



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : NEPHROLOGY

UNIT : GENITO URINARY SYSTEM

**TOPICS : HISTOPATHOLOGY OF KIDNEY, URETERS,
URINARY BLADDER AND URETHRA**



KIDNEY



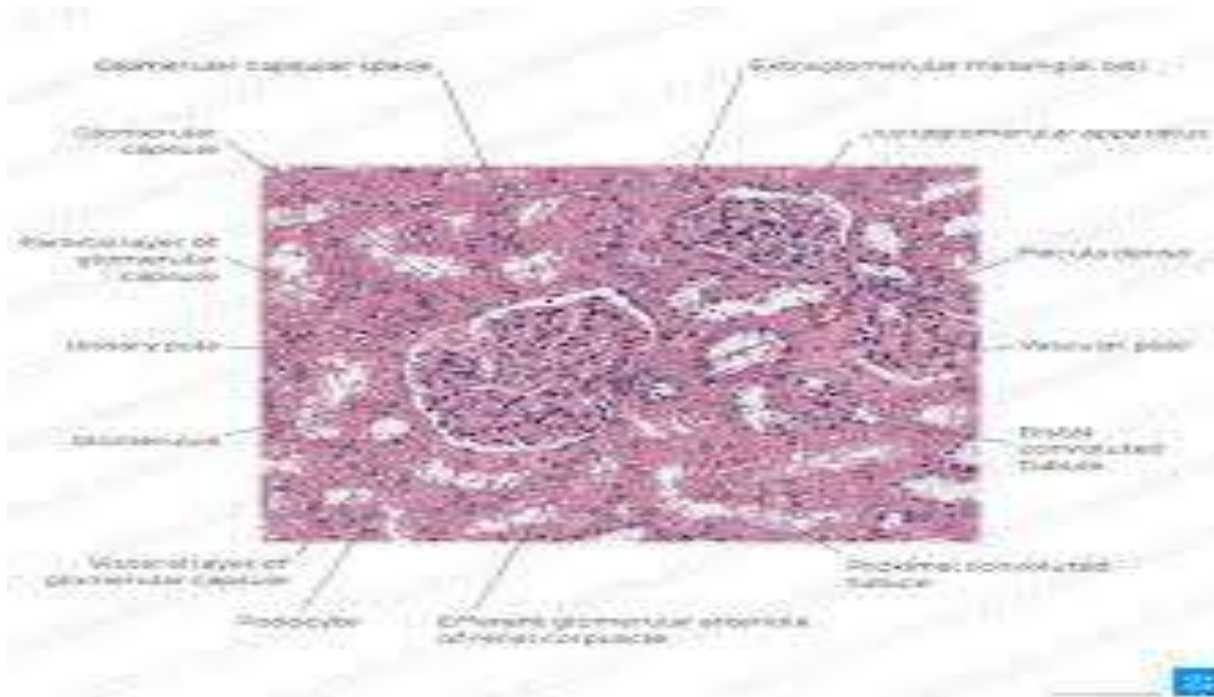
Glomerular Diseases:

- **Glomerulonephritis:** Characterized by inflammation and damage to the glomeruli, leading to proteinuria, hematuria, and decreased kidney function.
- Subtypes include IgA nephropathy, membranous nephropathy, and focal segmental glomerulosclerosis (FSGS).



Diabetic Nephropathy:

- Associated with diabetes mellitus, featuring glomerular basement membrane thickening, mesangial expansion, and nodular glomerulosclerosis (Kimmelstiel-Wilson nodules).





Tubulointerstitial Diseases

- Acute Tubular Necrosis (ATN): Tubular injury characterized by epithelial cell necrosis, loss of brush border, and tubular casts, often caused by ischemia or nephrotoxins.



Chronic Interstitial Nephritis:

- Chronic inflammation and fibrosis of the renal interstitium, leading to tubular atrophy and loss of renal function. Common causes include chronic infections, autoimmune diseases, and drug-induced injury.



Vascular Diseases:

- Arterionephrosclerosis: Thickening and hyalinization of arteriolar walls, commonly associated with hypertension and aging.
- Thrombotic Microangiopathy: Characterized by microvascular thrombosis and endothelial injury, seen in conditions like hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP).



URETER

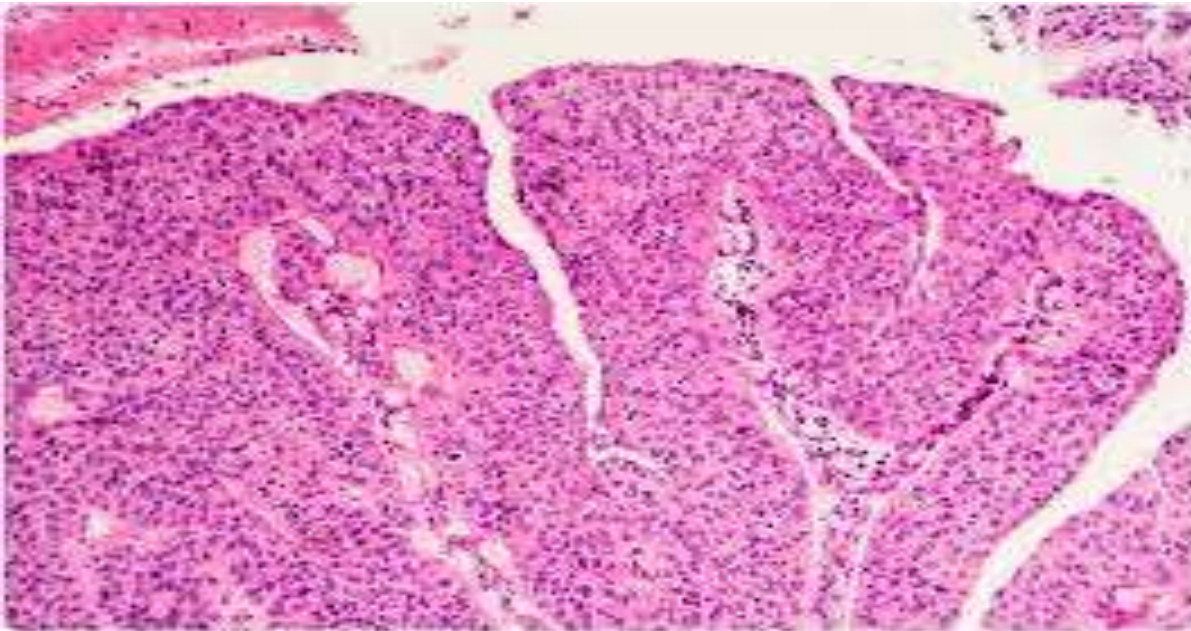


Inflammatory Conditions:

- Ureteritis: Inflammation of the ureter, often secondary to urinary tract infections or autoimmune diseases, characterized by edema, lymphocytic infiltration, and mucosal ulceration.



- Ureteral Obstruction: Structural blockage of the ureter, leading to hydronephrosis, dilation of the ureter, and secondary changes such as smooth muscle hypertrophy and fibrosis.





Neoplastic Conditions:

- Transitional Cell Carcinoma (TCC): Malignant proliferation of urothelial cells lining the ureter, presenting as papillary or infiltrating tumors with varying degrees of differentiation and invasion into the muscular layer.

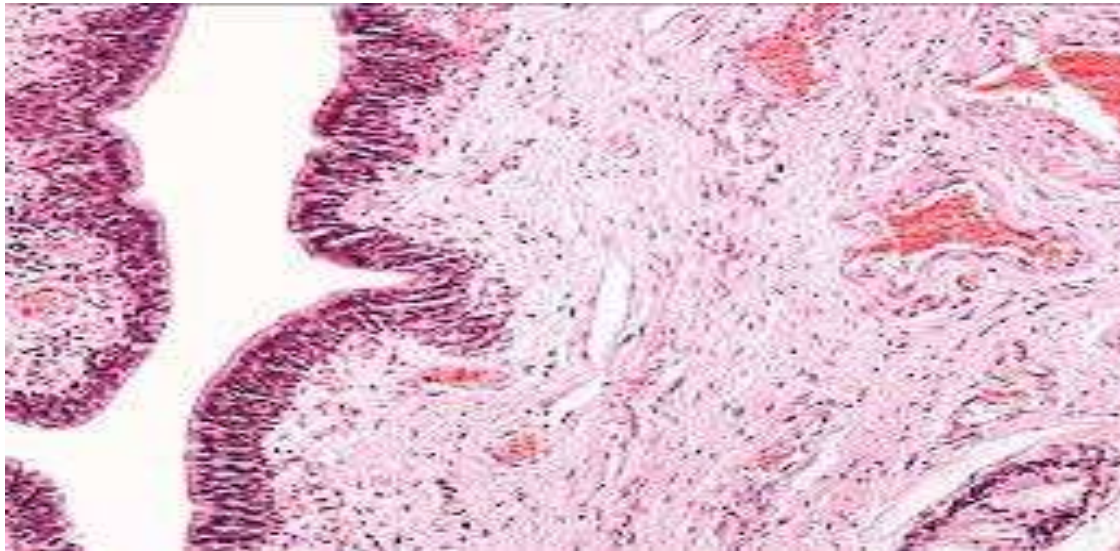


URINARY BLADDER



Non-Neoplastic Conditions:

- **Cystitis:** Inflammation of the bladder wall, characterized by edema, inflammatory cell infiltration, and epithelial changes such as ulceration or hyperplasia.
- **Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS):** Chronic inflammatory condition of the bladder, featuring urothelial denudation, submucosal hemorrhage, and fibrosis.





Neoplastic Conditions:

- Urothelial Carcinoma: Malignant proliferation of urothelial cells lining the bladder, presenting as papillary or flat lesions with varying degrees of differentiation and invasion into the muscularis propria.



URETHRA



Non-Neoplastic Conditions:

- Urethritis: Inflammation of the urethra, often due to infectious agents such as bacteria or viruses, characterized by epithelial ulceration, edema, and inflammatory cell infiltration.
- Urethral Stricture: Narrowing of the urethral lumen, typically caused by fibrosis and scarring, leading to obstructive urinary symptoms.





Neoplastic Conditions:

- Urethral Carcinoma: Malignant proliferation of urothelial or squamous cells in the urethra, presenting as papillary, nodular, or infiltrating tumors with varying degrees of differentiation and invasion.



ASSESSMENT



- What is the Histopathology of Kidney ?
- What is the Histopathology of Urinary Bladder ?