

Molar Pregnancy and Glomerulonephritis

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Summary

A 17-year-old, sexually active, single, nulliparous young woman presented to us with one week history suggestive of nephrotic syndrome. She was found to have a benign hydatidiform mole confirmed by histopathological examination after suction and curettage. Renal biopsy revealed focal segmental glomerulosclerosis. The renal pathology was most probably due to molar pregnancy due to the close temporal relationship. To our knowledge, this is the first case of focal segmental glomerulosclerosis associated with a gestation trophoblastic disease described in the literature.

Key Words: Nephrotic syndrome, Benign hydatidiform mole, Focal segmental glomerulosclerosis.

Case report

Miss FS was a 17-year-old single sexually active nulliparous Malay girl. She presented to our centre with a one-month history of cough, haemoptysis, loss of appetite and nausea. One week prior to admission, she developed facial puffiness, bilateral leg edema, frothy urine and increasing weight. Her last menstrual period was a month earlier on 17th June 2004. Physical examination on admission revealed a young girl with pallor, facial puffiness and gross bilateral pitting leg edema. Her pulse rate was 120 beats per minute and blood pressure was 150/110 mmHg. Abdominal examination revealed a palpable uterine mass of 18 weeks size.

The initial laboratory investigations were consistent with nephrotic syndrome. Urinary analysis revealed the presence of protein and red blood cells. Twenty-four-hour urine protein was about 8g/day, serum albumin was 21g/L, blood urea and serum creatinine were 9.6mmol/L and 42umol/L respectively. Her hepatitis and connective tissue disease screening were negative. Her urine pregnancy test was positive and beta human chorionic gonadotrophin (β -HCG) level was 3,186,200 units/L. Pelvic ultrasound showed a uterine mass with

a 'snow storm' appearance suggestive of molar pregnancy.

Suction curettage was performed and histopathological examination confirmed benign hydatidiform mole. Subsequently a renal biopsy was done and revealed focal segmental glomerulosclerosis with mesangial staining of immunoglobulin M (Figure 1). Four days after the suction curettage, the patient showed remarkable improvement. Her nephrotic state subsided with a fall in urine protein excretion and a rise in serum albumin. She was discharged well from the ward. Since her initial β -HCG level was exceeding 3,000,000 U/L, her progress was monitored closely in the outpatient clinic. Her β -HCG levels came down to less than 2 U/L within one month period. She remains well on follow-up and her β -HCG levels were normal.

Discussion

The first report of an association between malignancy and glomerular disease was made by Galloway in 1922, who reported a patient with Hodgkin's disease who subsequently developed nephrotic syndrome. Later, Volhard in 1931 described a patient with nephrotic

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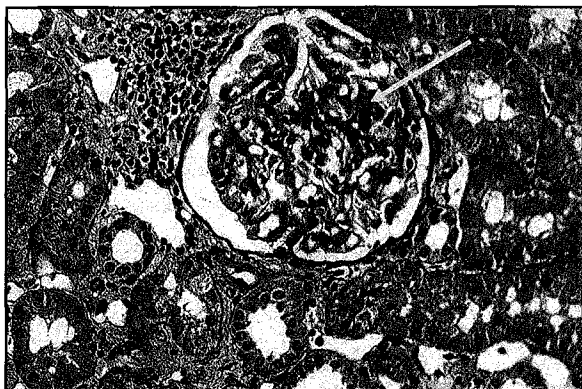


Fig 1: Renal biopsy (H&E x 200): Glomerulus with mild segmental sclerosis.

syndrome associated with gastrointestinal cancer. The first series which suggested a high prevalence of carcinoma in adult patients with nephrotic syndrome was made by Lee *et al* in 1966, who reported an underlying carcinoma in 11 of 101 patients with nephrotic syndrome.

Both benign and malignant tumors, including solid tumors, most commonly adenocarcinoma of the lung and gastrointestinal tract, and lymphoproliferative and myeloproliferative disorders, have been associated with nephropathy. However, only three cases of trophoblastic disease associated nephrotic syndrome have been reported in the literature; in which two had no renal biopsy done and one patient had biopsy-proven membranous nephropathy¹. Our patient is probably the first case of trophoblastic disease associated with focal segmental glomerulosclerosis.

Membranous nephropathy is the most common histological type associated with tumor especially carcinoma. Nonetheless, other histological types such as mesangiocapillary, minimal change disease and others have all been reported to be associated with various tumors. Case reports and clinical reviews demonstrate the association between various tumors

and the nephrotic syndrome as a genuine phenomenon. It is probably causal as well, in view of the close temporal relationship between the clinical appearance of the renal lesion and the tumor, as well as remission of the nephropathy after removal of the tumor.

In our case, the presentation of the patient with simultaneous gestational trophoblastic disease and nephrotic syndrome shows that these two entities were highly associated. The improvement of nephrotic syndrome within a few days, and resolution within a month; after suction and curettage, without any specific treatment such as steroids or cytotoxic agents, makes the relationship even stronger. Some cases of nephrotic syndrome may remit spontaneously. It is especially true for minimal change disease and membranous nephropathy, but occurs rarely in focal segmental glomerulosclerosis. Thus, the resolution of nephrotic syndrome in our patient was unlikely to be due to the natural history of the disease itself.

Minimal change disease was less likely in our patient because of the presence of hypertension and hematuria. Even though membranous nephropathy was the most common histological type associated with malignancy, it is not so in our case. However, it was not surprising to diagnose focal segmental glomerulosclerosis from the renal biopsy of our patient since this histological type is responsible for 15% of patient with nephrotic syndrome in general. It is also associated with malignancy².

Glomerular injury in malignancy may be immunologically mediated, or may result from disseminated intravascular coagulation or amyloidosis. Circulating immune complexes have been described in up to 80% of patient with malignancy by Rossen *et al* in 1976. Review of autopsies also showed 17%-30% of patients with malignancy had evidence of immune complex deposits in the glomeruli³. In our case, the most likely underlying pathology was immunologically mediated focal segmental glomerulosclerosis since there was diffuse and global deposition of IgM in the glomeruli. There was no evidence of disseminated intravascular coagulation or amyloidosis.

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