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Expect the Unexpected: MSSA endocarditis and liver abscess with renal failure. Jennifer Ongchin, Jaime Ruzskowski, Paul Pronovost. Yale Primary care Internal Medicine Residency, New Haven and Waterbury, CT.

Learning Objectives: Renal failure can be a common consequence in the setting of endocarditis due to various causes, such as septic emboli, immune complex glomerulonephritis (GN), or drug-induced acute interstitial nephritis (AIN) or acute tubular necrosis (ATN). Staph infections have been reported to cause a GN mimicking IgA nephropathy. We will review the literature and describe its incidence and pathophysiology.

Case: A 74 year old female with history of diabetes mellitus type 2 with neuropathy, hypertension and recent hospitalization for liver abscess and endocarditis, both positive for Methicillin Sensitive Staph Aureus (MSSA), on Acef who presented with increasing shortness of breath and weakness. She was found to be in acute renal failure with significant proteinuria and hematuria. One month prior to admission, the patient had normal renal function. She was initially admitted to the floor and the antibiotics to treat her MSSA was changed to Oxacillin. However, the patient was quickly transferred to the intensive care unit for acute respiratory failure secondary to noncardiogenic pulmonary edema. Her renal function continued to worsen and the patient became anuric and was started on hemodialysis. Renal ultrasound was negative. ANA, hepatitis serologies, C-ANCA, P-ANCA, protein electrophoresis were negative. C4 was normal, but C3 was low, which was expected – given her presentation and history, the predominant thought was that the patient's renal failure was due to immune complex GN. Repeat C3, C4 was normal approximately one week later.

Left renal biopsy was obtained and revealed immune complex GN with IgA deposits in the mesangium and endothelium.

Immunosuppressants were not given due to the relationship of staph infection-associated GN mimicking IgA nephropathy.

The patient was eventually extubated, completed a 6-week course of Oxacillin, and continued hemodialysis upon discharge.

Discussion: Renal failure in patients with underlying staph aureus infections, both MSSA and Methicillin-Resistant Staph Aureus (MRSA) have been associated with glomerulonephritis that mimicks IgA nephropathy. It has been widely reported in Japan and has recently been more closely looked at in the United States. One of the implications of these findings has been whether IgA nephropathy is a coincidental underlying condition in patients with staph infections and renal failure. However, studies from several groups from Japan and the US have proposed possible mechanisms specific to staph infections that cause this mimicking of IgA nephropathy.

