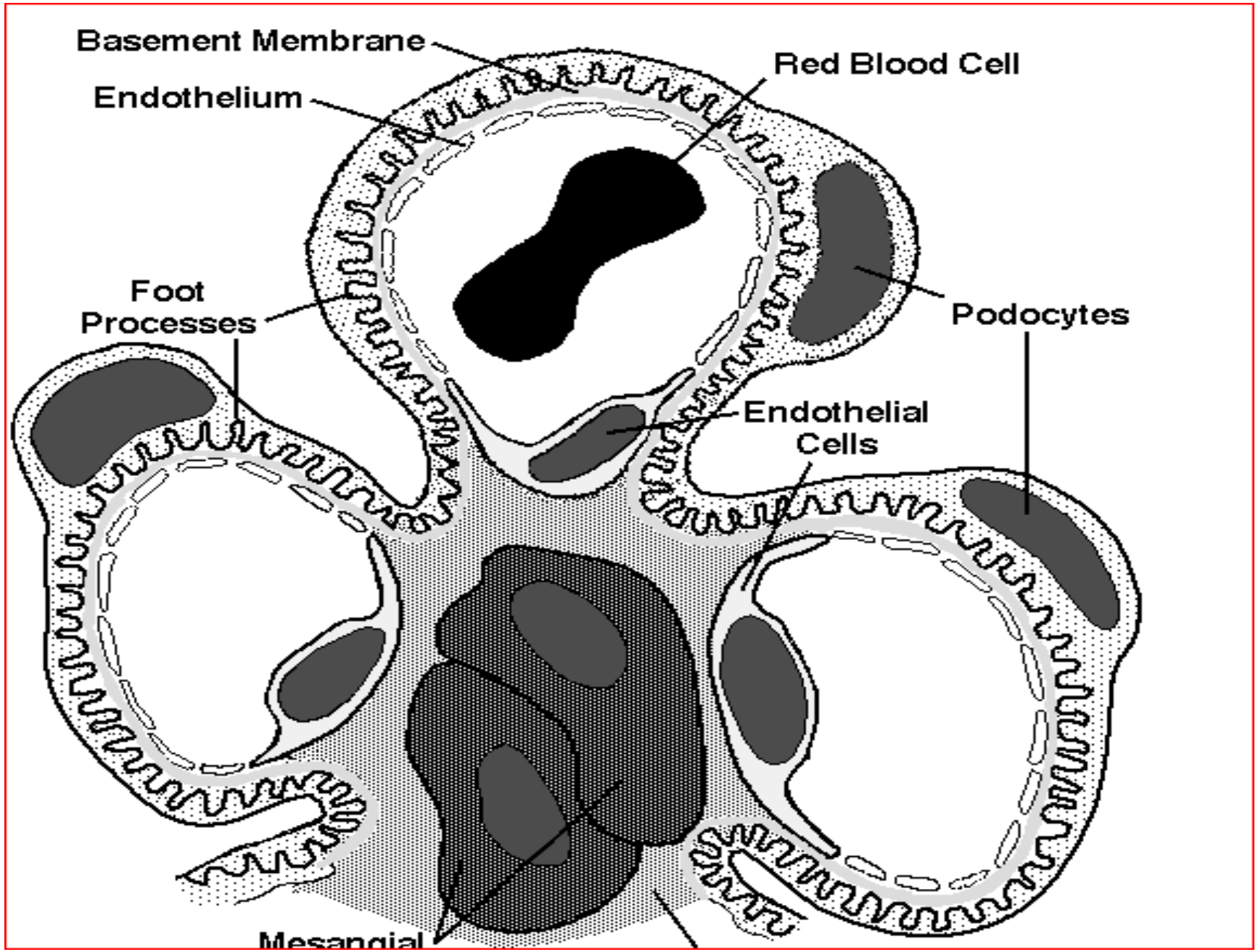
Nephropathology deals with the diagnosis, management and prognostication of medical renal diseases.

The kidney biopsy is an essential tool for diagnosis of many kidney diseases. Obtaining an adequate biopsy sample with appropriate allocation for various studies is essential.

Correlation with immunofluorescence, and clinical findings are emphasized to reach a differential diagnosis and the final diagnosis.


Basement Membrane
Endothelium
Red Blood Cell
Foot Processes
Podocytes
Endothelial Cells
Mesangial

- The minimum sample size for diagnosis varies greatly with the specific diagnosis; for instance, membranous nephropathy can be diagnosed from a single glomerulus although even this disorder requires a greater number of glomeruli to fully characterize the lesion and the extent of chronicity or scarring that may be present.

Subcapsular cortical samples have overrepresentation of global sclerosis related to aging/hypertension and nonspecific scarring.

Juxtamedullary glomeruli are the earliest to be involved with segmental sclerosis in focal segmental glomerulosclerosis (FSGS).

This region should be included in the sample for optimal detection. Some processes are better represented in the corticomedullary or medullary regions (eg, polyomavirus nephropathy).

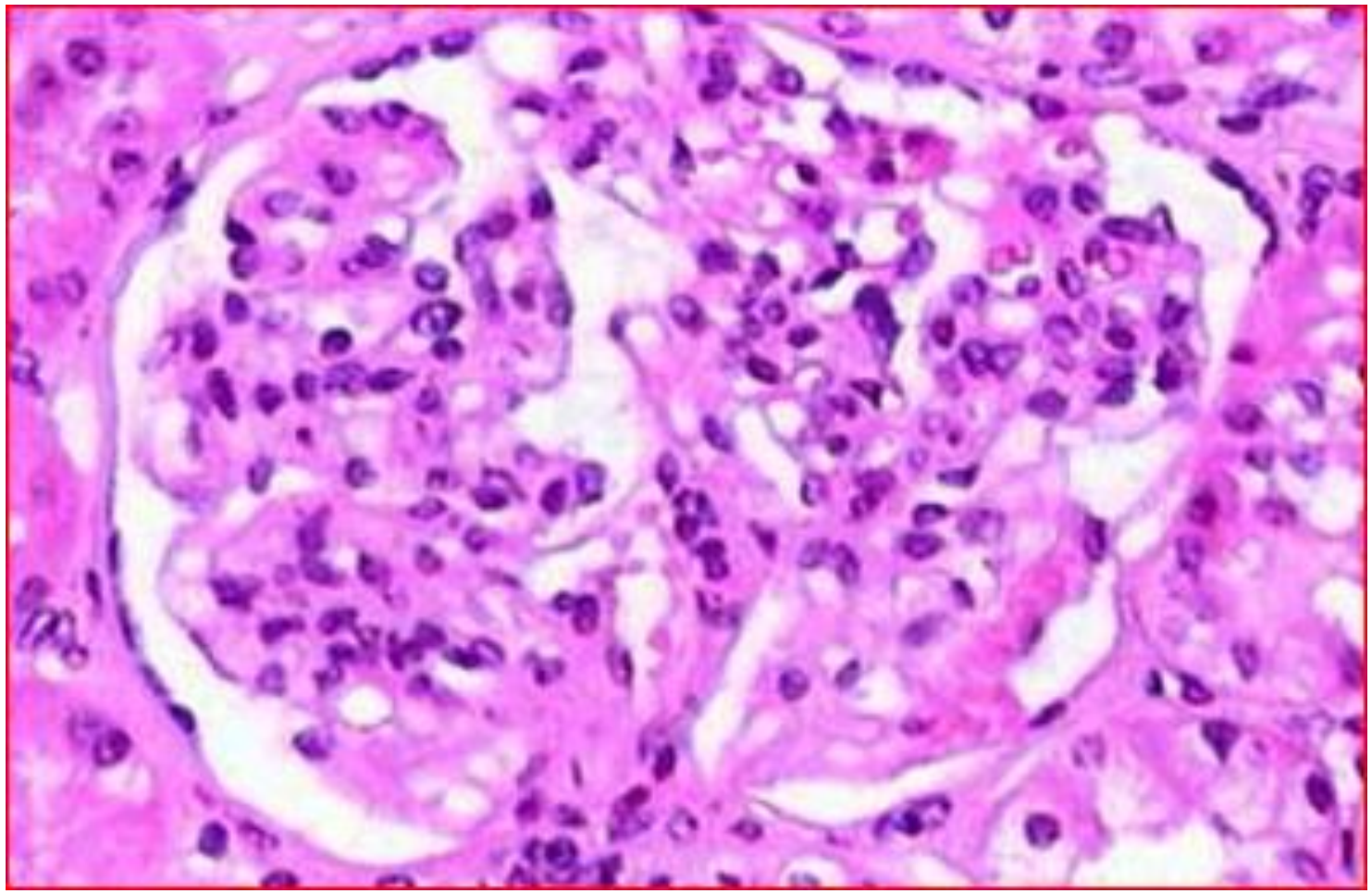
An adequate assessment of native renal biopsies includes light microscopy (LM) and immunofluorescence microscopy (IF),

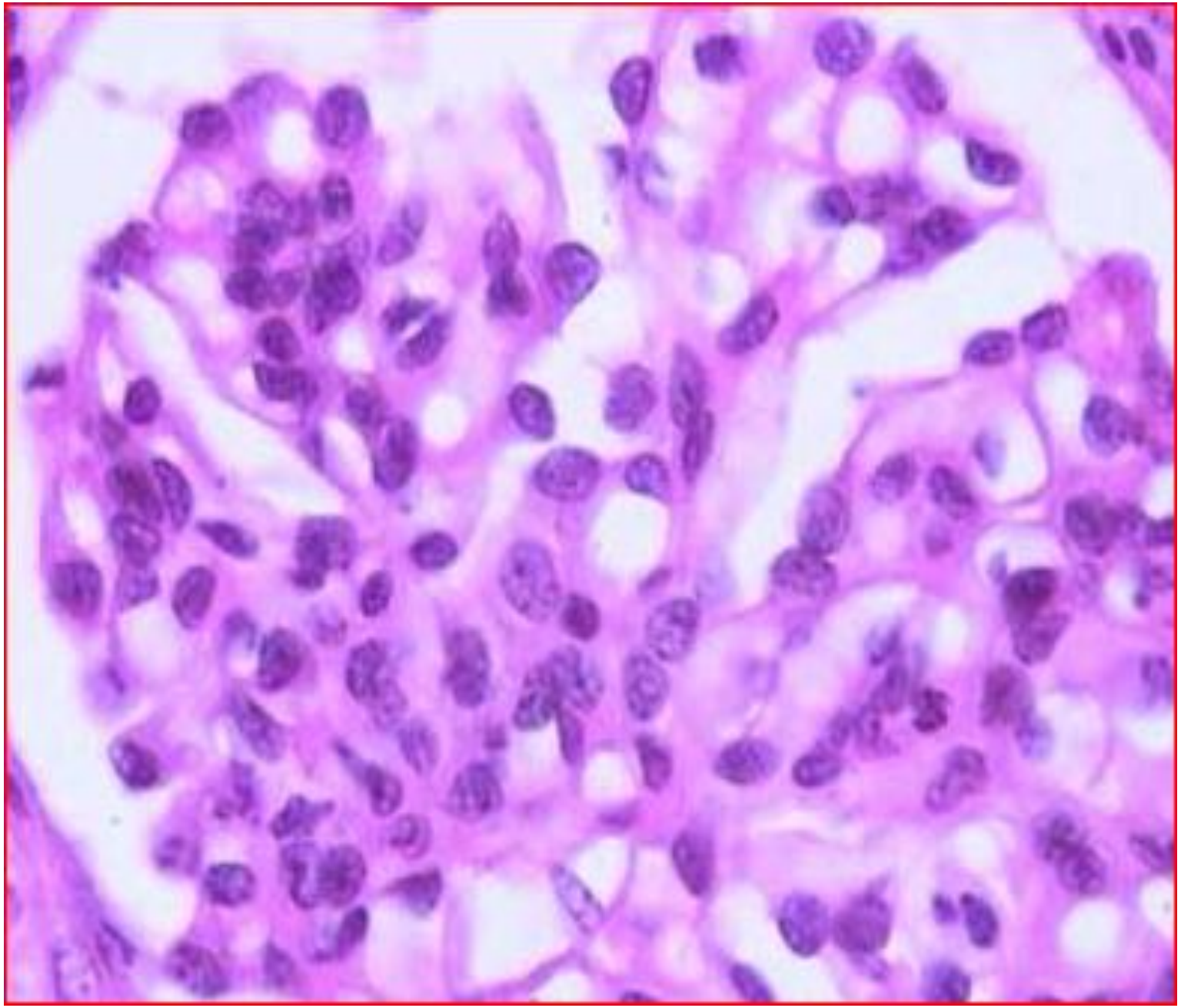
Minimal change versus membranous

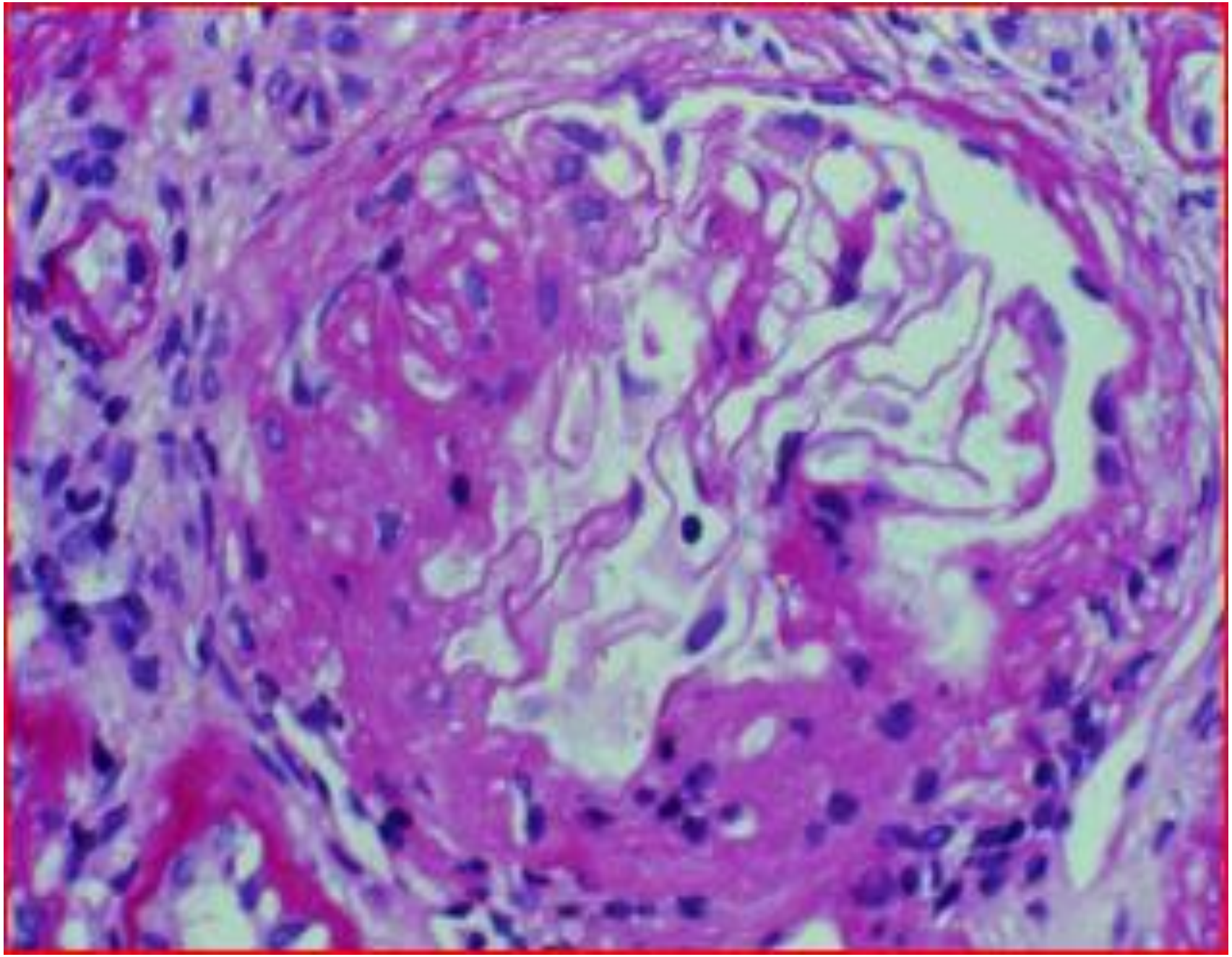
Minimal change versus FSGS

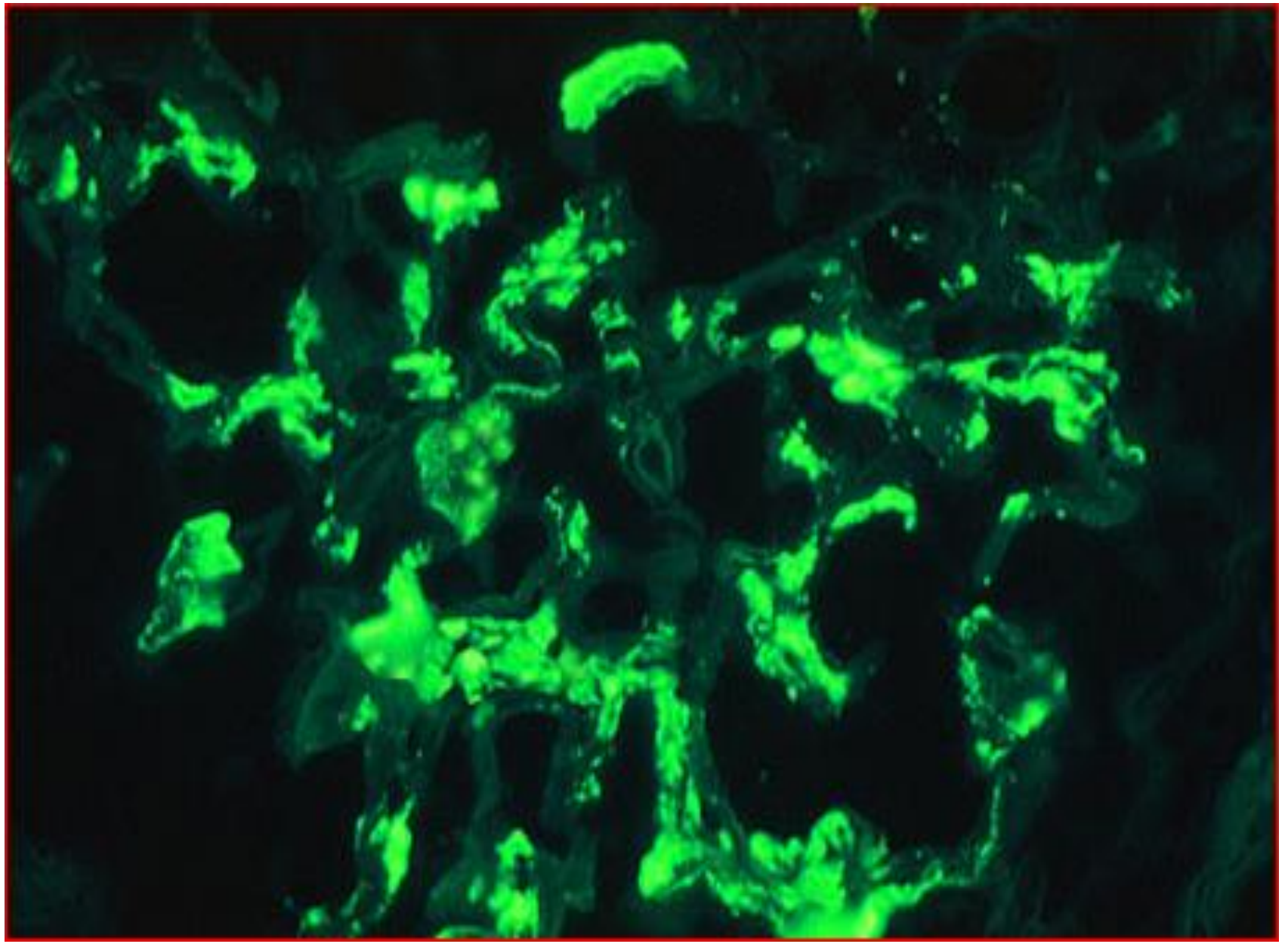
For focal lesions involving a small number of glomeruli, 25 glomeruli may be needed for light microscopy (LM) examination to have a greater than 95% chance of detecting those lesions. For lesions that are segmental, preparing serial sections and levels is critical to increase the likelihood that any such lesions represented in the biopsy core will be identified in the histologic sections, especially when the number of available glomeruli is limited.

FSGS versus IgA nephropathy

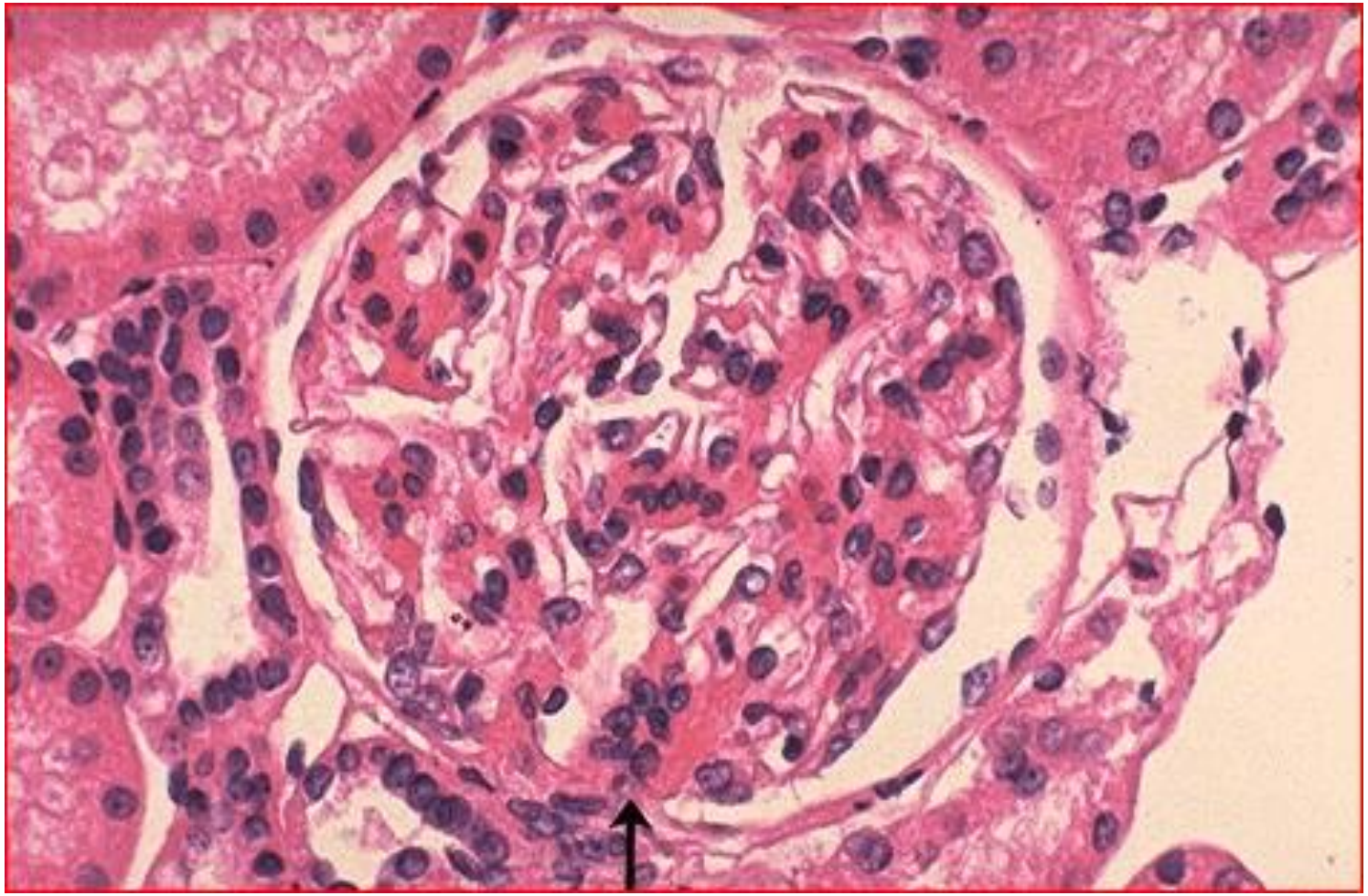


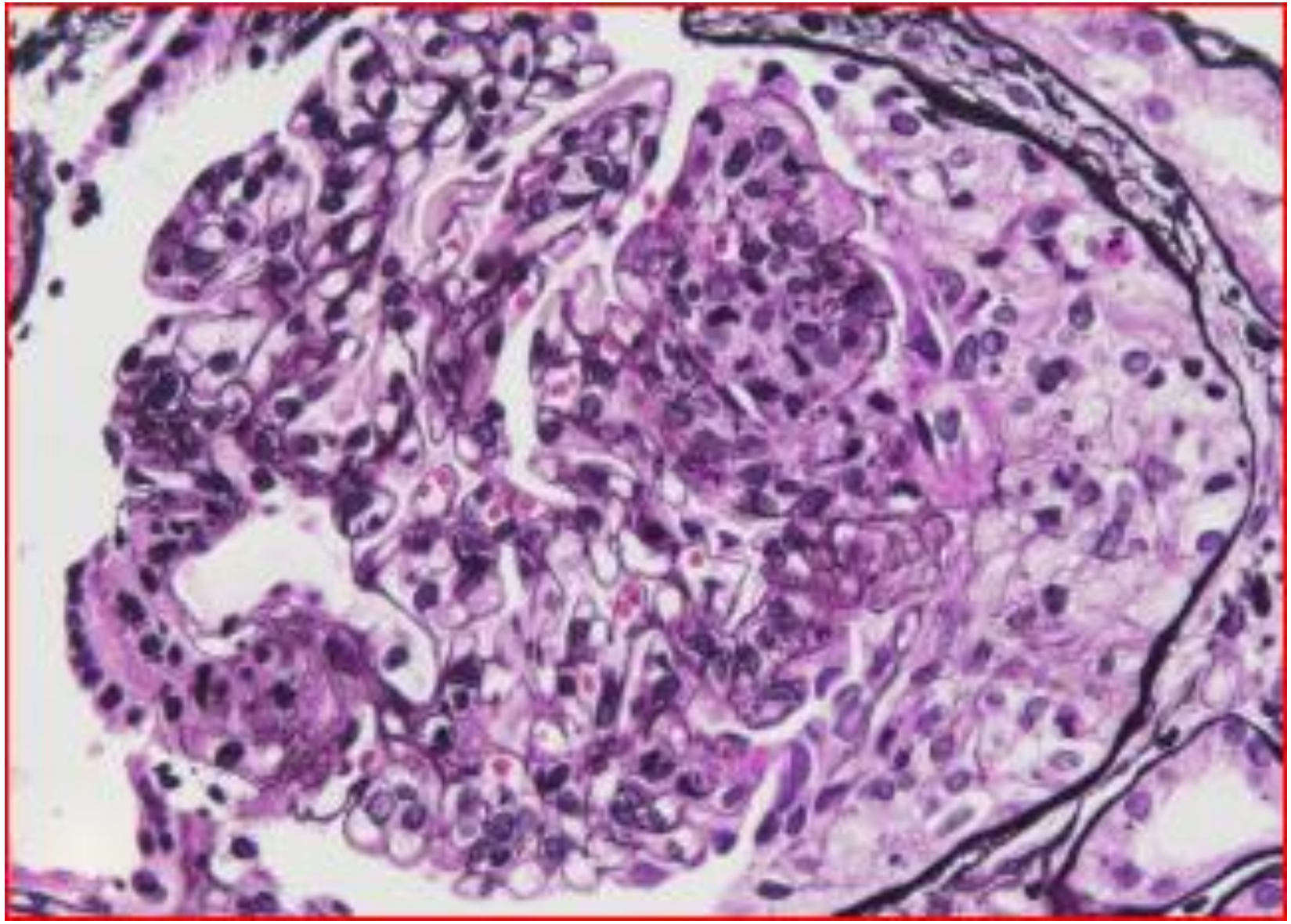


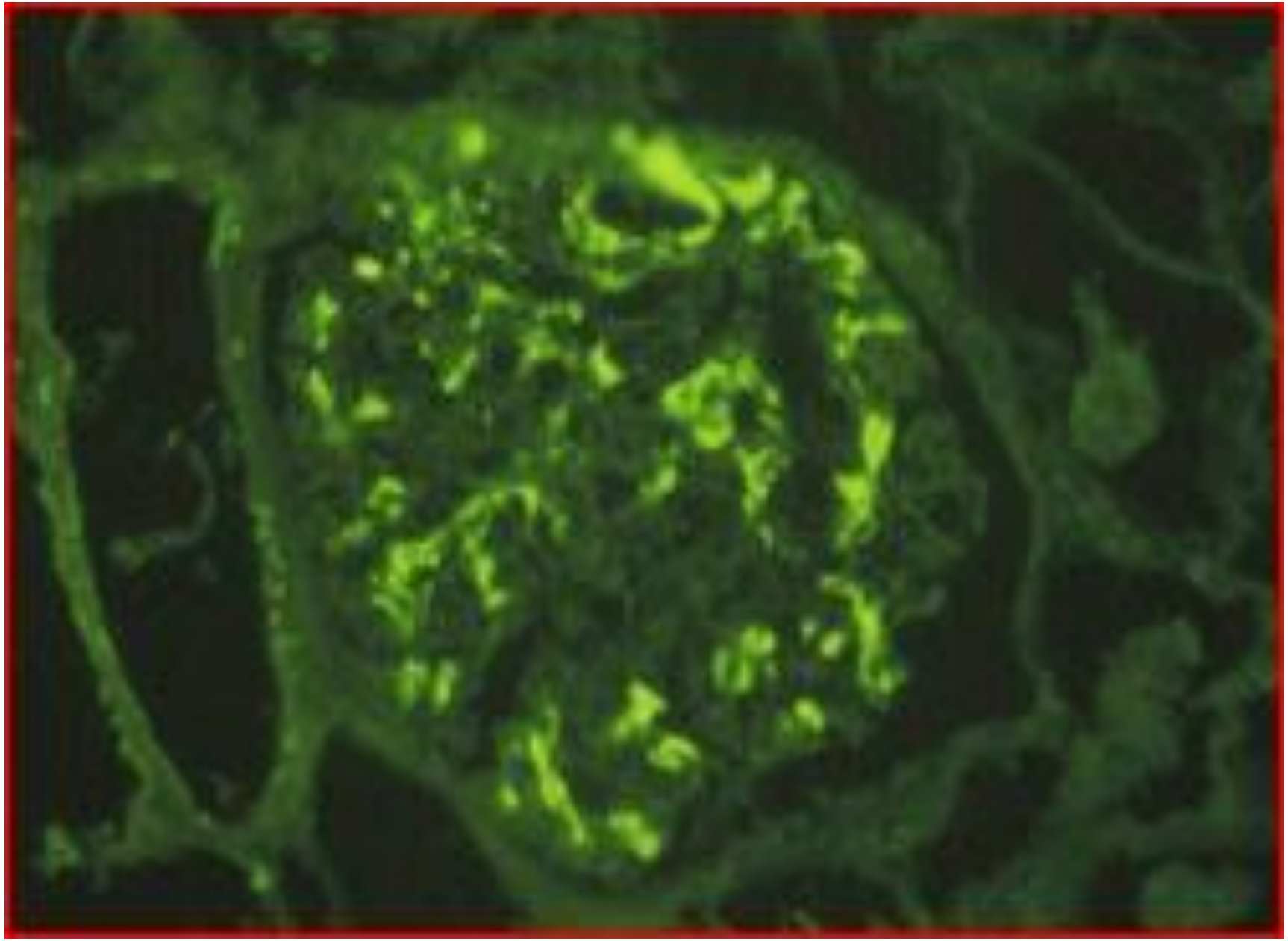


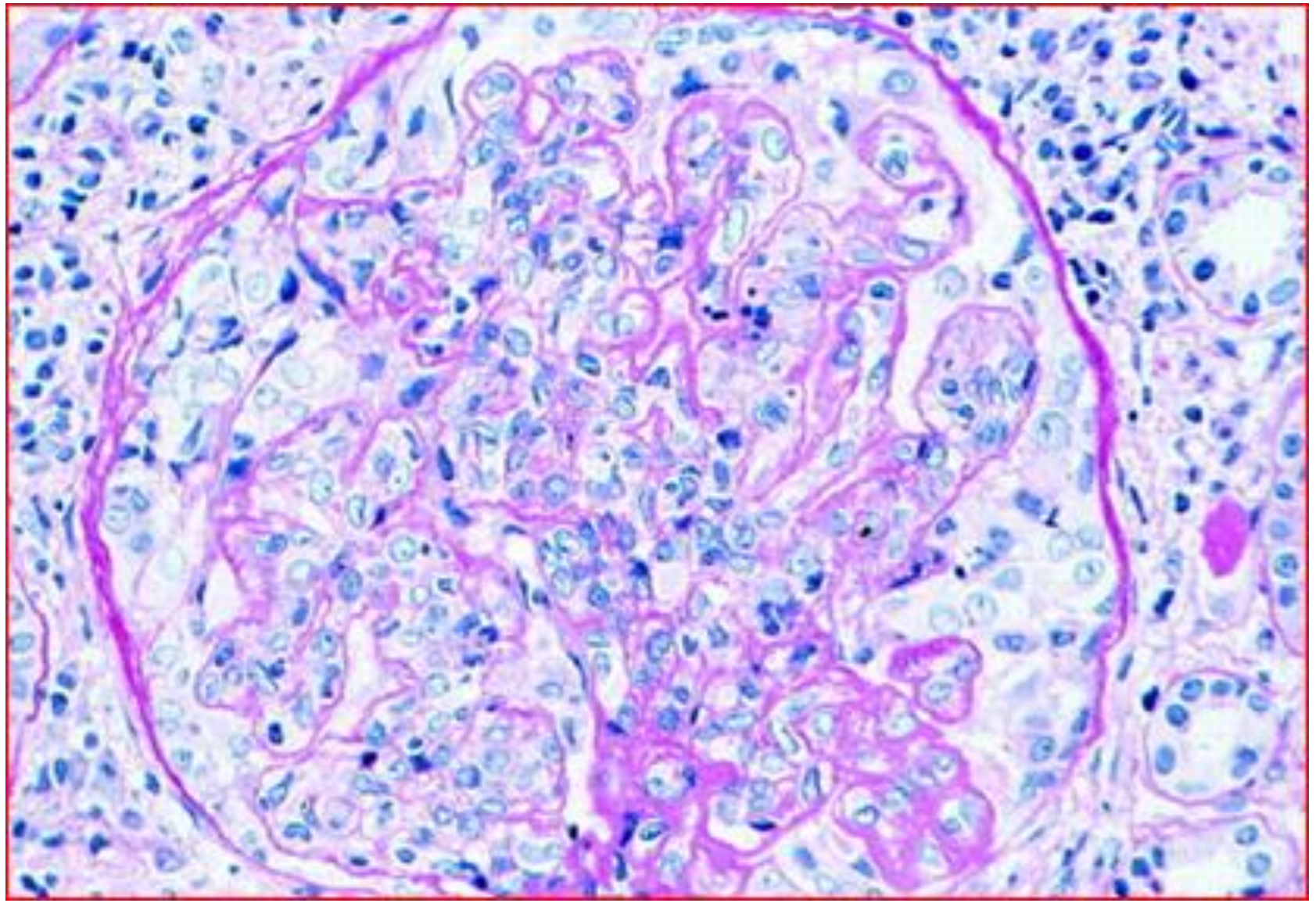


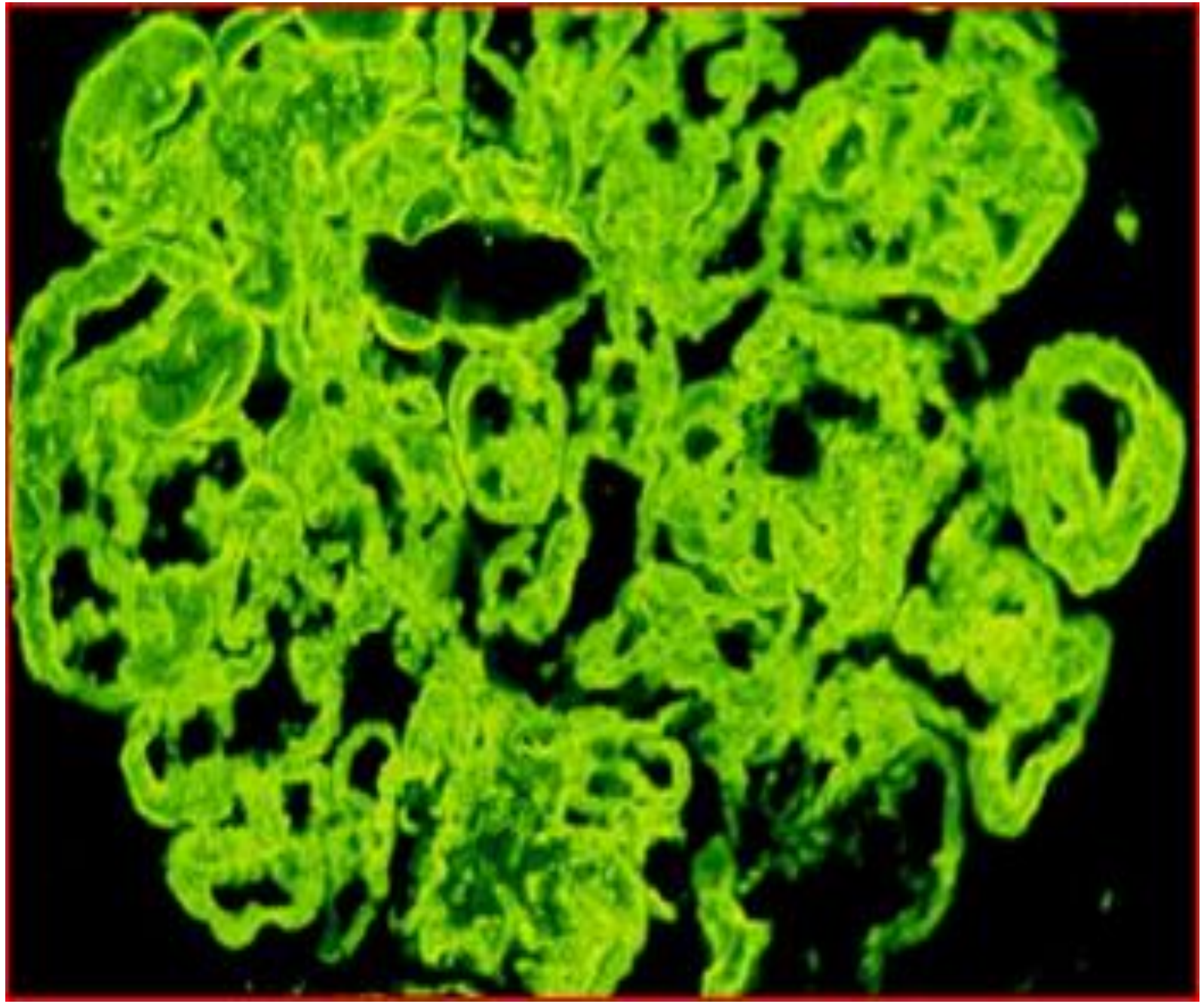
IgA nephropathy versus lupus nephritis

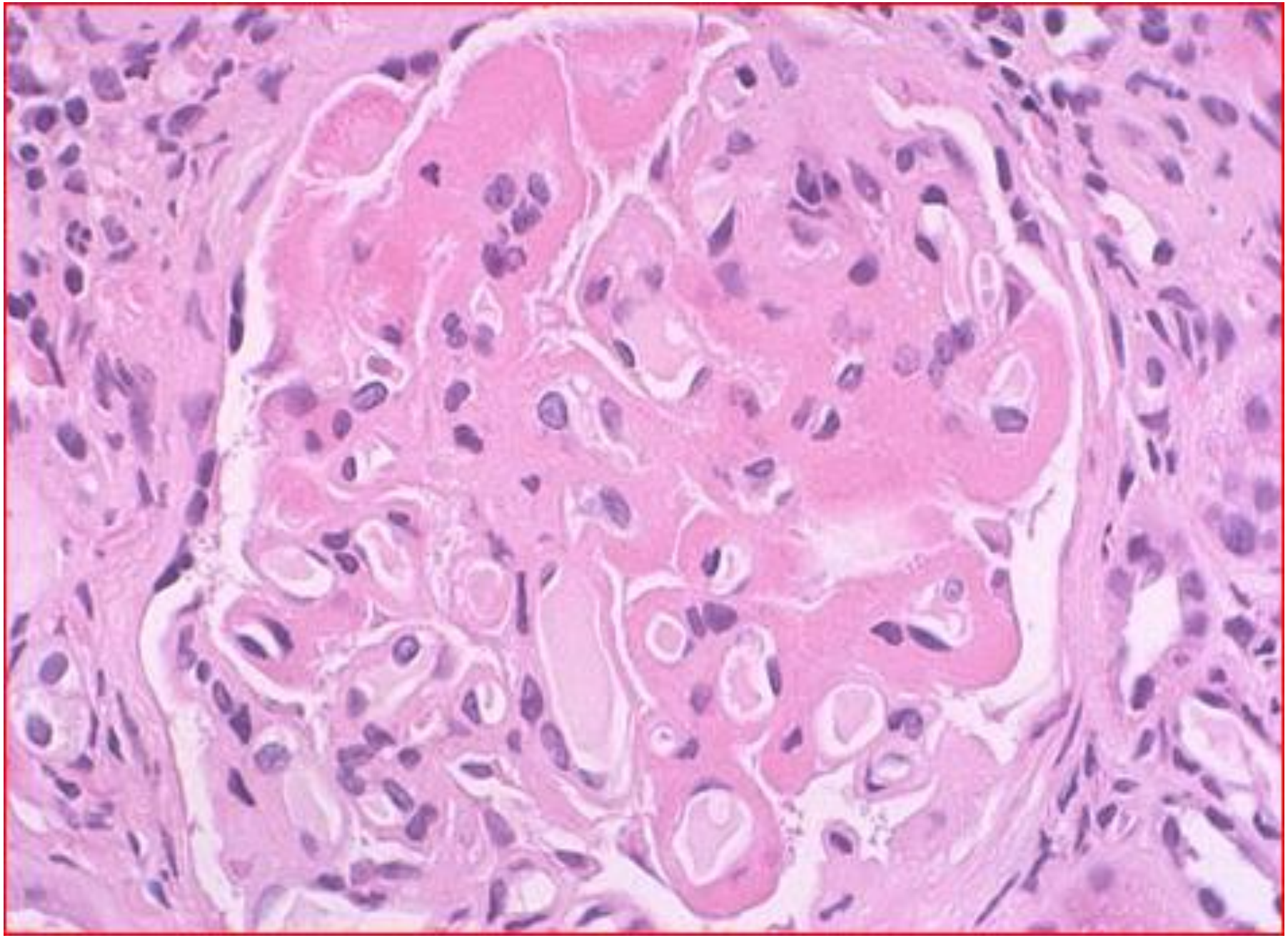




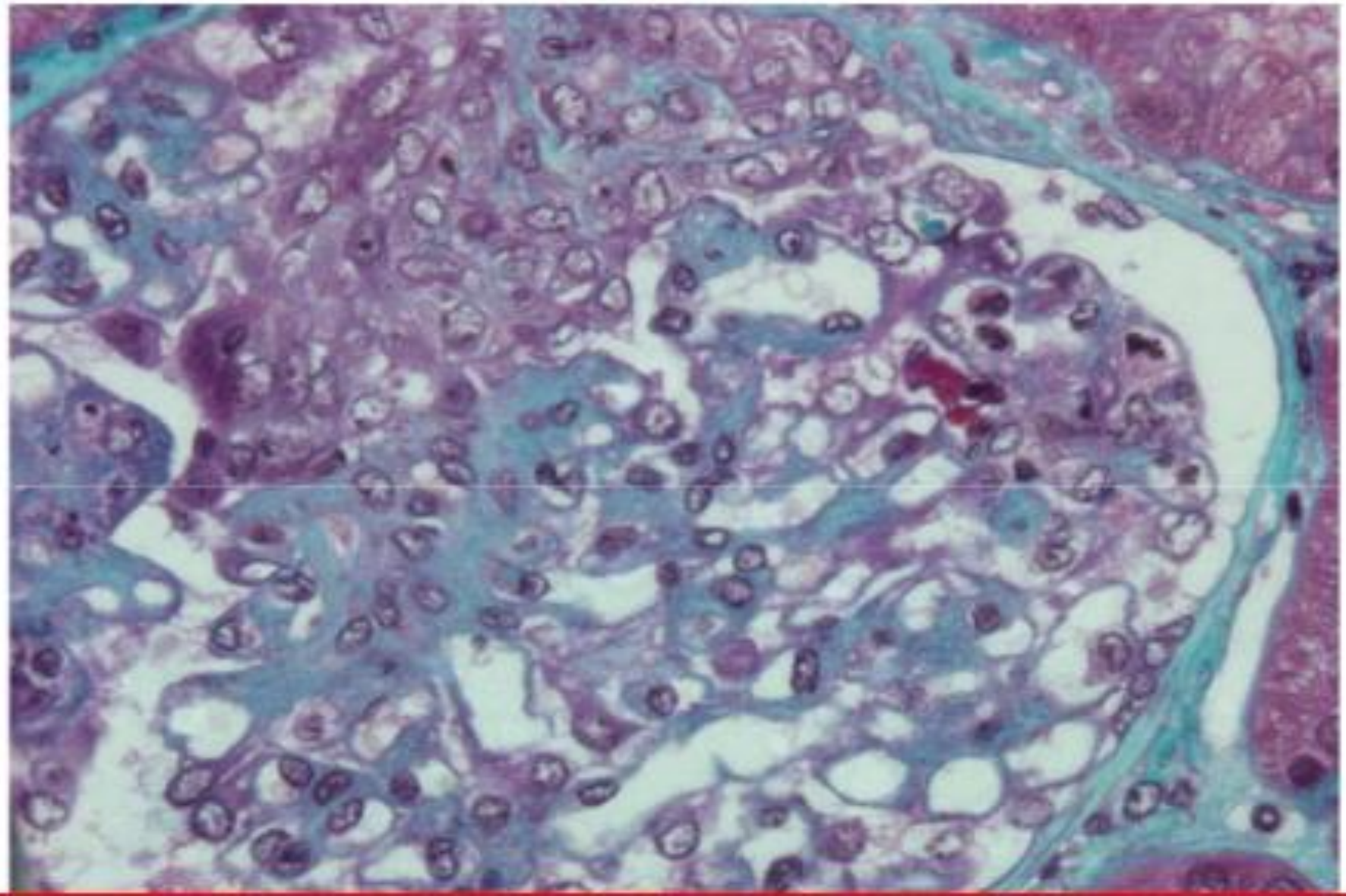


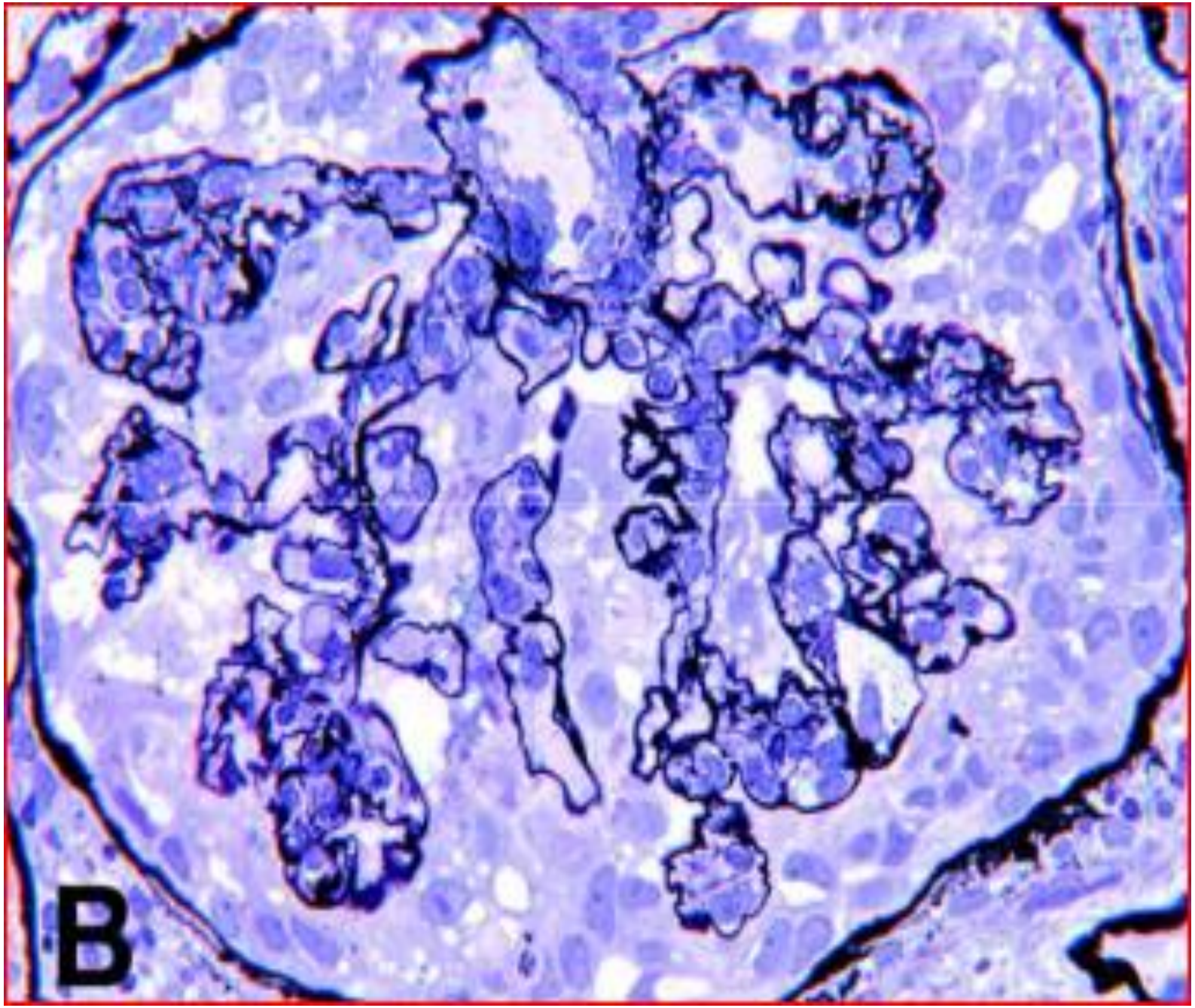






– Croissants épithéliaux

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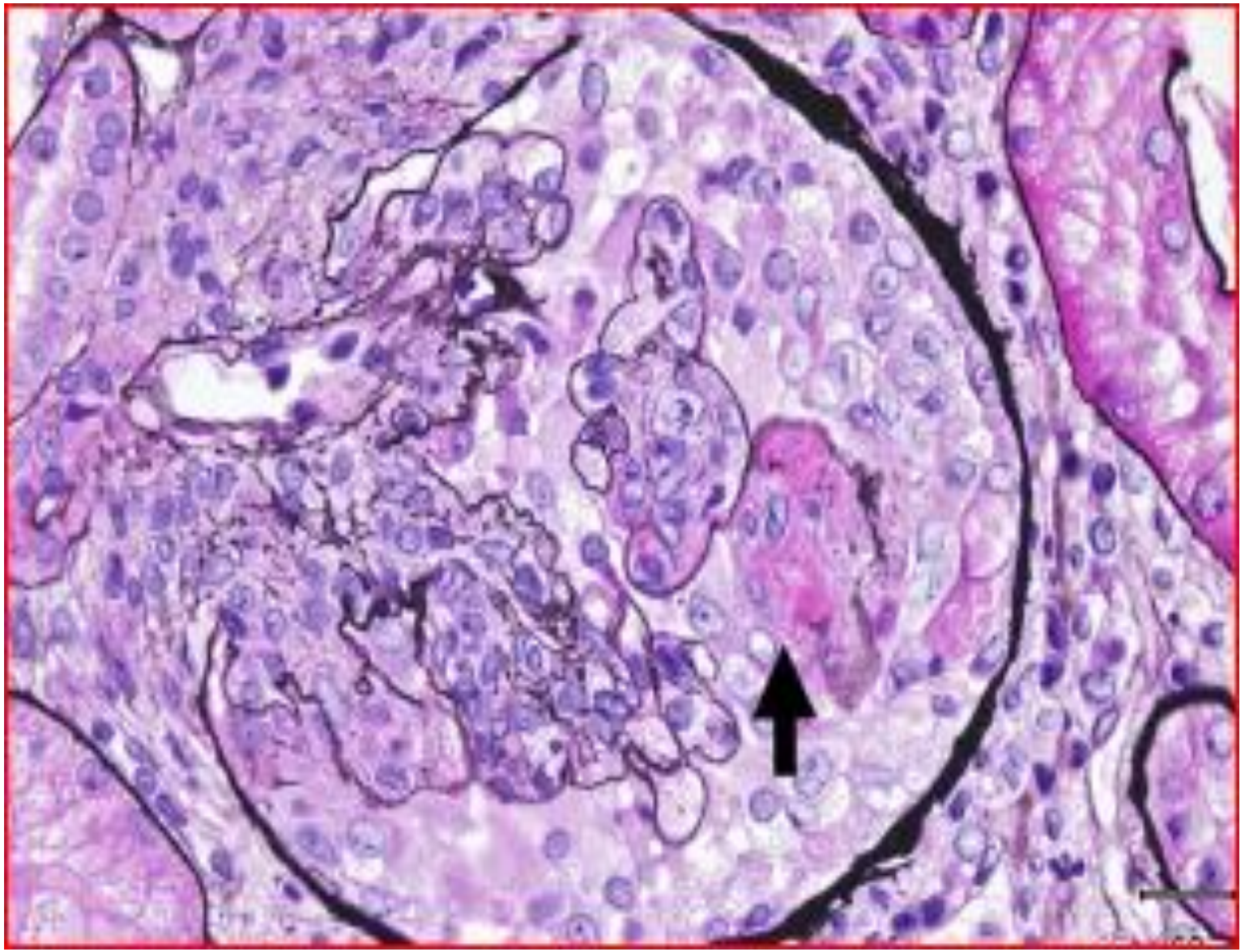
Collapsing Glomerulopathy in Systemic Lupus Erythematosus: An Extreme Form of Lupus Podocytopathy?

Mark Haas

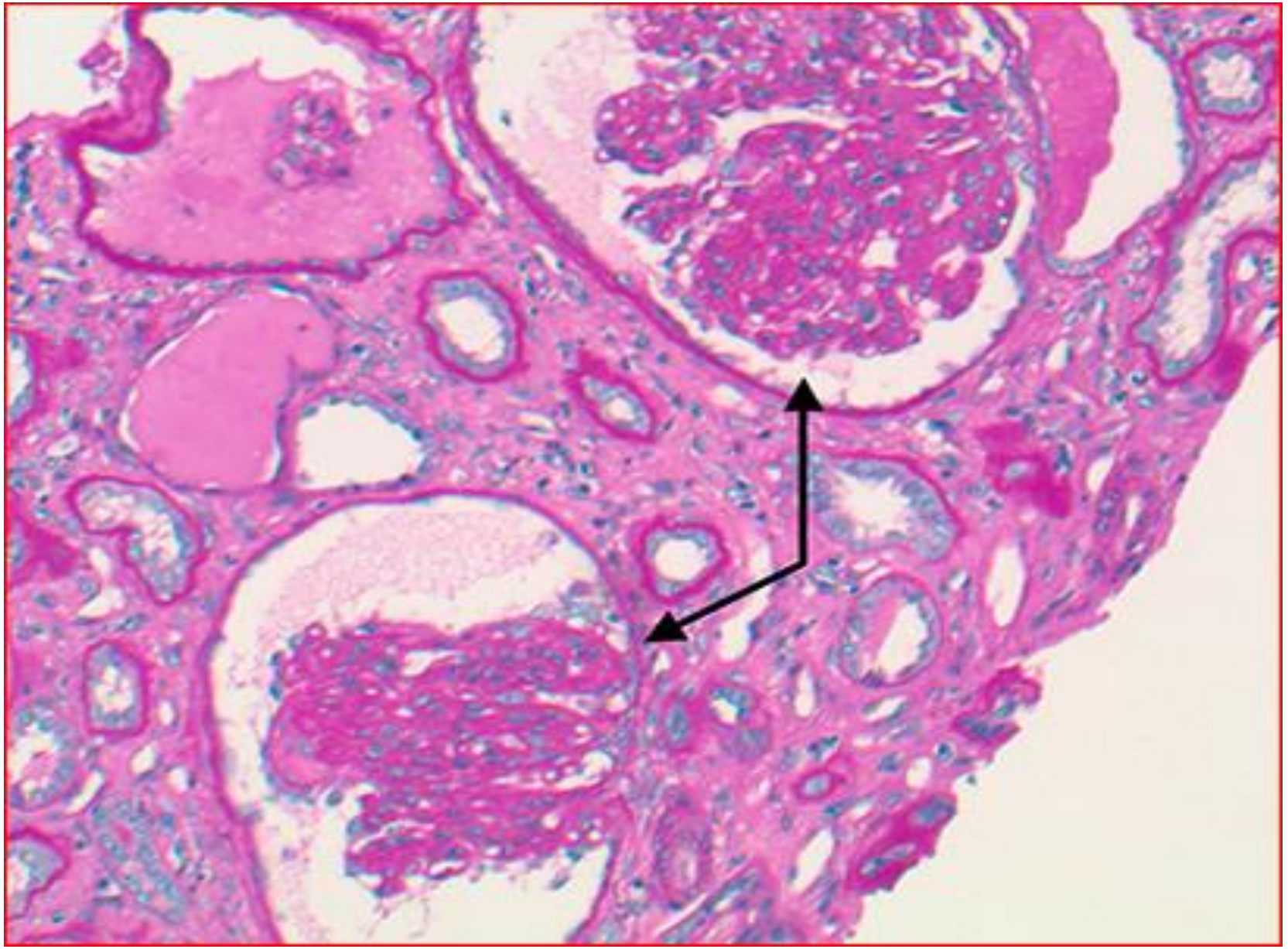
Lupus-Mediated Kidney Damage: Lupus Nephritis or Collapsing Glomerulopathy?

Angel De La Cruz, Haider Ghazanfar, Nayrobi Peña, Rabih Nasr

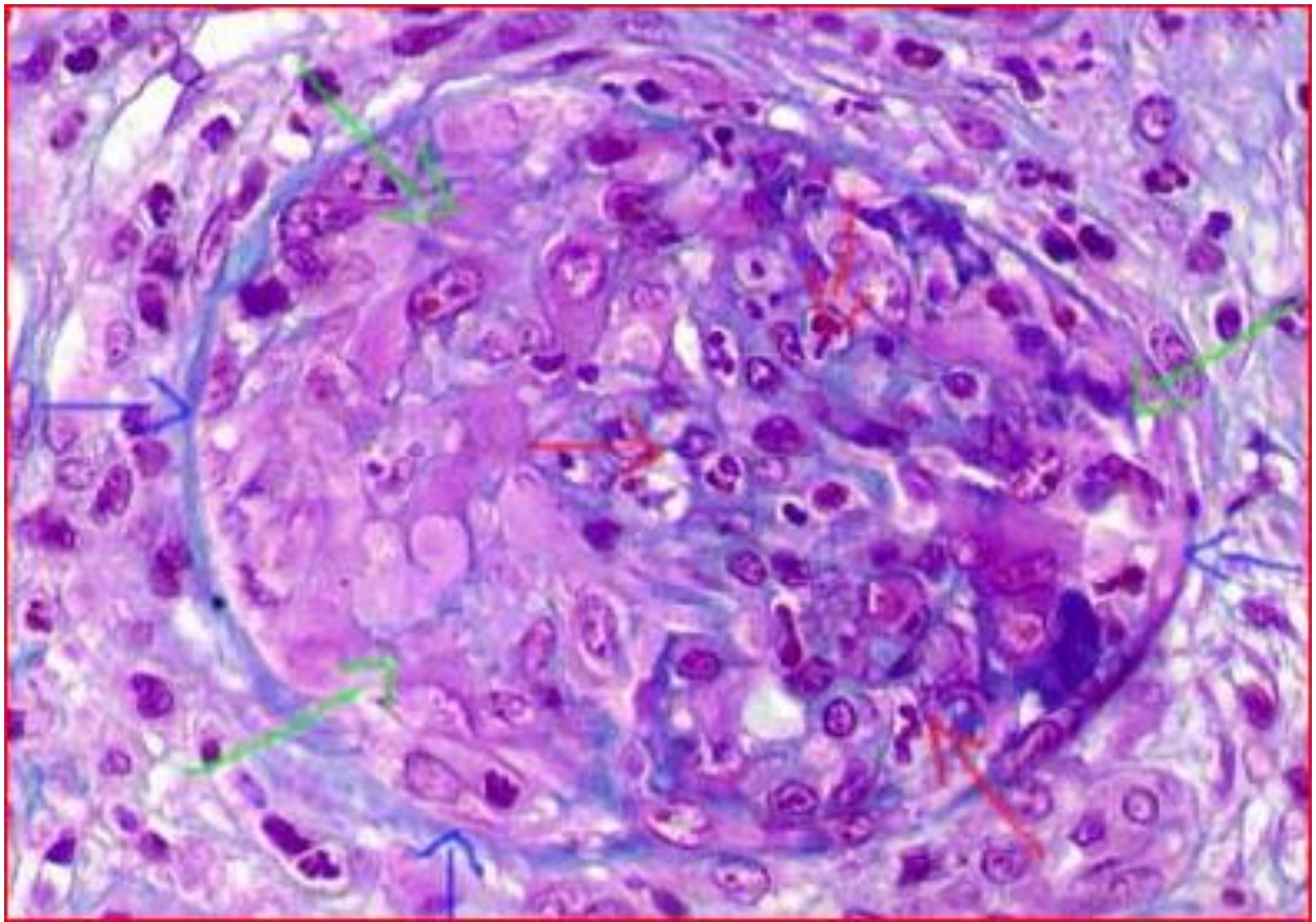


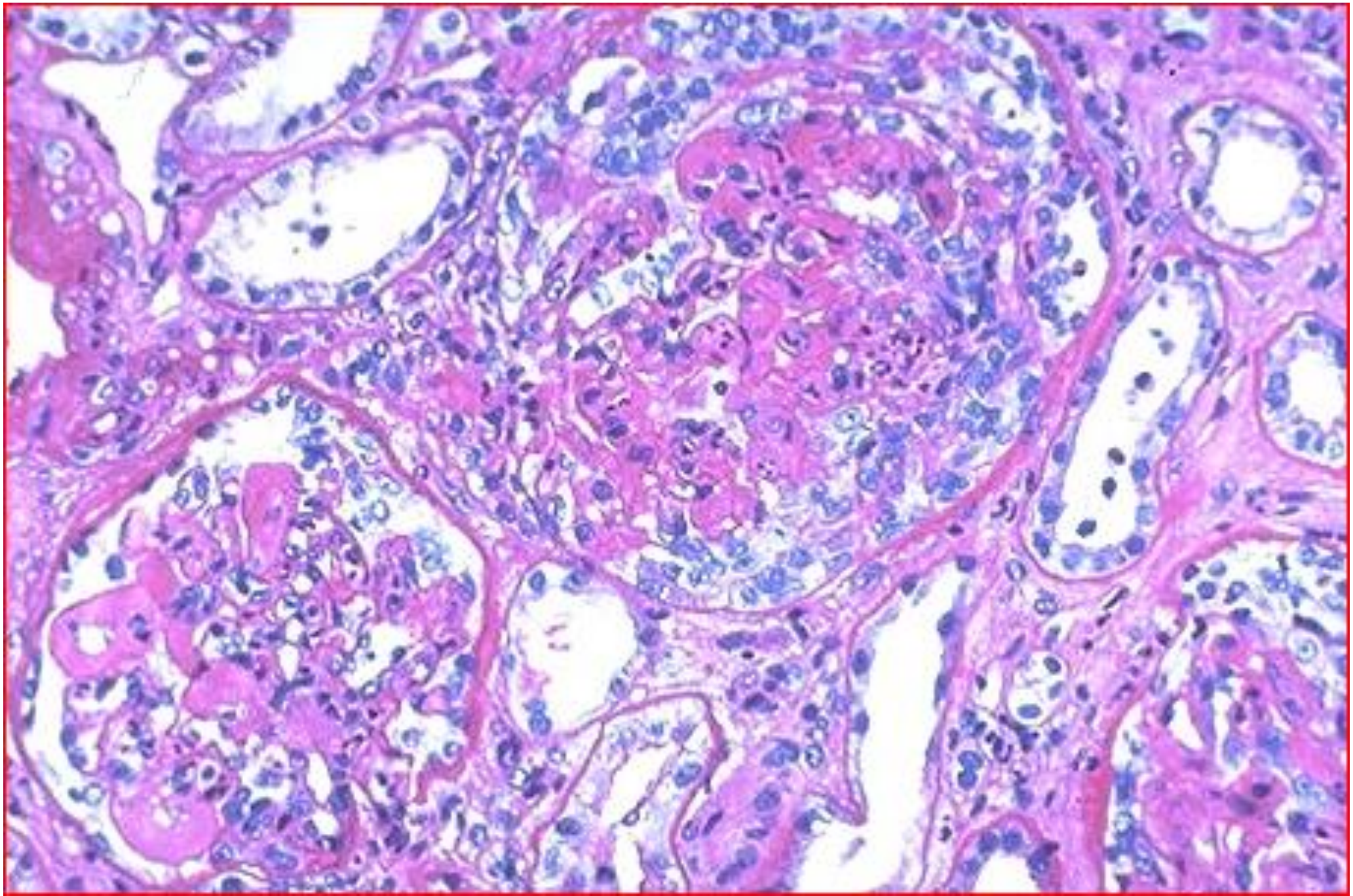
Case and Review

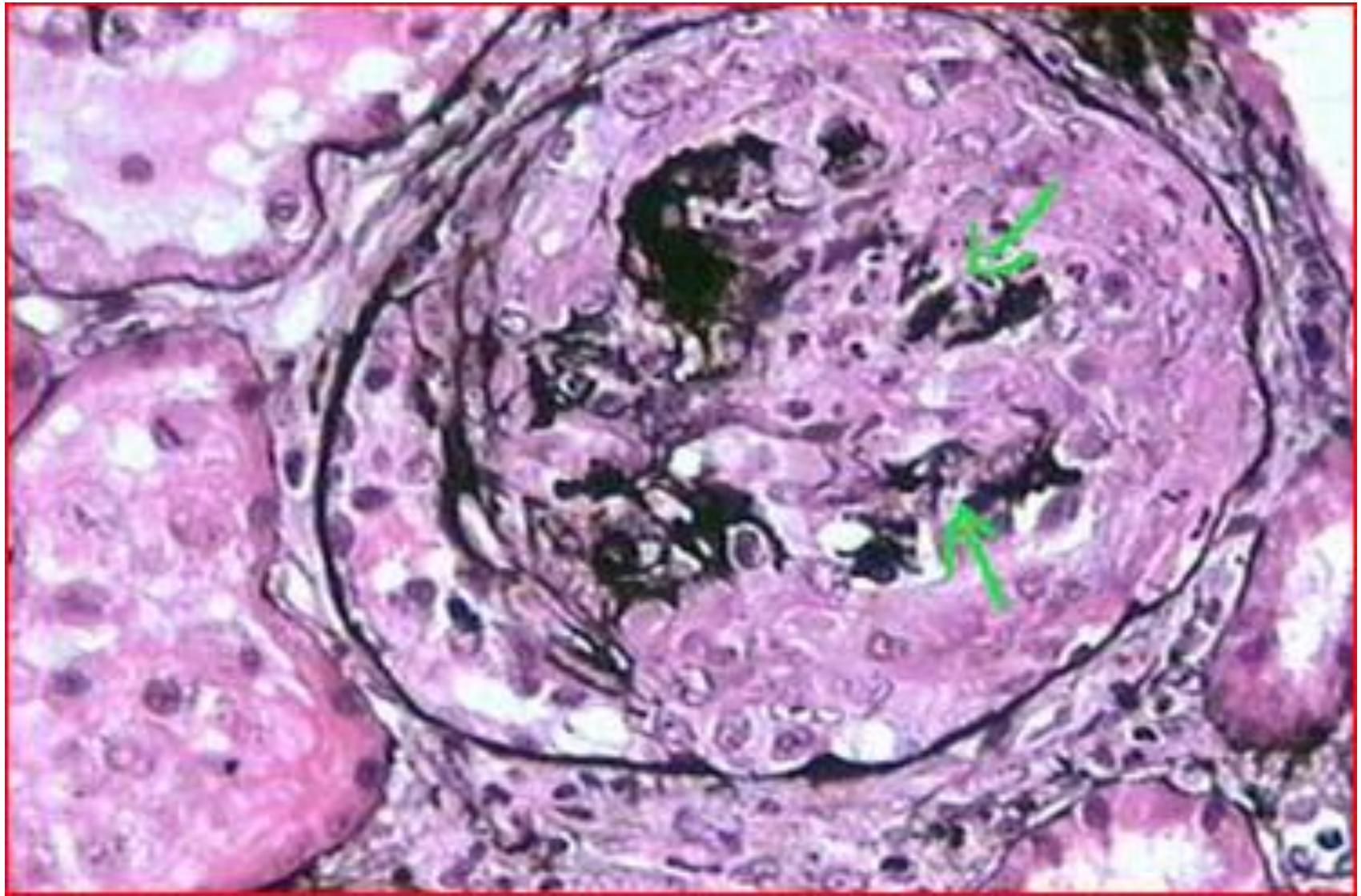
Collapsing FSGS with Concurrent Class 2 and 3 Lupus Nephritis: A Case Report and Review of the Literature

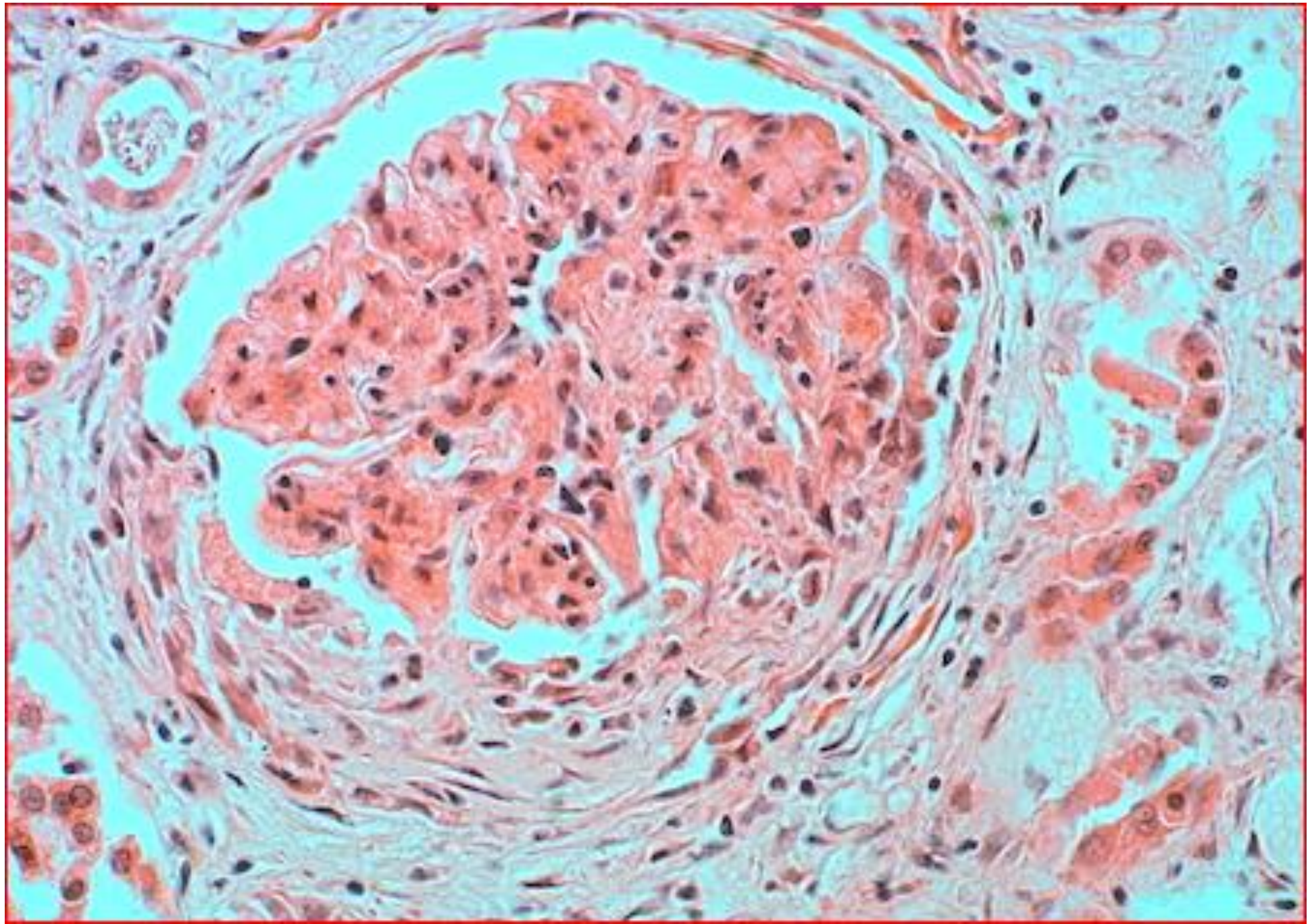


Crescentic glomerulonephritis







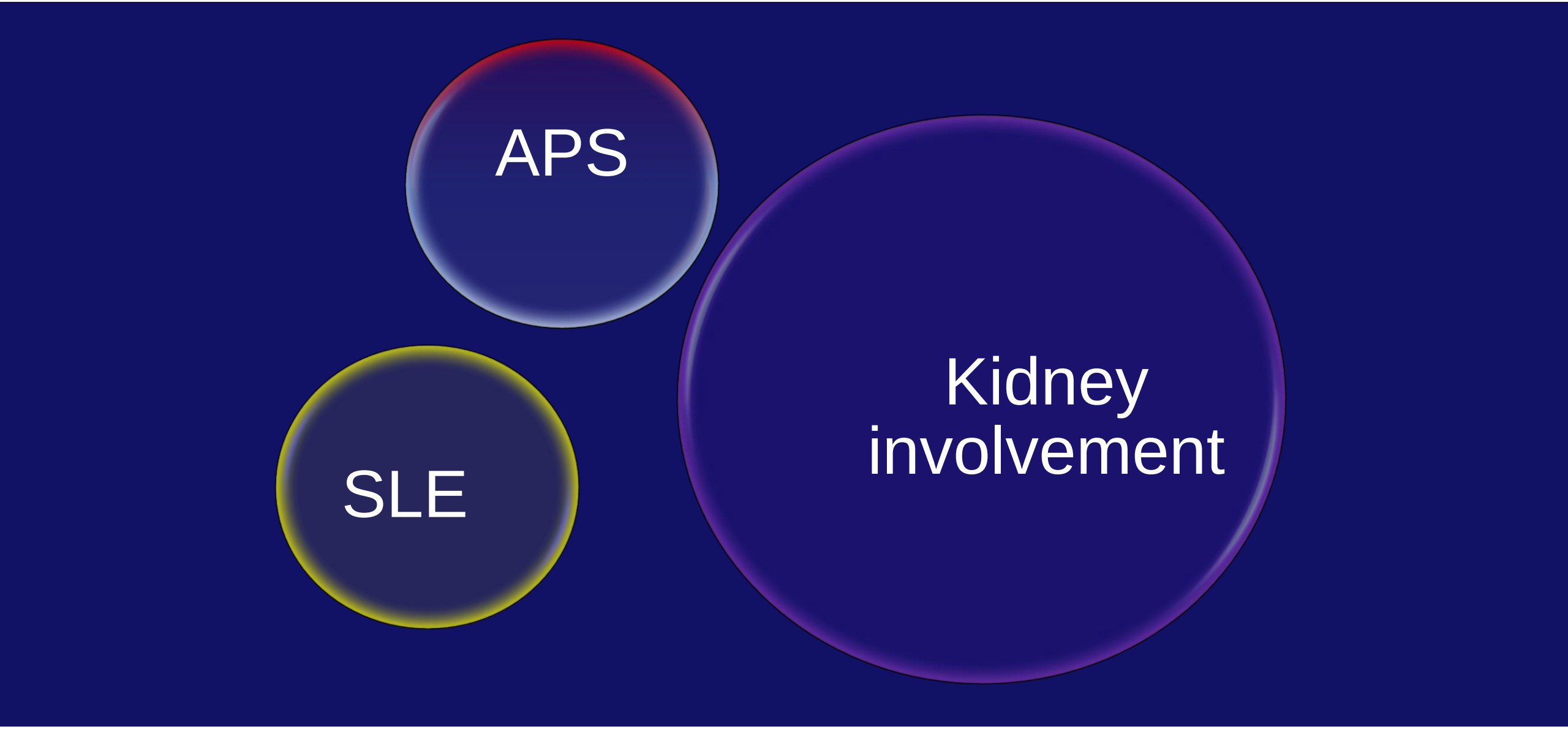


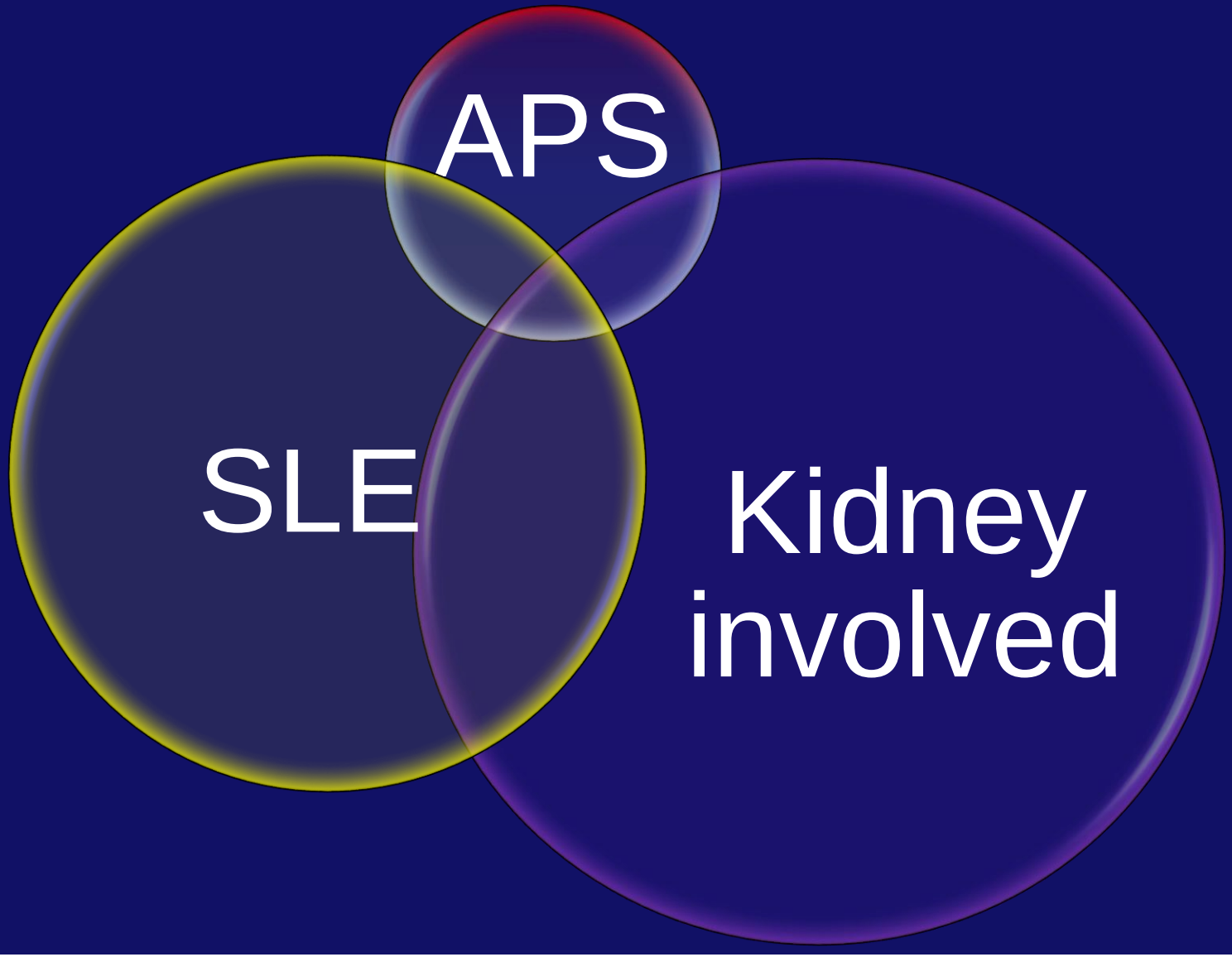
The anti-phospholipid syndrome (APS)

-Presence of APA and Thrombosis of large arteries/veins or small vessels

-Pregnancy morbidity: recurrent miscarriages (before the 10th week of gestation)

-Closely associated to SLE Slight majority of patients with APS have no evidence of other AI disease: Primary APS (PAPS)


APS
SLE
Kidney involvement


APS
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involved

Testing for anti-phospholipid antibodies

Lupus anticoagulant present in plasma on two or more occasions at least 12 weeks apart

Medium or high of IgG or IgM anticardiolipin antibody in serum or plasma on two or more occasions, at least 12 weeks apart

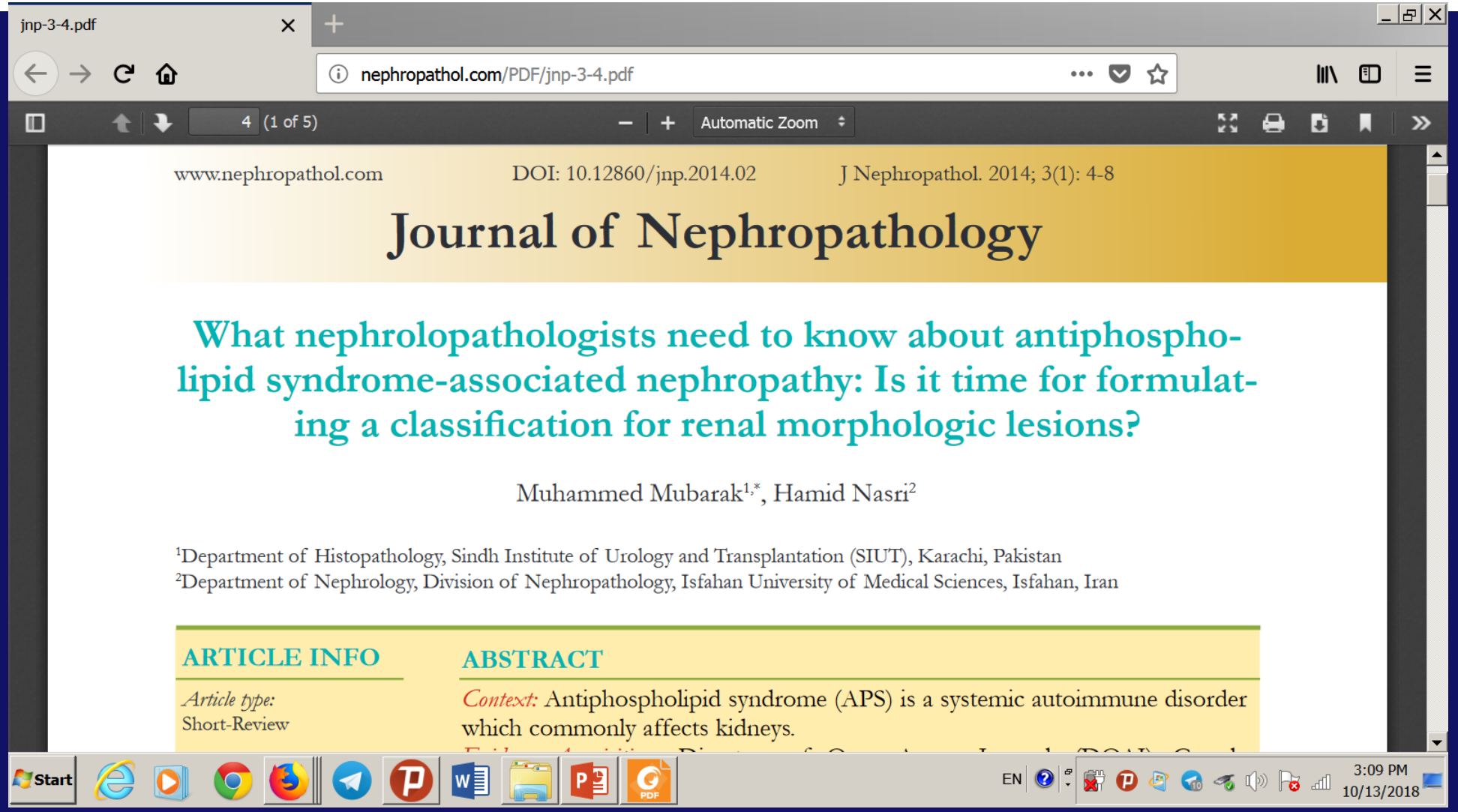
Medium or high titre of IgG or IgM anti-β2 glycoprotein I antibody in serum or plasma on two or more occasions, at least 12 weeks apart

Renal involvement in APS

- Large series have a broad range of patients with APS and renal involvement: 2.7 to 78% of cases

- Clinically, renal involvement is probably underestimated:

  - Extra-renal symptoms dominate the clinical presentation
  - Patients do not undergo renal biopsy because of frequent presence of thrombocytopenia and/or anticoagulant treatment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www.nephropathol.com DOI: 10.12860/jnp.2014.02 J Nephropathol. 2014; 3(1): 4-8
Journal of Nephropathology
What nephrolopathologists need to know about antiphospholipid syndrome-associated nephropathy: Is it time for formulating a classification for renal morphologic lesions?
Muhammed Mubarak[1,*], Hamid Nasri[2]
[1]Department of Histopathology, Sindh Institute of Urology and Transplantation (SIUT), Karachi, Pakistan
[2]Department of Nephrology, Division of Nephropathology, Isfahan University of Medical Sciences, Isfahan, Iran
ARTICLE INFO
Article type:
Short-Review
ABSTRACT
Context: Antiphospholipid syndrome (APS) is a systemic autoimmune disorder which commonly affects kidneys.
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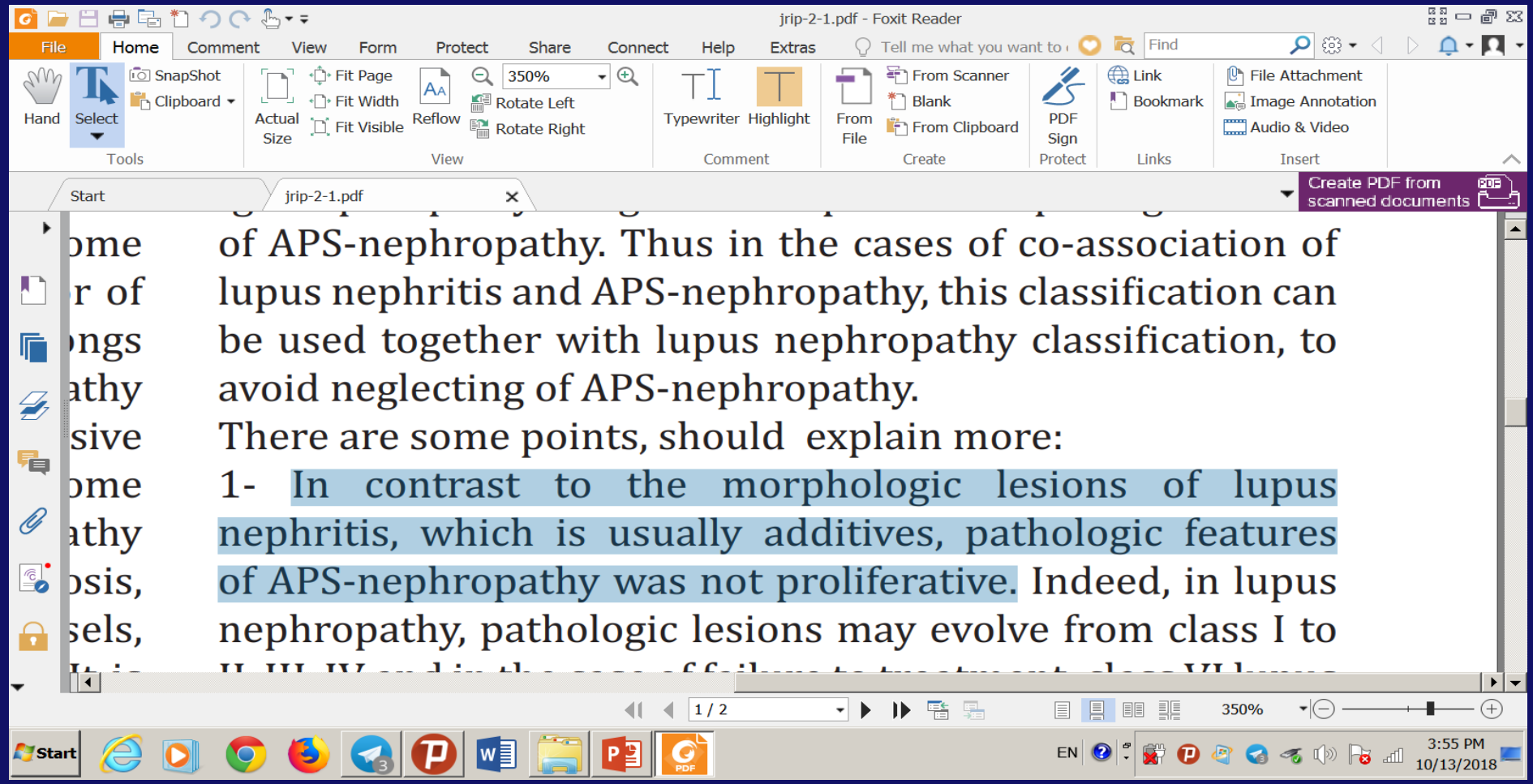
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of APS-nephropathy. Thus in the cases of co-association of lupus nephritis and APS-nephropathy, this classification can be used together with lupus nephropathy classification, to avoid neglecting of APS-nephropathy.
There are some points, should explain more:
1- In contrast to the morphologic lesions of lupus nephritis, which is usually additives, pathologic features of APS-nephropathy was not proliferative. Indeed, in lupus nephropathy, pathologic lesions may evolve from class I to
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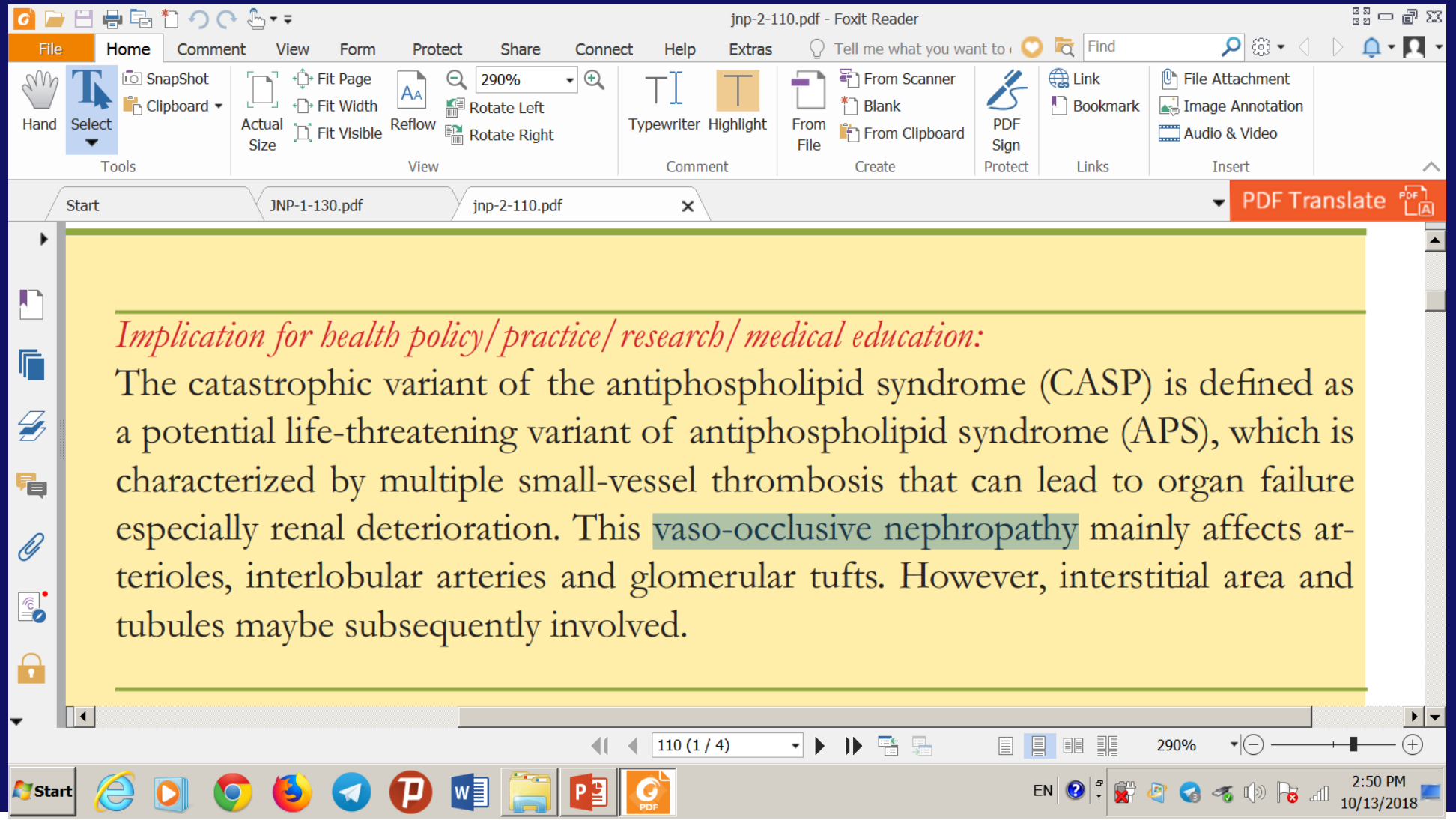
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Implication for health policy/practice/research/medical education:
The catastrophic variant of the antiphospholipid syndrome (CASP) is defined as a potential life-threatening variant of antiphospholipid syndrome (APS), which is characterized by multiple small-vessel thrombosis that can lead to organ failure especially renal deterioration. This vaso-occlusive nephropathy mainly affects arterioles, interlobular arteries and glomerular tufts. However, interstitial area and tubules maybe subsequently involved.
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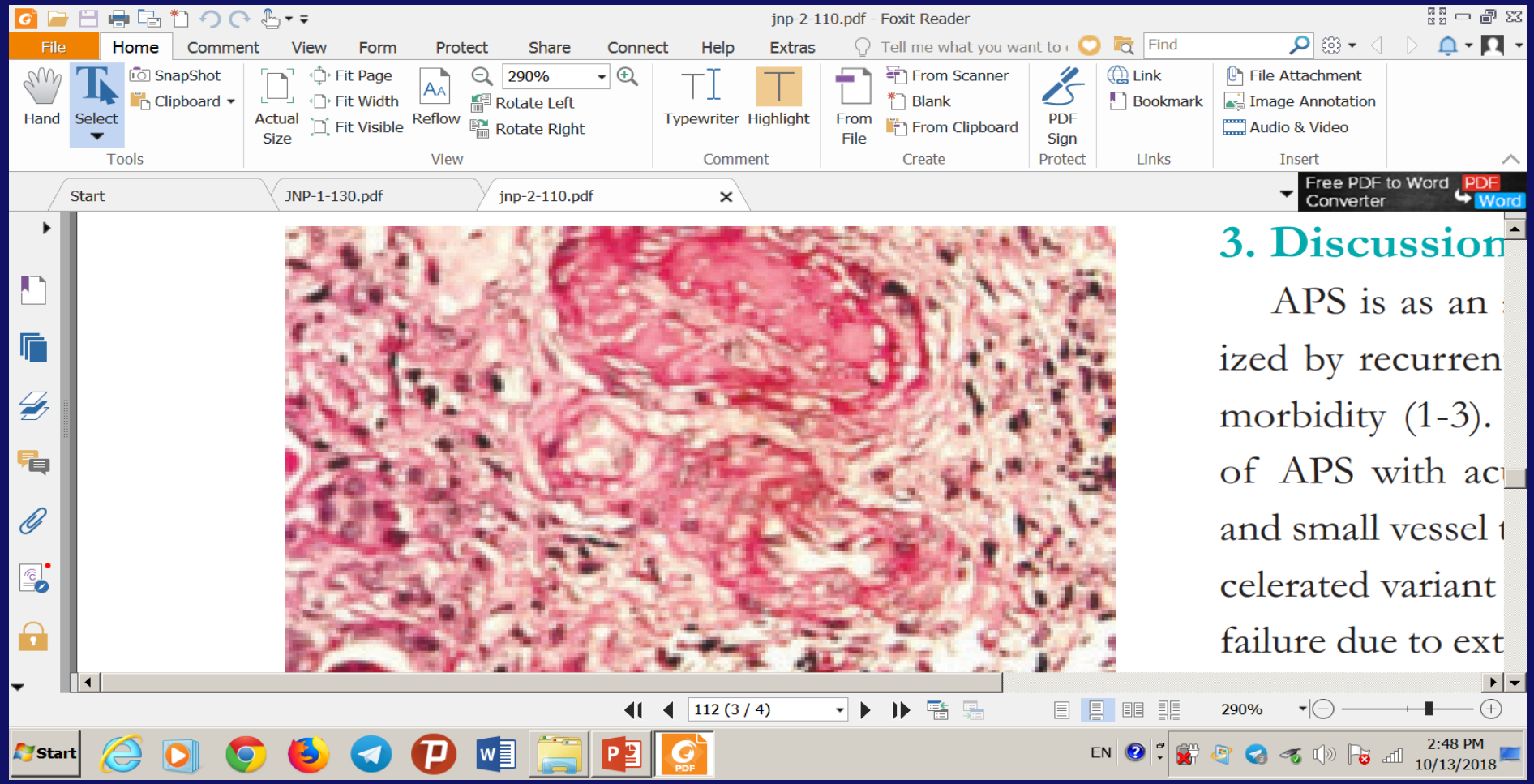
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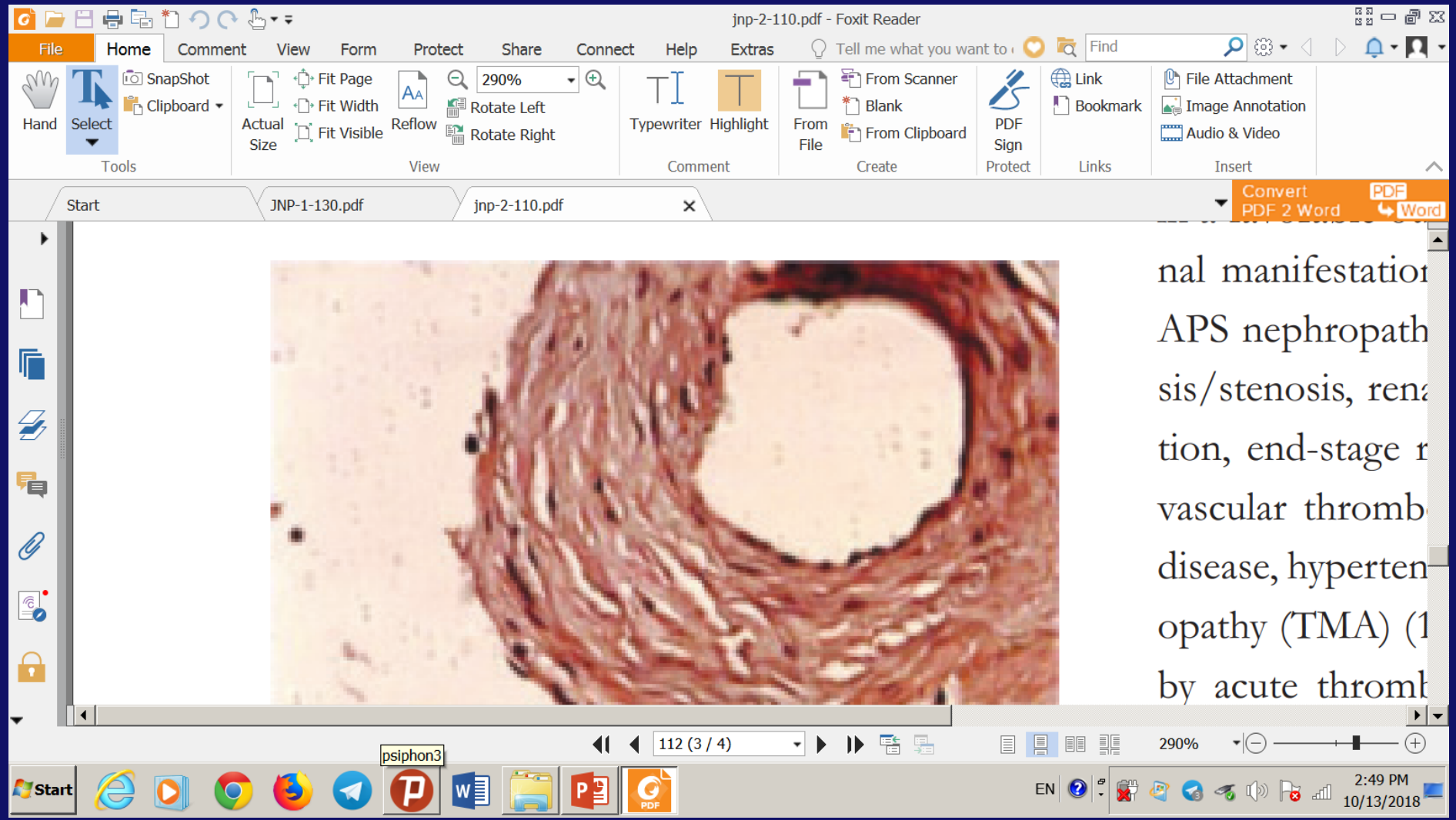
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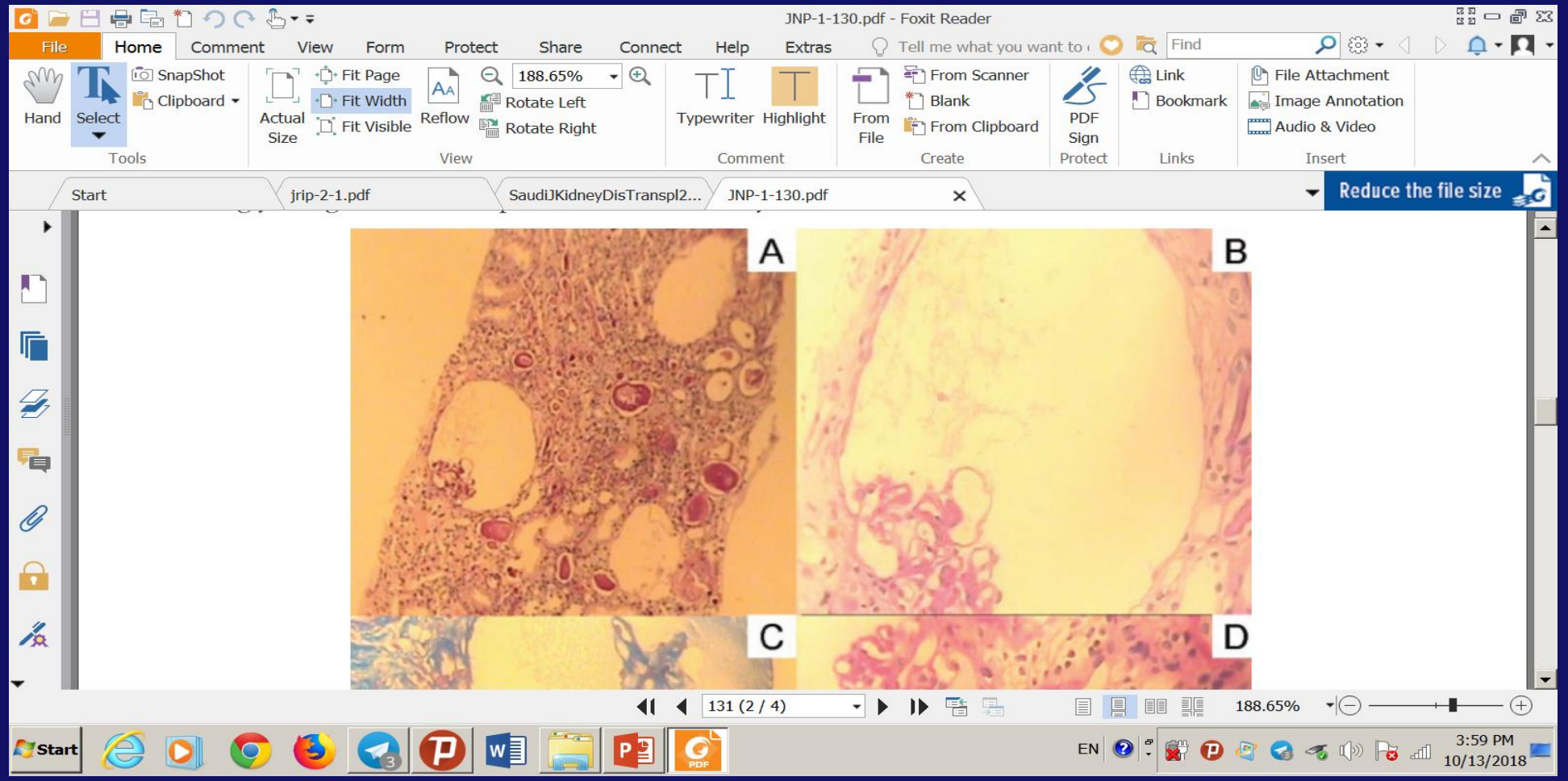
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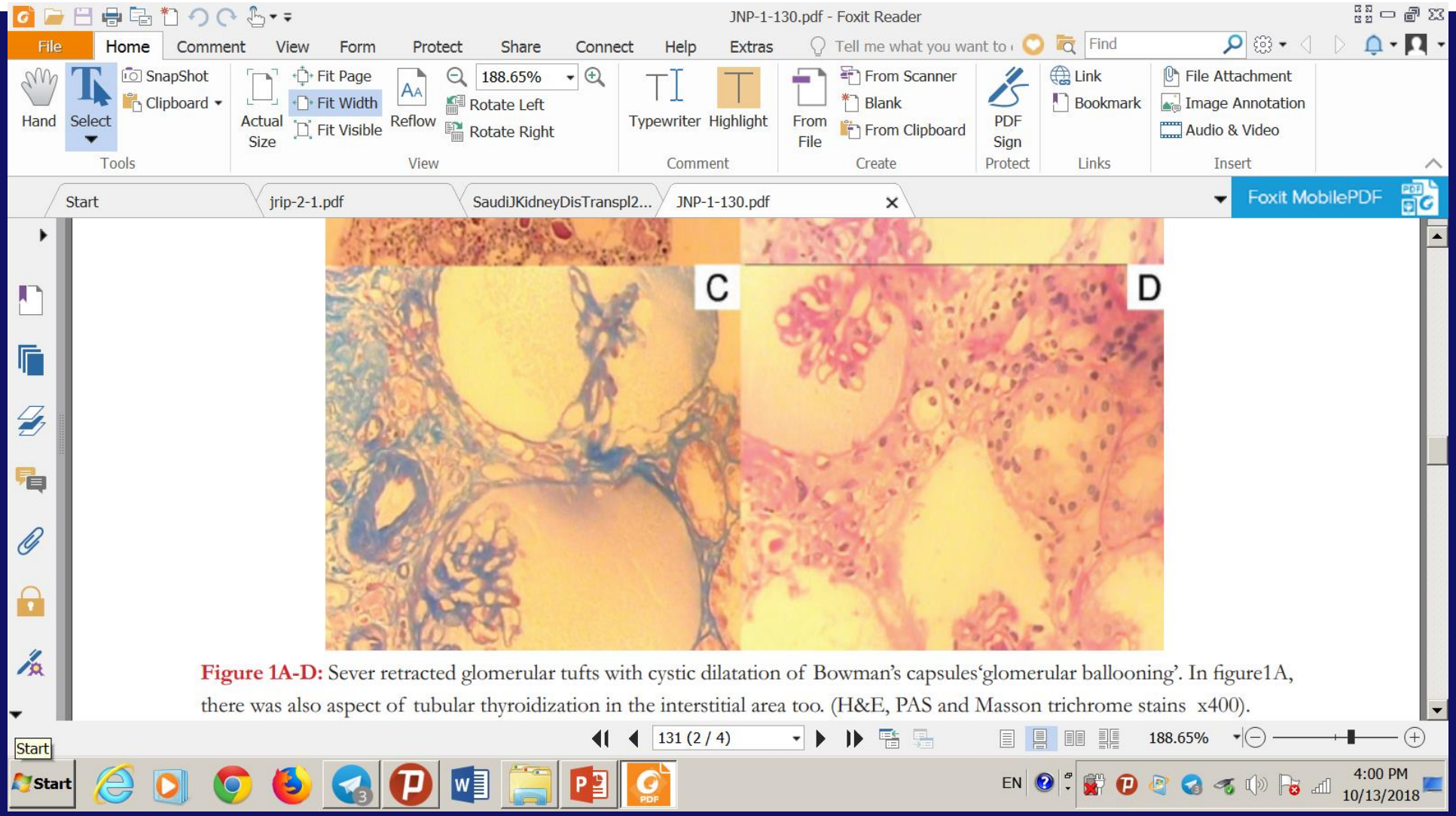
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Figure 1A-D: Sever retracted glomerular tufts with cystic dilatation of Bowman's capsules'glomerular ballooning'. In figure1A, there was also aspect of tubular thyroidization in the interstitial area too. (H&E, PAS and Masson trichrome stains x400).
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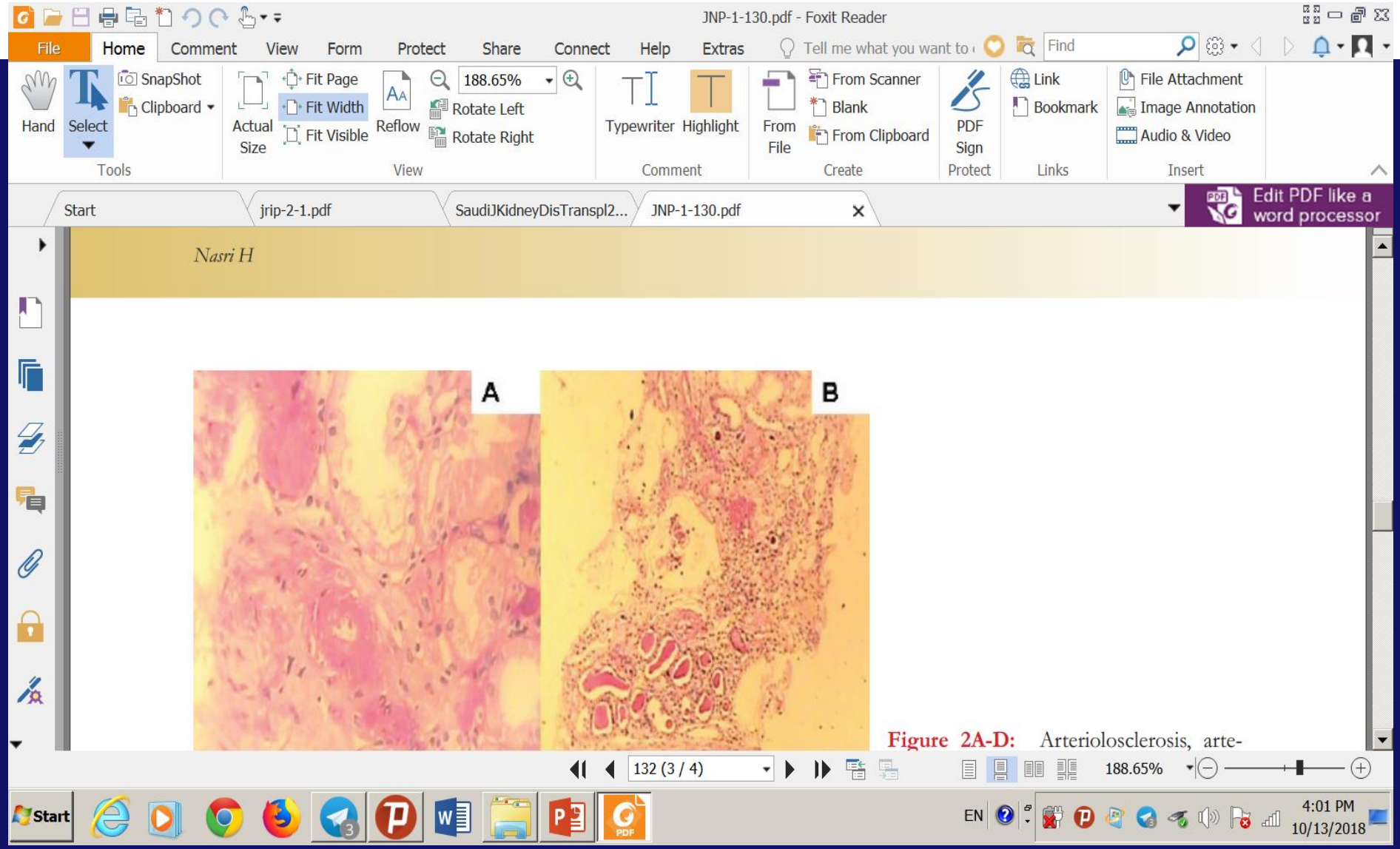
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Figure 2A-D: Arteriolosclerosis, arte-
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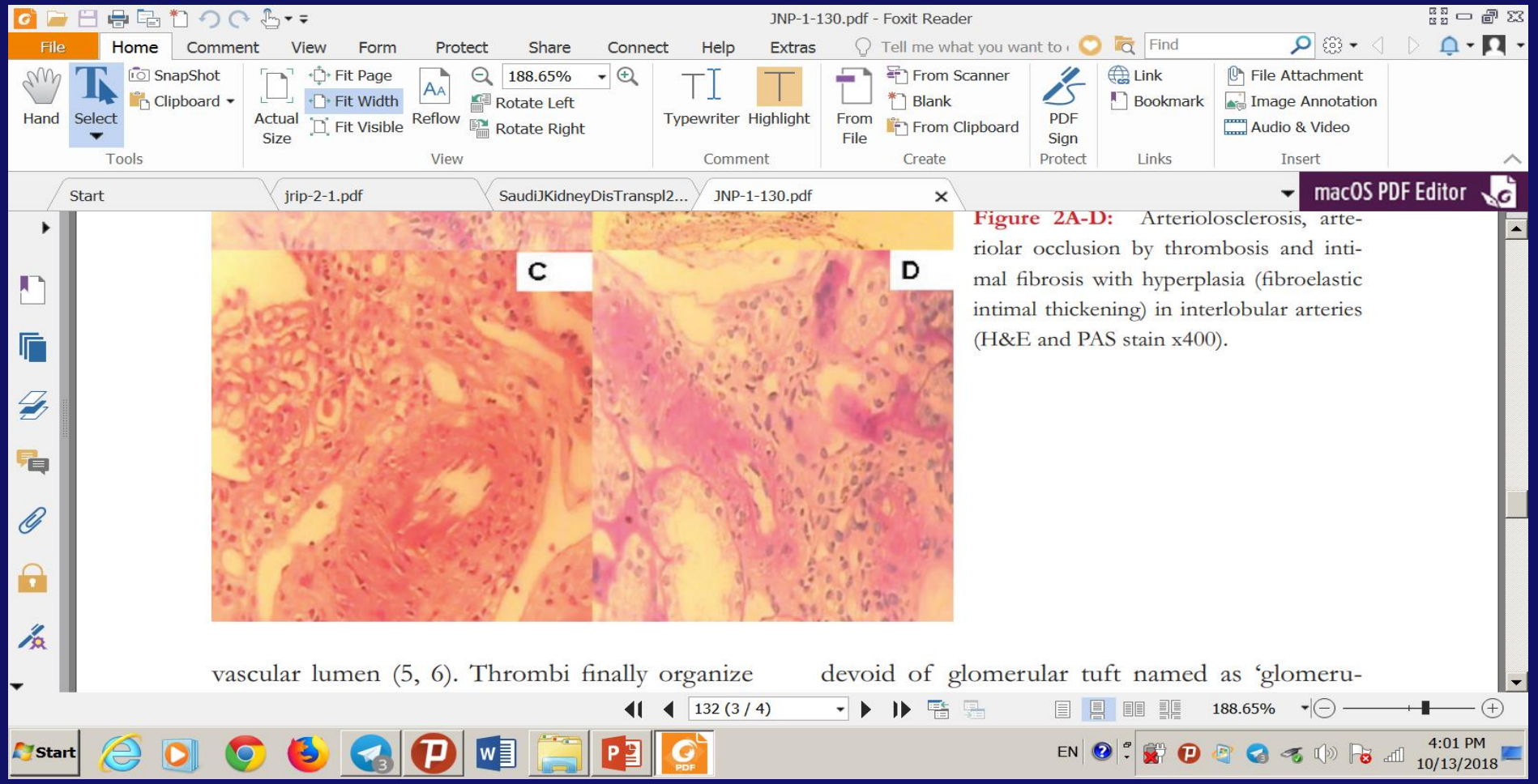
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Figure 2A-D: Arteriolosclerosis, arteriolar occlusion by thrombosis and intimal fibrosis with hyperplasia (fibroelastic intimal thickening) in interlobular arteries (H&E and PAS stain x400).
vascular lumen (5, 6). Thrombi finally organize
devoid of glomerular tuft named as 'glomeru-
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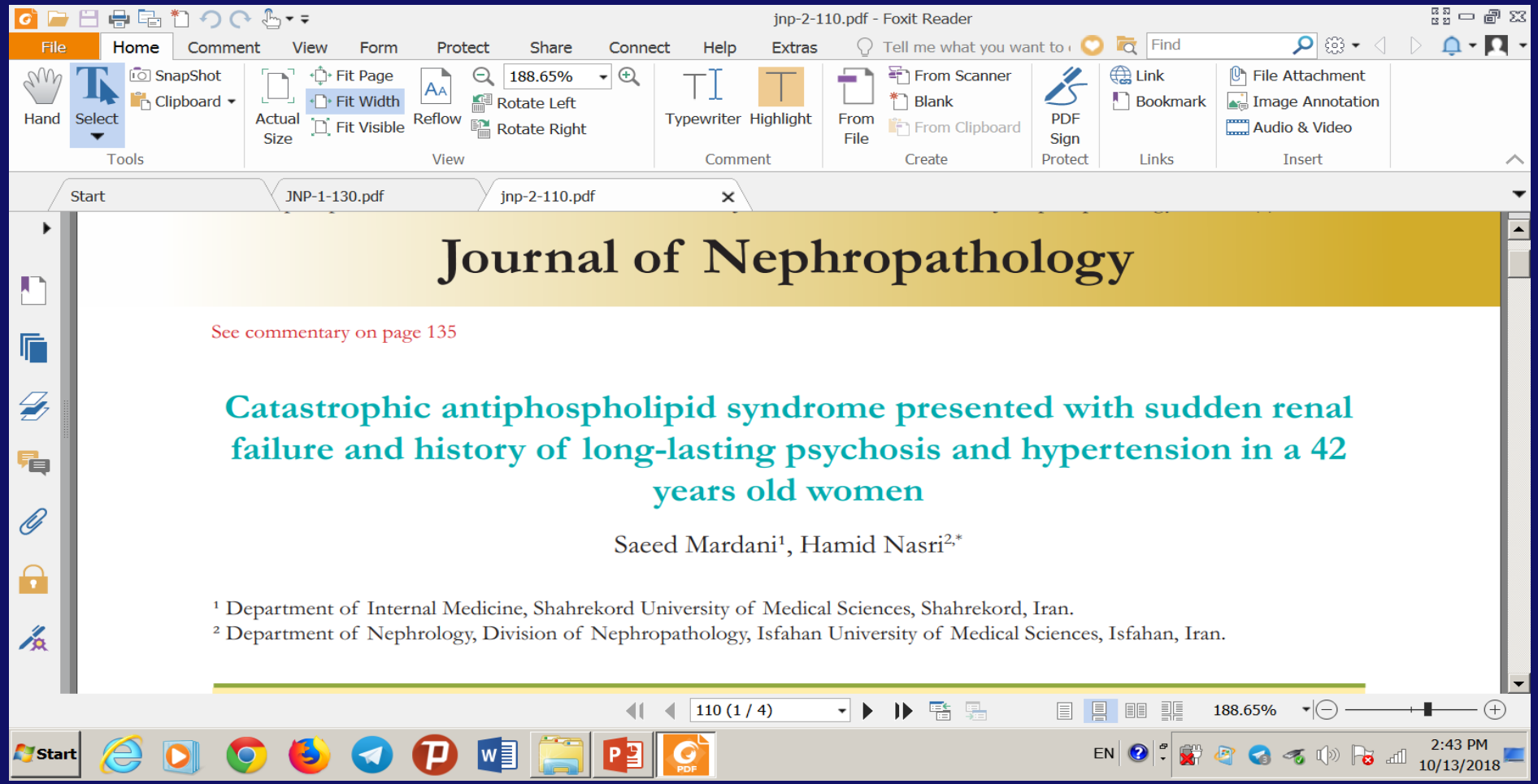
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Journal of Nephropathology
See commentary on page 135
Catastrophic antiphospholipid syndrome presented with sudden renal failure and history of long-lasting psychosis and hypertension in a 42 years old women
Saeed Mardani[1], Hamid Nasri[2,*]
[1] Department of Internal Medicine, Shahrekord University of Medical Sciences, Shahrekord, Iran.
[2] Department of Nephrology, Division of Nephropathology, Isfahan University of Medical Sciences, Isfahan, Iran.
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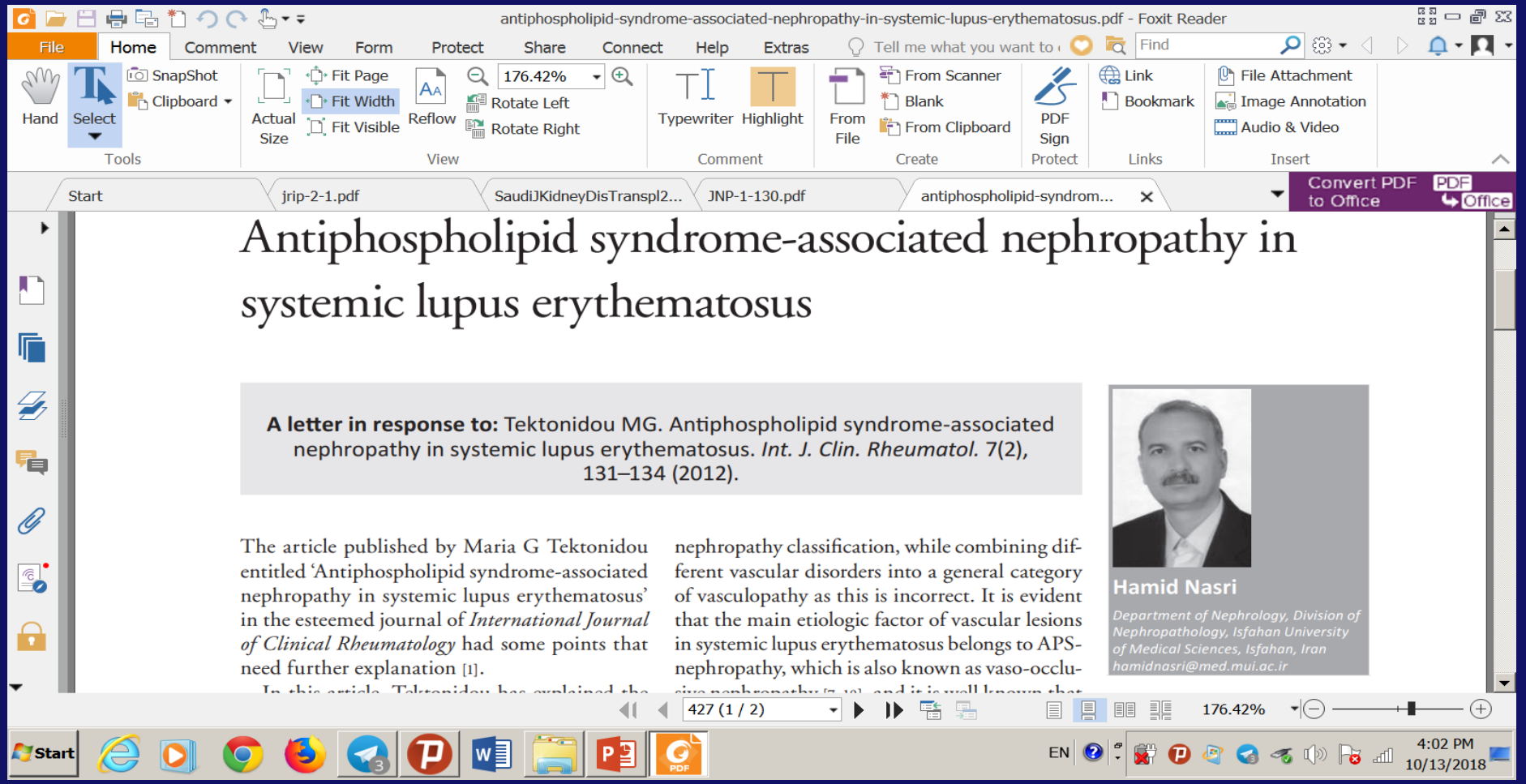
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Antiphospholipid syndrome-associated nephropathy in systemic lupus erythematosus
A letter in response to: Tektonidou MG. Antiphospholipid syndrome-associated nephropathy in systemic lupus erythematosus. Int. J. Clin. Rheumatol. 7(2), 131–134 (2012).
The article published by Maria G Tektonidou entitled 'Antiphospholipid syndrome-associated nephropathy in systemic lupus erythematosus' in the esteemed journal of International Journal of Clinical Rheumatology had some points that need further explanation [1].
nephropathy classification, while combining different vascular disorders into a general category of vasculopathy as this is incorrect. It is evident that the main etiologic factor of vascular lesions in systemic lupus erythematosus belongs to APS-nephropathy, which is also known as vaso-occlu-
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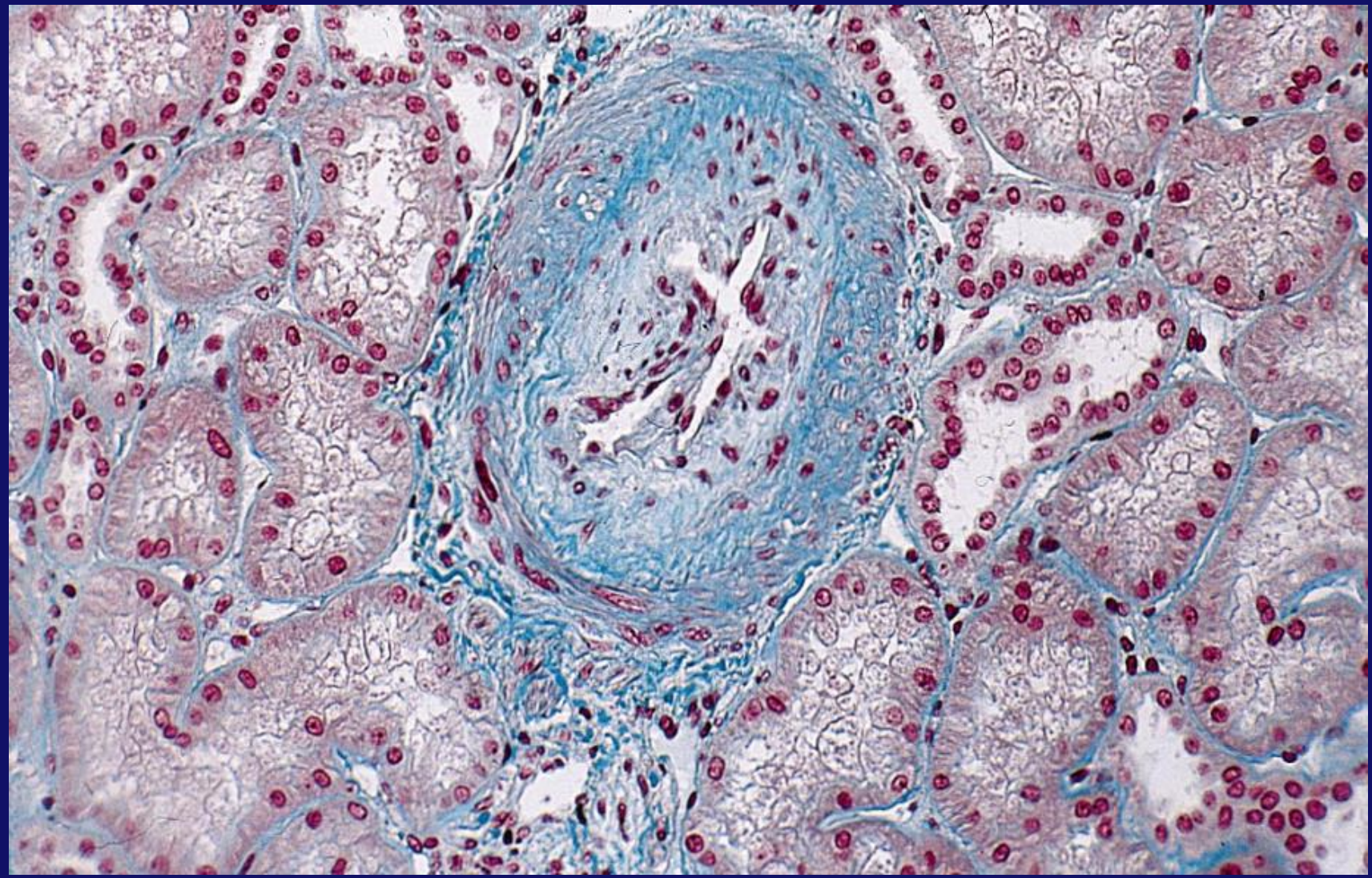
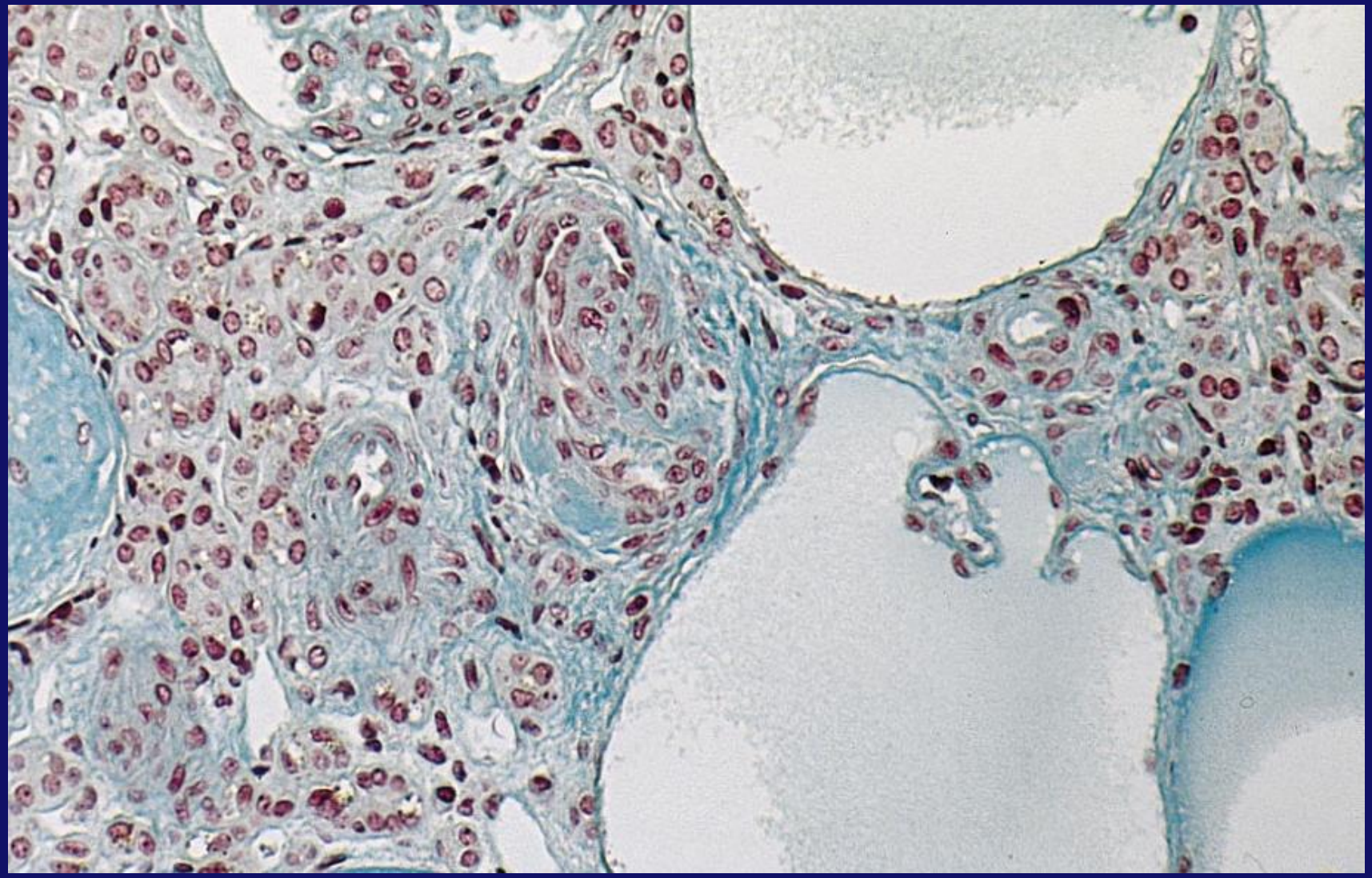
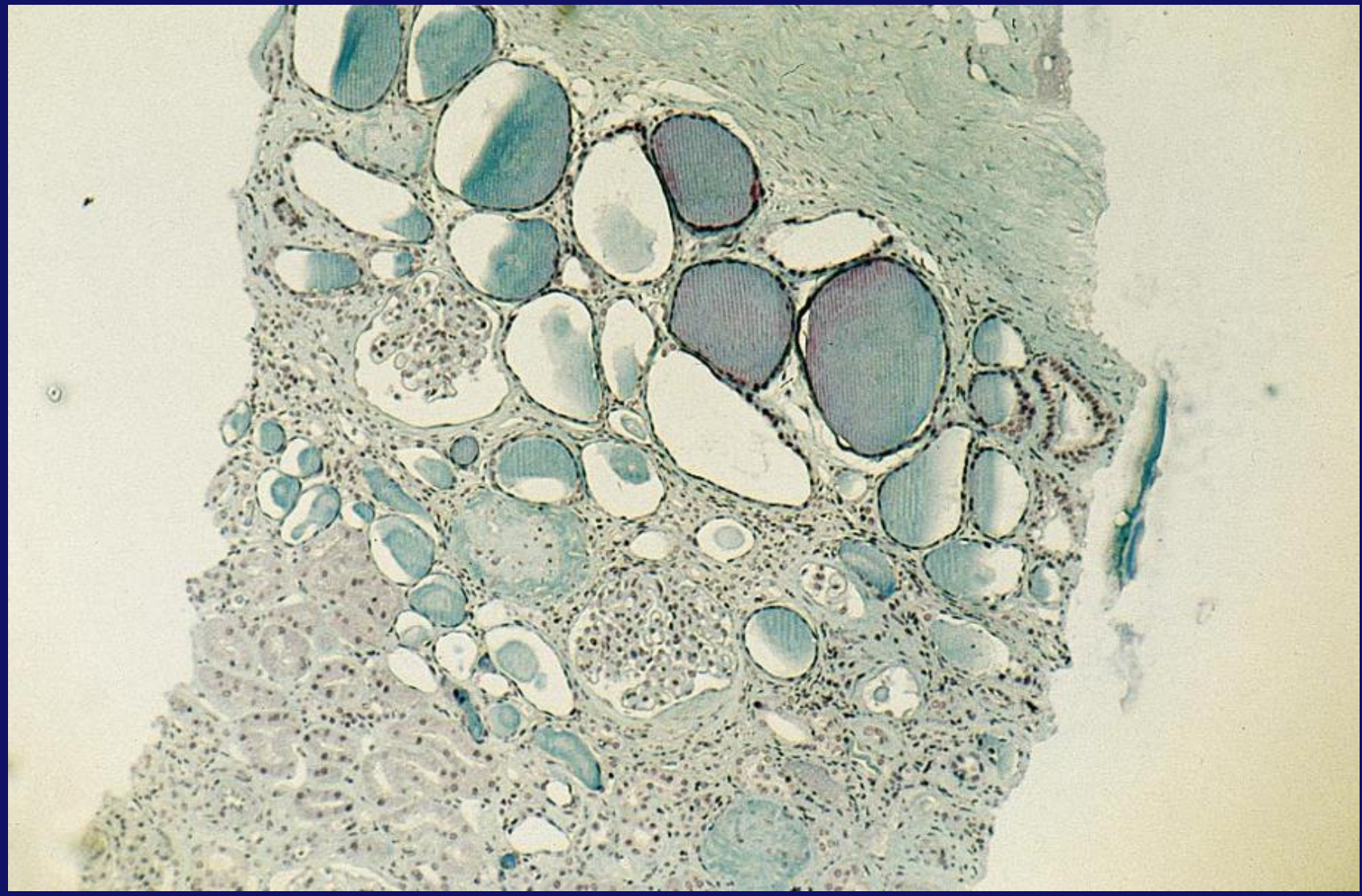
Arteriosclerosis (From Nochy, 1999)



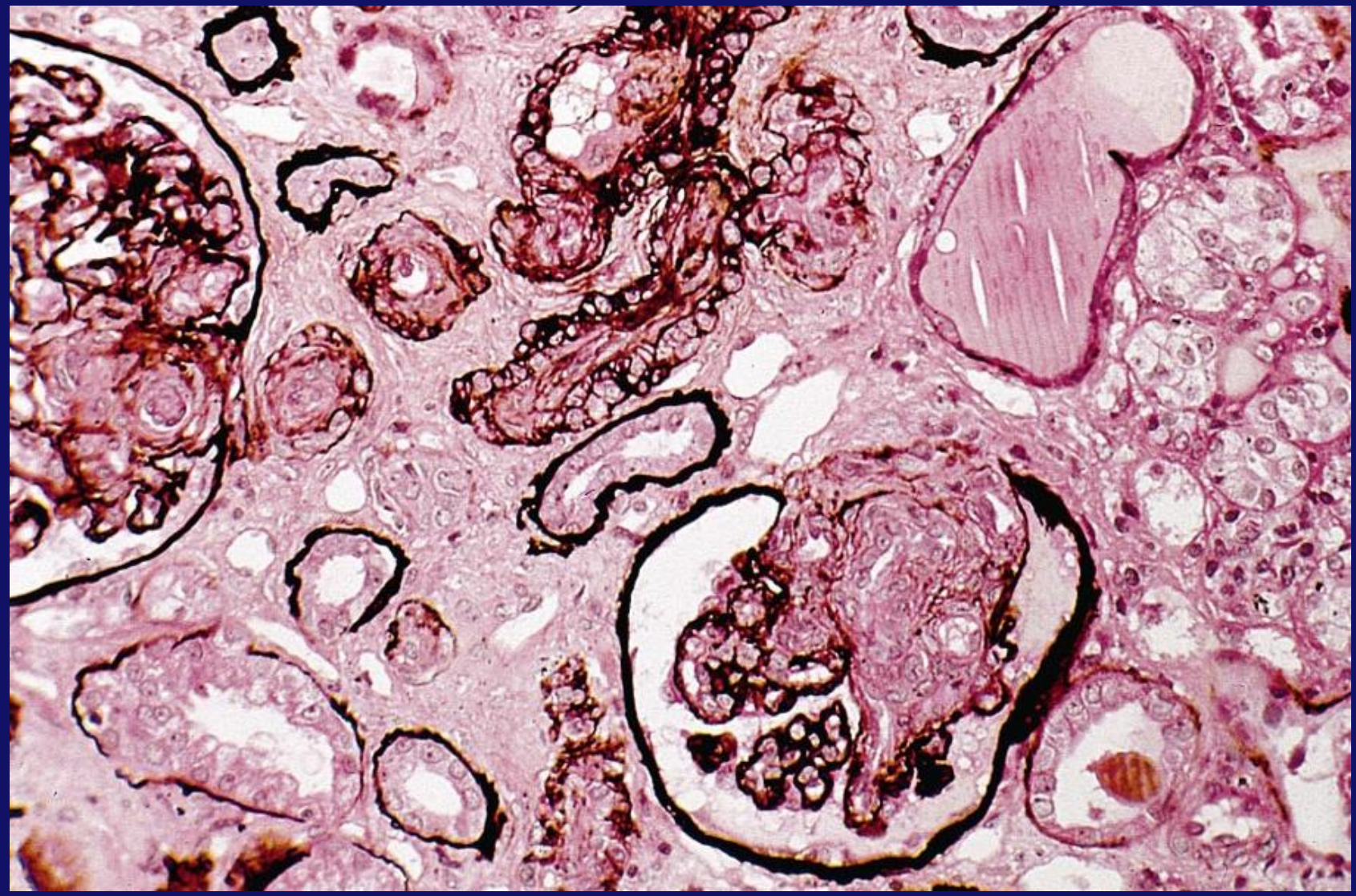
Cystic formation of glomeruli (From Nochy, Fig 3)



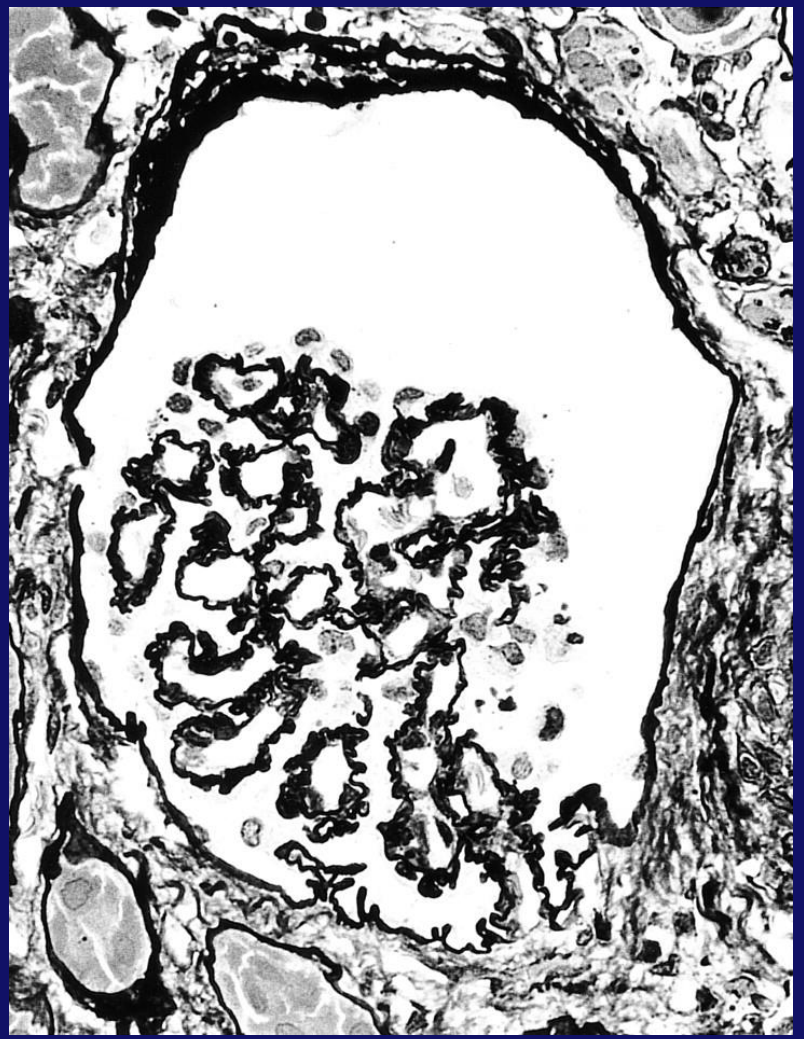
Focal cortical atrophy(From Nochy, 1999)



Thrombotic microangiopathy (From Nochy, 1999)

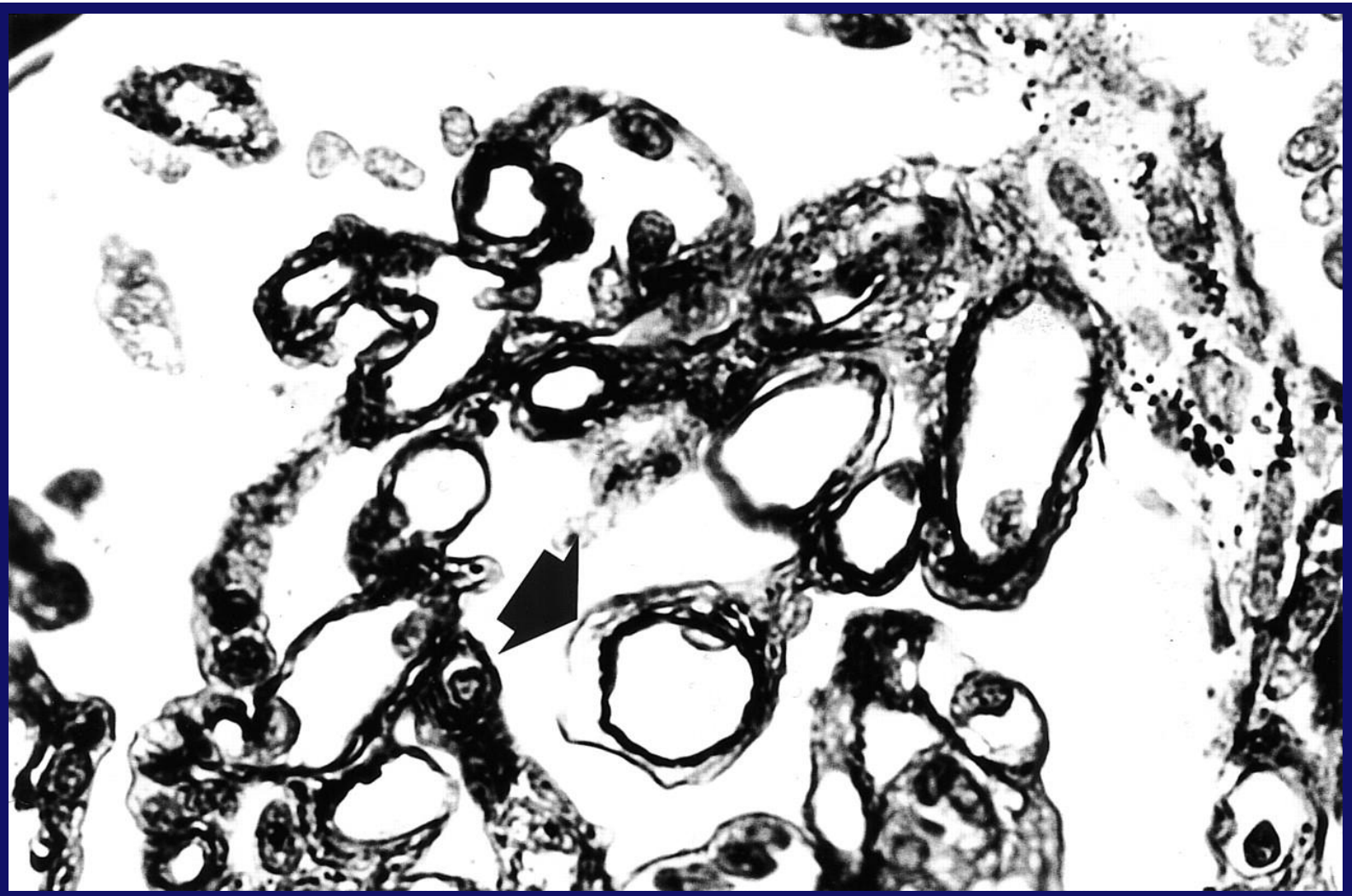


In some glomeruli, simple ischaemic collapse and basement membrane wrinkling occur, presumably due to occlusion of a more proximal vessel.



Griffiths M et al. QJM 2000;93:457-467

At higher power the basement membranes have double contours, the outer basement membrane being longer and slightly wrinkled (arrow).



Griffiths M et al. QJM 2000;93:457-467

Classification of lupus nephritis and APA

SPECIAL FEATURE

J Am Soc Nephrol 15: 241–250, 2004

The Classification of Glomerulonephritis in Systemic Lupus Erythematosus Revisited

Table 4. Abbreviated International Society of Nephrology/ Renal Pathology Society (ISN/RPS) classification of lupus nephritis (2003)

Class I	Minimal mesangial lupus nephritis
Class II	Mesangial proliferative lupus nephritis
Class III	Focal lupus nephritis[a]
Class IV	Diffuse segmental (IV-S) or global (IV-G) lupus nephritis[b]
Class V	Membranous lupus nephritis[c]
Class VI	Advanced sclerosing lupus nephritis

SLE, anti-phospholipid antibodies, TMA

TMA in lupus nephritis became a hallmark for the presence of antiphospholipid antibodies

TMA can occur in any class of lupus nephritis

TMA in lupus nephritis should not be confused with intracapillary coagula of immunoglobulines

TMA in lupus nephritis is associated with ESRD

The incidence of TMA in patients with SLE and APA is much lower than in PAPS