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Joseph Scurozo DO

*Lehigh Valley Health Network, joseph.scurozo@lvhn.org*

Wael Hanna MD

*Lehigh Valley Health Network, wael\_a.hanna@lvhn.org*

Grace Chong DO

*Lehigh Valley Health Network, Grace.Chong@lvhn.org*

Frederick S. Fleszler MD

*Lehigh Valley Health Network, Frederick\_S.Fleszler@lvhn.org*

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# Relapsing HCV Associated Glomerulonephritis Despite Sustained Virologic Response (SVR) to Direct-acting Antivirals (DAA)

Joseph Scurzo, DO,<sup>1</sup> Wael Hanna, MD,<sup>1</sup> Grace Chong, DO,<sup>1</sup> Frederick Fleszler, MD<sup>1,2</sup>

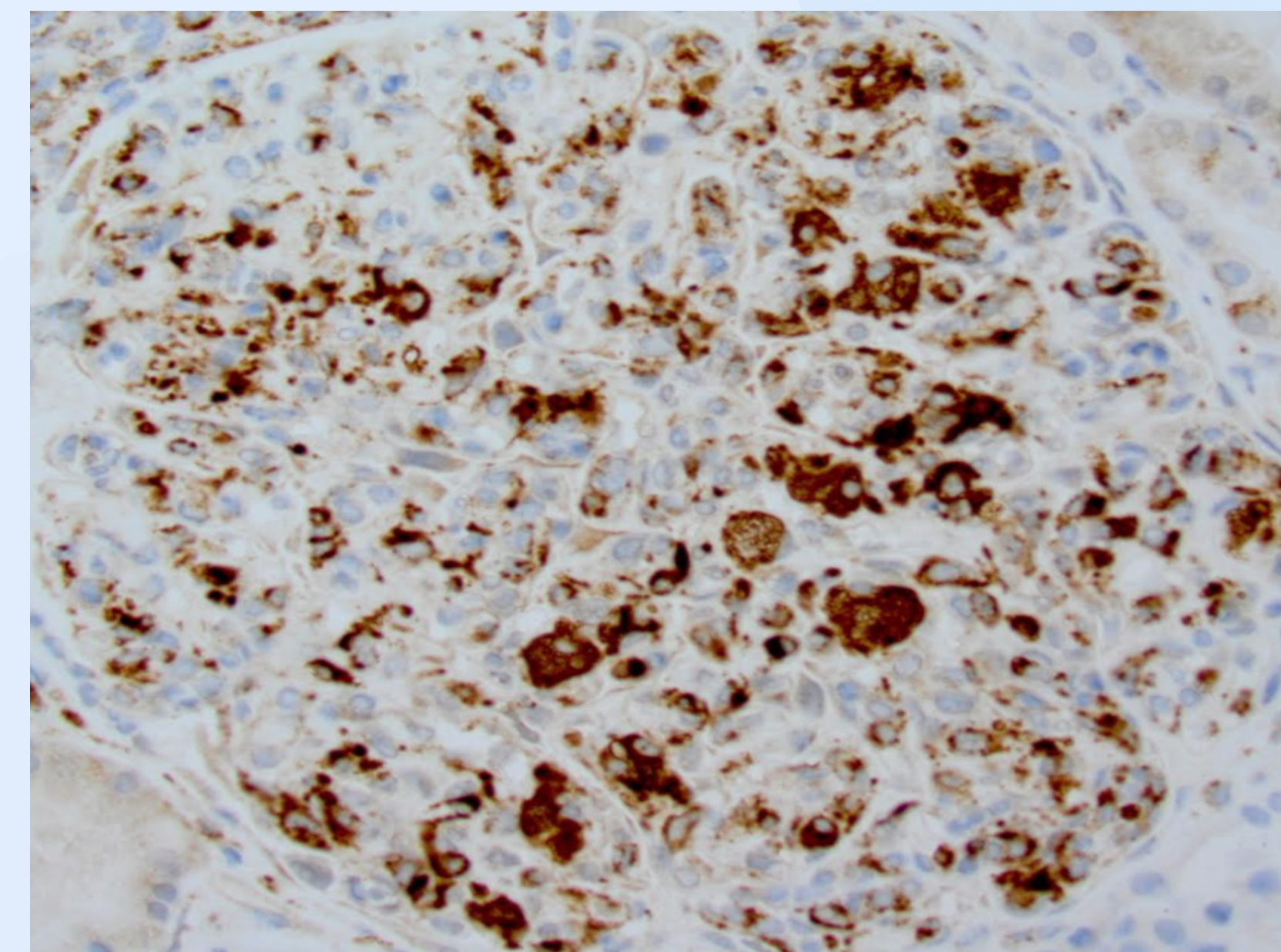
<sup>1</sup>Lehigh Valley Health Network, Allentown, PA, <sup>2</sup>Valley Kidney Specialists, Allentown, PA

## INTRODUCTION

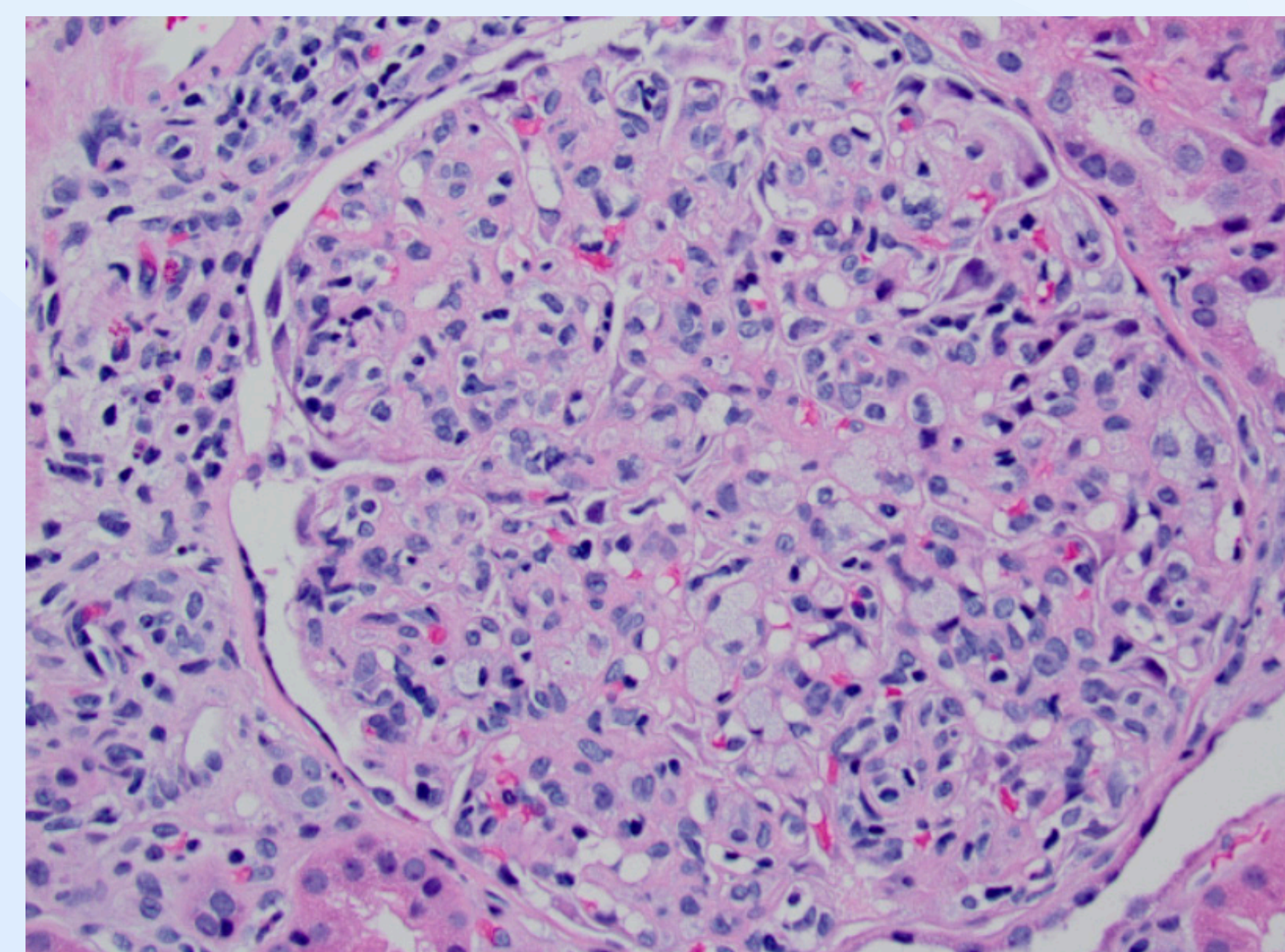
Hepatitis C is a common disease with an increasing incidence in the US. It is closely associated with type II mixed cryoglobulinemia (MC) and its complication of cryoglobulinemic vasculitis (CryoVas). HCV-associated cryoglobulinemic glomerulonephritis (HCV-CryoGN) occurs in 10-35% of those with CryoVas.

## CASE PRESENTATION

- A 59-year-old female presented with AKI & proteinuria. In 2011 she was diagnosed with HCV-CryoGN. Complete remission was achieved with IV Cyclophosphamide and steroids. SCr stabilized at 1.4 mg/dL and proteinuria of 0.3 g/g. In 2013 she was treated with DAAs for HCV and attained SVR.
- In September 2017, urinalysis showed proteinuria UPCR 3.5 g/g and microhematuria. Labs revealed SCr 2.5mg/dL, elevated rheumatoid factor (RF) titers 334 IU/L with positive cryoglobulin screen for type II MC.
- Serologic work up for ANA, ANCA and anti-GBM Ab were all negative with normal SPEP, C3 & C4 levels. HCV RNA was undetectable.



CD 68 STAIN WITH ABUNDANT INFILTRATING MONOCYTES A COMMON FEATURE OF CRYOGLOBULINEMIC GN DUE TO MCP-1 CHEMOKINE PRODUCING CELLS.



DIFFUSE PROLIFERATIVE GN WITH ABUNDANT INFILTRATING MYOCYTES.

- Renal biopsy revealed diffuse proliferative GN with abundant infiltrating monocytes. Immunofluorescence was positive for IgM(+2), C3(+2) & IgG(trace). Electron microscopy noted segmental sub-endothelial and mesangial deposits.
- Treated with rituximab (RTX) and prednisone, followed by RTX maintenance therapy. Treatment gradually improved the renal function, proteinuria, and RF levels.

## DISCUSSION

Reports of HCV-CryoGN despite SVR after DAA therapy are rare. DAAs lead to SVR in the overwhelming majority of HCV patients, but are less consistent in treating CryoVas. A pathological explanation is mixed cryoglobulinemia syndrome is an immune-mediated process that becomes independent from the triggering virus. Rituximab treatment has been found to deplete bone marrow B-cell clonal expansion resulting in a decrease of serum cryoglobulin and RF, correlating with improved treatment success rates with few adverse events.

## CONCLUSION

HCV-CryoGN can occur in the absence of ongoing viral replication due to persistence of RF-producing memory B-cell clones. Combining the efficacy of DAAs in eradicating HCV infection along with the immunomodulatory effect of RTX can lead to improved treatment of HCV-CryoVas.

## REFERENCES

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## CORRELATION OF RENAL FUNCTION WITH RF TITERS AFTER RITUXAN THERAPY

