CASE REPORT

Subclinical Acquired Syphilis Masquerading as Membranous Glomerulonephritis

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Summary

Membranous glomerulonephritis (MGN) is one of the common forms of nephrotic syndrome in the adult population. The majority of MGN are idiopathic, but the secondary forms can be seen in the setting of autoimmune disease, neoplasia, infection and following exposure to certain therapeutic agents. Histologically, MGN is an immunologically mediated disease in which immune complexes deposit in the subepithelial space. Syphilis is a venereal disease that can also be acquired by exposure to infected blood. Untreated syphilis may progress and develop renal complications such as membranous glomerulonephritis (MGN) or diffuse endocapillary glomerulonephritis with or without crescent formation. Today, with increasing awareness of sexually transmitted diseases especially HIV infection coupled by the practice of protected sexual intercourse and advancement of medicine, we have seen fewer and fewer cases of acquired syphilis. Furthermore, majority will present with typical syphilitic symptoms of such as chancre, rash, fever and lymph node enlargement in which case the diagnosis is easily obtained. We are reporting a case of acquired syphilis masquerading as membranous glomerulonephritis without typical syphilitic symptoms.

Key Words: Syphilis, Nephrotic syndrome, Membranous glomerulonephritis

Case report

A 31 year-old Chinese man presented with a 4-day history of facial puffiness and bilateral leg swelling. He also noticed that his urine output was reducing in amount and the urine was frothy in nature. He denied having any signs and symptoms pertaining to urinary tract infection (UTI), sexually transmitted disease (STD) and connective tissue diseases. A week prior to this admission, he had a low grade fever and generalised body ache. He had visited a general practitioner then, and received a course of antibiotic. He has no significant past medical or surgical history, and no drug allergy.

He works as a waiter in a nightclub. He is single but sexually active with multiple sexual partners and usually practises unprotected sexual intercourse. He smokes 20 cigarettes per day and drinks alcohol regularly. There was no history of consumption of traditional medication prior to his presentation. He also has no family history of kidney diseases.

On examination, he was not tachypnoeic and afebrile. No lymphadenopathy was detected. There were no stigmata of connective tissue diseases or vasculitides. He had facial puffiness and bilateral leg oedema up to his knees. Sacral oedema was also present. His pulse was 75/min and the rhythm was regular. His blood pressure was 140/90. Cardiovascular and respiratory systems examinations were normal and there was no ascites. There were no genital ulcers or penile discharge. The rest of his systemic examination was unremarkable.

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The microscopic examination of his urine showed 2+ protein. The 24-hour urine collection for protein quantification was 9725mg and the spot urine examination for urine protein creatinine index (UPCI) was 0.27g/mmol creatinine. His serum albumin was low i.e. 21g/L (normal range is 35-50 g/L). His lipid profile was also deranged with total cholesterol level of 8.62mmol/L (normal range <5.7mmol/L), triglycerides of 2.24mmol/L (normal range is <1.40mmol/L) and LDL of 6.5mmol/L (normal range is <3.80mmol/L). These indexes are consistent with nephrotic syndrome i.e. triad of hypoalbuminaemia, proteinuria and oedema. His renal profile was normal with blood urea of 3.1mmol/L (normal range is 2.5-6.4mmol/L) and the serum creatinine was 76umol/L (normal range is 44-80umol/L). The abdominal ultrasound showed no significant abnormality. The hepatitis and the connective tissue screening were negative and the anti-Streptolysin-O titre (ASOT) was not elevated. The VDRL screening was positive with a titre of 1:32, and both of the syphilis IgM and IgG were positive. A renal biopsy was done and it was reported as membranous glomerulonepritis. See Figure 1 and 2.

This patient was admitted and treated by restricting daily fluid and dietary sodium intake. Diuretics were instituted and achieved a weight loss around 0.5-1.0 kg per day. He was also anticoagulated. Benzathine penicillin (i.e. 2.4 mu intramuscularly weekly for three weeks) was initiated. Contact tracing was done and the patient was also given counselling regarding safe sex practice.

Upon discharge, his oedema has subsided. He had lost about 5kg of weight, serum albumin was 35g/L and the urine protein-creatinine index was 0.1g/mmol creatinine. He was followed-up at the clinic six weeks later after completing the antibiotic therapy. He was asymptomatic and his biochemistry tests had normalised i.e. his serum albumin was 43g/L and the UPCI was 0.01g/mmol creatinine (normal value is <0.02g/mmol creatinine). The VDRL titre had also reduced to 1:8 from 1:32. Complete resolution of this patient's nephrotic syndrome following therapy with penicillin, suggest a causal relationship between syphilis and the nephrotic syndrome.

Discussion

The role of sexually transmitted diseases (STDs) as a cause of nephropathy is not common. Although unusual, the relationship between syphilis and renal disease has been recognized for more than 100 years[2,3]. A review of the literature indicates that nephropathy associated with syphilis seems to have been more common in the past, often presenting as nephrotic syndrome with underlying immune-complex mediated membranous or mesangial glomerulonephritis1. Nowadays, renal involvement in syphilis has become infrequent[1].

Syphilis is caused by Treponema pallidum (TP) and renal involvement has been a reported albeit uncommon complication of secondary syphilis[1,2]. The spectrum of syphilitic nephropathy encompasses albuminuria, acute nephrosis and, infrequently acute

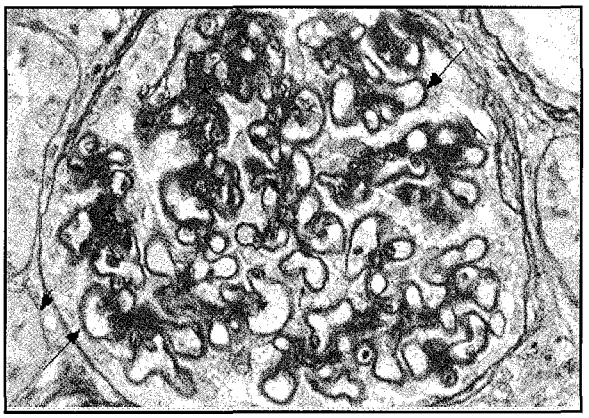

Fig 1: H & E stain of the renal biopsy showing thickening of the glomerular basement membrane

Fig 2: Mild thickening of glomerular basement membrane with some subepithelial deposits. Impression: Membranous glomerulonephritis

haemorrhagic nephritis[2]. As was the case in this patient, acute nephrosis in syphilitic nephropathy is a nephrotic syndrome without marked haematuria, hypertension or azotaemia[2-3]. Pathologically, most acquired syphilitic nephropathy in adults shows membranous glomerulonephritis on light microscopy, often accompanied by a slight mesangial proliferation[2-3]. Immunofluorescence discloses subepithelial electron-dense deposits containing IgG and complement[2-3].

It is always difficult to establish a true causal relationship between syphilis and renal disease. In fact it probably can never be established with certainty. Pointers to the diagnosis include history of recent infection, co-existence of late primary or secondary syphilis with nephropathy, a positive serological test, spontaneous remission or rapid recovery following anti-syphilitic therapy and the absence of other causes of renal disease[2,3]. Our patient fulfilled these criteria. He also demonstrated a presentation of an acute nephrosis, and his renal biopsy showed membranous glomerulonephritis, consistent with the commonest pathologic findings in syphilitic nephropathy. His serology titre was falling and his nephrotic syndrome resolved completely following therapy with penicillin, supporting syphilis as the cause of his acute nephrosis. It is also interesting to note that the patient presented with signs and symptoms of nephrosis in the absence of genital ulcers, penile discharges, lymphadenopathy or any other tell tale signs of STDs.

This case report illustrated to us, that the diagnosis of syphilis should be entertained in the differential diagnosis of nephrotic syndrome with underlying membranous glomerulonephritis in any patient who fits the criteria (i.e. sexually active, presence of STDs signs and symptoms, positive serological testing) even though the incidence of syphilis had declined in this day and age. Furthermore, renal manifestations may even precede the typical presentations of syphilis itself.

References

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