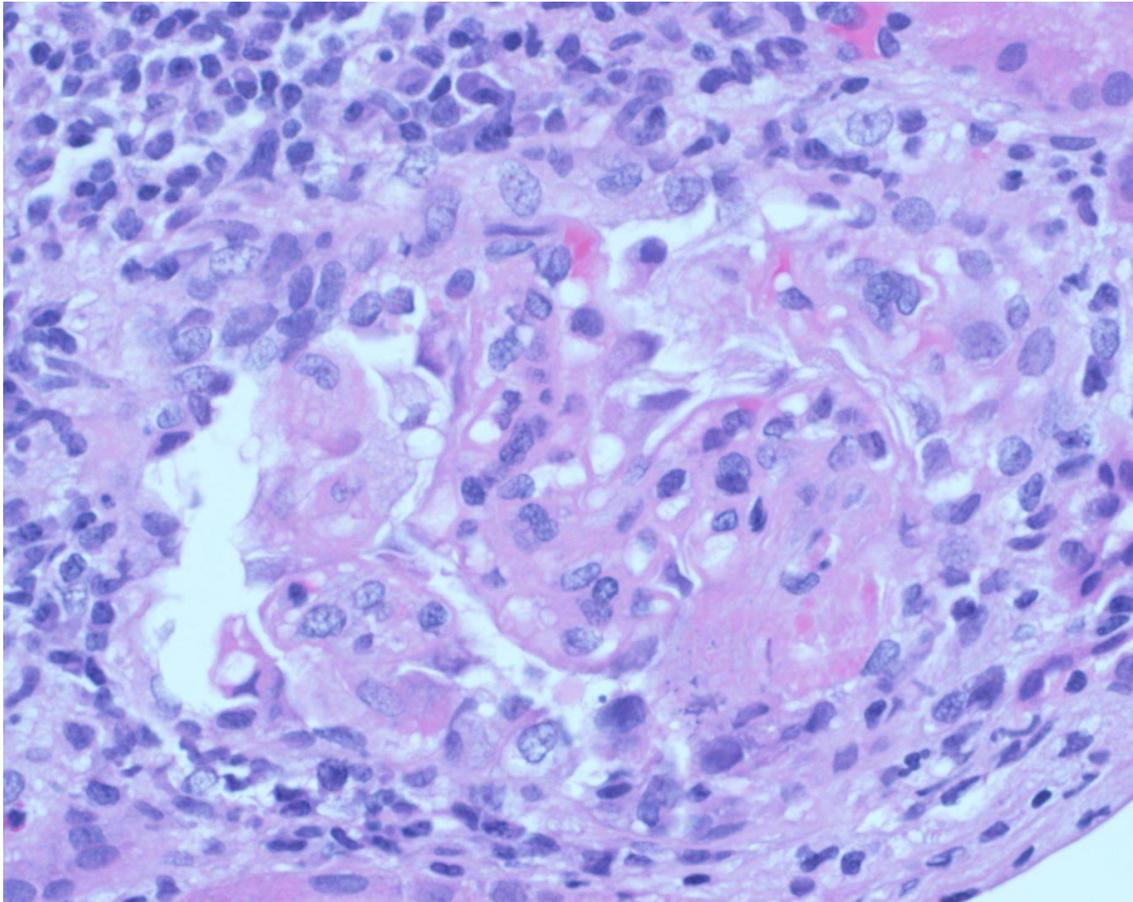


## Case History: Dr. Hala Kfoury

### Case #1

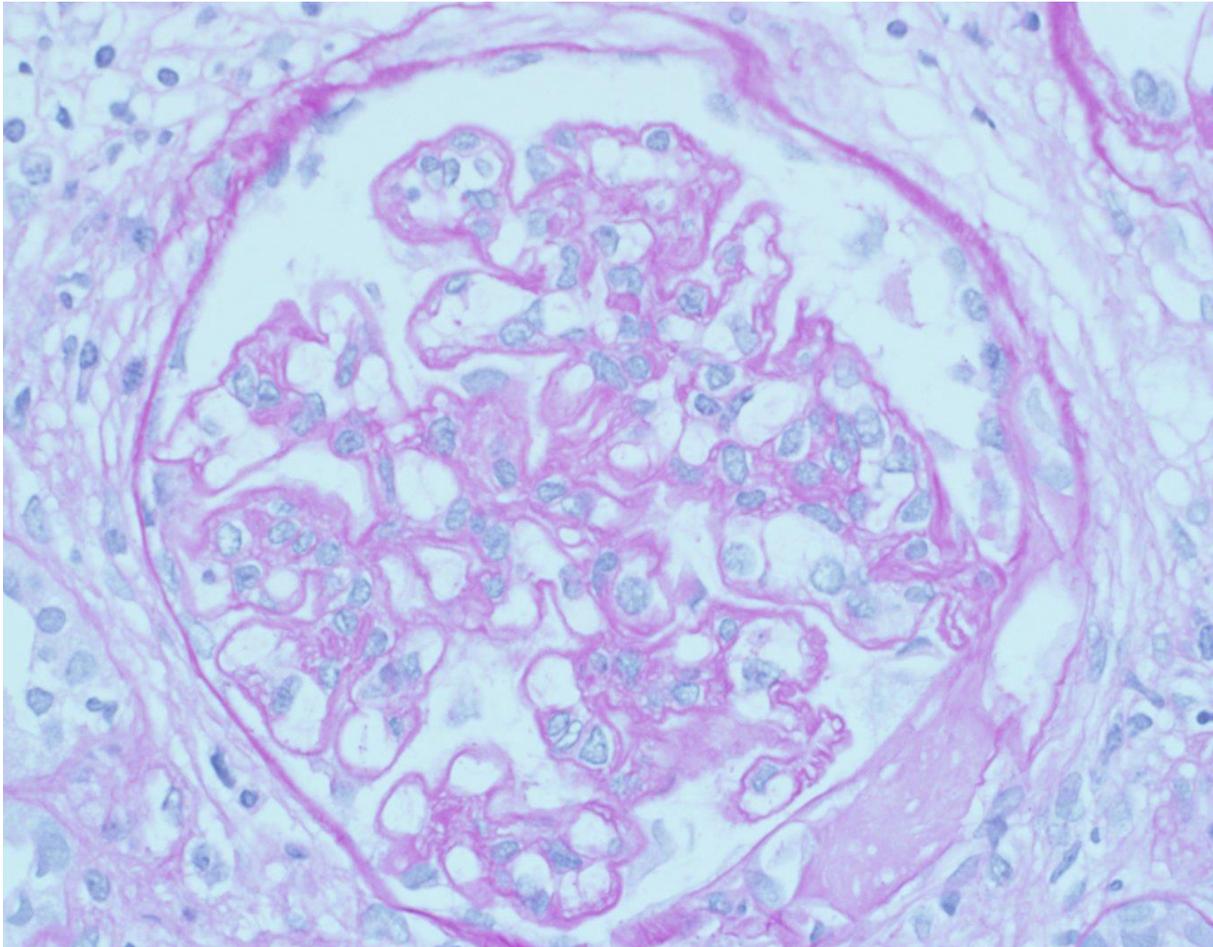
Ms. L is a 30-year-old woman who presented with oral ulcers, arthralgia, and photosensitivity in 2009. Her previous medical history was not informative for her diagnosis. Her physical examination revealed elevated blood pressure with bilateral edema in her lower limbs. Her chest, heart, abdomen, and central nervous system appeared normal. Her laboratory results demonstrated signs of anemia, with a hemoglobin concentration of 9.6 g/dL, thrombocytopenia ( $151 \times 10^9/L$ ), a WBC of  $2.5 \times 10^9/L$ , C3 of 40 mg/dL, and C4 of 6 mg/dL. Her serology was positive for ANA with a titer of 1:10,000 and an anti-DNA antibody result of 1397 IU/mL. Her urine analysis showed a WBC count of 30 and a red blood cell (RBC) count of 0 per high-power field (HPF) assessment. Her serum creatinine was 1.27 mg/dL, and her 24-hour urine protein rate was 12 g/day. A renal biopsy was performed (first biopsy): The patient was put on a course of treatment that included the following: prednisolone (60 mg/day), hydroxychloroquine, mycophenolate mofetil (2 g/day), and lisinopril (20 mg/day). After 3 months of this treatment regimen, the patient continued to experience heavy proteinuria (8.5 g/day) and developed deep vein thrombosis (DVT). Therefore, she was switched to monthly intravenous administration of cyclophosphamide (500 mg) for 6 months, followed by bi-monthly infusions for three additional doses. Her proteinuria improved to 5.4 g/day along with improvement in other measures including C3 of 110 mg/dL, C4 of 35 mg/dL, an ANA titer of 1:640, and a negative test result with the anti-dsDNA antibody. A second renal biopsy was performed (second biopsy).

	First biopsy	Second biopsy
24-hour urine protein (g/day)	12	5
Creatinine clearance (ml/min)	44	112
Urea (mmol/L)	9.1	4.9
Serum creatinine (mg/dL)	1.27	1.1
Urine RBC (HPF)	Nil	264
Urine WBC (HPF)	30	Nil
C3 (mg/dL)	40	110
C4 (mg/dL)	6	35



**1. What are the most important histological features indicating the presence of an active disease in the above photomicrograph from the first renal biopsy?**

- A. Thick capillary walls and segmental sclerosis of the glomerular tuft
- B. Fibrinoid necrosis, crescent formation, and endocapillary proliferation
- C. Mesangial proliferation and interstitial infiltration by lymphocytes
- D. Adhesion of the glomerular tuft to the Bowman's capsule
- E. Mesangiolysis and interstitial edema and inflammation



**2. The wrinkling and irregularities of the glomerular capillary walls present in this glomerulus from the second biopsy are most likely secondary to which one of the following processes?**

- A. Ischemia
- B. Necrosis
- C. Apoptosis
- D. Metaplasia
- E. Dysplasia

**3. Which of the following defines the best future treatment strategy for this patient based on the results of the last exam?**

- A. Stop immunosuppression as the risks to the patient now outweigh the potential benefits
- B. Continue mycophenolate mofetil for 3–5 years more
- C. Continue mycophenolate mofetil for the rest of her life
- D. Add belimumab to her current immunosuppressive treatment
  - a. e. Switch to azathioprine for another 3–5 years