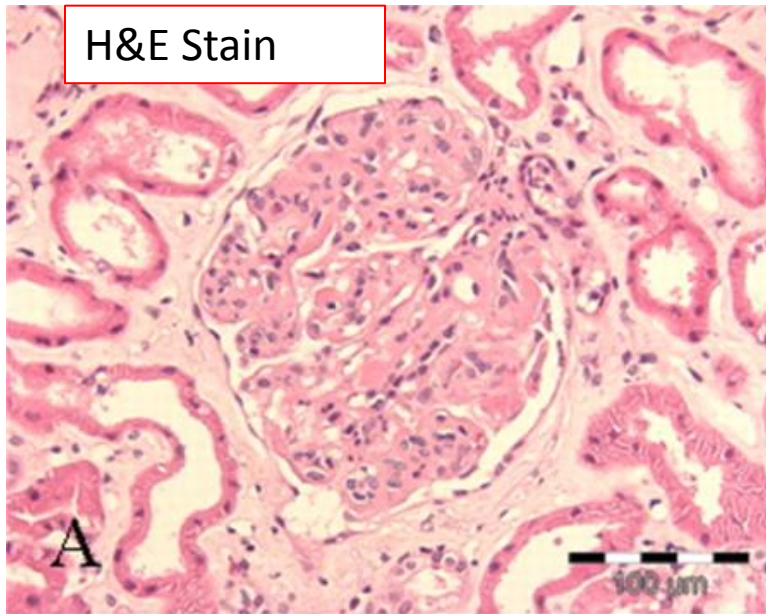
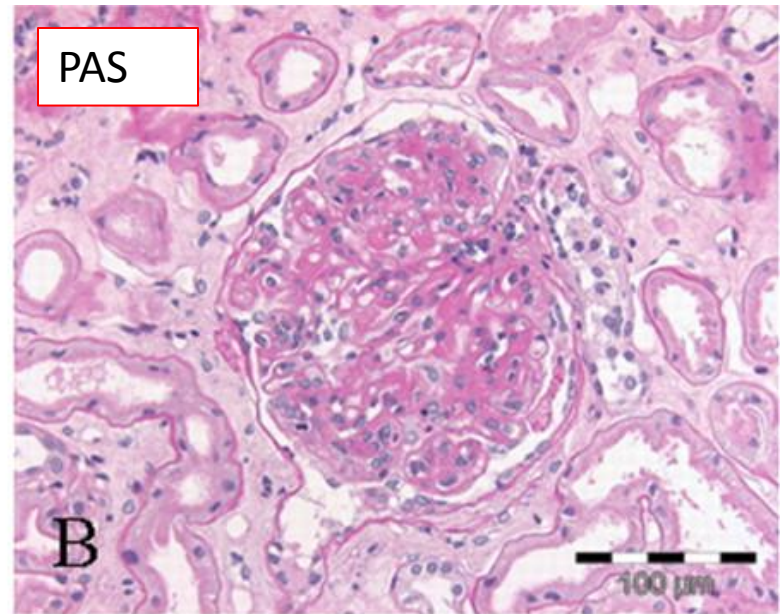


Light Microscopy Basics

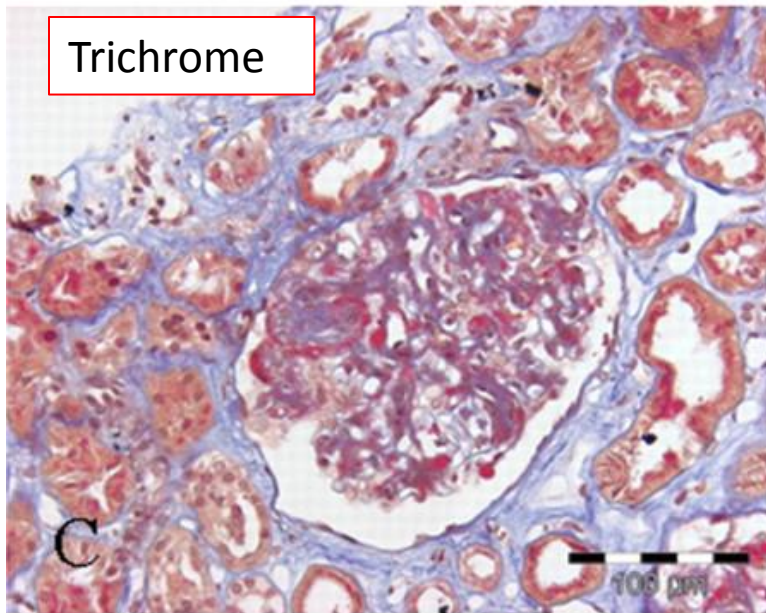
H&E Stain



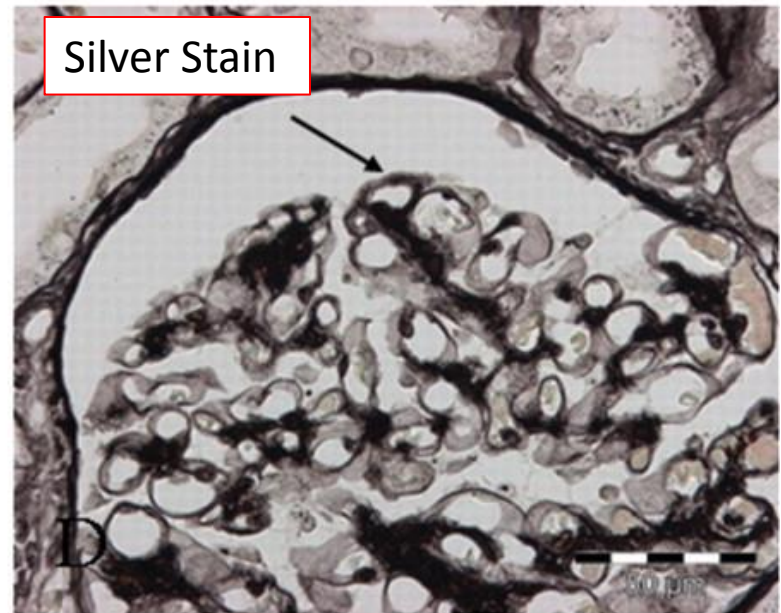
PAS



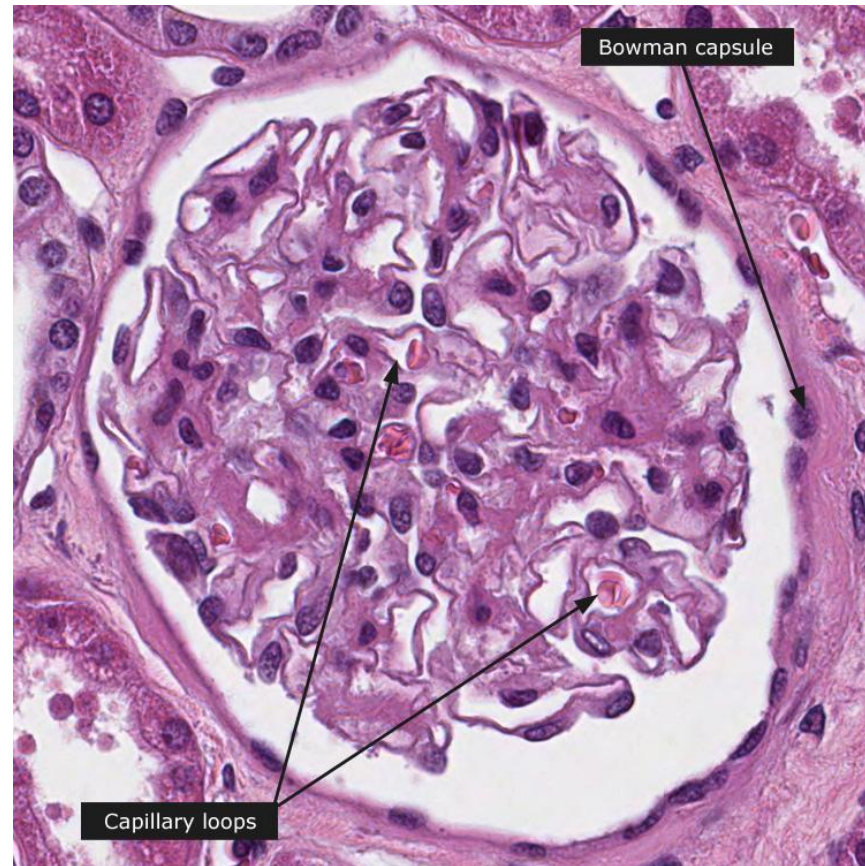
Trichrome



Silver Stain

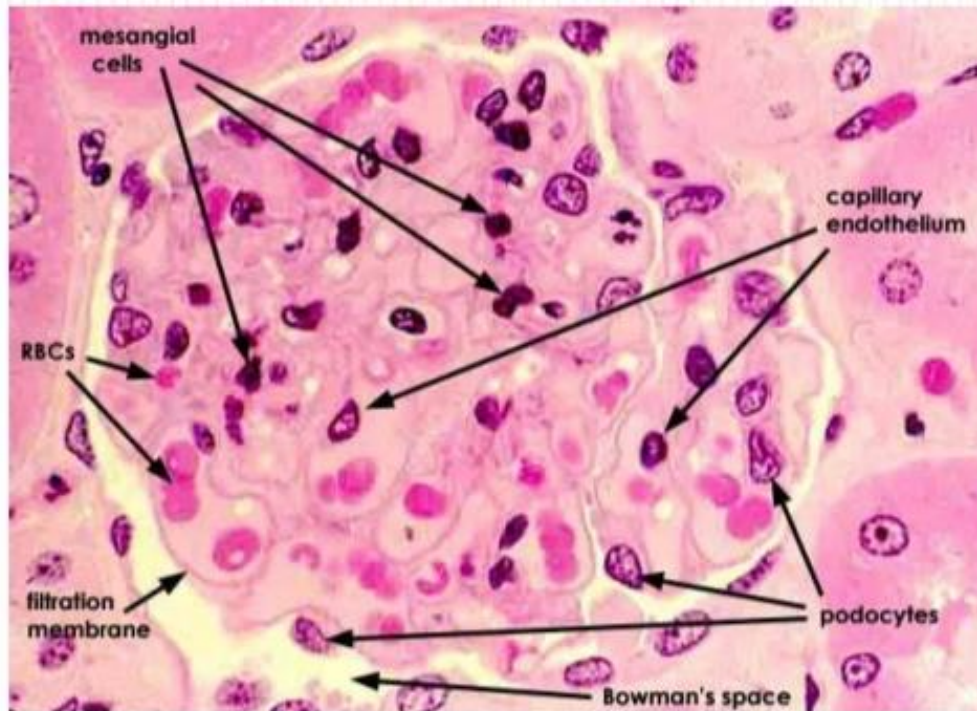


Normal H&E Stain



Normal H&E Stain

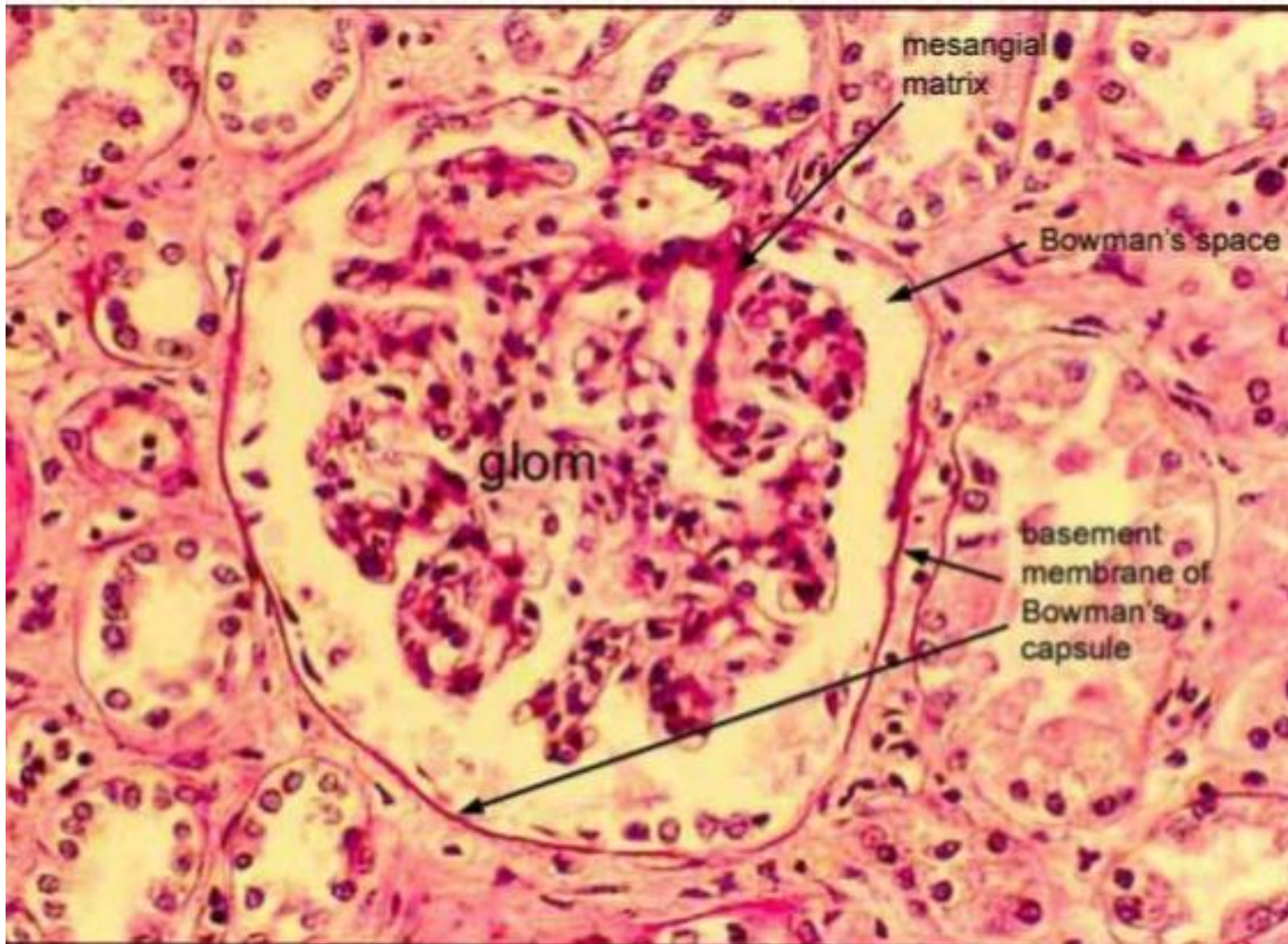
Normal = No more than 3 mesangial cells



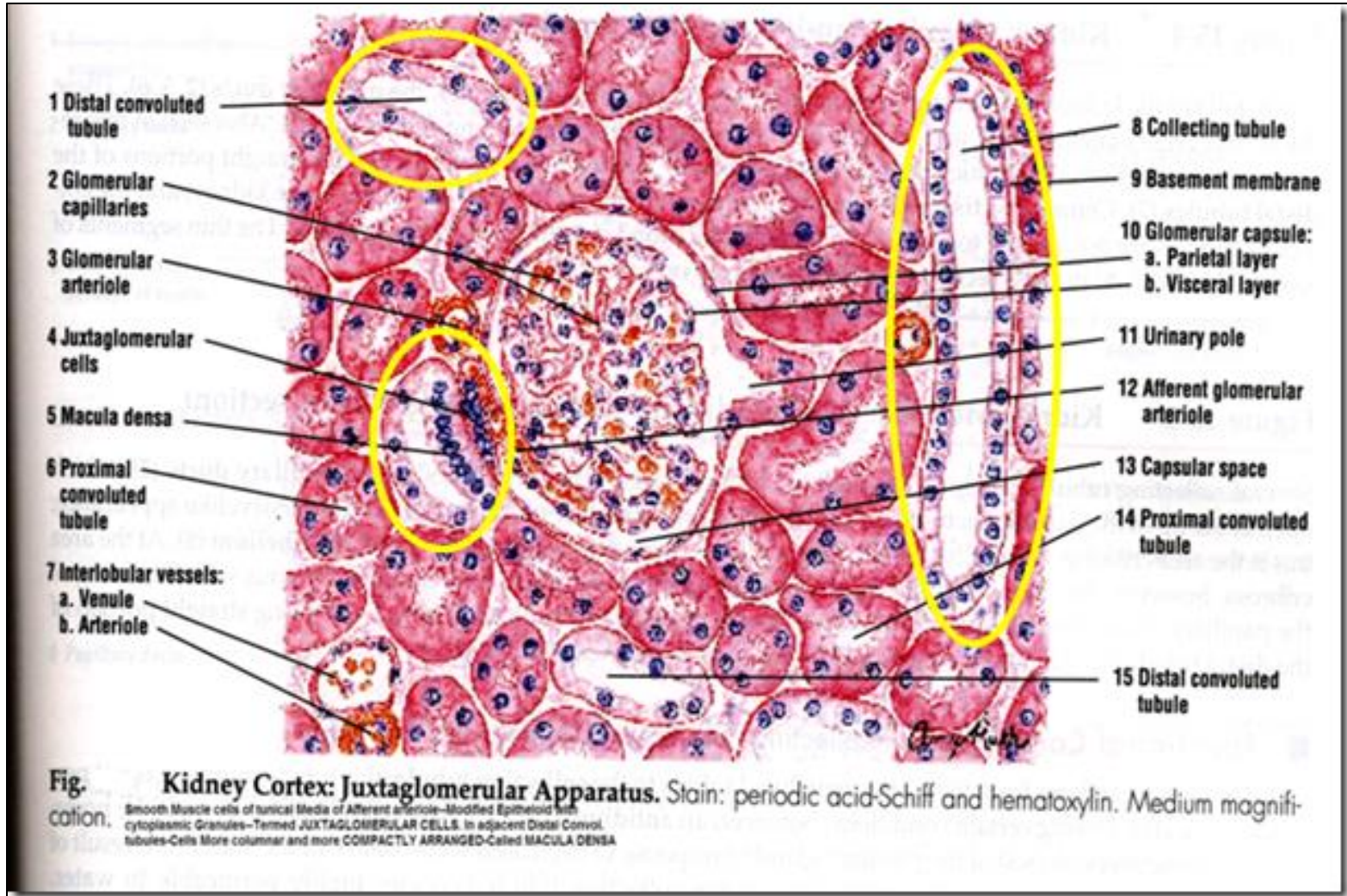
- Podocyte cell bodies nuclei are relatively large and euchromatic.
- Mesangial cell nuclei are relatively small, irregular in shape, and heterochromatic

Normal PAS Stain

(Periodic-Acid Schiff – stains glycogen)



Normal PAS



Membranous Nephropathy

PAS Stain

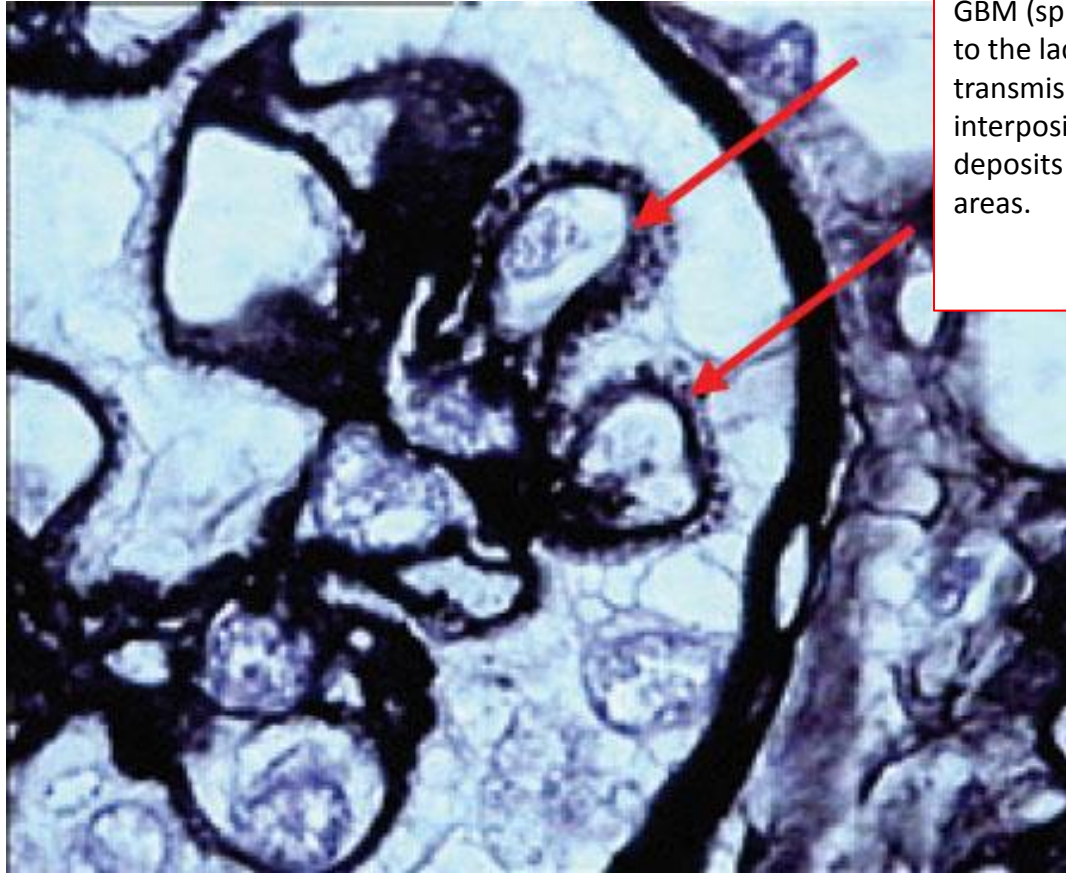


Thickened GBM



Membranous Nephropathy

Silver Stain

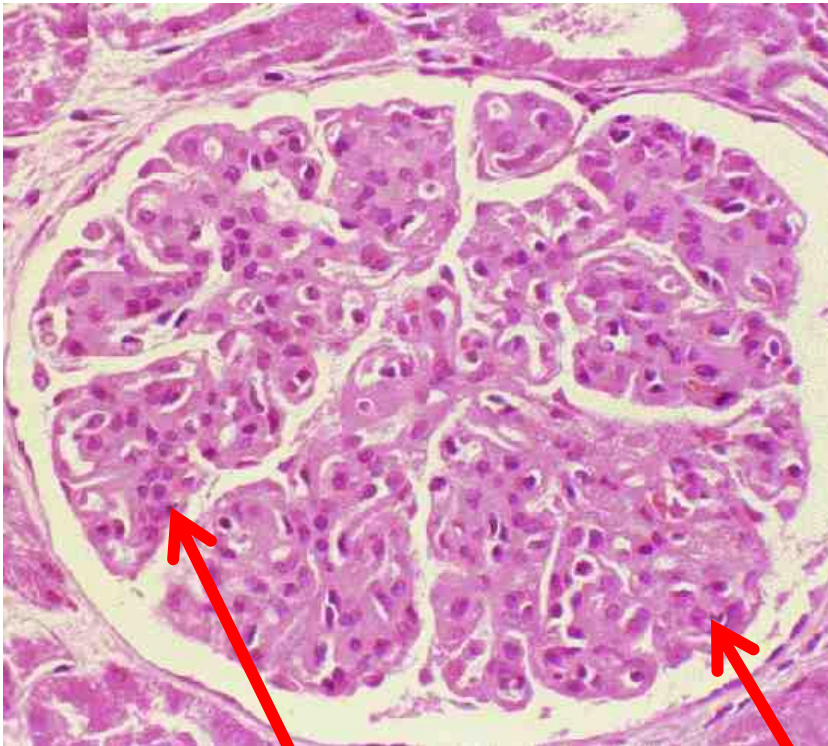
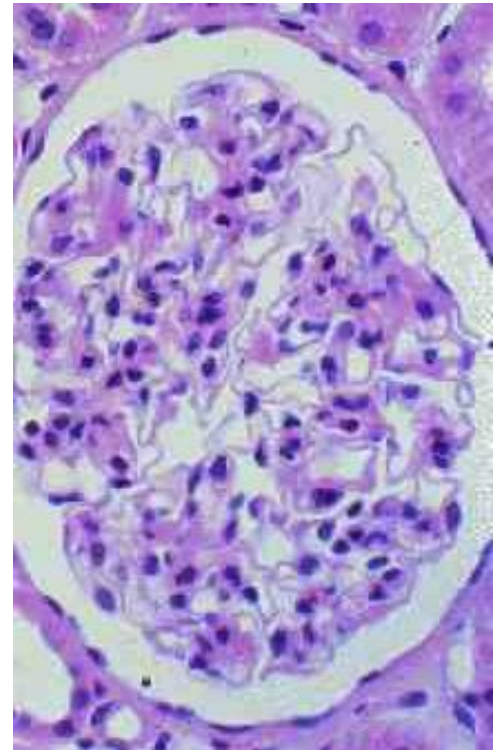


GBM (spikes) look black, due to the lack of light transmission, whereas the interposing immune deposits appear as lucent areas.

MPGN

H&E Stain

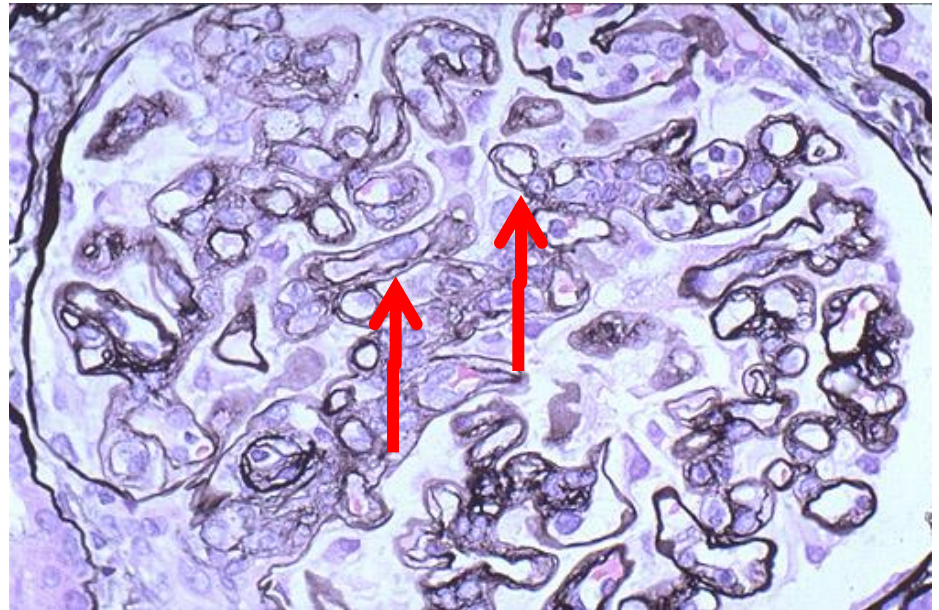
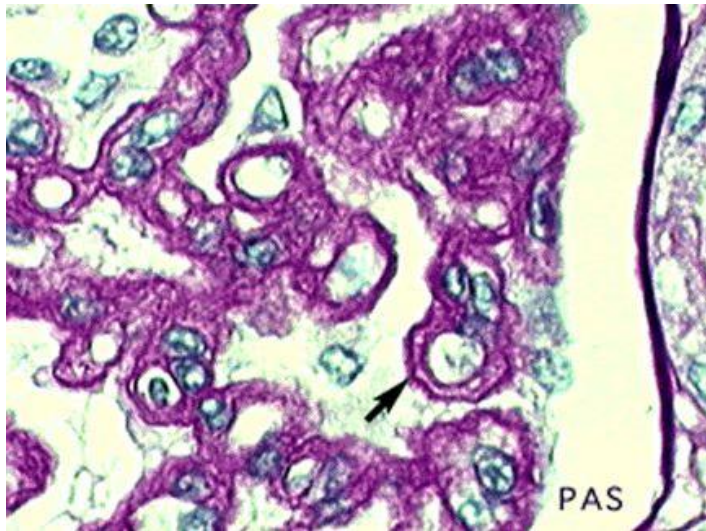
Normal glomerulus



Mesangial hypercellularity

Endocapillary proliferation
(capillary lumens obliterated)

MPGN Double Contour



Silver Stain

MPGN TYPES

Type I – “idiopathic”

Type II – Dense deposit disease

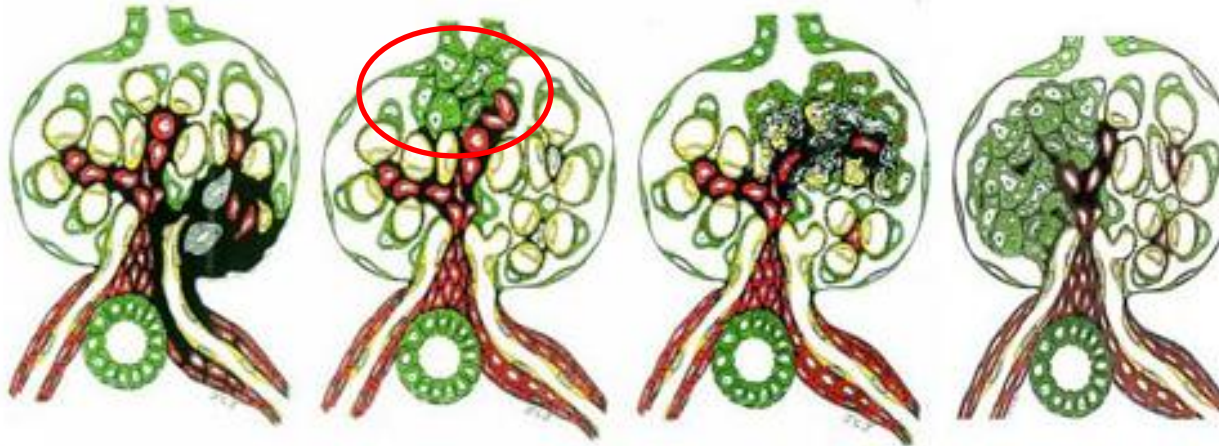
Type III – Immune complex mediated

FSGS

Tip: “tip” is the beginning of the tube that carries away the urine, and it is usually on the opposite side of the filter from where the blood vessels enter and exit. Most responsive to tx.

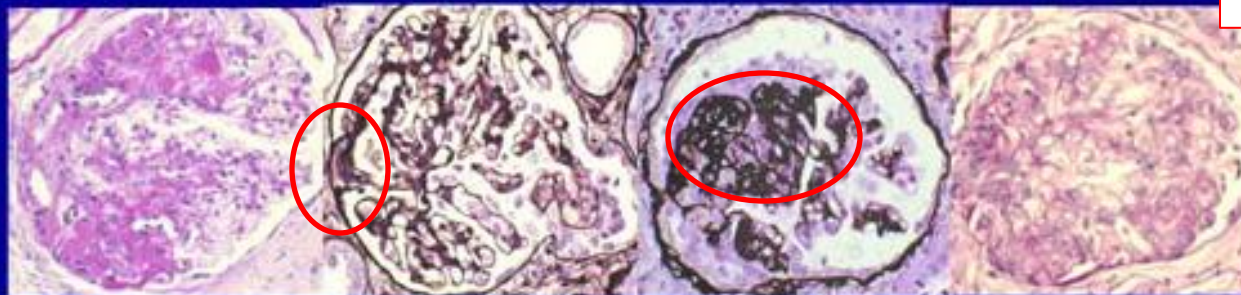
Collapsing:

most rapidly progressive form
Does not typically respond to therapy. The scarring quickly affects the entire filter, causing it to *collapse*



Cellular: implies a slightly different type of scarring. The problem is an overabundance of *cells* that make up the filter itself

Perihilar: scar forms at the *hilum* of the filter (vascular pole)



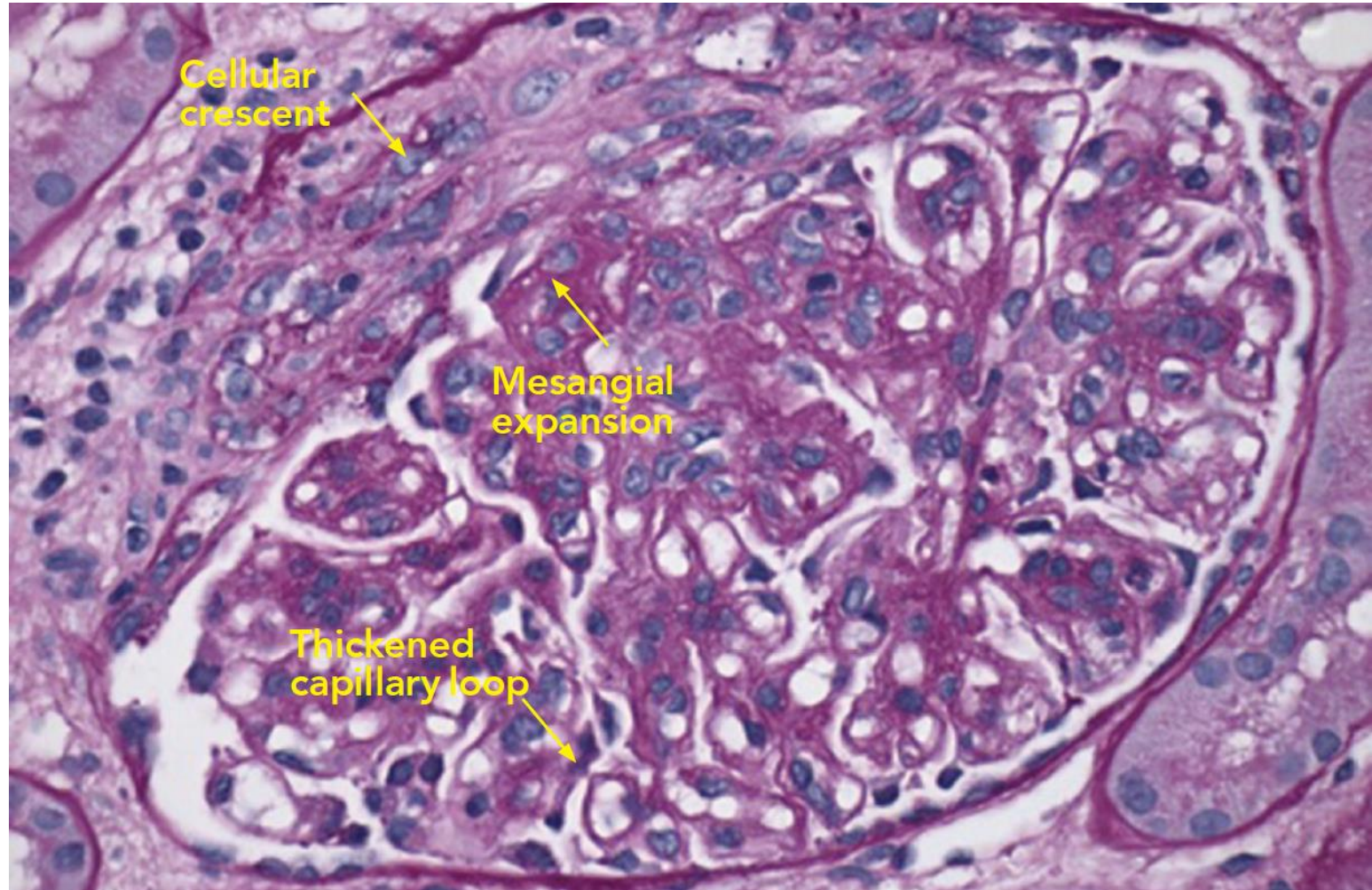
Perihilar

Tip Lesion

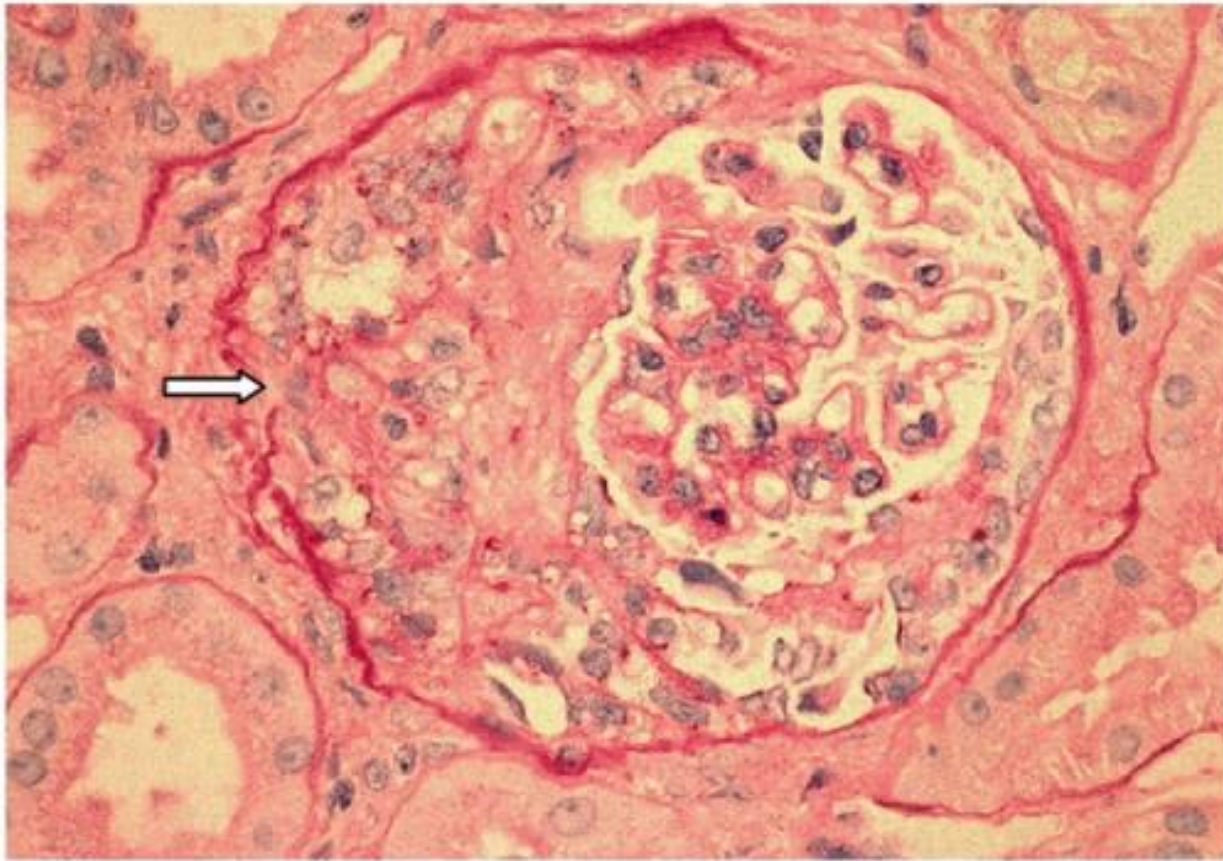
Collapsing

Cellular

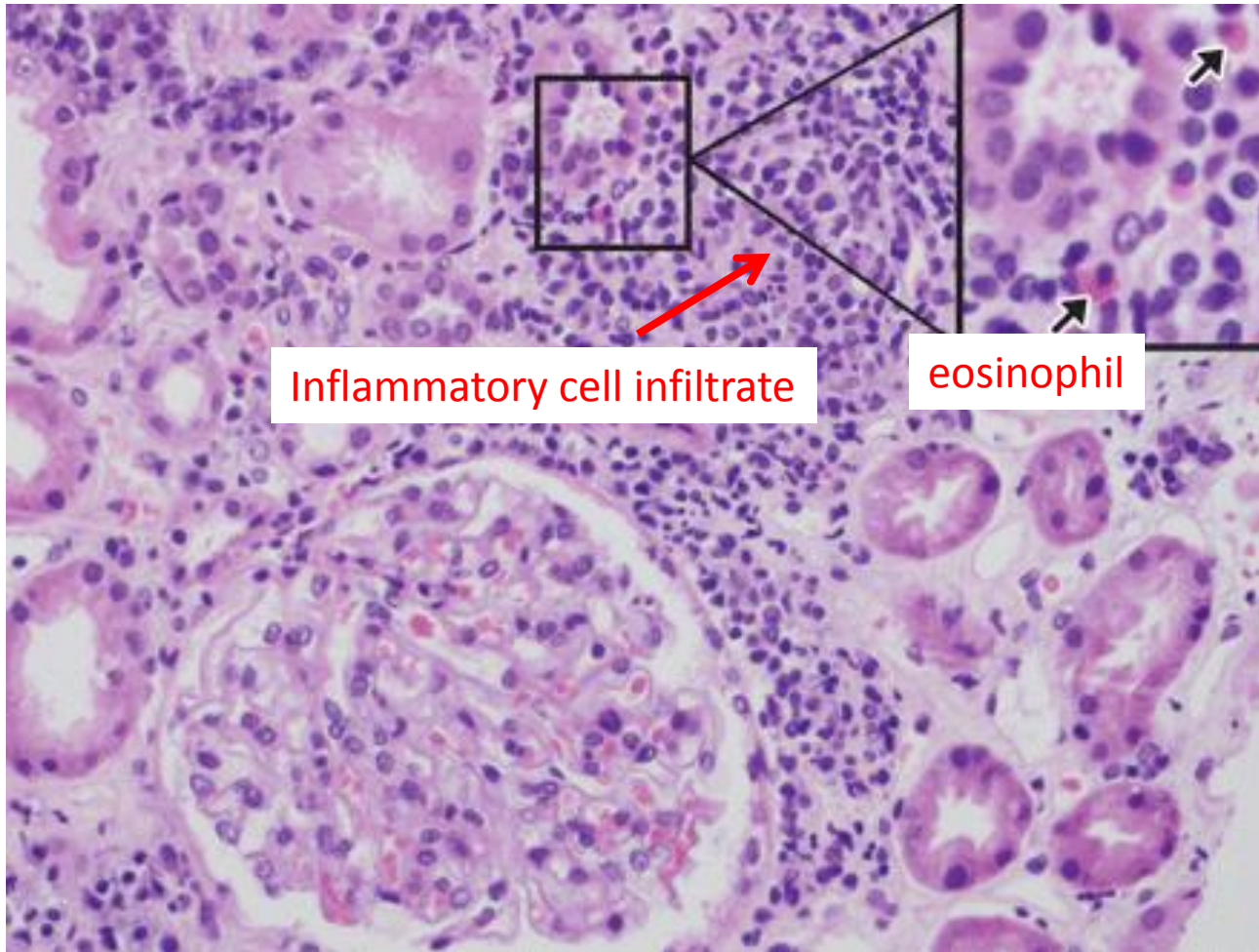
Cellular Crescent Extracapillary Proliferation



Fibrocellular Crescent

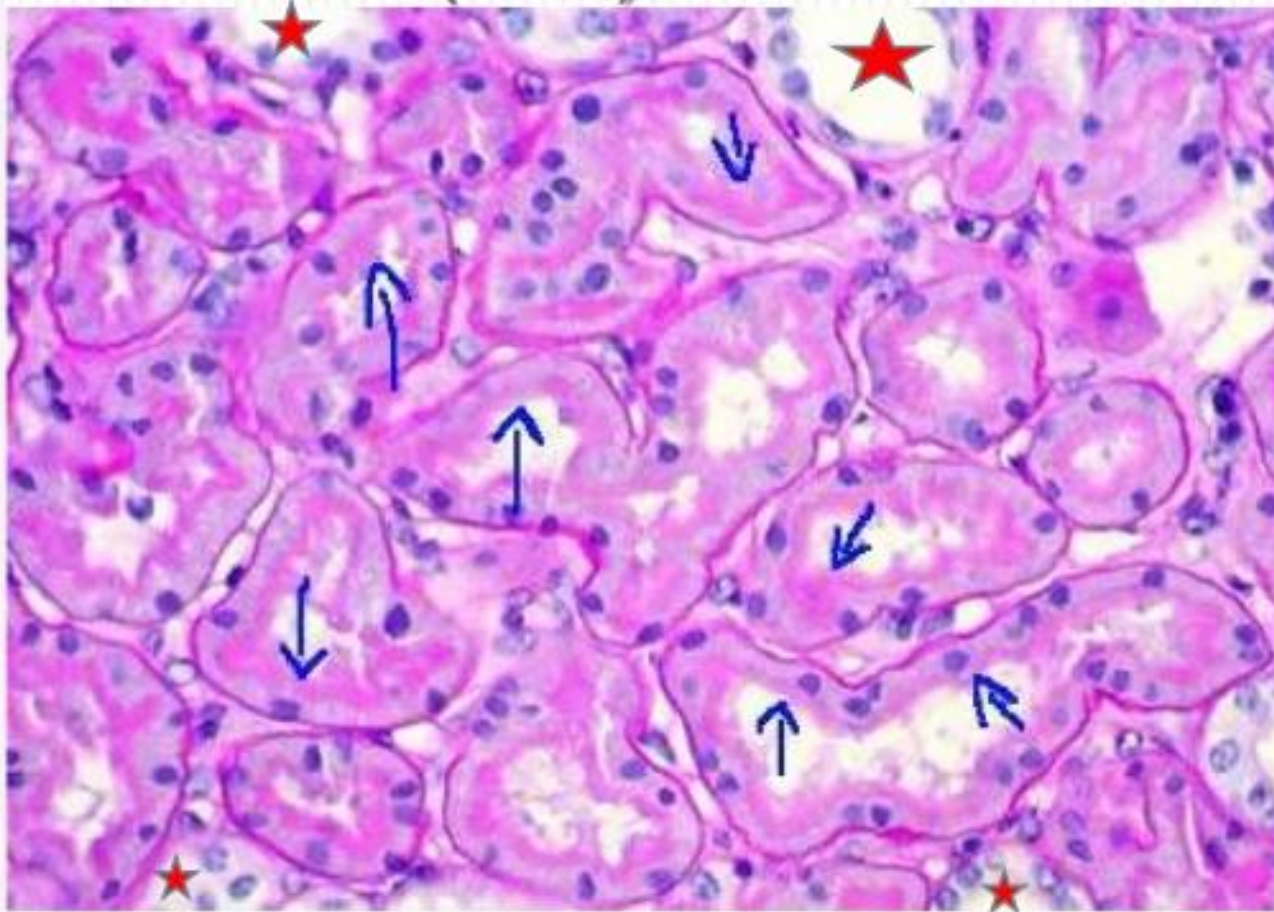


Interstitial Nephritis



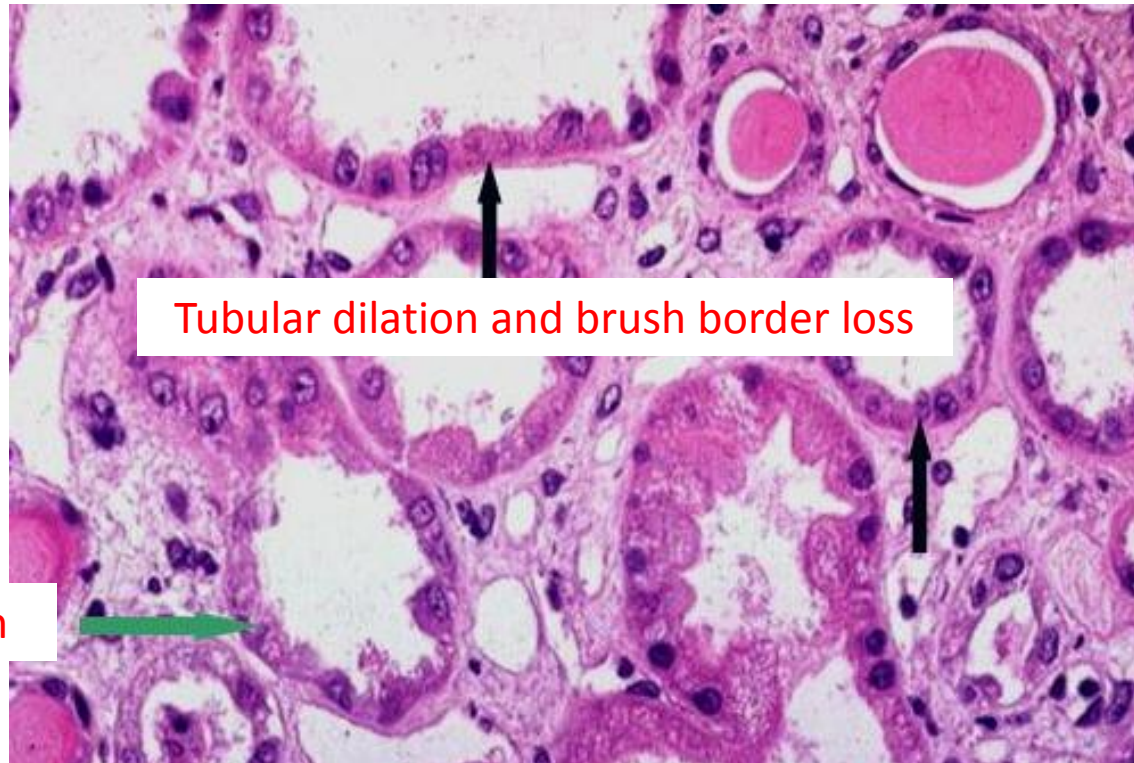
Normal Renal Tubules

PAS

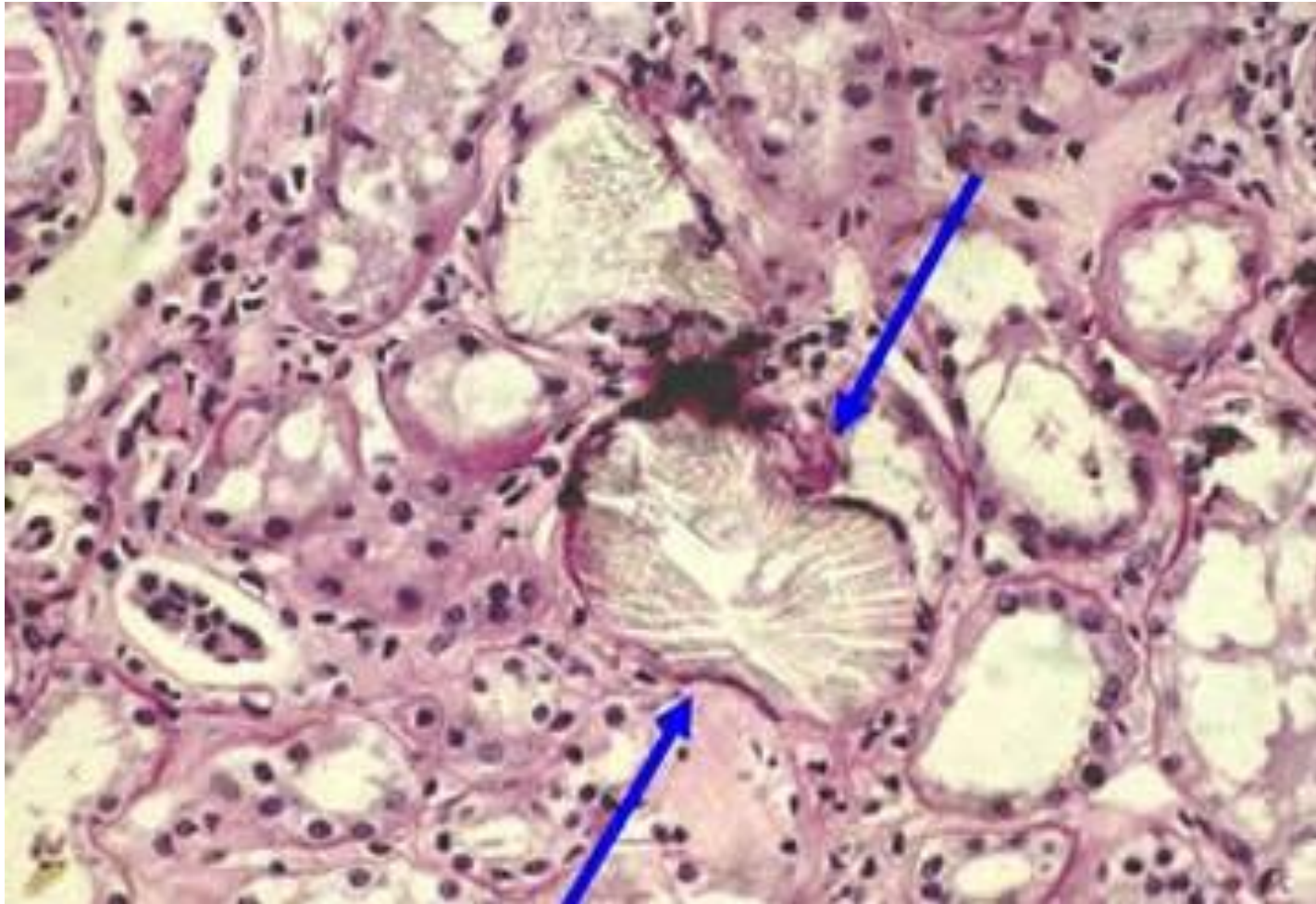


Brush border of the proximal tubules has affinity by the reagents used in the periodic acid of Schiff coloration (arrows). DCT (asterisks)

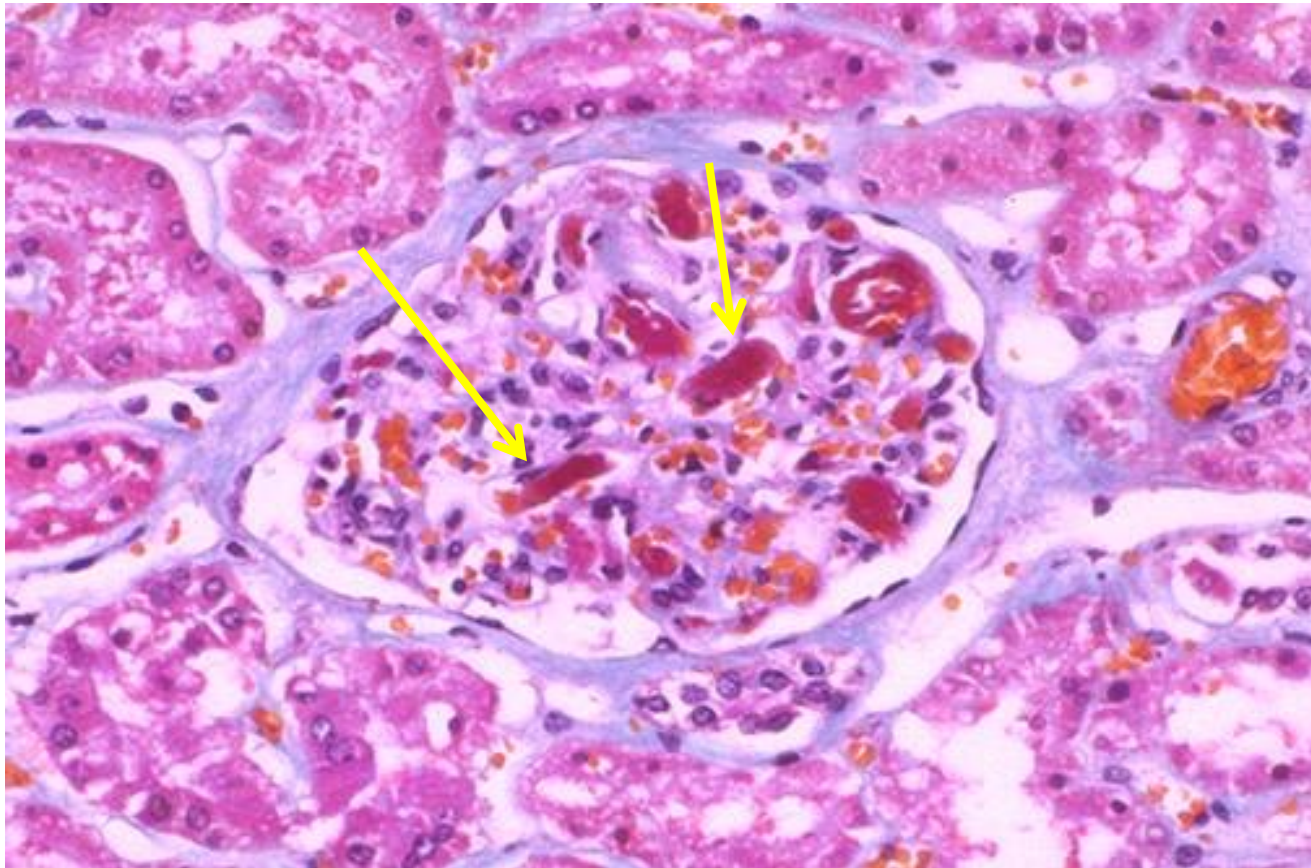
Acute Tubular Necrosis



Intratubular Calcium Oxalate Crystals

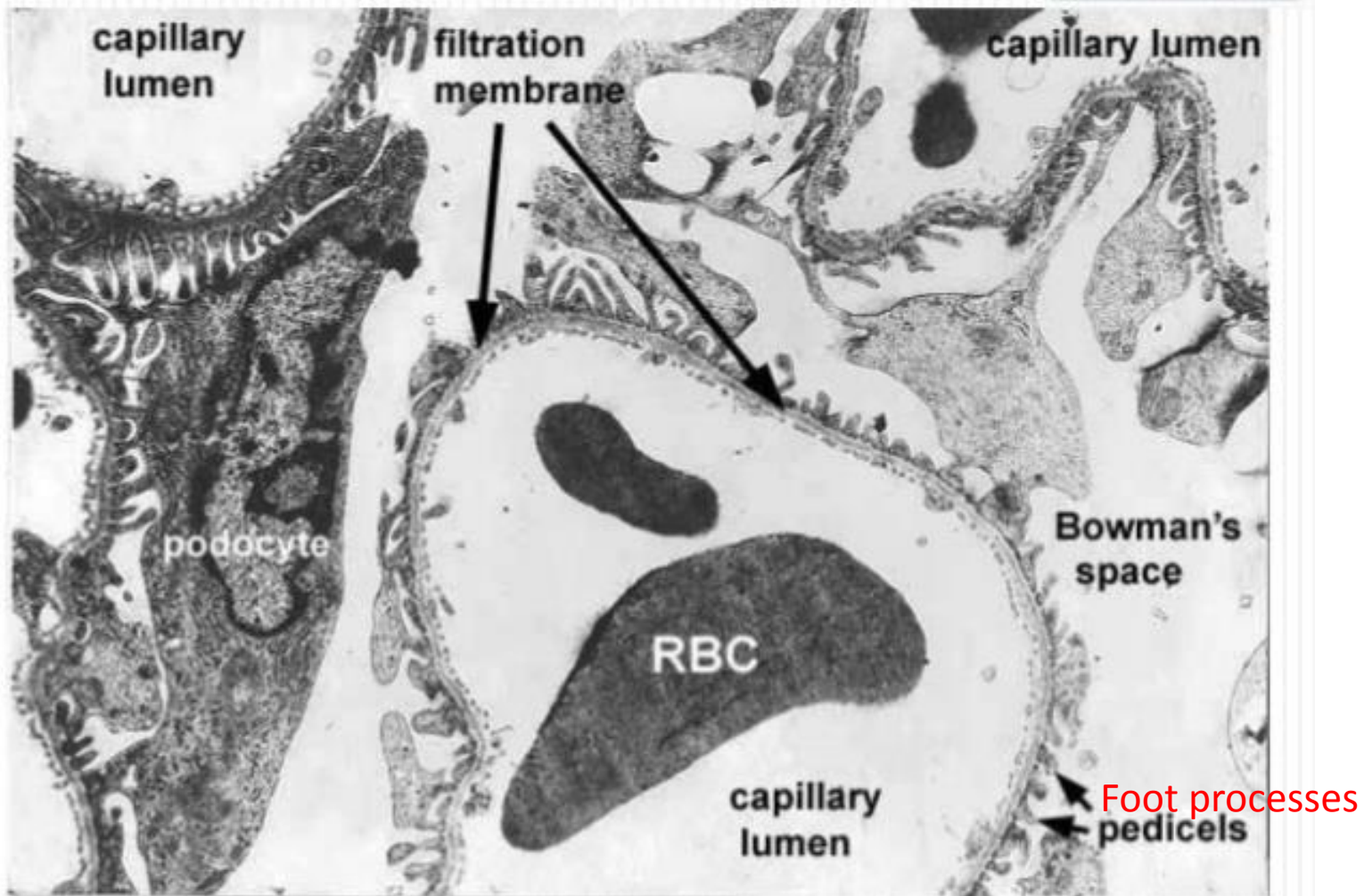


Fibrin Thrombi TTP/HUS

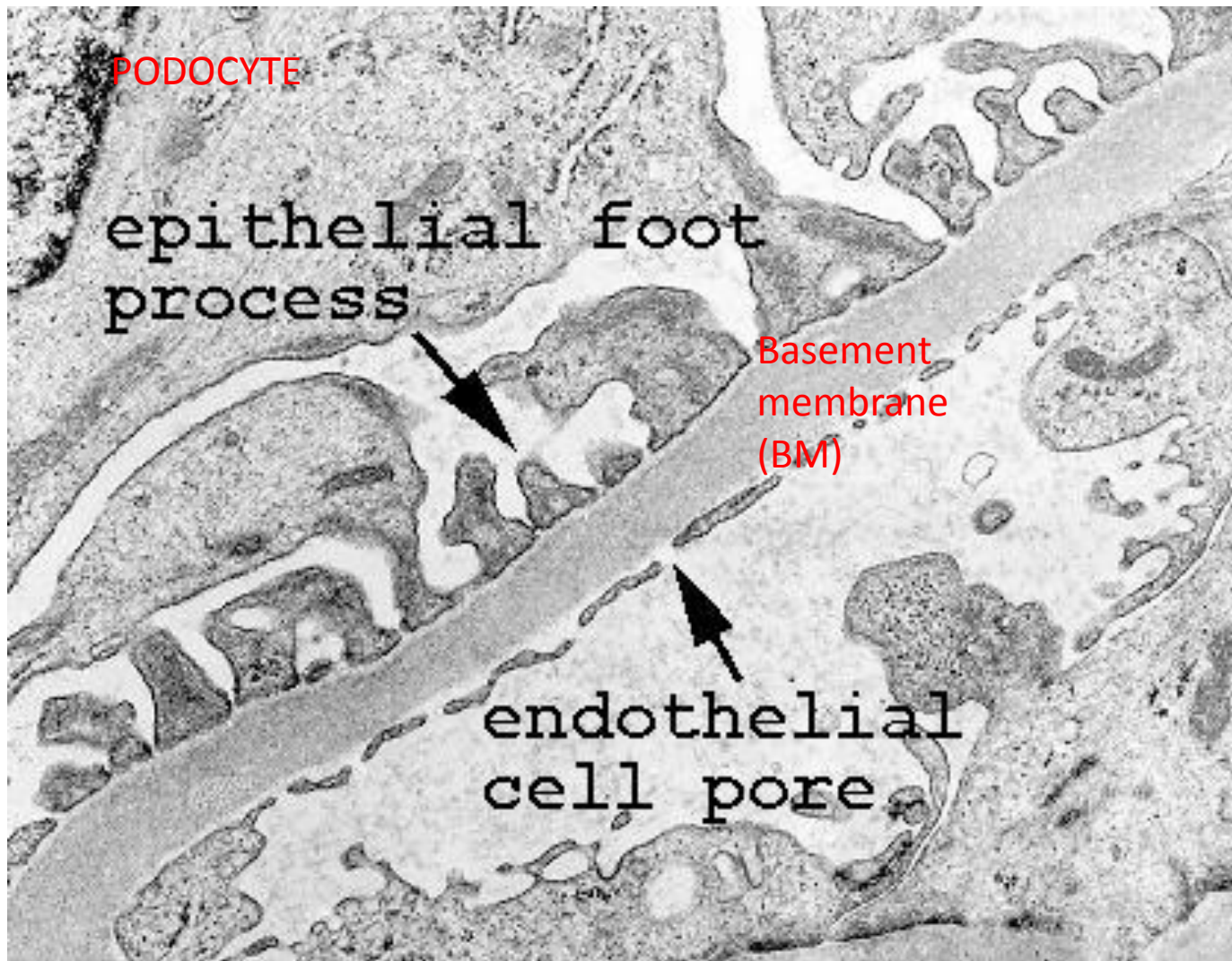


Electron Microscopy Basics

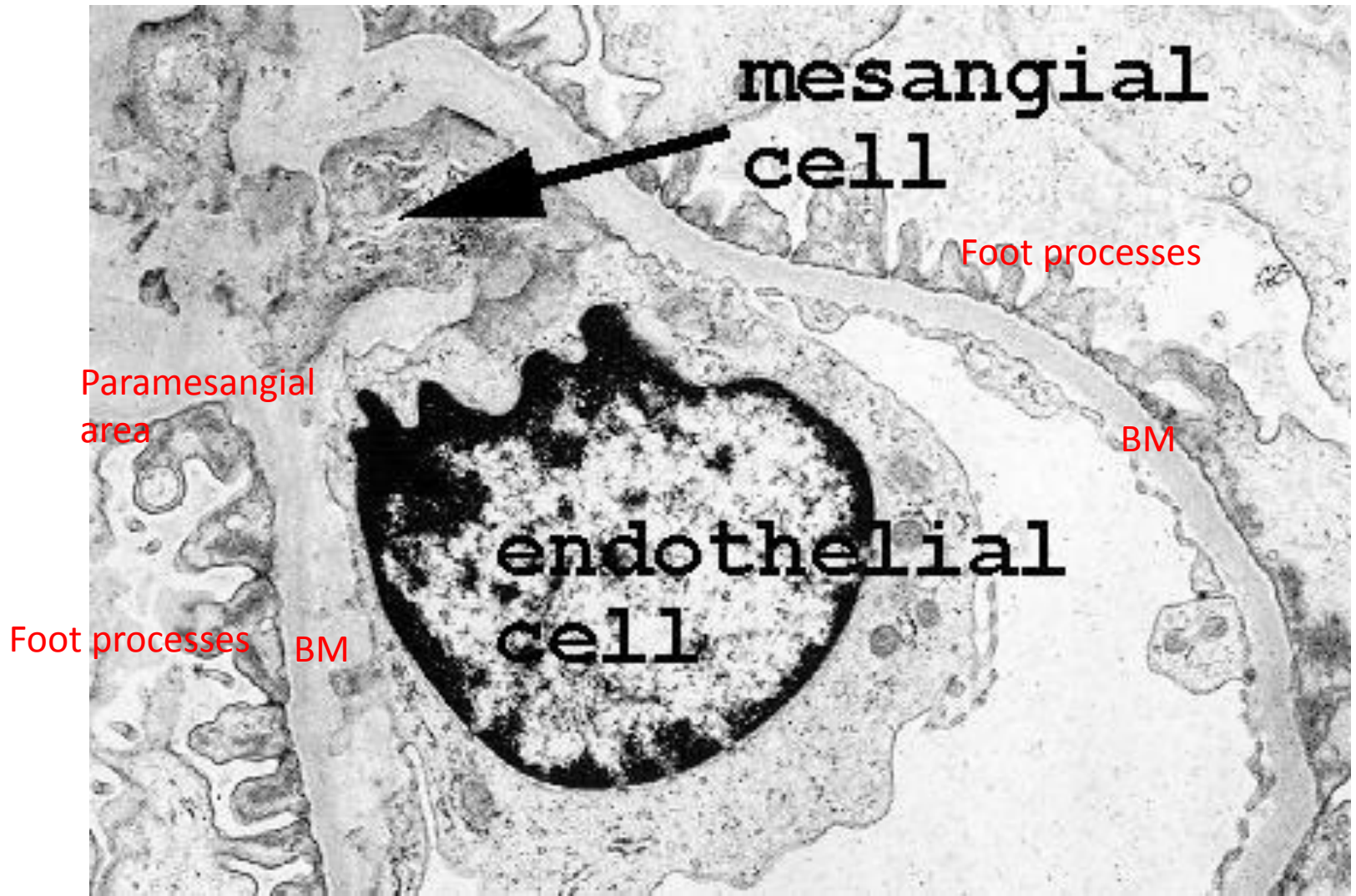
Normal EM



Normal EM



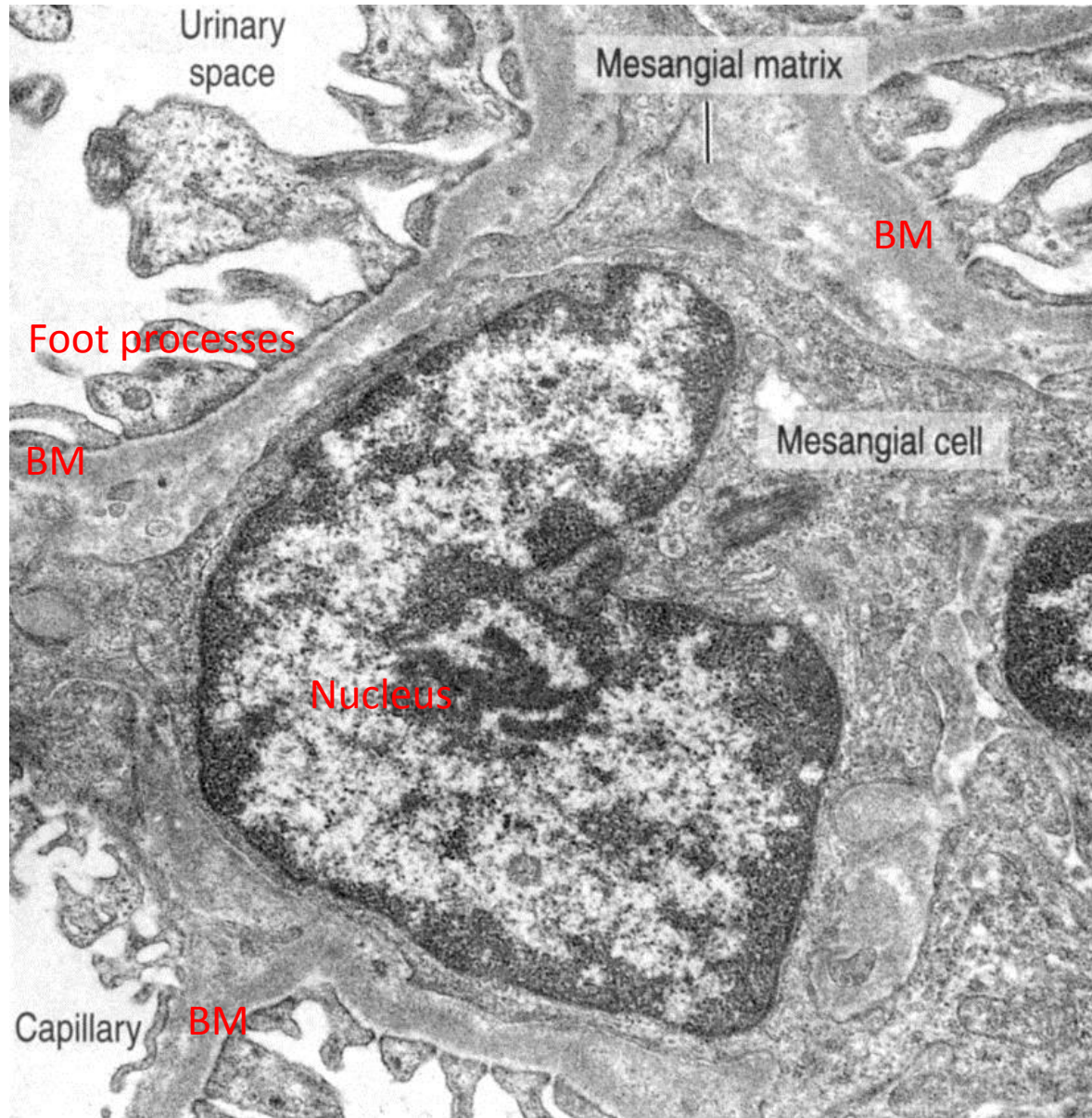
Normal EM



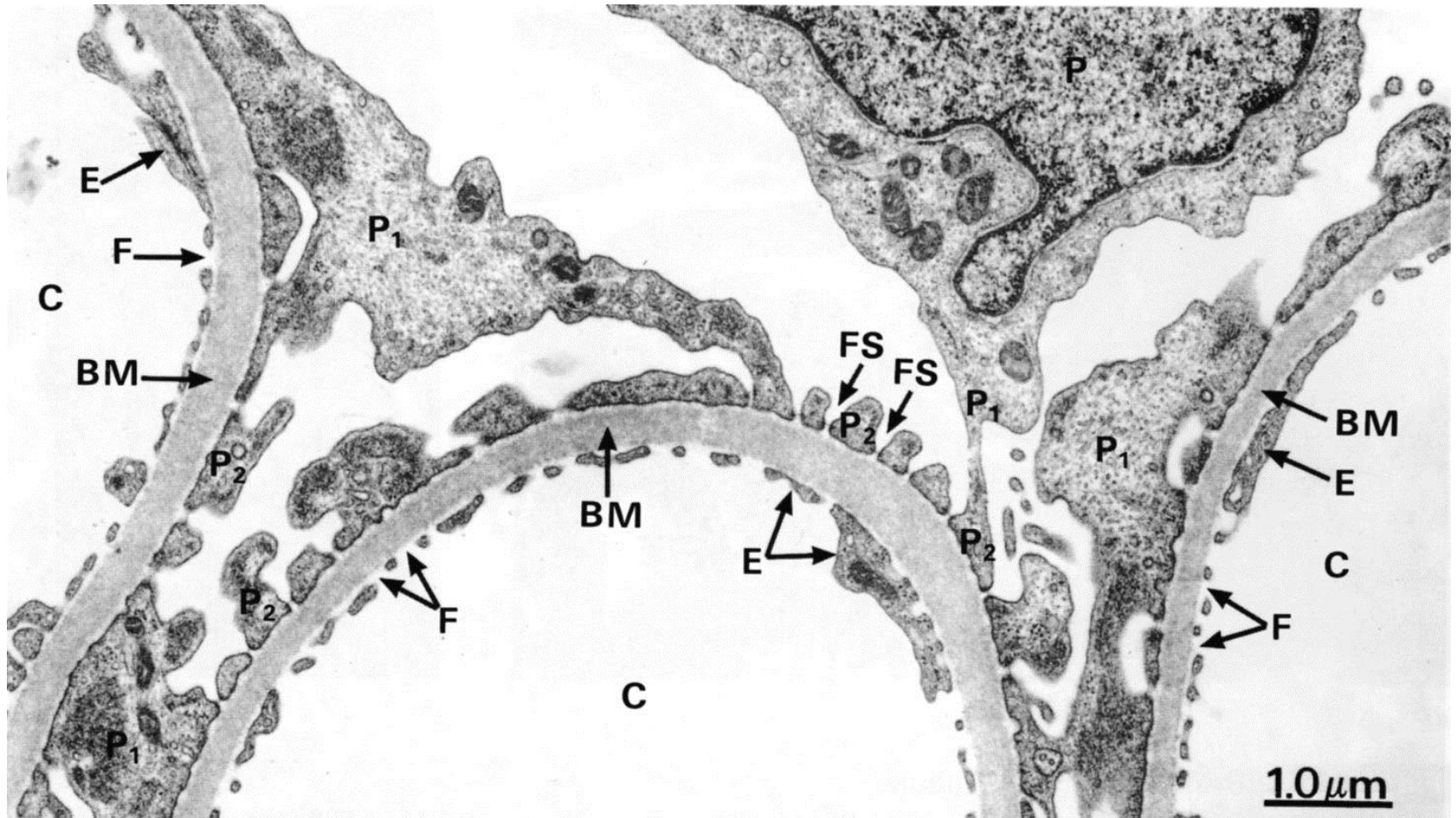
Normal EM



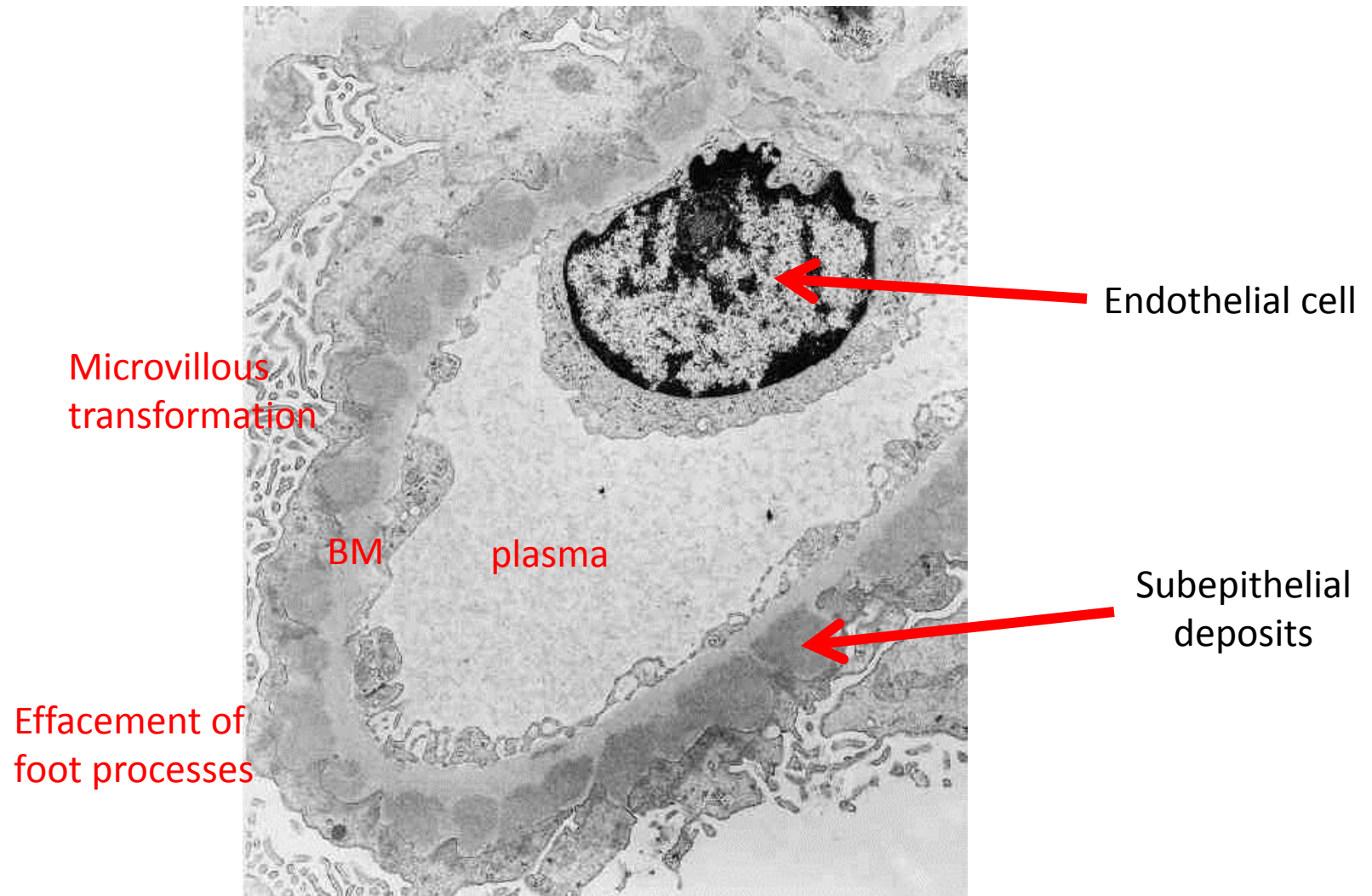
Normal EM



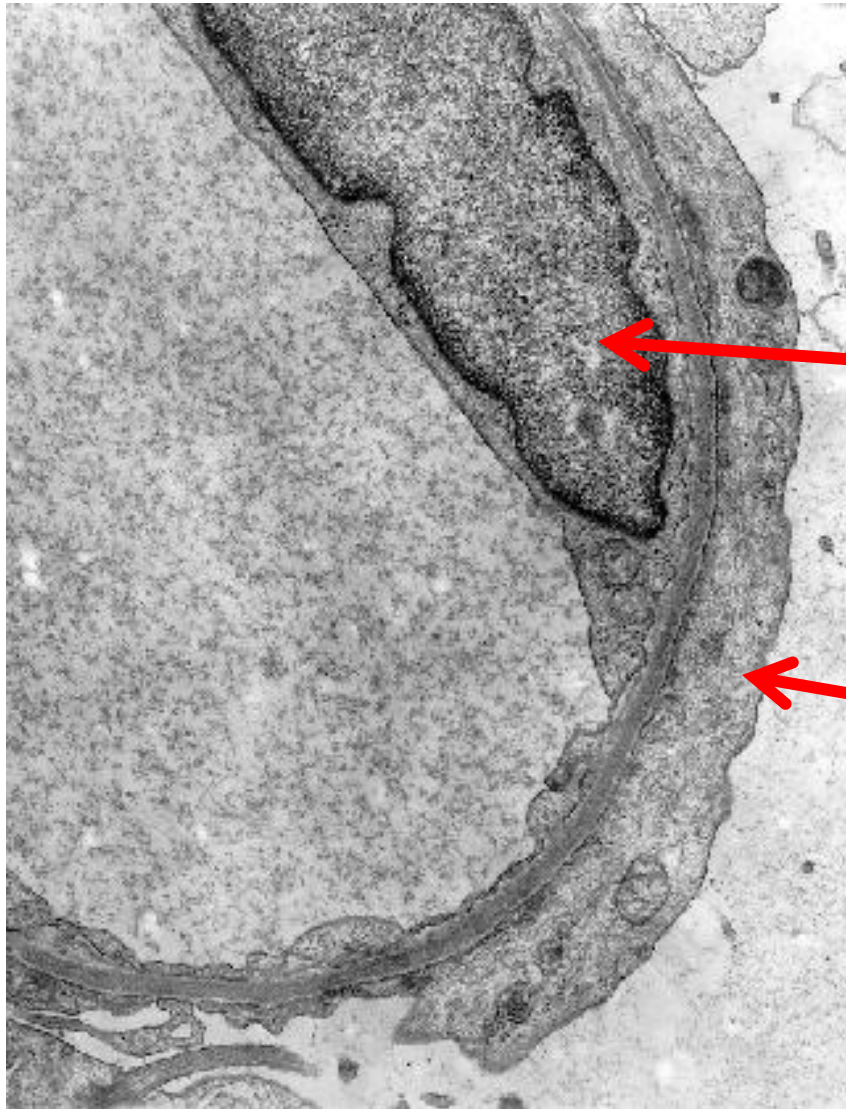
Normal EM



Subepithelial Deposits



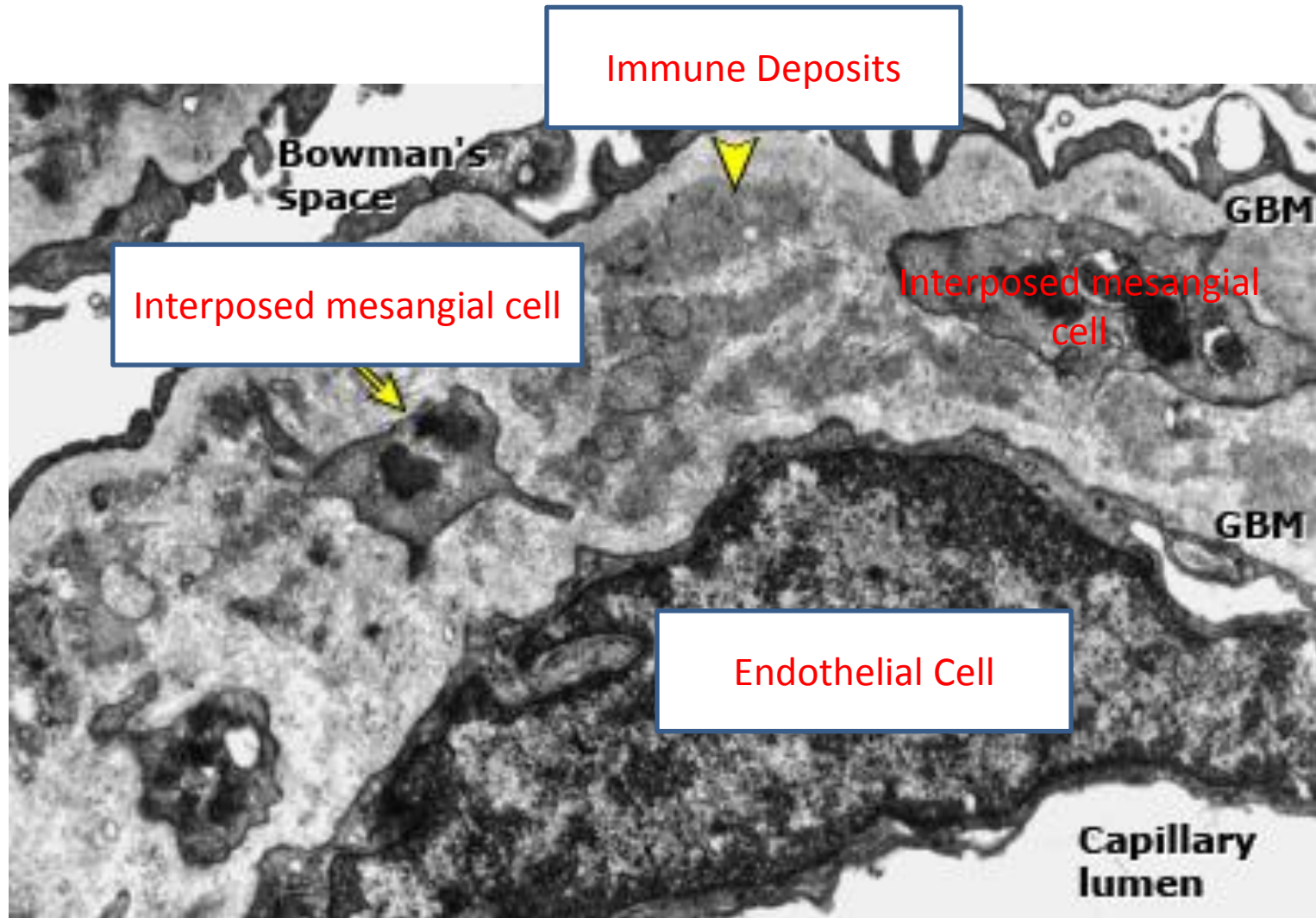
Effaced Podocyte



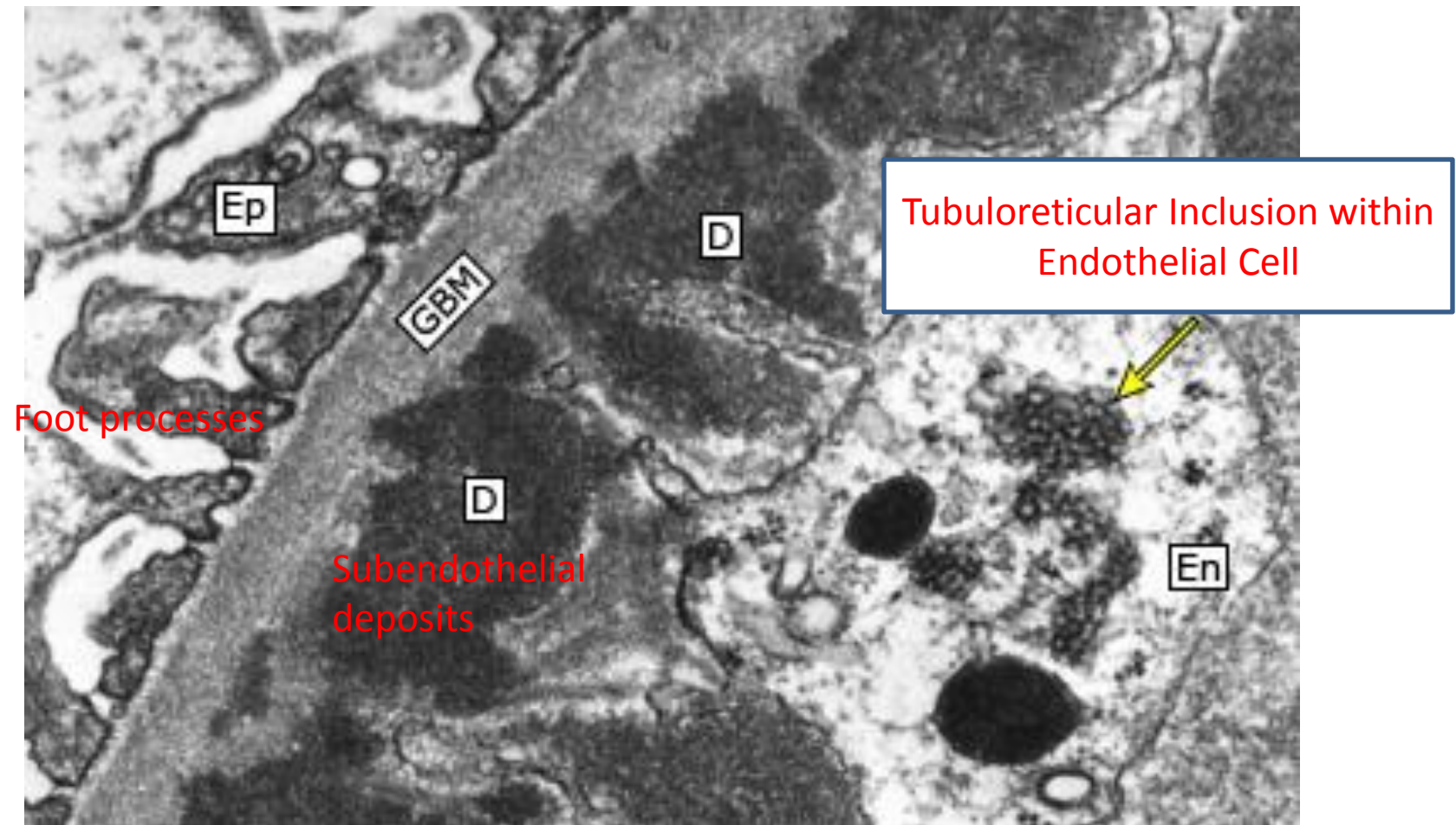
Endothelial cell

Effaced foot
processes

Type I MPGN



Subendothelial Deposit + TRI



Subepithelial Humps (PIGN)

