

A Great Imitator Presenting as Crescentic Glomerulonephritis with Membranous Features

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Background

The CDC reported 176,713 cases of syphilis in 2021¹

The rate of primary and secondary syphilis has increased almost every year since reaching a historic low in 2000 and 2001¹

Most cases of syphilis occur in men → majority in men who have sex with men (MSM).¹

MSM are disproportionately affected by syphilis → 53% of all male P&S syphilis cases in 2020²

CLASSIFICATION OF ACQUIRED SYPHILIS

Primary	Anogenital ulcer/chancere
Secondary	Multisystem, < 2 years of infection
Early latent	<2 years, serology +, no clinical evidence
Late latent	>2 years, serology +, no clinical evidence
Tertiary	cardiovascular syphilis, neurosyphilis, gummatous syphilis

- Syphilis is often referred to as the great imitator as its varied manifestations mimic several pathologies.
- Renal involvement in syphilis is very rare → it is a complication of the secondary stage.³
- Renal manifestations of secondary syphilis include :
 - ✓ mild transient albuminuria
 - ✓ nephrotic syndrome
 - ✓ acute nephritis with hypertension and ARF²
- Pathology:
 - ✓ membranous glomerulonephritis or
 - ✓ diffuse endocapillary glomerulonephritis, sometimes with crescents²
- Elevated C3 complement with IgG and IgM antibodies have been detected in syphilis-induced nephritis.⁴
- Renal abnormalities often resolve following treatment of syphilis²

Case description

43-year-old male presented with:

- ✓ 3-month history of non-specific abdominal and joint pain
- ✓ 3-week history of tea-colored urine
- ✓ Recently diagnosed hypertension

Physical Exam:

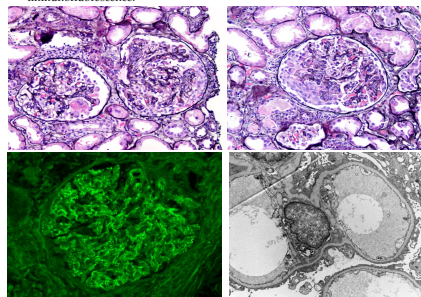
- ✓ generalized abdominal tenderness
- ✓ 1+ bilateral lower extremity pitting edema
- ✓ generalized lymphadenopathy
- ✓ mild erythematous rash over the chest and back

Laboratory results

Parameter	Result	Parameter	Result
Hemoglobin	10.5 → 8.9	HIV	negative
WBC	8.6 → 4.4 → 15.2	Hepatitis B	negative
Platelets	390 → 420	Hepatitis C	negative
Creatinine	2.14 → 2.84	albumin/Cr ratio	129
24-hour urine protein	4.8g	Urinalysis	3+ blood and 1+ protein
HbA1C	6.4%	serum albumin	2.4
ISH	3.66	Complement levels	normal
ANA, ANCA, SSA (Anti-Ro), SSB (Anti-La), Smith antibodies, SPEP, CIPK, IHA, IZZ, Cryoglobulin, DAT C3 and DAT IgG	negative	All 5 main immunofluorescence stains: IgA, IgG, IgM, C3, CIQ	positive

Kidney biopsy :

- Crescentic glomerulonephritis with membranous features.
- Findings suspicious for lupus nephritis with near full-house immunofluorescence.



Hospital course

- ✓ Initially treated with 1g daily methylprednisolone → Creatinine trended down.
- ✓ On day 3 of steroids → dramatic generalized maculopapular, erythematous rash.
- ✓ Further analysis of his sexual history revealed he had unprotected intercourse with men over the past few months.
- ✓ RPR and Treponema pallidum antibodies tests obtained → positive, titers 1:64
- ✓ Intravenous steroids discontinued.
- ✓ Initiated on IV penicillin G 2,000,000 units 8-hourly for a total of 6 doses following which his symptoms improved remarkably.
- ✓ Plan at discharge: outpatient IM benzathine penicillin G 2,400,000 units weekly for 3 weeks. Unfortunately, patient was lost to follow up.

Treatment

- A literature review by Inayat et al., 2020 reported 19 cases between 1989 and 2020 in which renal manifestations of syphilis resolved after treatment with penicillin.⁴
- Regimens reported included:
 - ✓ Procaine penicillin IM 600 000 IU daily for 14 days
 - ✓ Benzathine penicillin 2.4 million U IM weekly for 3 weeks
 - ✓ Intravenous benzylpenicillin (1.8 g every 4 hours)
 - ✓ Amoxicillin for 14 days
 - ✓ Penicillin G, 2.4 million U IM

Conclusion

This case highlights :

- ✓ the importance of detailed history taking in the diagnosis of this rare presentation of syphilis
- ✓ An easily treatable cause of glomerulonephritis which merits increased awareness of this rare presentation

References

¹<https://www.cdc.gov/std/statistics/2021/overview.html>

²https://www.uptodate.com/contents/syphilis-epidemiology-pathophysiology-and-clinical-manifestations-in-patients-without-hiv?source=history_widget118

³Shettigar R, Schollum J, Patt T, Chan L, Lau M, Walker R. Renal manifestations of syphilis. Intern Med J. 2021 Jul;51(7):1160-1167. doi: 10.1111/imj.15407. PMID: 34278996.

⁴Inayat E, Almas T, Bakhari SRA, Muhammad A, Sharshir MA. Membranous Glomerulonephritis as an Uncommon Presentation of Secondary Syphilis: A Reminder on Therapeutic Decision-Making in Clinical Practice. J Invest Med High Impact Case Rep. 2020 Jan-Dec;8:232470620967212. doi: 10.1177/232470620967212. PMID: 33078640; PMCID: PMC7594254.