

Crescentic Glomerulonephritis Leading to Diagnosis of a Culture Negative Endocarditis



Lakshmi Jayam, OMS-II, Huanchun Nana Lai, M.D., Tara Nelson, D.O.
McLaren Macomb, Michigan State University College of Osteopathic Medicine



INTRODUCTION

- Infective endocarditis is usually diagnosed by Duke's criteria which includes clinical findings, positive blood cultures and echocardiogram findings.
- Infective endocarditis-associated glomerulonephritis (**IEAGN**) may develop as a sequelae of acute or subacute endocarditis.

PRESENTATION

- **PMH:** HTN, CAD, remote hx of CABG
- **CC:** cough, dyspnea and worsening lower extremity 1-2+ pitting edema.
- Presenting Cr **2.27 mg/dL**, previous Cr 1.0mg/dL
- Urine studies: urine protein/creatinine ratio 4.1g/day, 100 RBC, some RBC cast seen
- **Serology Workup:**
 - ANA 1:80 (mildly +), normal C3(113); C4(37), ANCA (-), MPO (-), Anti-GBM IgG (-), PR3 (-), chromatin(-), anti sm (-), anti- Scl 70 (-)
- **Protein Electrophoresis:** normal SPEP and normal K/L ratio (1.33), no Bence Jones proteins
- **Blood cultures were negative**
- **Infectious Workup:** anti-strep (-), legionella (-), Hep B (-), Hep C (-), HIV (-), bartonella (-), Q fever (-) histoplasmosis (-)

PATHOLOGIC FINDINGS

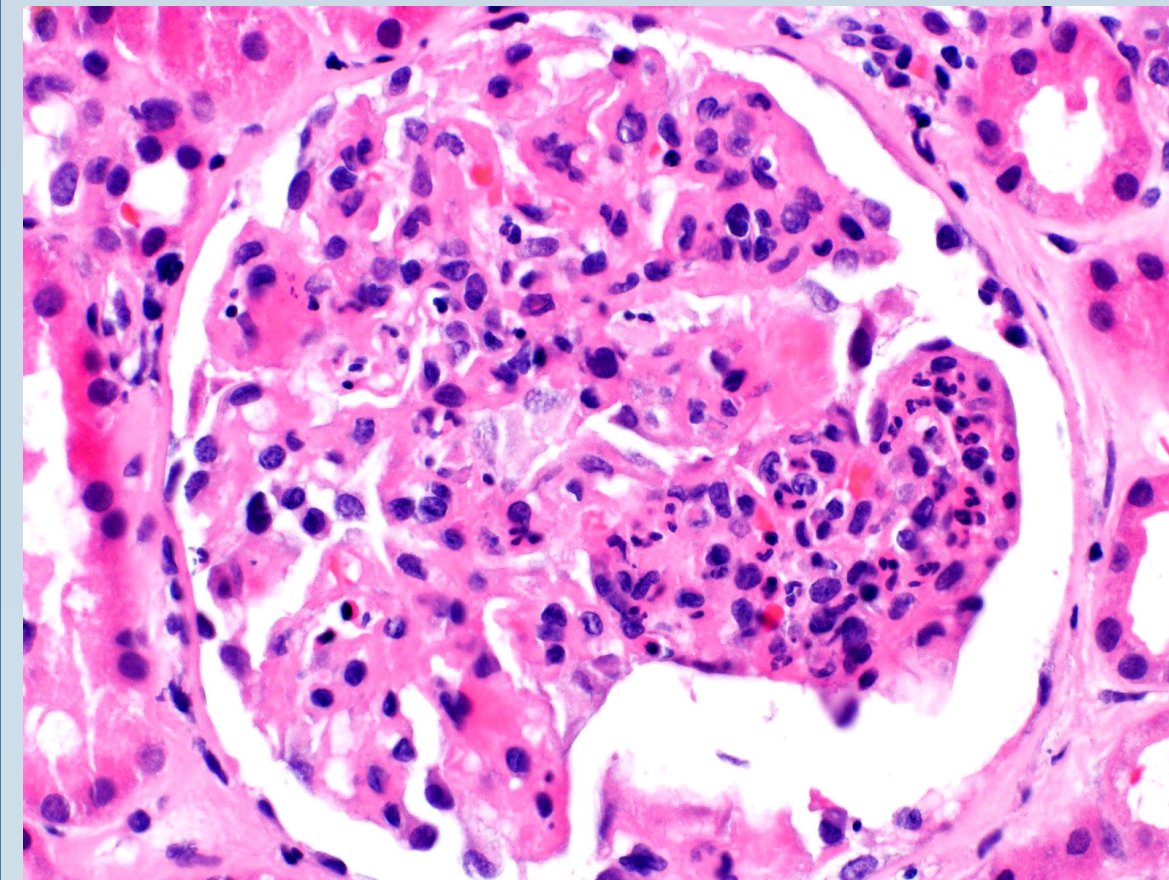


Figure 1: Light microscopy (Periodic acid- Schiff stain)
Endocapillary hypercellularity with prominent neutrophils

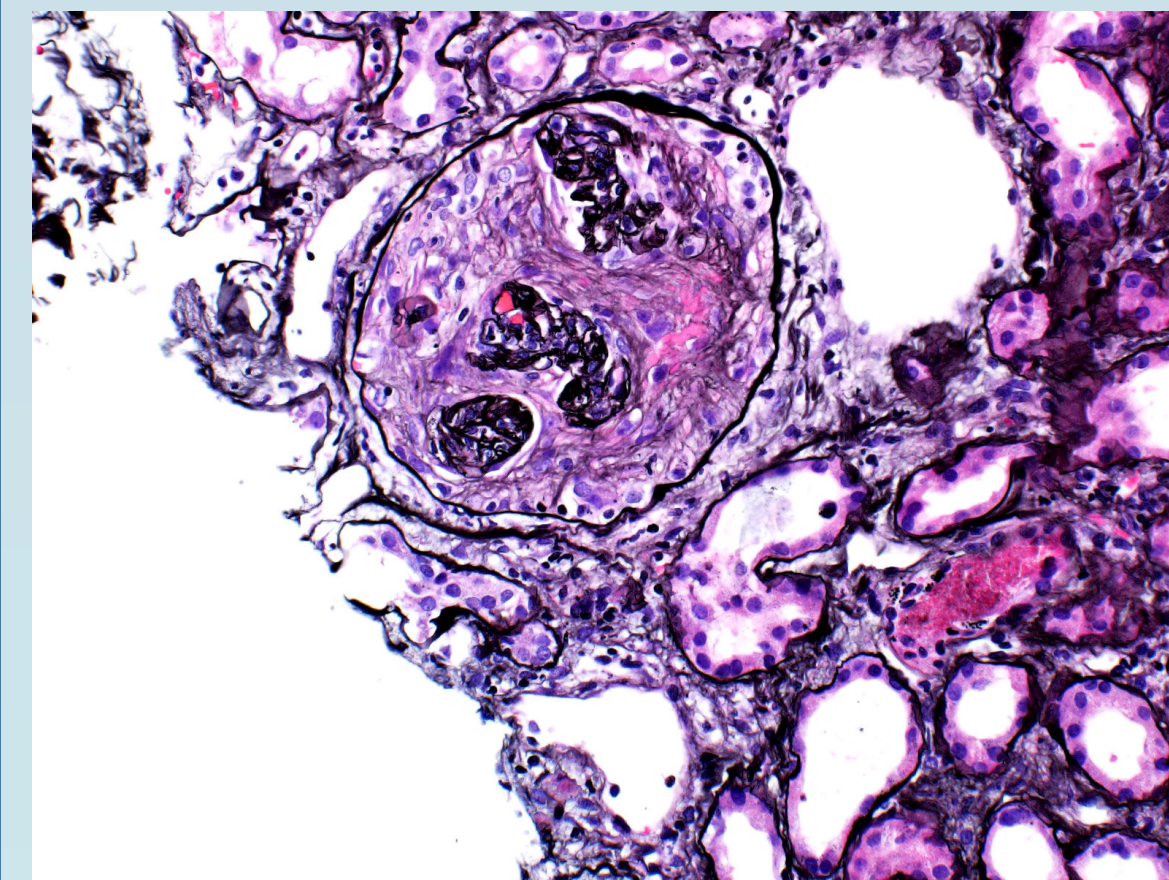


Figure 2: Light Microscopy (Jones methenamine silver stain)
-Cellular crescent with necrotizing foci
-Active crescents seen in 55-60% of non-obsolescent glomeruli

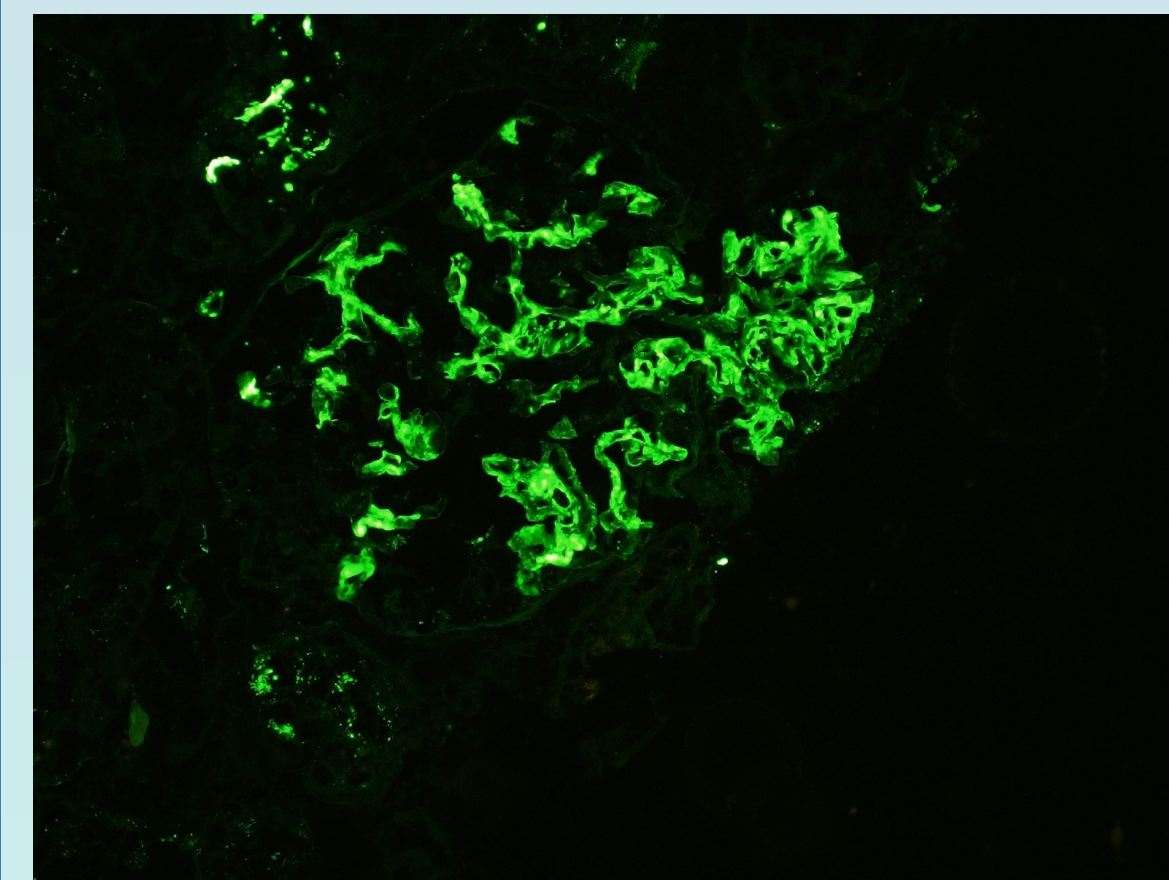


Figure 3:
Immunofluorescence microscopy:
Glomerulus with 3+ C3 mesangial staining

DISCUSSION

- **Renal biopsy** findings suggest infection-associated glomerulonephritis
- **Transesophageal Echocardiogram:** showed small echodensity on right coronary cusp
- **Treatment:** 6 weeks of IV ceftriaxone 1g daily and prednisone 60mg taper
- Patient had improvement of symptoms and improvement of renal function (Cr 1.8)
- Follow up echocardiogram showed resolution of endocarditis

CONCLUSION

- It may be difficult to diagnose infectious endocarditis without typical presentations of endocarditis
- This case highlights the role renal biopsy could have in the diagnosis and management of culture negative, serology negative endocarditis.

REFERENCES

1. Bele et al., 2020 BMC Neph 21:40, doi: <https://doi.org/10.1186/s12882-020-1694-2>
2. Boils et al., 2015 Kidney Int 87(6), doi: <https://doi.org/10.1038/ki.2014.424>
3. Chamarthi, et al., 2020 Cureus. 2020; 12(2): e7127, doi: [10.7759/cureus.7127](https://doi.org/10.7759/cureus.7127)
4. Hunt et al., 2019 Pediatr Clin North Am 66(1):59-72, doi: [10.1016/j.pcl.2018.08.005](https://doi.org/10.1016/j.pcl.2018.08.005)
5. Lusco, et al., 2016 Am J Kidney Dis 68(2): e11-e12, doi: <https://doi.org/10.1053/j.ajkd.2016.06.001>
6. Tomoaki et al., 2022 Yonago Acta Med 65(1): 1-7, doi: [10.33160/yam.2022.02.011](https://doi.org/10.33160/yam.2022.02.011)