# Mornington Crescent(s): A circuitous path to an EM-guided diagnosis

Dr Sarah Grenfell
Consultant Histopathologist, University Hospitals Plymouth

# COI

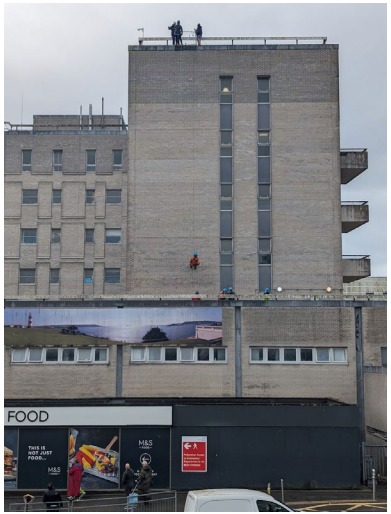
ACEM have covered the cost of my attendance at the conference today

# How do renal pathologists use EM?

Every case?

Select cases?

Screened in house or external site?






# When do *I* use EM?

Minimal change disease

Unsampled FSGS

I don’t know what’s going on



# It’s now time to play a game, but first…

# Our request card today comes from Dr Trellis…

Patient: Mid 70s, male

PMHx:

- HTN, T2DM, HCC

PC:

- AKI
- Weight loss
- Skin rash
- Nephrotic range proteinuria




# Light microscopy (Barbican)

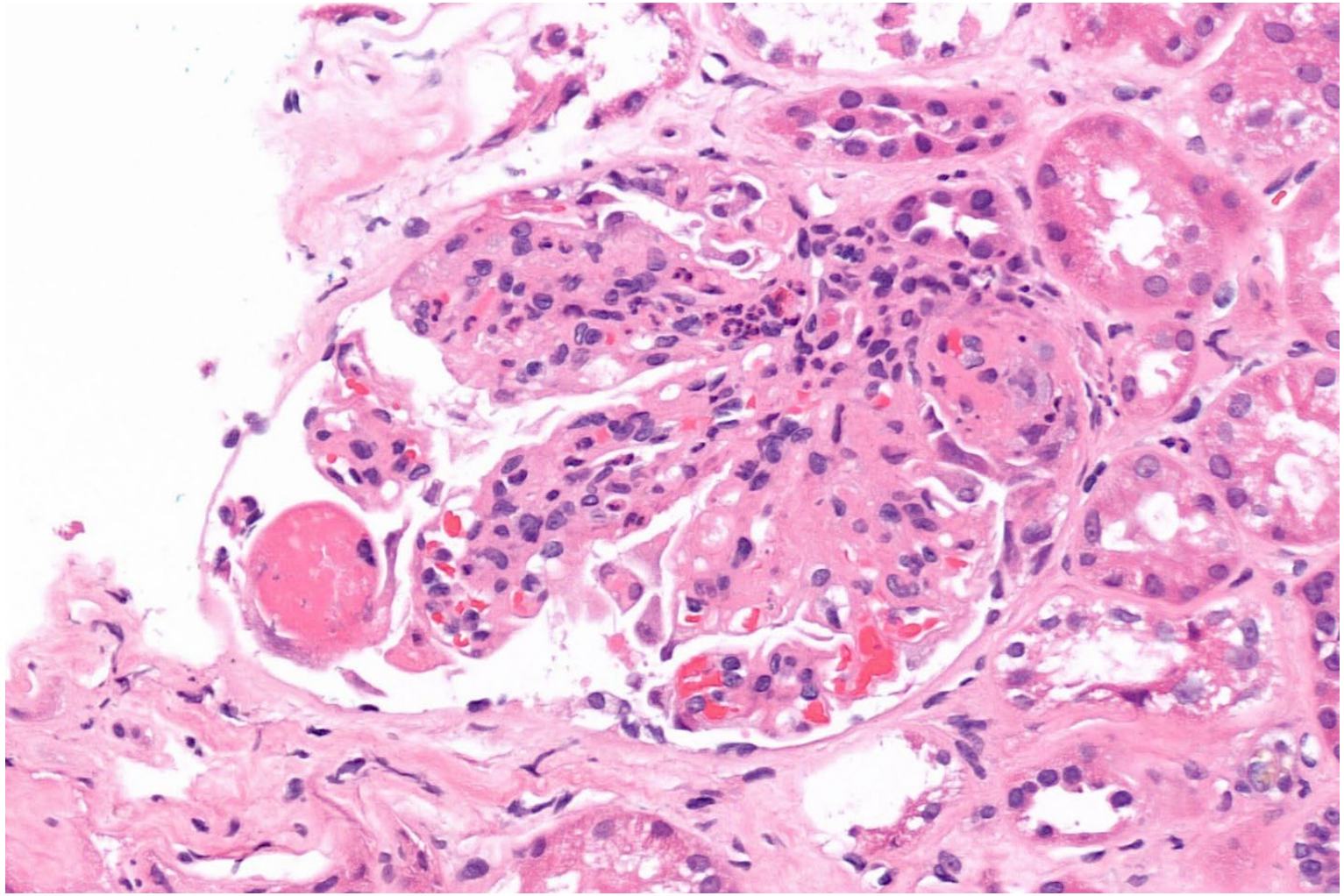
H&E

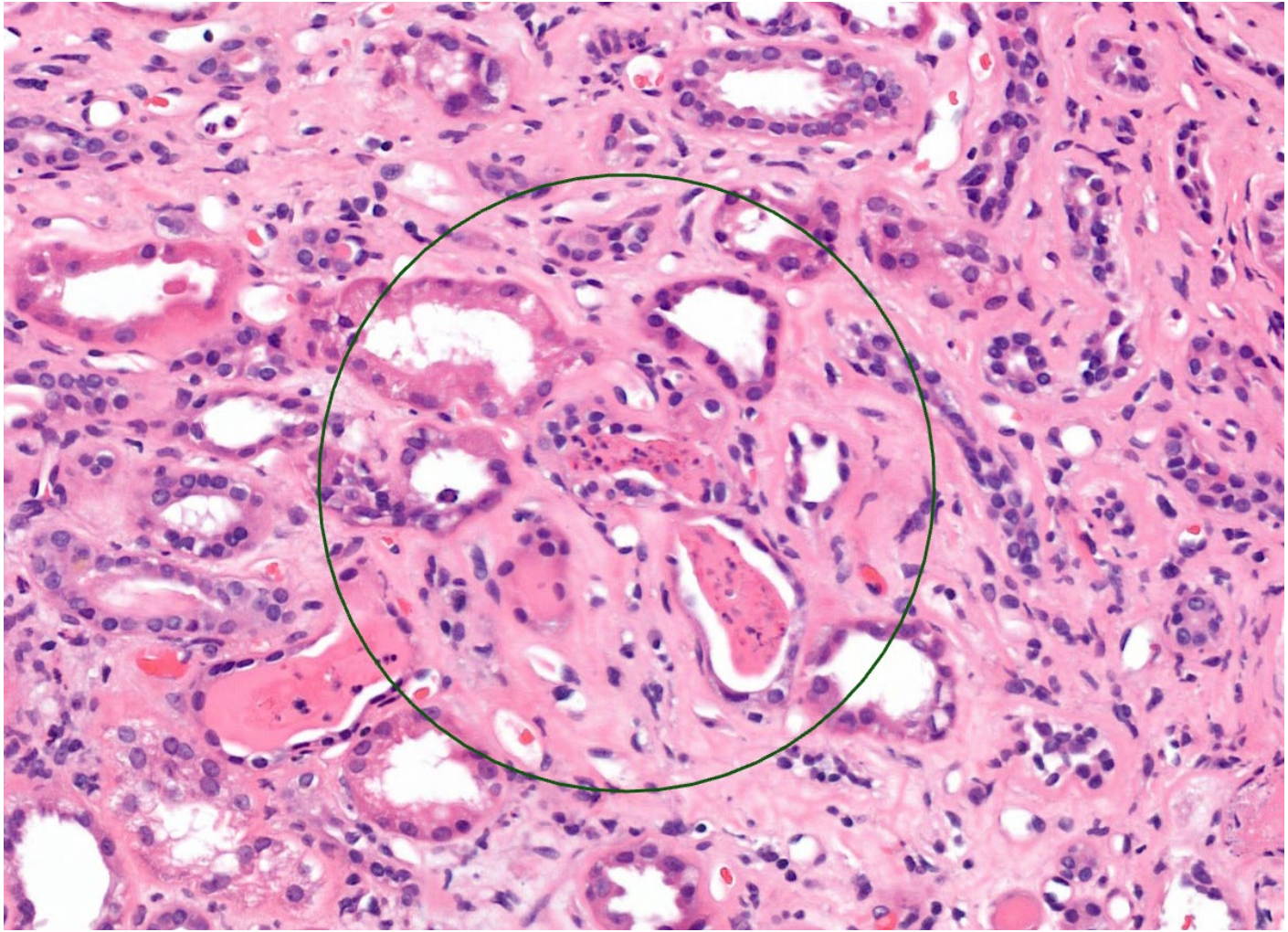
PAST

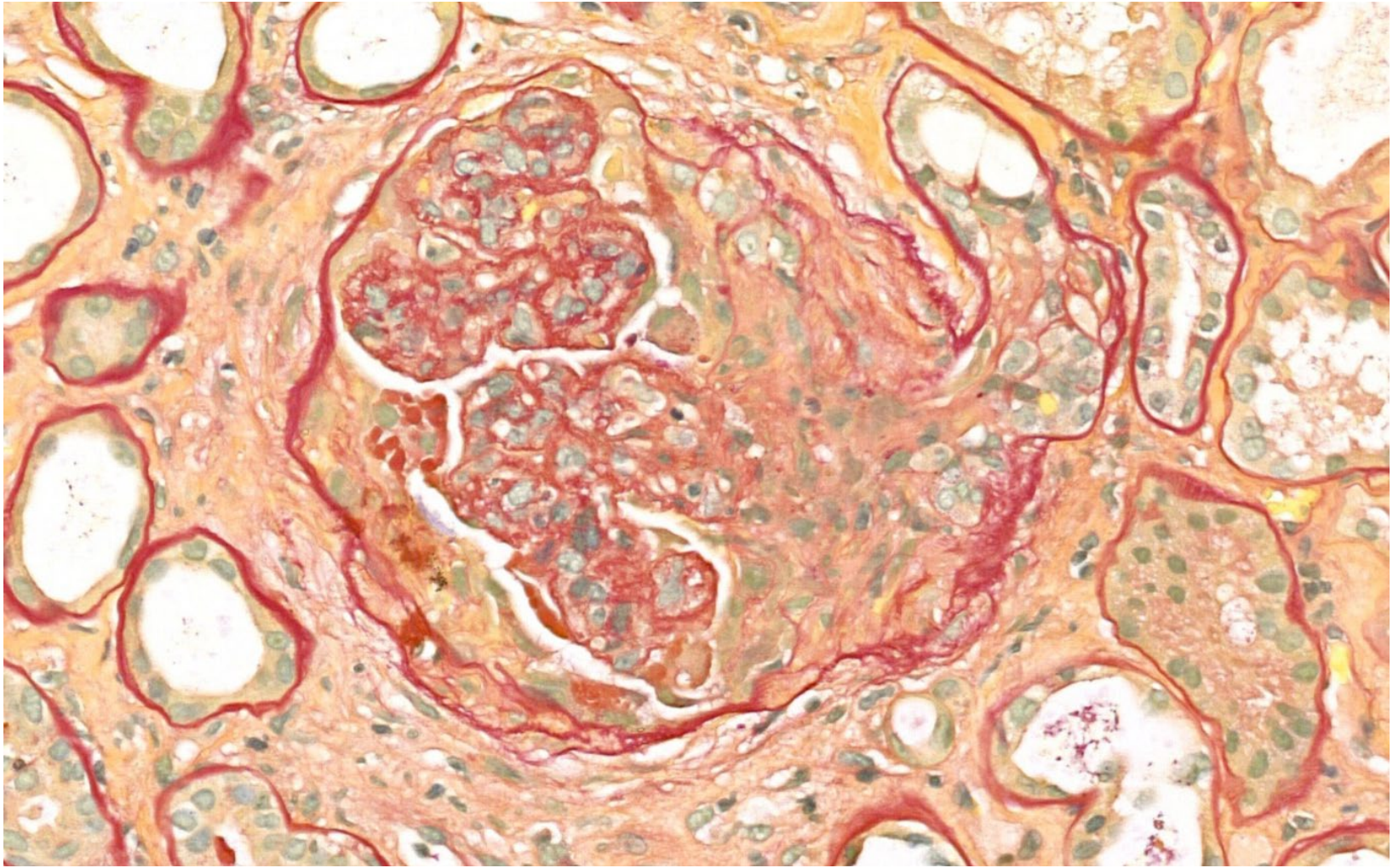
Jones’ Silver

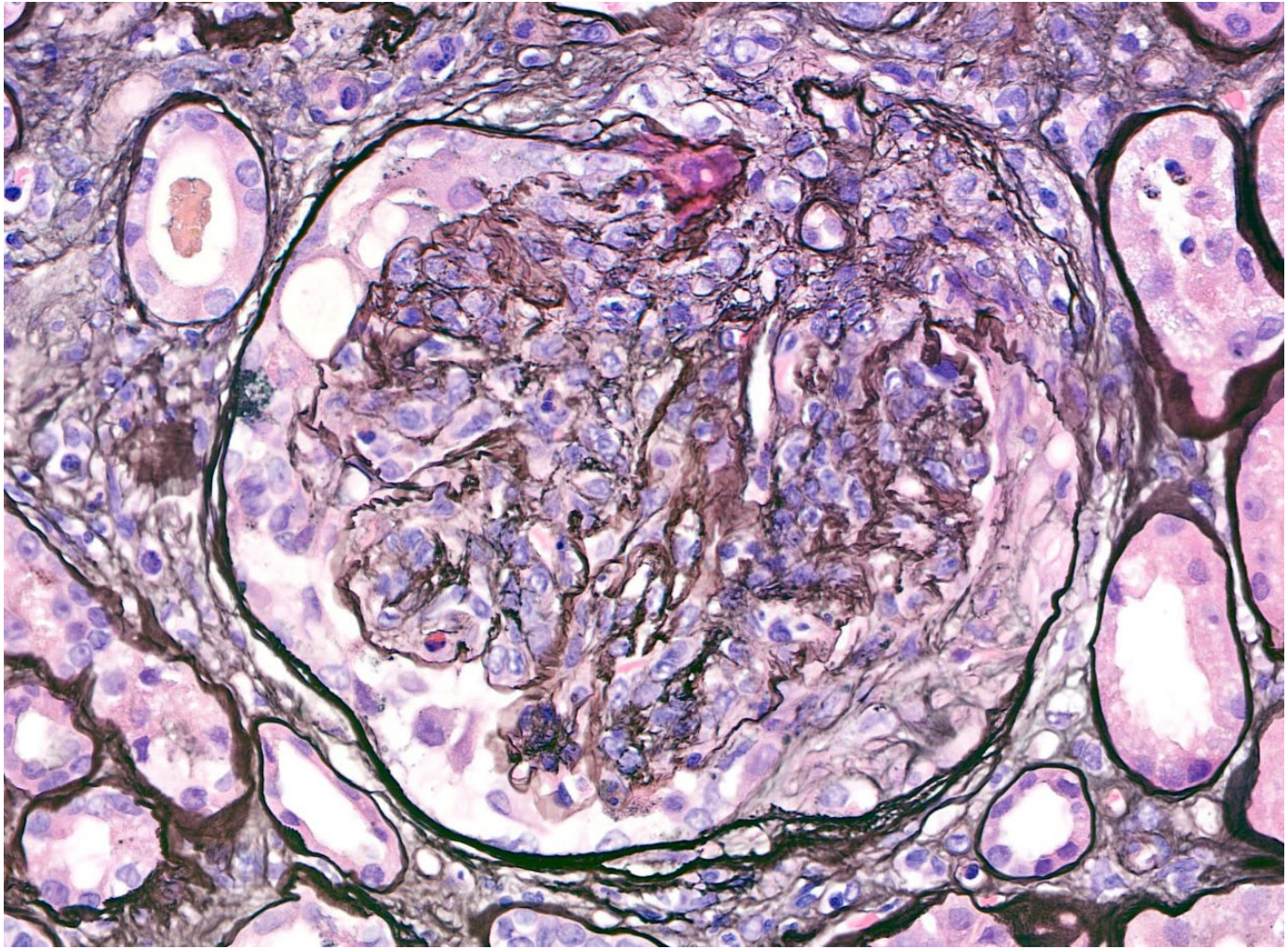
EVG

Congo red












# Immunofluorescence (Seven Sisters)

IgA

IgG

IgM

C3

C1q

Kappa

Lambda



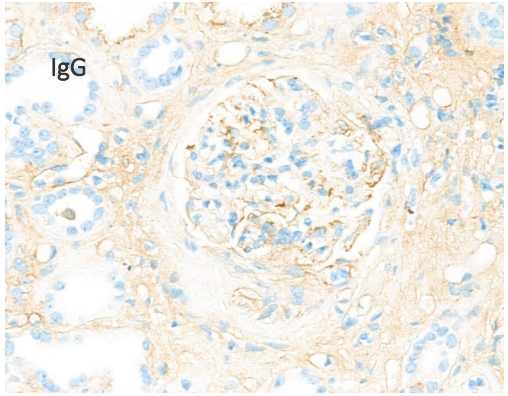

# Immunoperoxidase (Oxford Circus)

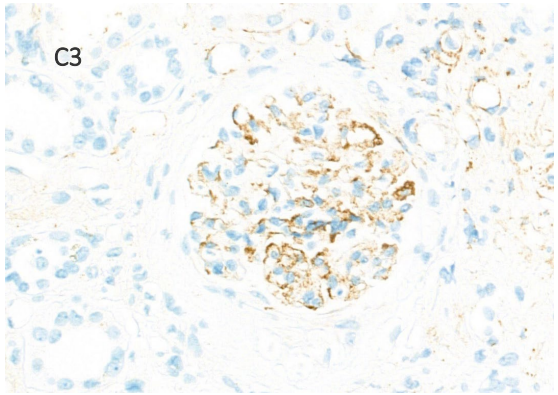
IMF is considered the “gold standard”

- But it’s useless if you don’t have usable material

We have material for IP, but there are documented issues with over- and under-sensitivity

- Particularly C3c


IgG


C3

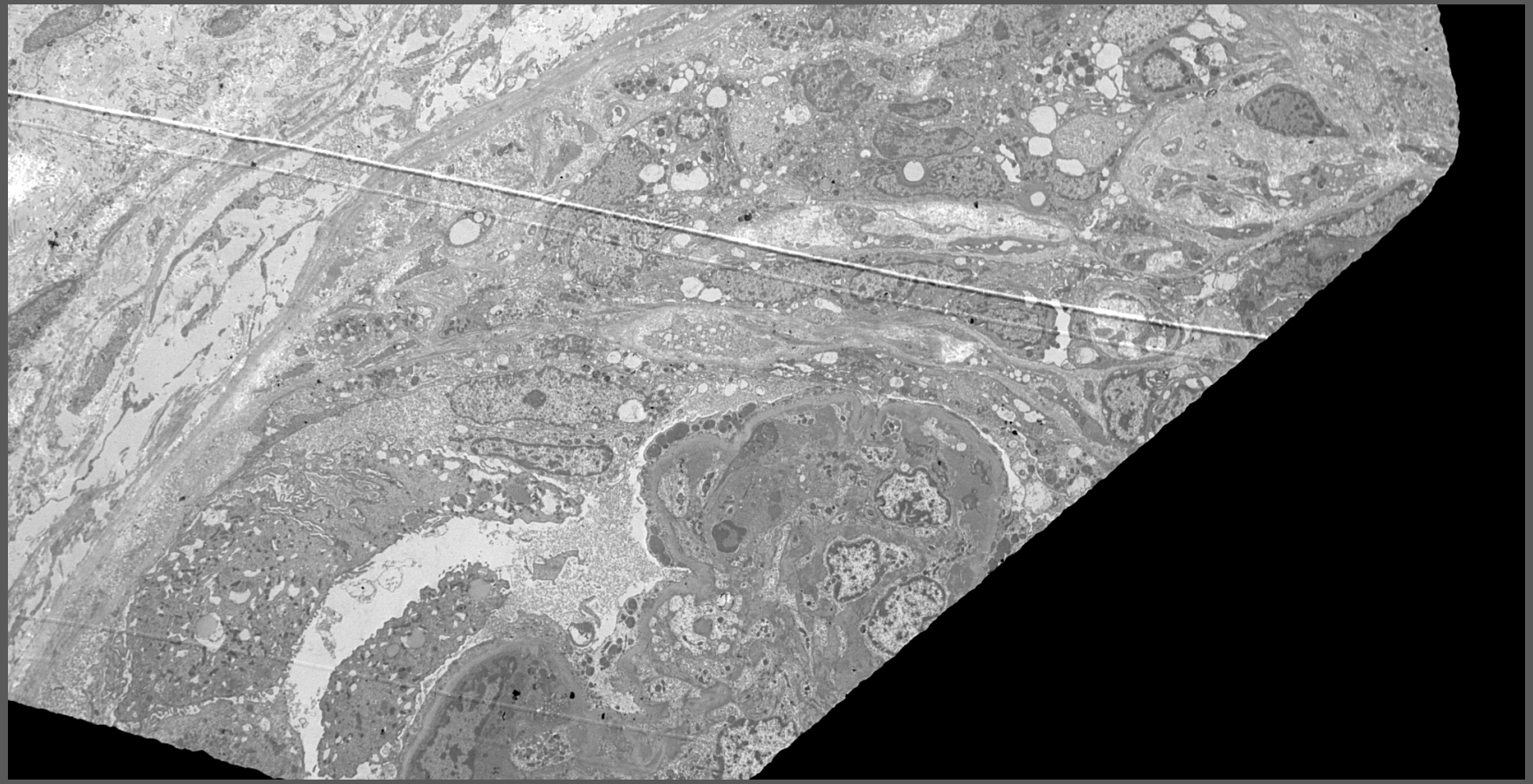

IgA

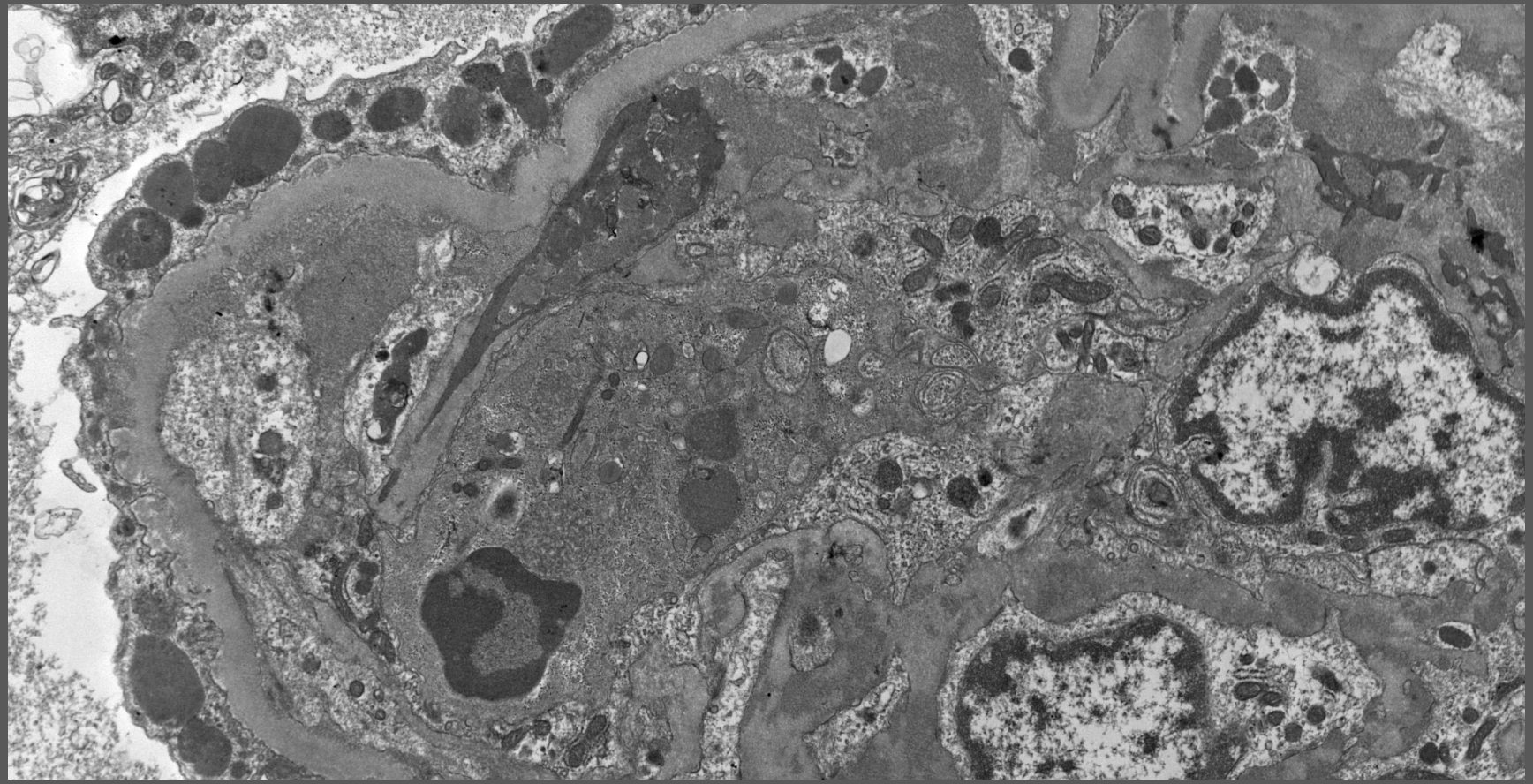
# I’m Sorry,
# I Haven’t A Clue

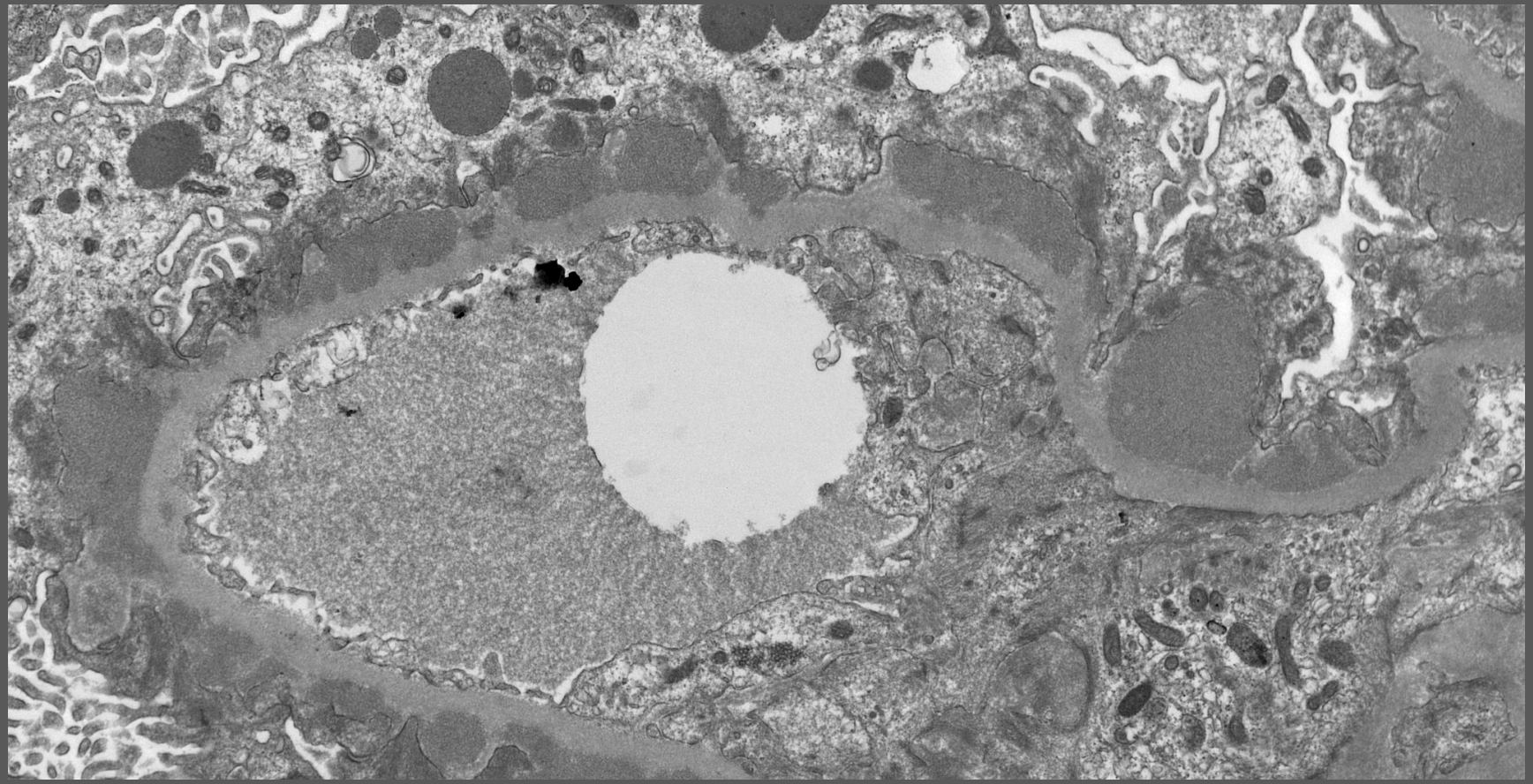



# Electron Microscopy (King's Cross)

When all else fails, send it for EM










# Time for some reading (Baker Street)

You never get all the information you need on a request form

Blood results

Clinic letters

# Further Investigation

Chronic kidney disease, with apparent sharp decline

- January eGFR 46, September eGFR 17

No paraproteins in urine

IgA, IgG, IgM, K:L ratio all within normal limits

C3 slightly low

AntiGBM antibodies negative

Anti PLA2R antibodies <3

MPO/PR3/cANCA/pANCA negative

# Further Investigation

Rash was longstanding and blistering in nature, not purpuric

Progressive CKD with longstanding proteinuria

History of bladder outflow obstruction with hydronephrosis

- Self catheterises

Initial urine cultures showed heavy mixed growth

Admission swabs isolated MSSA

-Later urine cultures grew *Klebsiella pneumoniae*
-Later blood cultures grew ***Staphylococcus aureus***


MORNINGTON CRESCENT

# The Solution! (Mornington Crescent)

Post infectious glomerulonephritis

- Studies have suggested that IgA dominant PIGN is more frequently associated with DM and Staphylococcal infection

When all else fails, EM saves the day (sometimes)

# References

https://pmc.ncbi.nlm.nih.gov/articles/PMC4127840/

https://commons.wikimedia.org/wiki/Main_Page - many of the pictures are courtesy of wikimedia