

Bartonella henslea prosthetic valve endocarditis mimicking vasculitis

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Case Presentation

A 43 year old male with a history of congenital bicuspid aortic valve status post valve replacement on warfarin presented to our hospital feeling poorly for several weeks with abdominal pain. He was found to be pancytopenic with an acute kidney injury (AKI) and had a non-pruritic, palpable purpura on his legs. He received an abdominal ultrasound showing enlarged, heterogeneous kidneys, a spleen 20cm in length, blood cultures were taken and he was admitted to the hospital.

He was evaluated for his AKI including renal biopsy, due to concern of a vasculitis, which showed “immune complex-mediated acute proliferative glomerulonephritis,” and a vasculitis panel was also sent which was found to be anti-neutrophil cytoplasmic antibodies (ANCA) positive. His etiology was thought to be infectious, and a transesophageal echocardiogram obtained did not show vegetations and blood cultures remained negative. Bone marrow biopsy was obtained and had no evidence of infection, leukemia, lymphoma, myeloma or fibrosis. When the infectious disease panel returned, Bartonella henselae IgG was 1:2560, IgM was 1:400 and Bartonella quintana IgG was 1:640. The patient was started on Doxycycline and Rifampin and responded well.

Conclusion

Culture negative endocarditis can present in unique ways making it difficult to diagnosis. This case highlights the importance of interdisciplinary work to ensure our patients get the proper care and treatment they need and deserve. Teamwork and communication amongst different specialties is the only way to ensure our patients are properly cared for which is truly the highlight of this case.

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Discussion

Culture negative endocarditis is a difficult diagnosis to make, made more challenging by elusive organisms such as Bartonella henselae, which is harbored by 40% of domesticated cats in the United States [1]. Seven species of Bartonella have been shown to cause human disease such as glomerulonephritis which can lead to renal failure. The pathophysiology of the renal failure was originally thought to stem from emboli from the vegetation, but with our case would support the idea that there is a primary immune complex (IC) deposition component (Figure 1). This stems from passive trapping of IC that are already in circulation or from reactivity of IgG antibodies with an endogenous component of the glomerulus itself such as seen in anti-glomerular basement disease.

Vasculitis can mimic endocarditis both serologically and clinically [2]. Certain infections and drugs can induce production of ANCA in endocarditis and glomerular disease. However, proteinase and super antigens as seen in patients with ANCA associated endocarditis [3] 3-ANCA are specifically found in patients with endocarditis [3]. Some of the possible mechanisms linked to the production of these antibodies is barrier dysfunction.

References

- [1] Fournier PE, Lelievre H, Eykyn SJ, et al. Epidemiologic and clinical characteristics of Bartonella quintana and Bartonella henselae endocarditis: a study of 48 patients. *Medicine (Baltimore)*. 2001;80(4):245-251. doi:10.1097/00005792-200107000-00003
- [2] Ryan M, Ware K, Qamri Z, et al. Warfarin-related nephropathy is the tip of the iceberg: direct thrombin inhibitor dabigatran induces glomerular hemorrhage with acute kidney injury in rats. *Nephrol Dial Transplant*. 2014;29(12):2228-2234. doi:10.1093/ndt/gft380
- [3] Csernok, Elena; Lamprecht, Peter; Gross, Wolfgang L. Clinical and immunological features of drug-induced and infection-induced proteinase 3-antineutrophil cytoplasmic antibodies and myeloperoxidase-antineutrophil cytoplasmic antibodies and vasculitis. *Current Opinion in Rheumatology*: January 2010 – Volume 22 – Issue 1 – p43-48. doi: 10.1097/BOR.0b013e3283323538

Figure

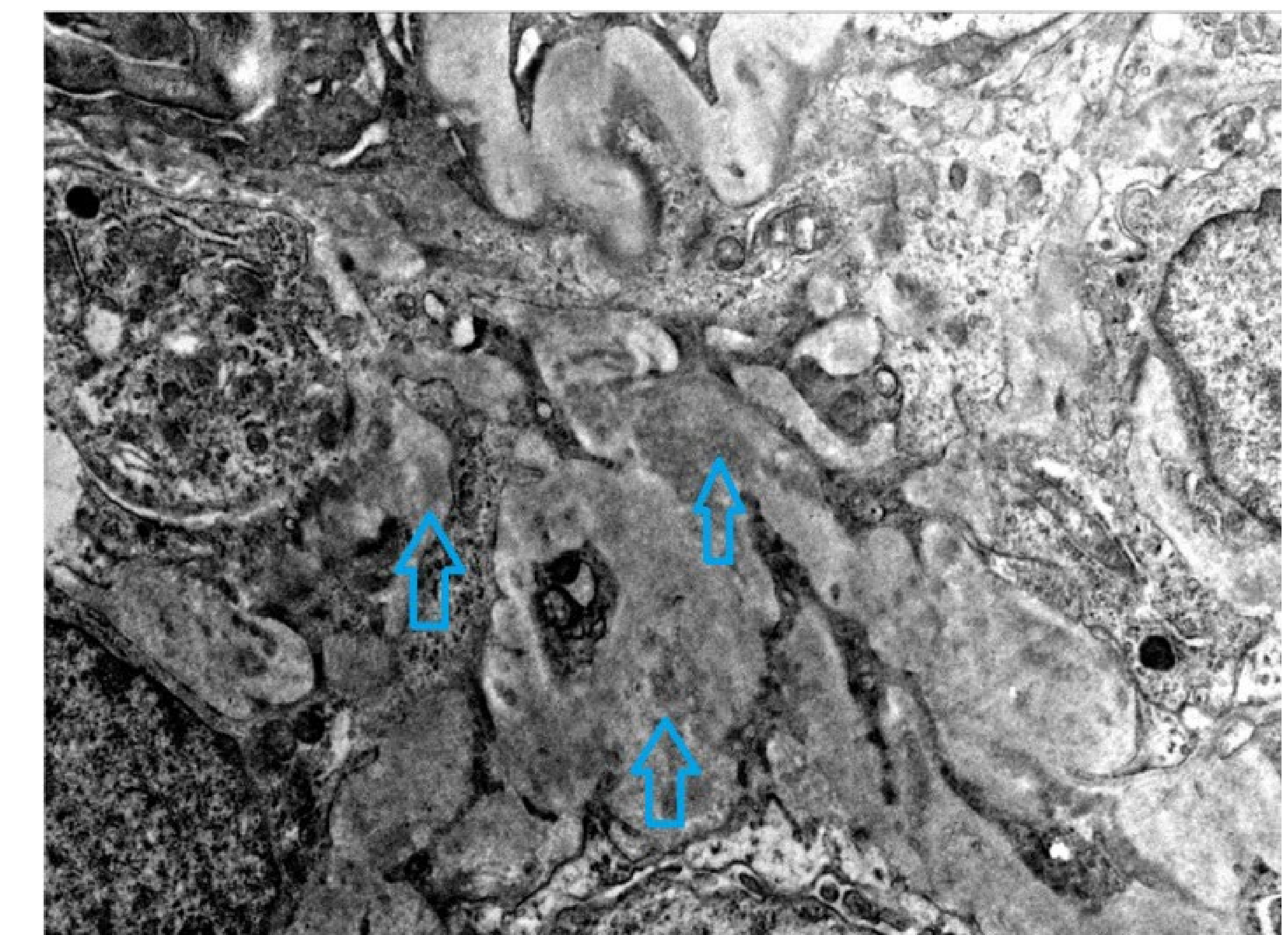


Figure 1. Electron microscopy of renal biopsy showing mesangial deposits (blue arrows) of immune-complexes

