
 - En dış tabaka
 - Kan-damar-sinir içeren yoğun kollajen ve elastik lifler
 - Proksimalde r. pelvis kapsülü
 - Distalde Waldeyer kılıfı



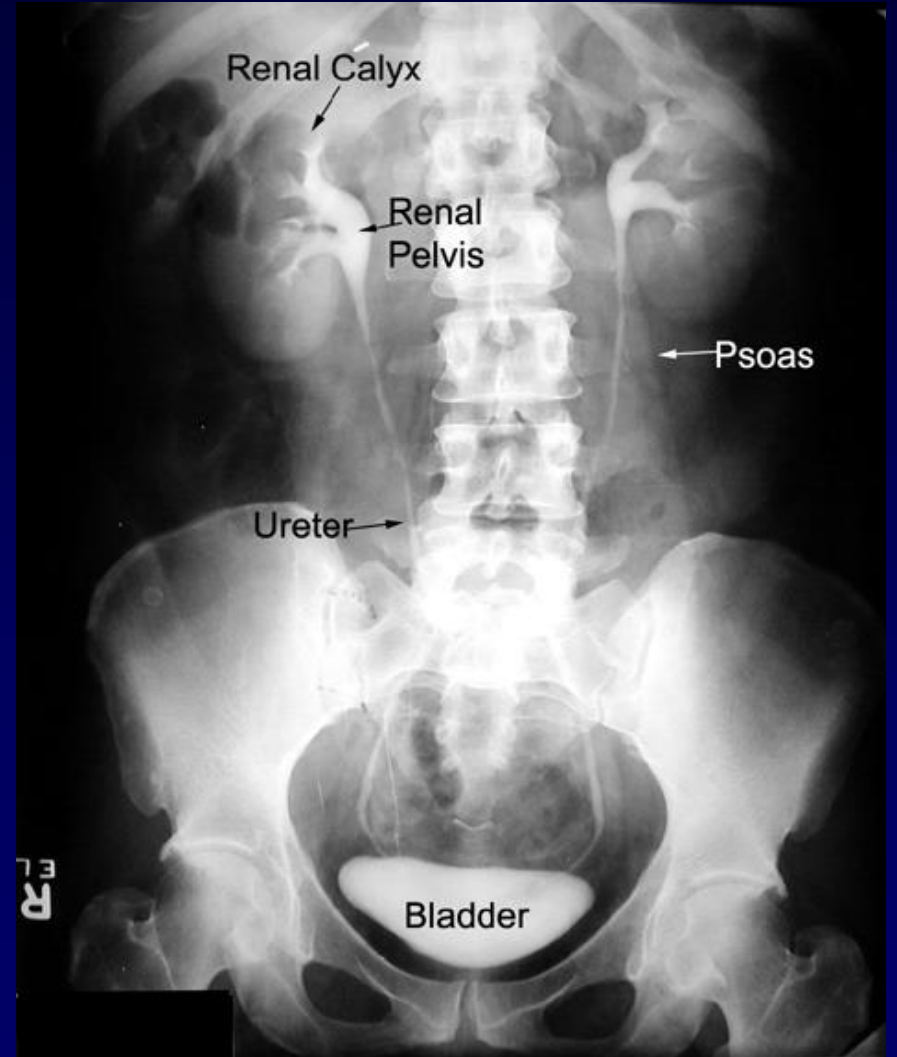
Üreterin kanlanması

- Abdominal üreter
 - Renal arter
 - İlave olarak gonadal, aortik, ranal polar, kapsüler ve adrenal arterlerden dallar
- Pelvik üreter
 - Kommon iliak
 - Eksternal iliak
 - Gluteal
 - Deferansiyel & uterin arter
 - Bazen obturator arter
 - Ek olarak vajinal, superior vezikal, orta rektal arter
- Üst üreterde kanlanma medialden alt pelvik üreterde lateralden
- Üreterin advensiyasında aşağı yukarı seyreder bir çok dal verir ve aralarında anastomoz yapar

- Venöz ve lenfatik drenaj
 - Arteriyel dağılıma paralel
- Pelviste
 - İnternal
 - Eksternal
 - Komminikal iliak
- Üst üreter ve pelvis
 - İpsilateral böbrek lenfatikleri

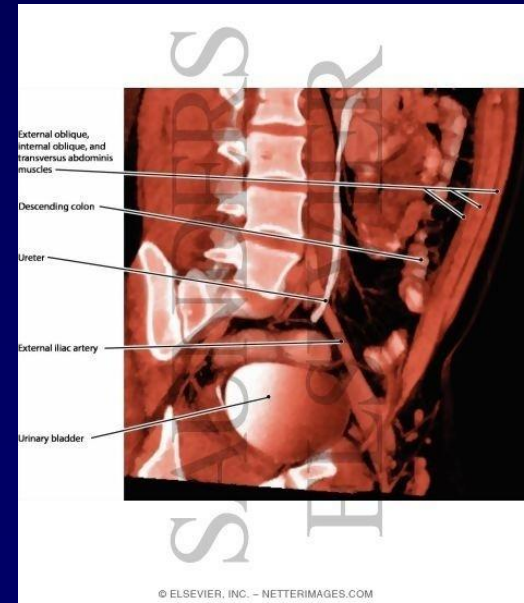
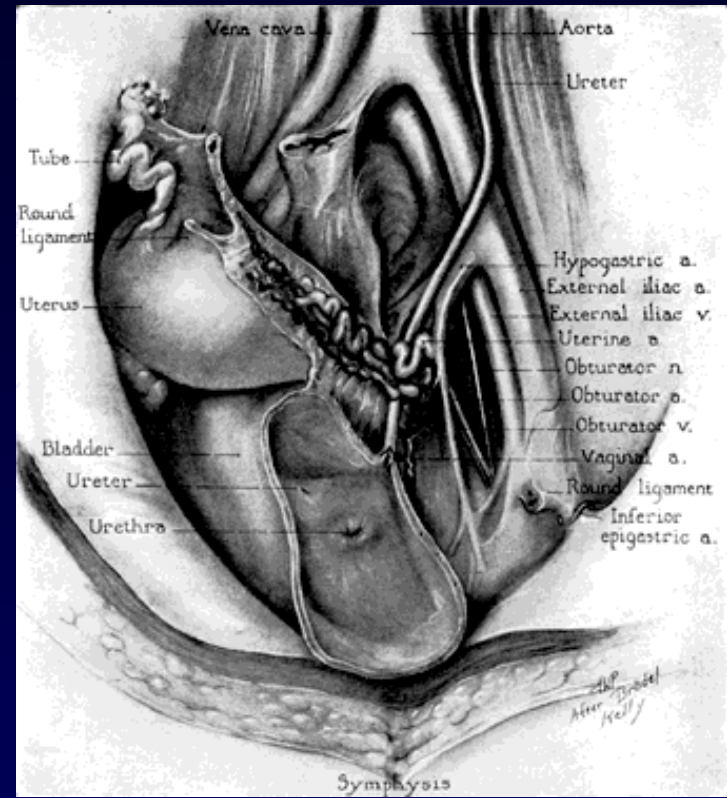
Abdominal üreter

- UPJ'da renal pelvisden başlar
- Psoas kası medialinde
- Parietal peritonla örtülür
- Kommon iliak damar bifurkasyonunun terminal parçası veya eksternal iliak
- Lumbar parça 8 cm
- İliak parça 8 cm



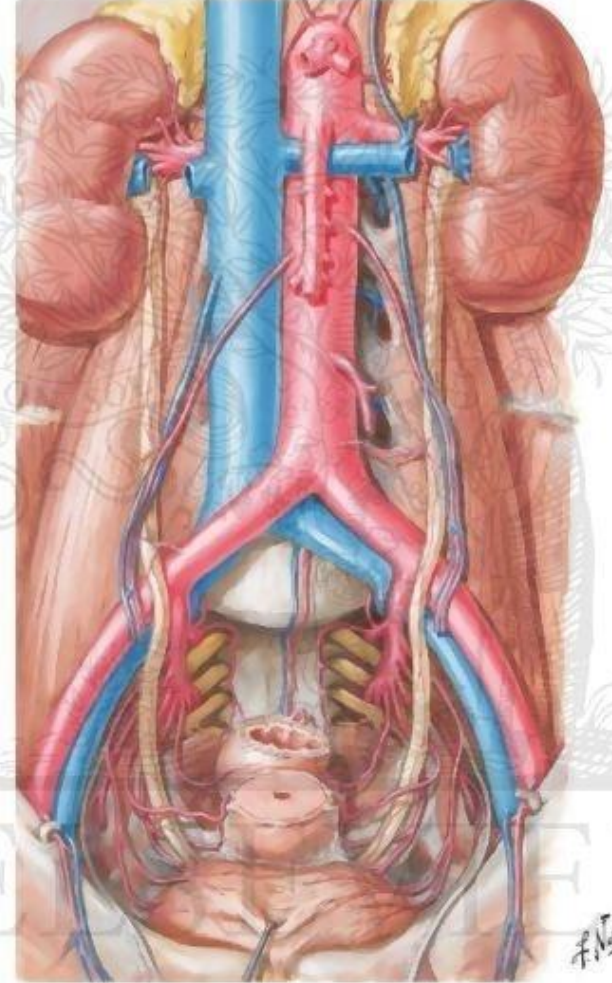
Pelvik üreter

- İliak damar üzerinde 5 cm
- Aşağı lateral pelvik duvar
- Grater skiyatik notch alt ucunda tekrar mediale
- Mesane laterali
- Mesane duvarı 2 cm oblik

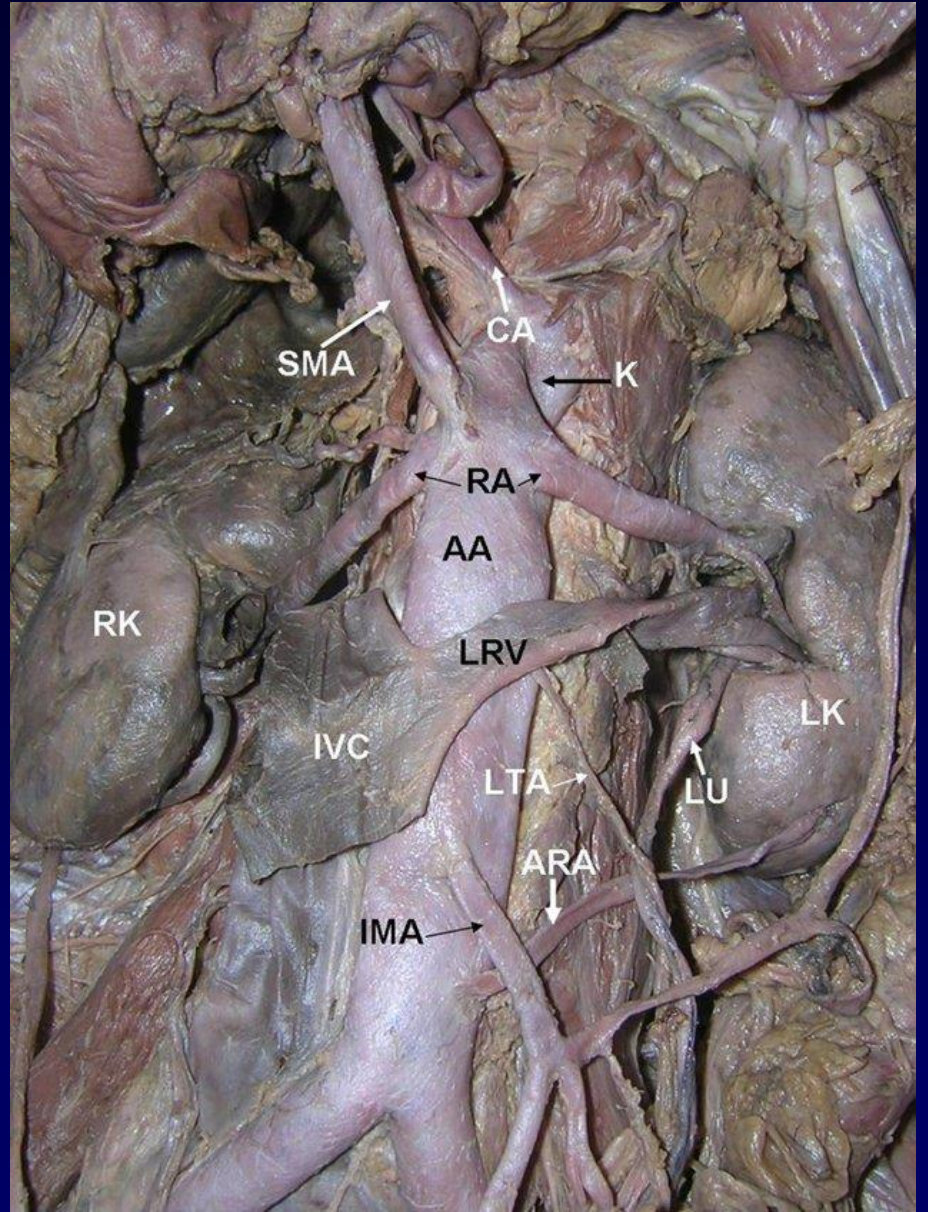


Anatomik iliřkiler

- Saę ureter
 - Duodenum inen parçası
 - İnferior v.cava'nın lateralinde
 - Gonadal damarları oblik
 - Saę kolik ve ilekolik damarlar
 - Terminal ileum ve mezenterin kaudal parçası



- Sol üreter
 - Jejenumun ilk parçası
 - Gonadal venlere paralel-çaprazlar
 - Sol kolik damar
 - Pelvisde sigmoid kolonla mezokolonu çaprazlar

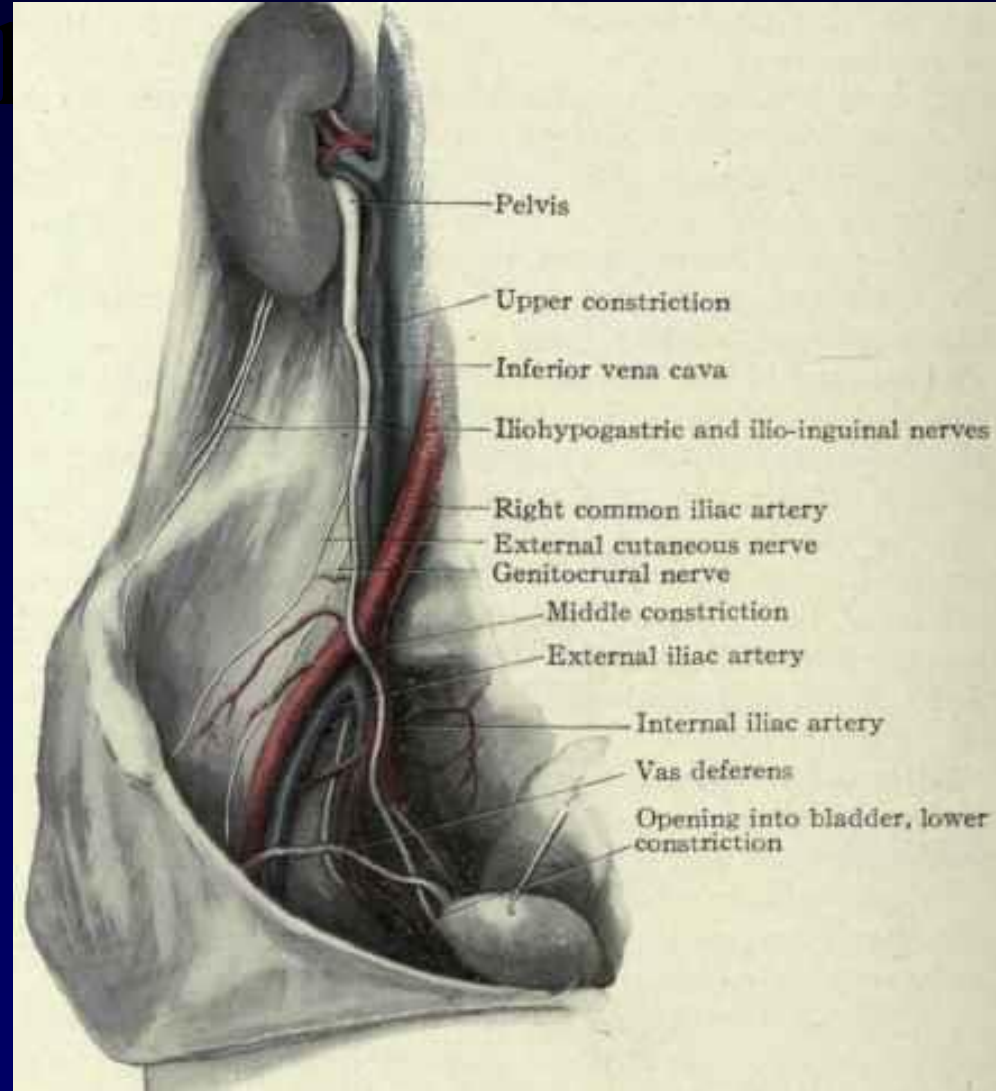


- Arkada
 - Psoas major kası üzerinde
 - Genitofemoral siniri çaprazlar
 - 3-5. lomber vertebra transvers çıkıntısının lateralinde
- Üreterin pelvik kısmı
 - Üst parçası sakral vertebra
 - Alt parçası iskial spine
 - Koksiksin ucunda mesane içinde
- Sağda apendix
- Solda sigmoid mezokolon

Pelvis

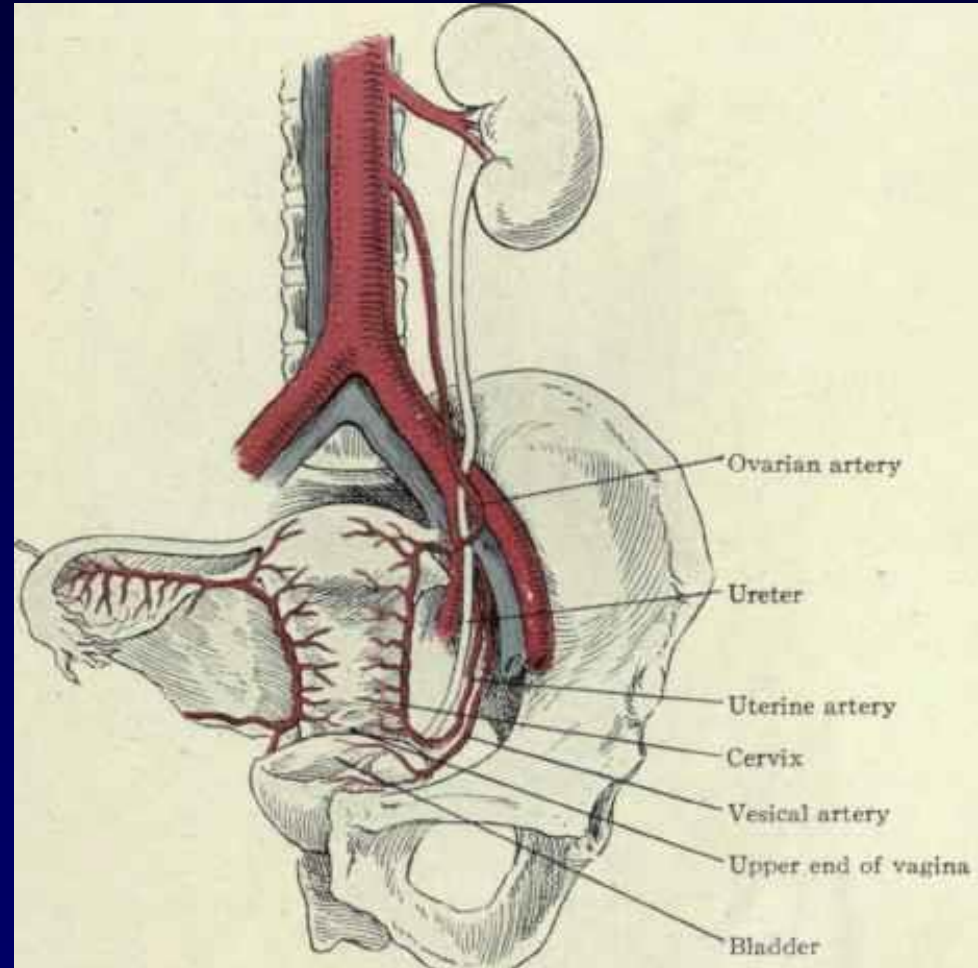
- Erkeklerde

- İnternal iliak arterin önünden pelvise girer
- Obturator damar, sinir, umbilikal arter ve superior vezikal arteri çaprazlar
- Hipogastrik sinir dallarıyla medial bir dönüş
- Mesaneye girmeden vas deferensini çaprazlar
- Seminal veziküllerin önünde ve üzerinde
- mesane

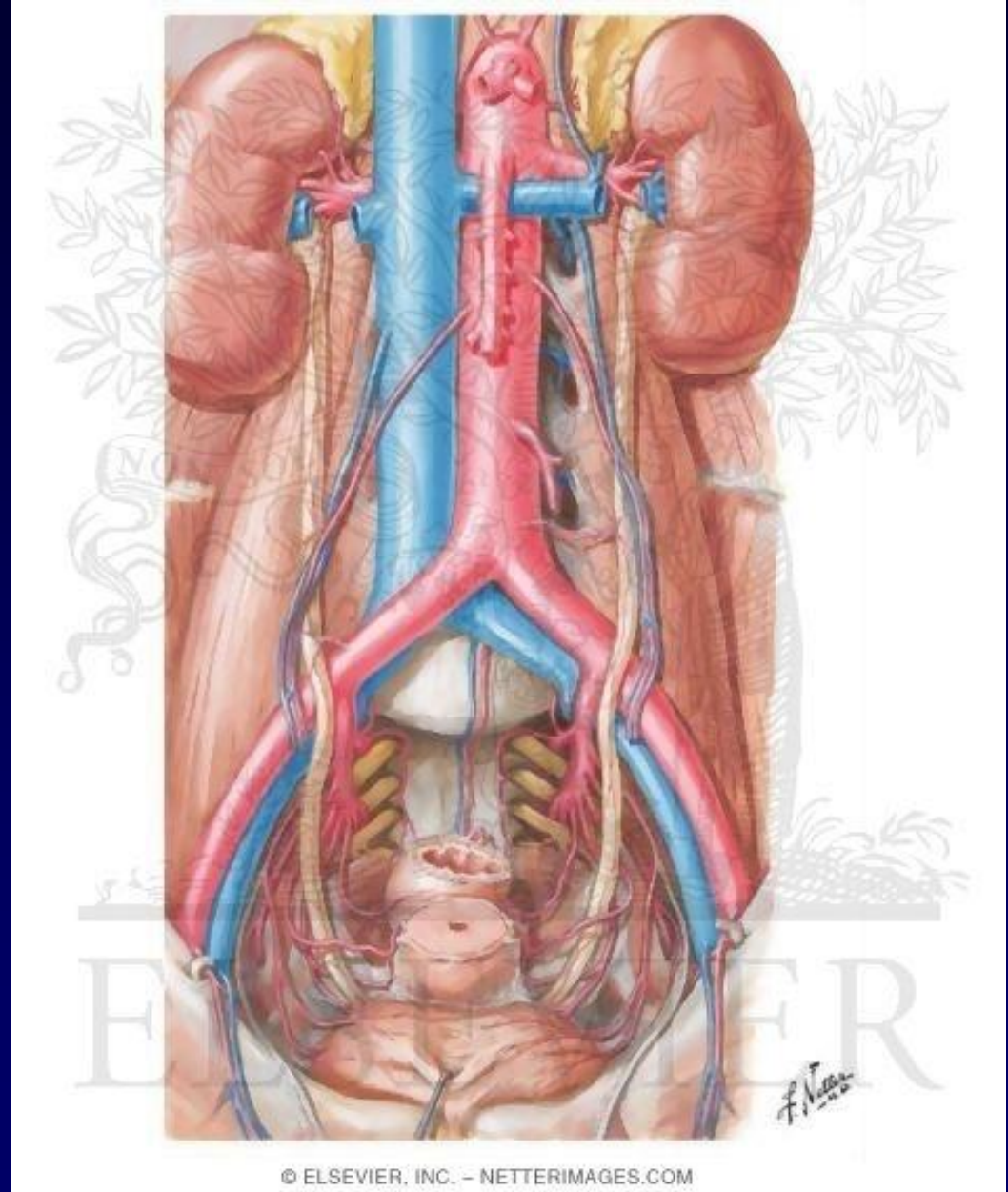


- Kadınlar

- Ovarian venin medialinde
- Uterin arteri çaprazlar
- Broad ligament tabanı boyunca geçer uterin arterin altında çaprazlar 1-2.5 cm
- Serviksin supravajinal kısmında lateral seyrederek
- Mesanenin lateral ligamentinden mediale aşağı döner
- Vajinanın önünden mesaneye



- Üreteral darlıklar
 - ÜP bileşke
 - İliak damar çaprazı
 - İntramural
 - En dar
- Anatomik olarak
 - Abdominal
 - pelvik



Üretral çap

SEVİYE	ÇAP (mm)	GENİŞLİK (F)
İntramural	1.5-3	5-9
Pelvis	4	12
Abdomen	5-6	15-18
UPJ	2-4	6-12

Böbrek sinirleri

- Sempatik
 - Preganglionik Th8-L1
 - Postganglionik
 - Çöliak
 - aortikorenal
- Parasempatik
 - Vagustan-renal otonomik pleksus
 - Efferent sinir böbrek içinde sonlanır
- vasokonstriksiyon

Üreter sinirleri

- Sempatik
 - Preganglionik semp girdisini Th10-L2
 - Postganglionik
 - Aortikorenal superior
 - İ inferior hipogastrik
- Parasempatik
 - S2-4 segmentlerden