

# Streptococcal Bacteremia and Nephrotic Syndrome in an Adult: A Case Report

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### INTRODUCTION

- Alpha-hemolytic *Streptococcus* species, such as *Streptococcal Pneumoniae* (SP), is not frequently associated with nephritic or nephrotic syndrome.
- 5% of the time, a constellation of laboratory findings, specifically proteinuria, is consistent with nephrotic syndrome and has been associated with *Streptococcus* infection.
- We present here a case of suspected nephrotic syndrome, diagnosed after a patient was found to have SP bacteremia.

### CASE

- A 43-year-old male with no significant past medical history presented with polyarthralgia, syncope, and fevers.
- On admission temperature was 102F
- Physical exam: tenderness and erythema over multiple joints.
- Pertinent laboratory work up on admission can be seen in table 1.
- Day 1 admission: blood cultures were positive for SP, and repeat blood cultures on day two were also positive.

#### Work up:

- Echocardiogram negative
- Immunological deficiency or other infectious etiologies were all negative (table 2).
- MRI lumbar spine: L5 epidural abscess

He was discharged on IV antibiotics. Was re-admitted shortly after with ongoing fevers and chills despite appropriate antimicrobial therapy. Repeat labs seen in table 1. Underwent epidural abscess washout and discharged.

Admission #1	Admission #2
WBC: 33.1 with 2% band BUN 21 Creatinine 1.9	WBC 30 BUN 22 Creatinine 1.6.
Urinalysis: hyaline casts and +2 protein.	Urinalysis: hyaline casts and +2 protein.  urine protein/creatinine ratio of 1.31.

Table 1. Pertinent labs from admission one and two.

Infectious and immunological work up	Rheumatological
HIV	Negative
Lyme Ab	Rheumatoid factor
Hepatitis A/B/C panel	ANA
Parvovirus B 19 IgM Ab	C3 140
Syphilis Ab	C4 24
Chlamydia and Gonorrhea	IgM 24
RSV and Influenza	IgG 2,526
Epidural abscess culture	IgA 163
	Propionibacterium acnes

Table 2. Immunological and infectious work up for the cause of bacteremia

### DISCUSSION

- Nephrotic syndrome (NS) is described as a constellation of findings including proteinuria, hypoalbuminemia, hyperlipidemia, and edema.
- Most cases of renal disease following *Streptococcal* infection have been secondary to alpha-hemolytic strains and are more commonly a nephritic syndrome
- Streptococcal* disease can have various nephrotoxic effects with both nephritic and nephrotic features.
- NS following diagnosis of SP has been mostly described in pediatric population, with limited cases in adults.

### CONCLUSION

- This patient was diagnosed with NS after the diagnosis of SP infection.
- While it is known that NS can predispose adults to bacteremia due to loss of immunoglobulins, it is unclear if primary SP bacteremia leads to development of NS, making this case unique.
- This lends credence to the idea that if *Streptococcal* infection is nephrotoxic, it is crucial to adequately treat infection early, in order to prevent renal dysfunction.
- Further studies are needed to delineate protocols for diagnosis and treatment of SP bacteremia to prevent irreversible consequences such as nephrosclerosis as seen in other disease states such as PSGN.

### References:

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