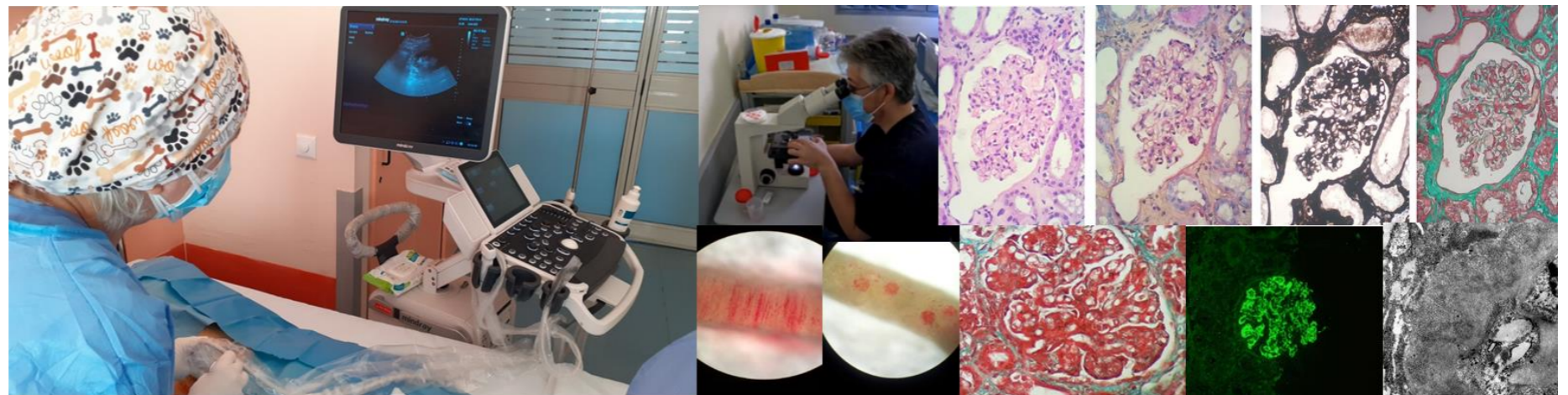




## BEDSIDE MICROSCOPY FOR ADEQUACY ASSESSMENT OF NON-SURGICAL RENAL BIOPSIES

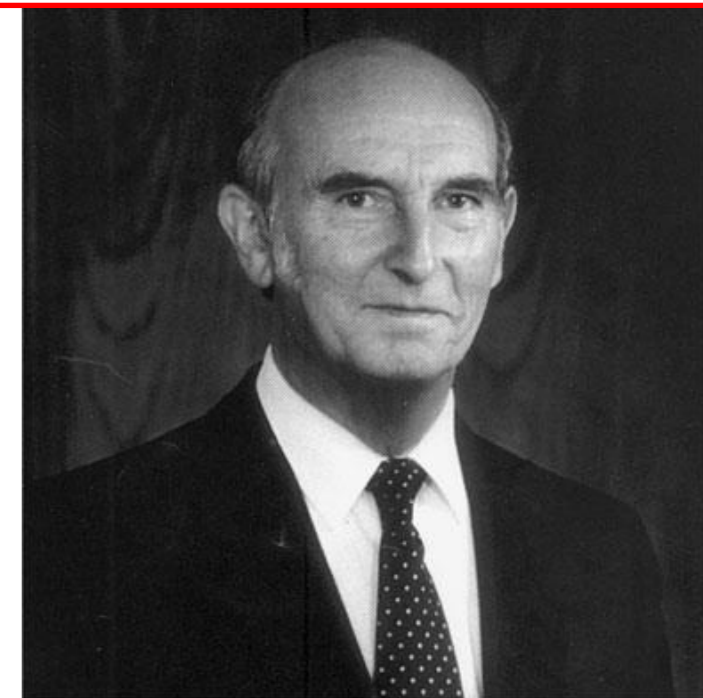
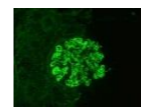
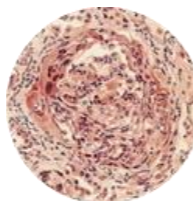
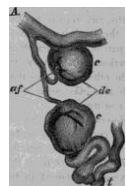
Panagiotis Pateinakis<sup>1</sup>, Parthena Kyriklidou<sup>1</sup>, Eleni Manou<sup>1</sup>, Stella Panagakou<sup>1</sup>, Achilles Karras<sup>1</sup>, Stavroula Pervana<sup>2</sup>,  
Dorothea Papadopoulou<sup>1</sup>

<sup>1</sup>Department of Nephrology and <sup>2</sup>Department of Pathology, General Hospital "Papageorgiou", Thessaloniki, Greece.

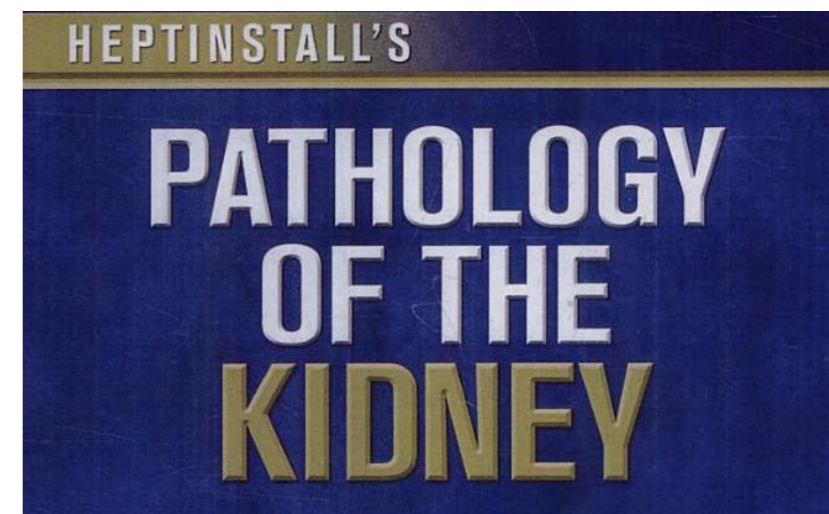




Marcello Malpighi (1628-1694)



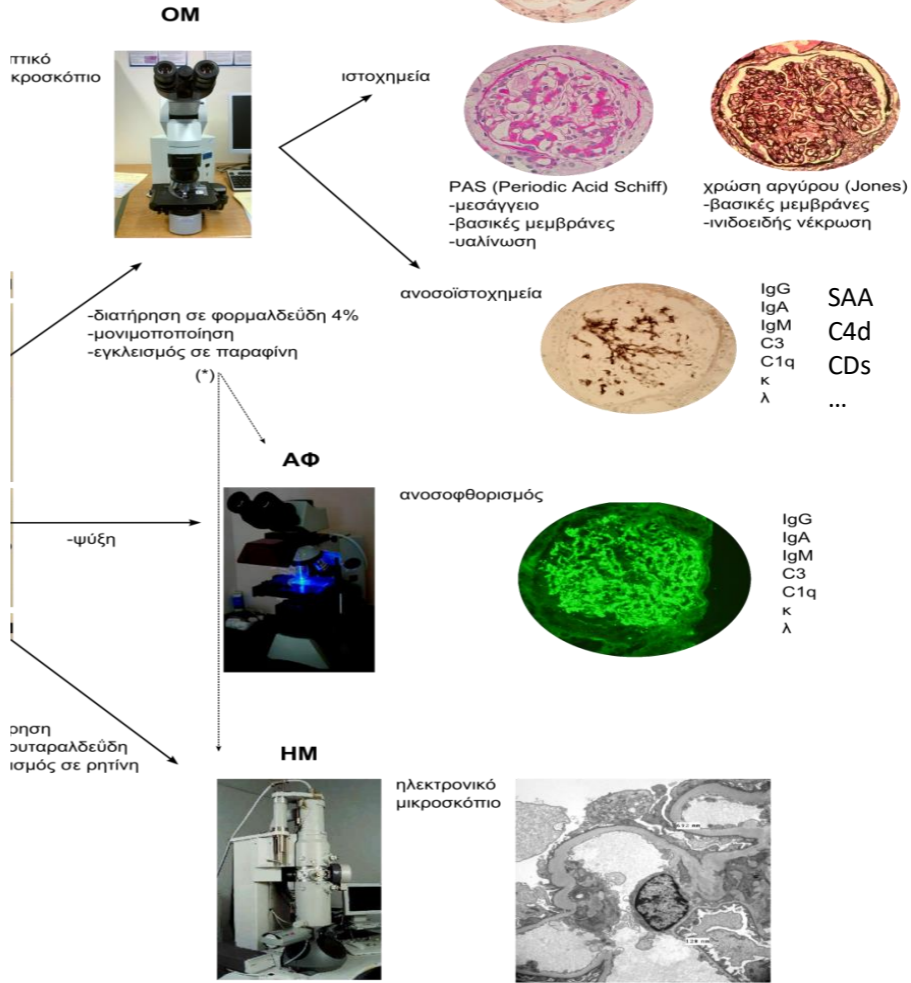
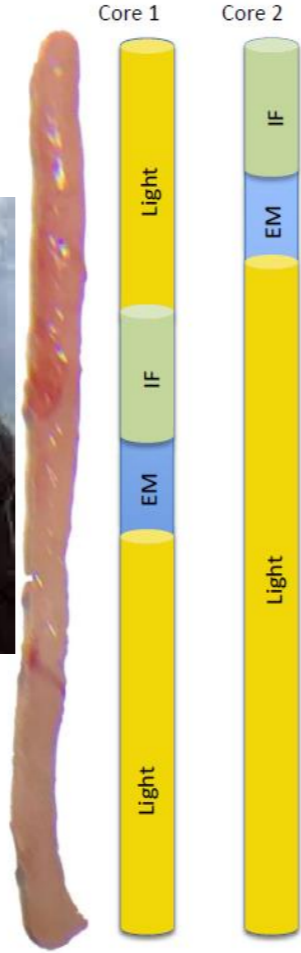
1966



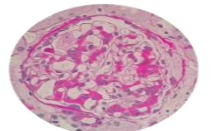


Cortical

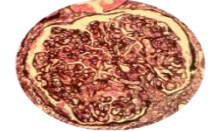
Medullary



E-A(εωσίνη-αιματοξυλίνη)  
-γενική ιστοική μορφολογία  
-μορφολογία πυρήνων  
-ινιδειδής νέκρωση  
-υαλίνωση



PAS (Periodic Acid Schiff)  
-μεσάγγειο  
-βασικές μεμβράνες  
-υαλίνωση

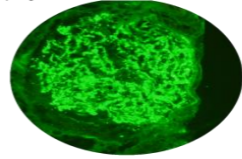


χρώση αργύρου (Jones)  
-βασικές μεμβράνες  
-ινιδειδής νέκρωση

IgG  
IgA  
IgM  
C3  
C1q  
κ  
λ  
...  
SAA  
C4d  
CDs



IgG  
IgA  
IgM  
C3  
C1q  
κ  
λ



Histochemistry

Immunohistochemistry

Immunfluorescence

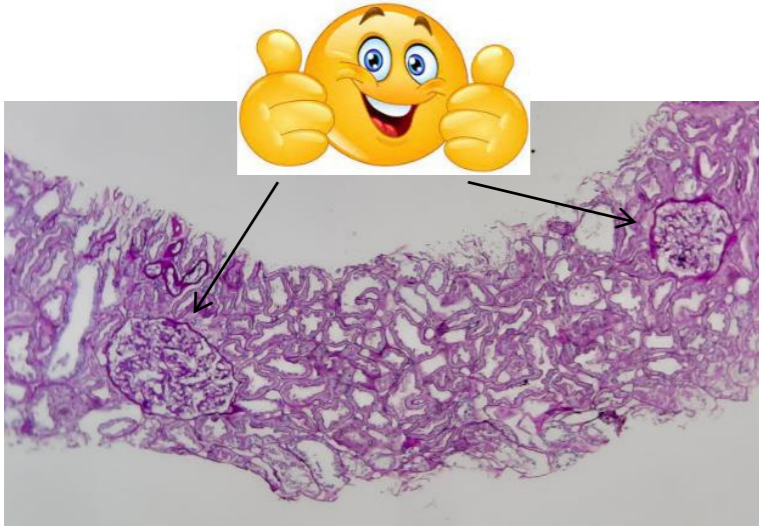
Electron microscopy

Am J Kidney Dis. 73(3): 404-415

(\*) υπάρχει η δυνατότητα διενέργειας ανοσοφθορισμού και ηλεκτρονικής μικροσκοπίας σε υλικό που έχει εγκλειστεί σε παραφίνη, με επίπτωση όμως στη διαγνωστική ακρίβεια.

-ποδοειδείς προσεκβολές  
-πάχος/μορφολογία βασικής μεμβράνης  
-ακριβής μορφολογία και θέση εναιθημάτων  
-ενδοκυττάρια εγκλειστά  
-οί

# Adequacy

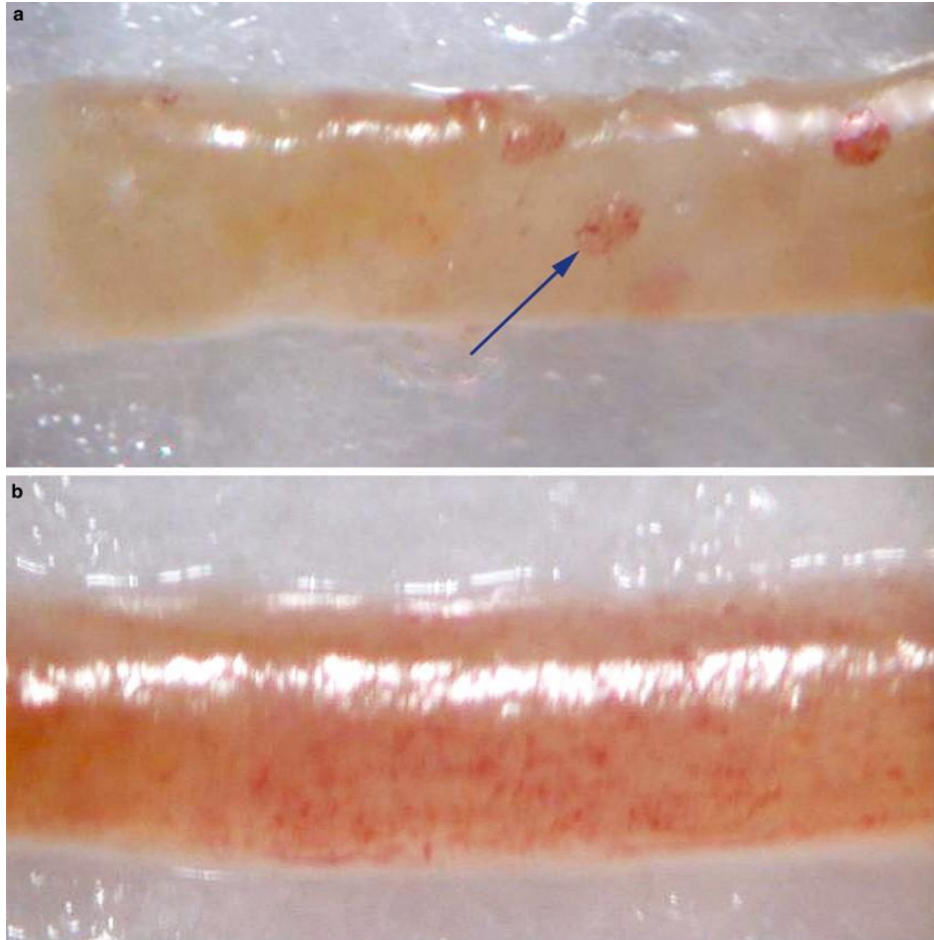


- Native kidney biopsies must contain cortex with glomeruli to be adequate for diagnosis and treatment plans



- Inadequate sampling only exposes the patient to the risks of the invasive biopsy procedure

# Bedside sample evaluation (BSE)



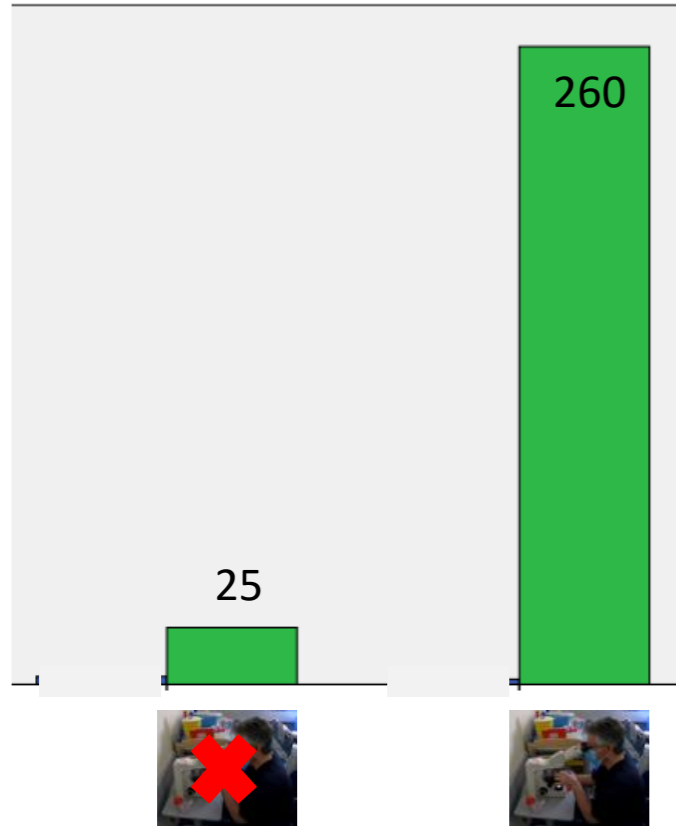
- Real time bedside sample evaluation
- under dissecting or standard light microscopy
- enhances probability of adequate sampling

# Aim



- To evaluate the impact of BSE on native kidney biopsy adequacy rates
- Adequacy was defined as 7 or more glomeruli per sample

# Sample



- 285 native kidney biopsies
- 25 biopsies without BSE
- 260 biopsies with BSE

# Technique

- Real time US guided biopsy
- 18g full automatic needle





# Technique

- Real time US guided biopsy
- 18g full automatic needle
- Biopsy core on saline soaked sieving paper in transparent Petri's dish



# Technique

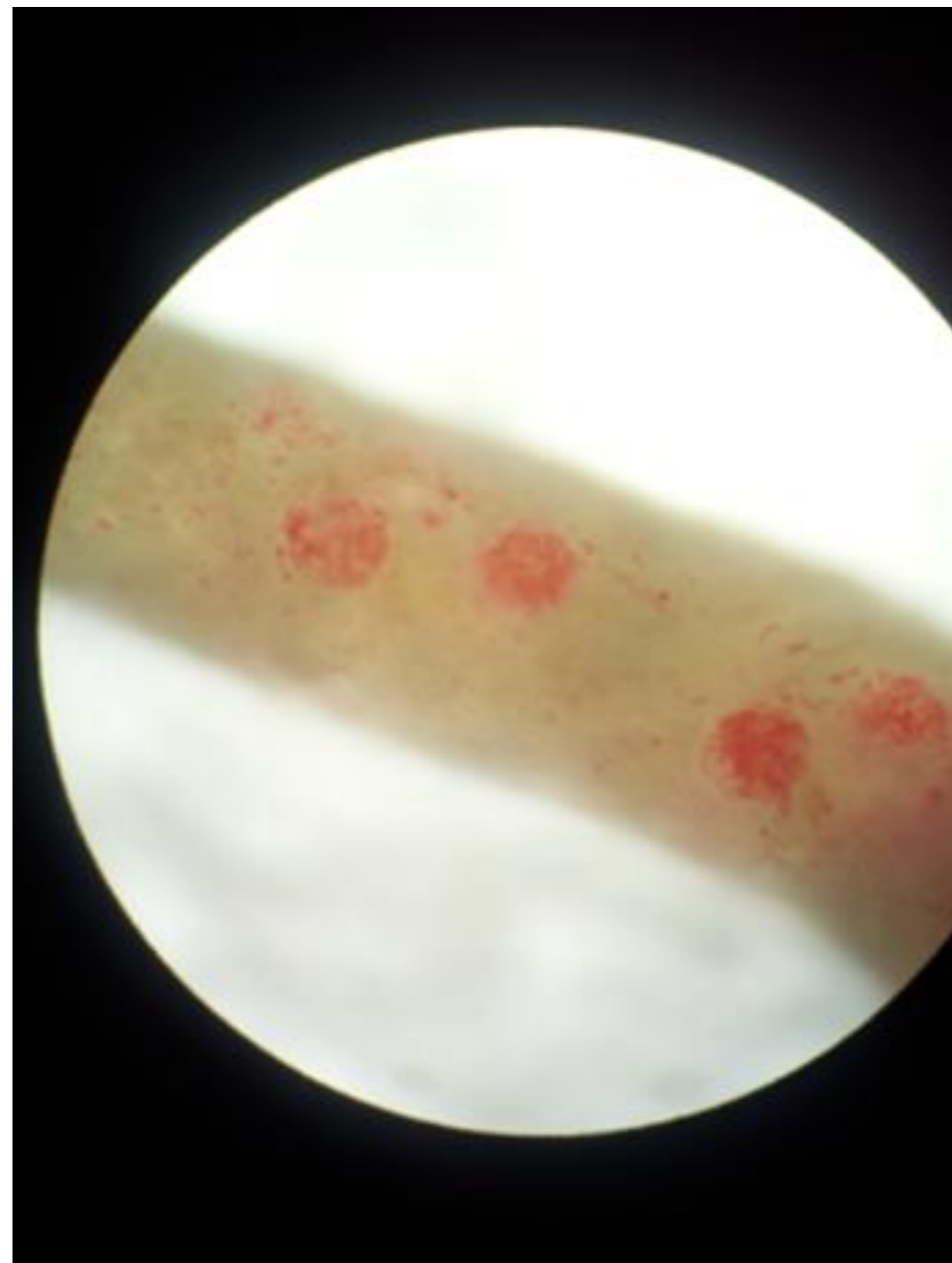


- Real time US guided biopsy
- 18g full automatic needle
- Biopsy core on saline soaked sieving paper in transparent Petri's dish
- Standard light microscope
- X100 total magnification
- Nephrologist/pathologist

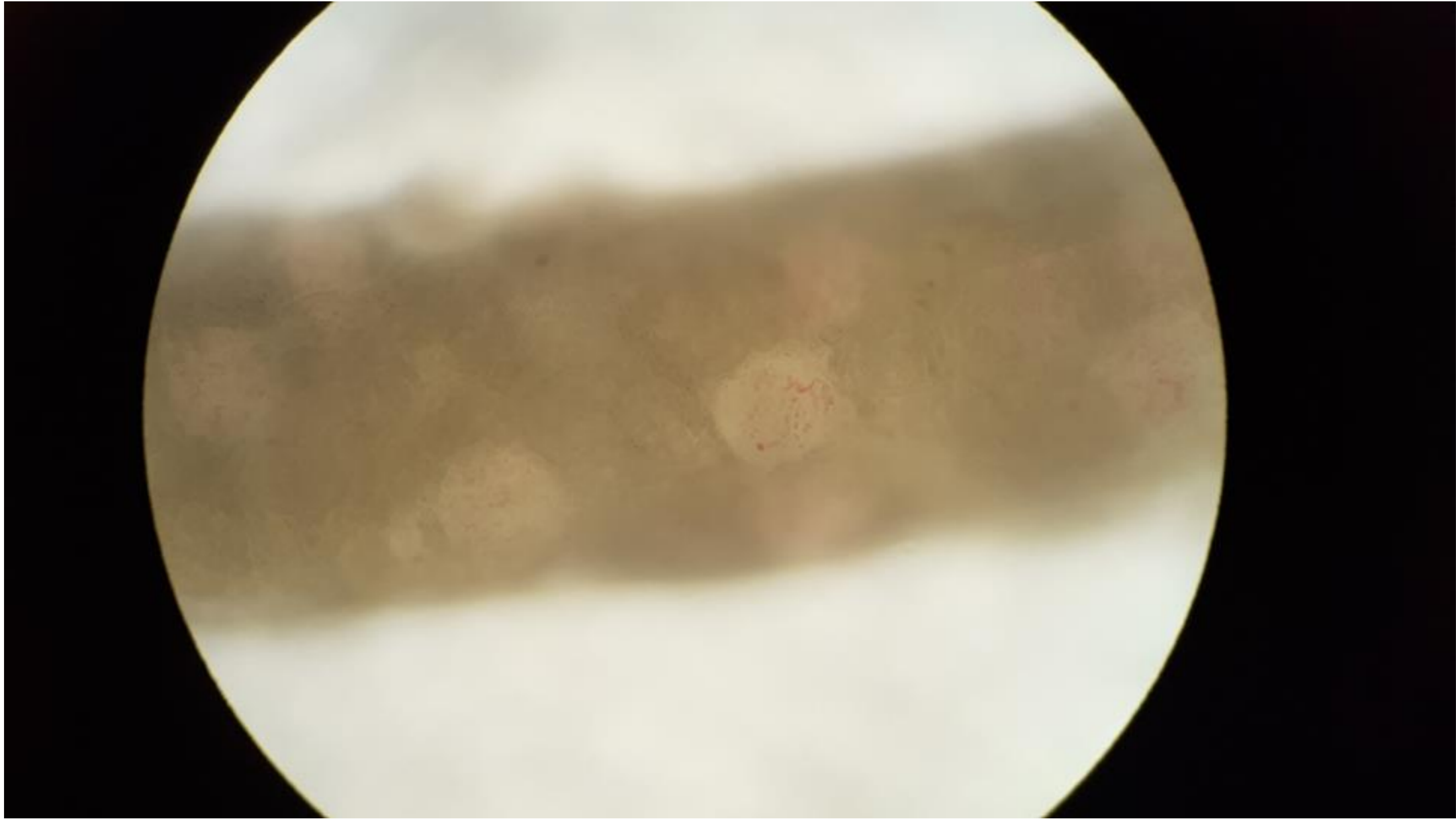
# Technique

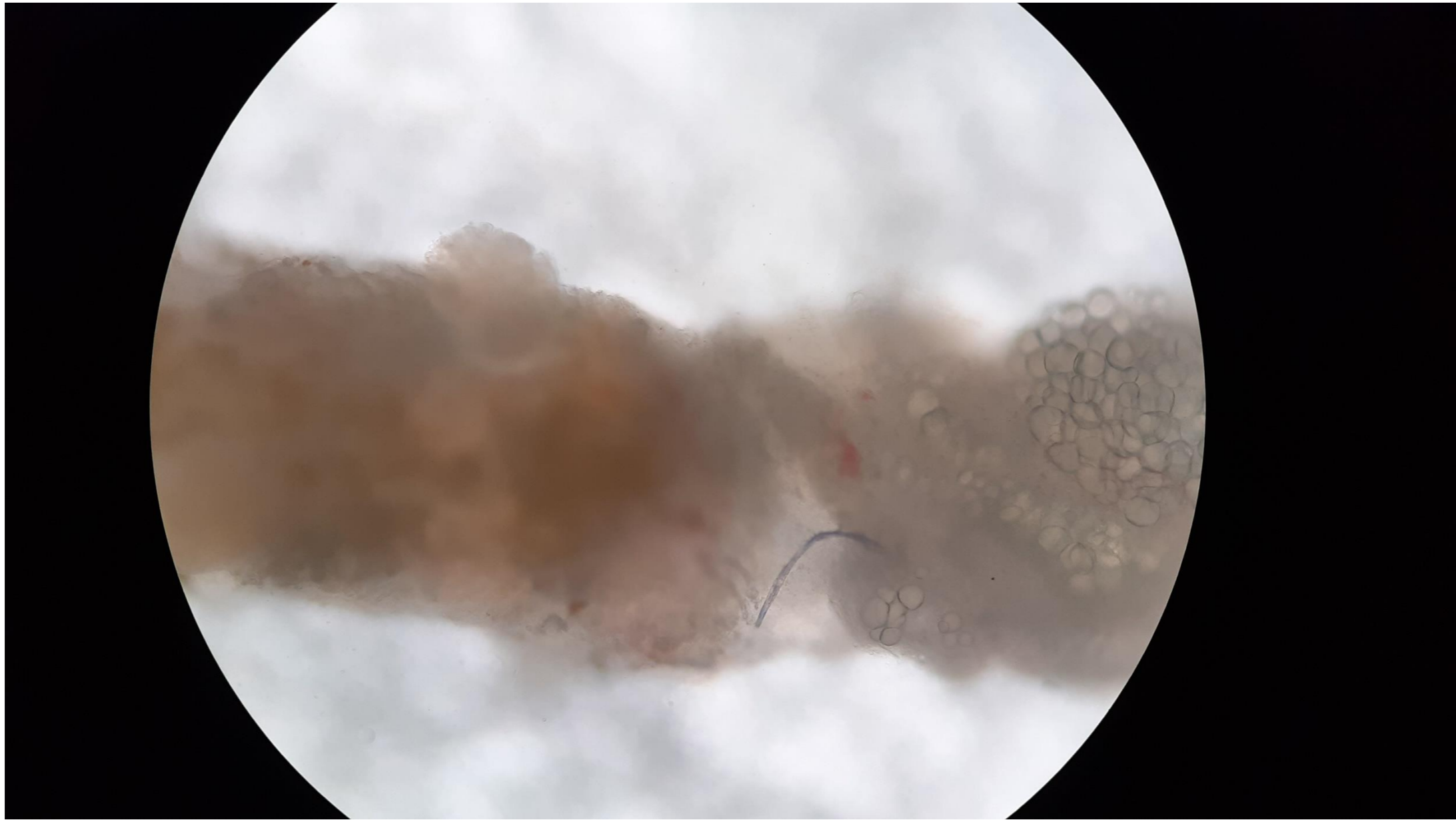


- Real time US guided biopsy
- 18g full automatic needle
- Biopsy core on saline soaked sieving paper in transparent Petri's dish
- Standard light microscope
- X100 total magnification
- Nephrologist/pathologist
- 2-7 passes until at least 2 cores with glomeruli containing cortex obtained

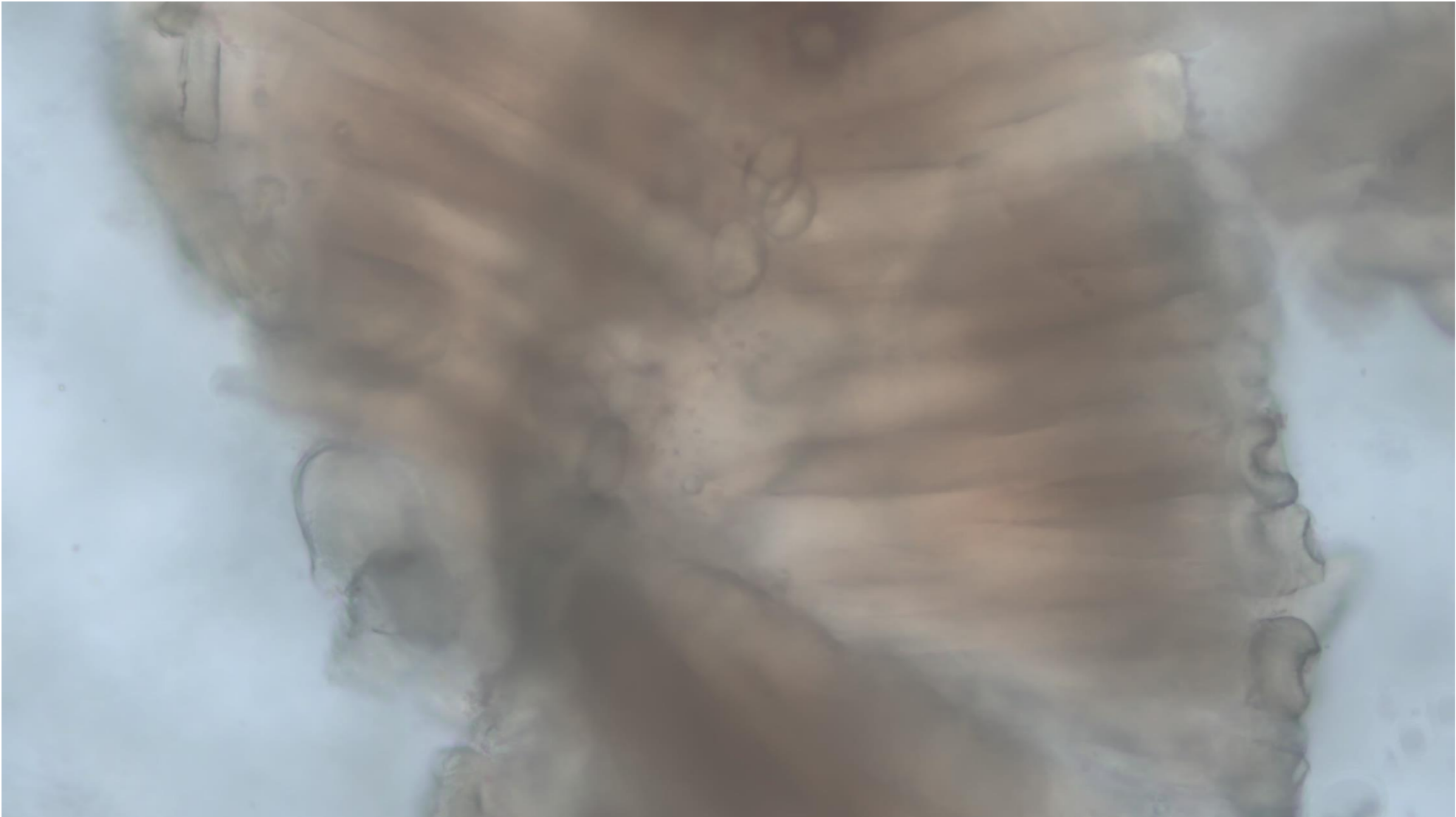


Photos taken with smartphone camera



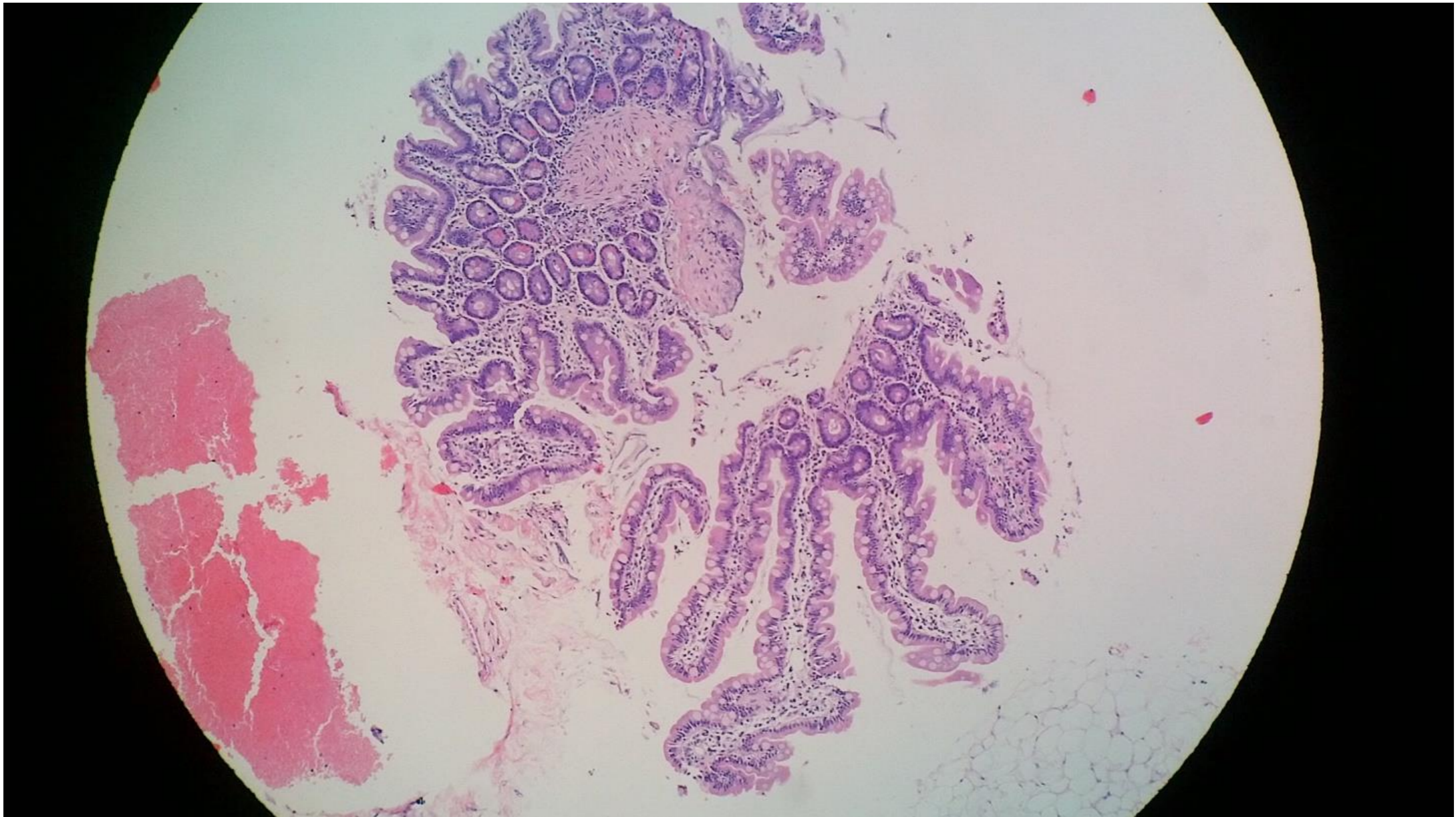




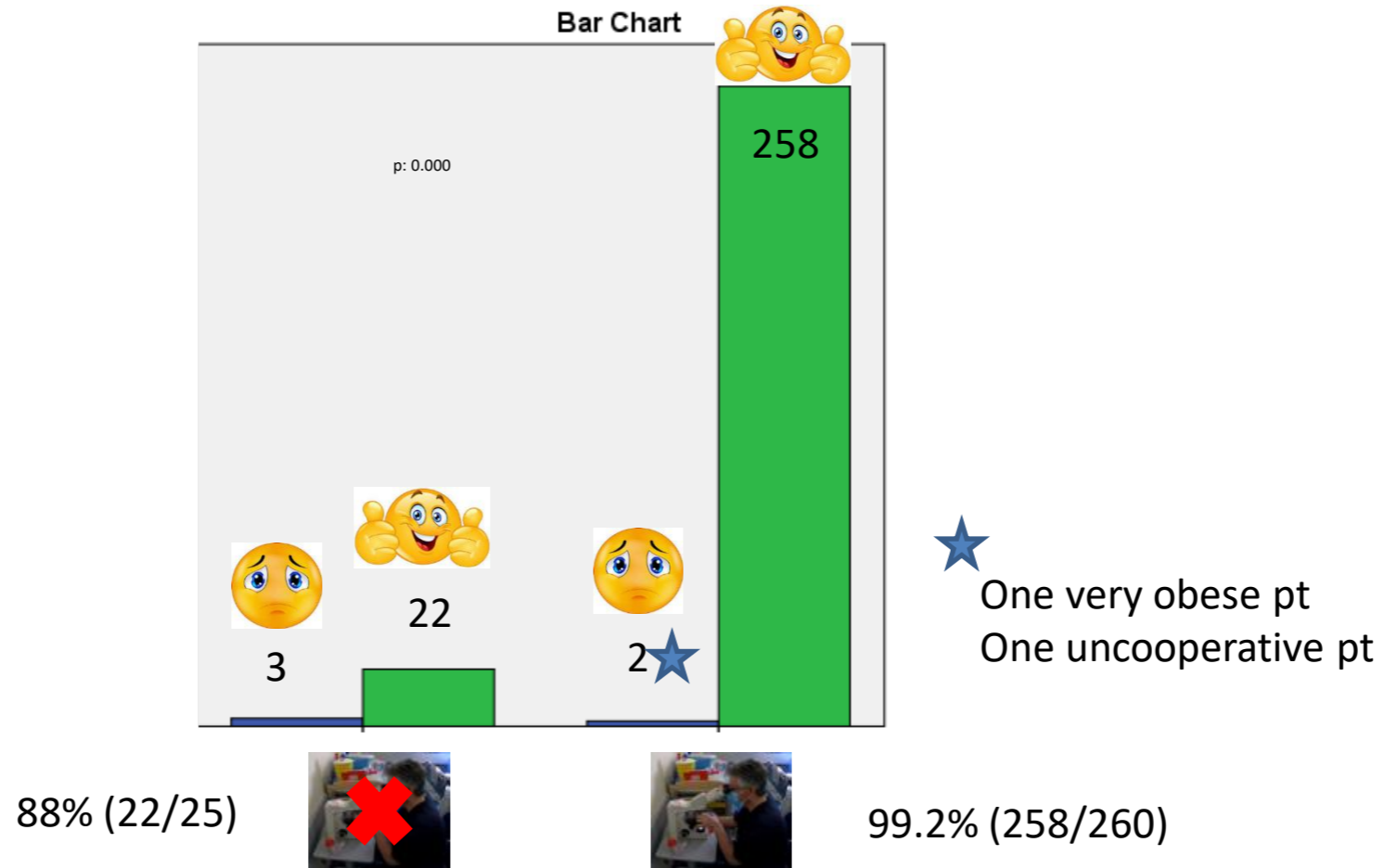






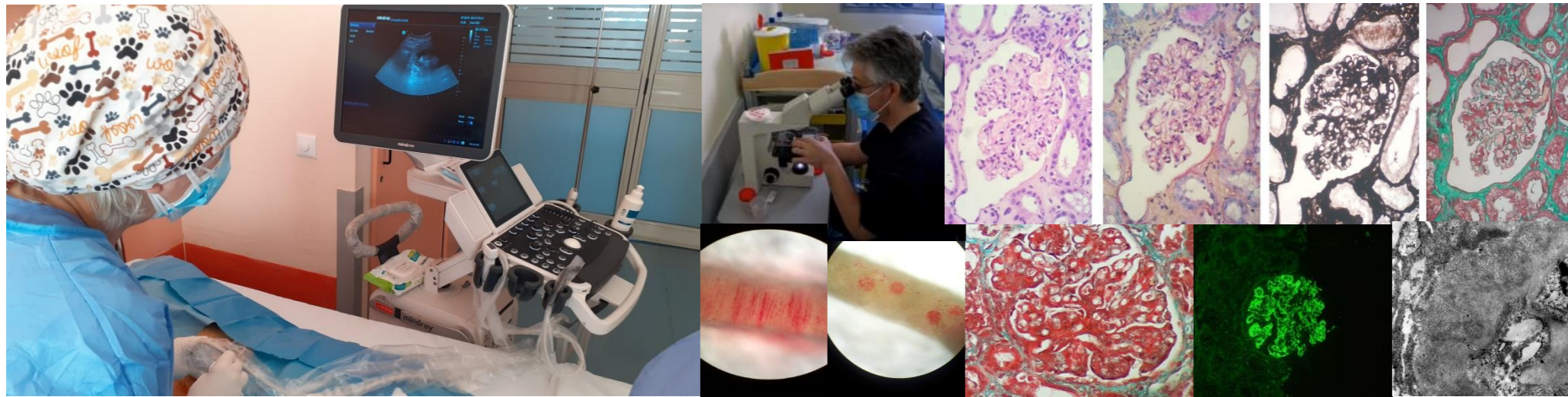


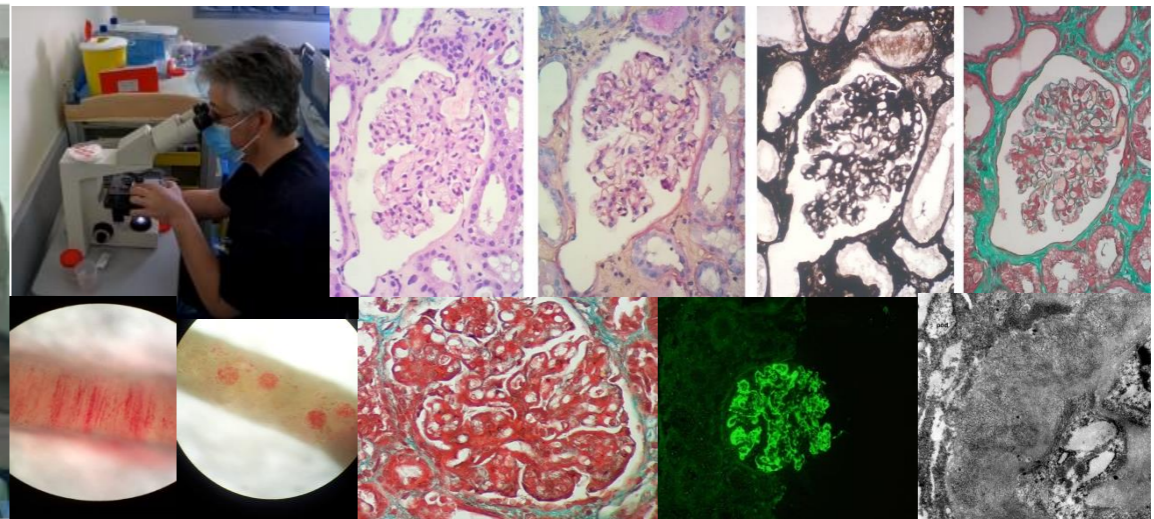
# Results



# Conclusion

- Bedside assessment of non-surgical native renal biopsy samples was associated with high adequacy rates, thus maximizing the procedure's benefits for the patient.





*Thank you for your attention*