Nephrotic syndrome associated with invasive mole

In conclusion, due to the indolent nature of the disease and since renal LC accumulation can be completely reversed, early performance of renal biopsy and timely application of ASCT is of critical importance in maintaining renal function in LCDD.

Conflict of interest statement. None declared.

References

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Nephrotic syndrome associated with invasive mole: a case report

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Abstract

Gestational trophoblastic disease describes a number of gynaecological tumours that originate in the trophoblast layer, including hydatidiform mole (complete or partial), placental site trophoblastic tumour, choriocarcinoma and gestational trophoblastic neoplasia (GTN). Invasive moles are responsible for most cases of localized GTN. Two cases of GTN previously reported in the literature exhibited membranous glomerulonephritis (MGN). However, histologic examinations in our case did not reveal evidence...
of MGN. Clinical features and pathologic findings were consistent with minimal change disease associated with an invasive mole. In the present case, we observed complete remission of nephrotic syndrome following removal of the invasive mole.

**Keywords:** invasive mole; minimal change disease; nephrotic syndrome

**Introduction**

Gestational trophoblastic disease (GTD) is characterized by abnormal proliferation of trophoblast layer of the placenta and is rarely associated with nephrotic syndrome (NS). The precise pathogenetic relationship between GTD and glomerulonephritis is unclear due to the rarity of reported cases. There are only a few case reports in which GTD associated with NS has been histologically documented [1–7].

Here, we describe a case of NS occurring with an invasive mole. The renal pathologic changes we observed were consistent with minimal change disease (MCD). Clinical features and time course may provide better evidence of the contribution of gestational trophoblastic neoplasia (GTN) to the generation of NS.

**Case Report**

A 51-year-old female presented with reported periods of amenorrhoea and vaginal bleeding for the 3 months prior to presentation. At admission, her blood pressure was 180/110 mmHg, and a palpable mass was noted on the lower abdomen. Mild pretibial pitting oedema was noted, and her haemoglobin concentration was 13.6 g/dL (136 g/L). Blood chemistry tests revealed levels of total serum protein of 6.3 g/dL (63 g/L), albumin 3.0 g/dL (30 g/L), total cholesterol 256 mg/dL (6.62 mmol/L), blood urea nitrogen (BUN) 14.6 mg/dL (5.21 mmol/L) and creatinine 1.1 mg/dL (97.24 mmol/L). In a 24-h urine specimen, 4811 mg of protein and 1209 mg of creatinine were measured. Tests for antistreptolysin-O, antinuclear antibody (ANA), venereal disease research laboratory (VDRL), hepatitis B surface antigen and antibody, and rheumatoid factor were all negative. Serum human chorionic gonadotropin (β-hCG) levels were elevated to 577 319 mIU/mL.

An abdominopelvic computed tomography (CT) scan confirmed an ∼9.0 × 17.5 × 17.3-cm-sized mass in uterus with relatively well-defined margin. Light micrograph shows the myometrium are infiltrated by bizarre cytotrophoblasts and syncytiotrophoblasts [haematoxylin and eosin (H&E), ×200].

Fig. 1. Abdominopelvic CT scan shows an ∼9.0 × 17.5 × 17.3-cm-sized mass in uterus with relatively well-defined margin. Light micrograph shows the myometrium are infiltrated by bizarre cytotrophoblasts and syncytiotrophoblasts [haematoxylin and eosin (H&E), ×200].

One month later, the patient’s serum β-hCG levels were 36.5 mIU/mL, and a 24-h urine
specimen revealed 1315 mg/day of protein loss. Two months later, serum β-HCG levels were <2 mIU/mL with no proteinuria. There was no evidence supporting recurrence or metastasis of the invasive mole for 1.5 years, and the patient currently appears to be free of clinical symptoms of MCD.

Discussion

GTD describes a variety of gynaecological tumours originating in the trophoblast layer, including hydatidiform mole (complete or partial), placental site trophoblastic tumour, choriocarcinoma and GTN. Complete and partial hydatidiform moles are non-invasive and account for 80% of GTD cases. Invasive moles that have malignant potential for local invasion and distant metastasis cause most cases of localized GTN [8]. Whether it is possible to classify an invasive mole as an absolute malignant tumour is debatable. The malignant transformation of trophoblastic tissue is probably capable of causing a paraneoplastic phenomenon. Paraneoplastic phenomena are mediated by humoral factors or by an immune response to malignant cells without obvious alternative aetiology, and they usually present with malignancy. Sometimes, such phenomena are noted prior to the diagnosis of malignancy. A number of different types of glomerular disease, nephrotic or nephritic, may be associated with malignancy. Effective treatment of the tumour generally leads to remission of the glomerular injury in these settings.

A common cause of NS during pregnancy is pre-eclamptic nephropathy [9]. NS occurring in GTD patients is rarely reported [1–4,6,7]. Interestingly, GTN had a tendency to be associated with membranous glomerulonephritis (MGN), according to the two cases presented earlier [2,6]. Those reports of MGN described the regression by tumour resection alone, supporting that malignant trophoblastic tissue itself, or neoplastic antigens, is responsible for the development of MGN. We did not find any evidence of MGN by microscopic studies. The normal thickness of the glomerular basement membrane and foot process fusions were consistent findings of MCD. MCD may occur in association with haematologic malignancies, lymphoma or leukaemia [10]. Toxic lymphokines released from abnormal T cells may initiate glomerular injury, increasing the permeability of the glomeruli and capillaries in these disorders. Solid tumours are more commonly associated with an immune complex-mediated disease such as MGN. However, rare cases of MCD associated with solid tumours have been reported. Clinical symptoms of MCD usually parallel the activity of the malignancy.

In our case, no clinical features of NS were noted before the diagnosis of malignancy, and a successful hysterectomy was followed by remission of MCD without medical treatment. We infer that MCD is secondary to an invasive mole. Although many uncertainties still exist about the pathogenetic mechanism, our report may provide the impetus for further research linking the pathogenesis of MCD to GTN.

Conflict of interest statement. None declared.

References


Fig. 2. Light micrograph of a glomerulus shows normal architecture and cellularity. The capillary lumens are patent and congested. There is no endothelial swelling. The others are unremarkable [periodic acid–Schiff (PAS), ×400]. Electron micrograph shows normal thickness of the glomerular basement membrane and diffuse foot process fusion. Vague, electron-dense deposit-like materials were focally noted within basement membrane (×4000).
A paraneoplastic membranoproliferative glomerulonephritis with isolated C3 deposits associated with hairy cell leukaemia

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Abstract

We describe a 35-year-old woman who presented with proteinuria and microscopic haematuria. Blood tests revealed a low C3 complement level, with no evidence of cryoglobulin. Renal biopsy showed a Type 1 membranoproliferative glomerulonephritis (MPGN) with isolated C3 deposits on immunofluorescence study. Bone marrow aspirate, done for monocytopenia, was consistent with a diagnosis of hairy cell leukaemia (HCL). Both haematological and nephrological diseases completely responded to treatment with cladribine, strongly suggesting that the renal disease was a paraneoplastic syndrome. To our knowledge, this is the first report of a non-cryoglobulinaemic MPGN associated to HCL.

Keywords: hairy cell leukaemia; membranoproliferative glomerulonephritis; paraneoplastic; pentostatin

Case report

A 35-year-old woman was referred to the nephrology department for persistent albuminuria (around 1 g/day) and microscopic haematuria discovered by her general practitioner. This followed a transient episode of gross haematuria 3 months earlier, without any abnormality on imaging studies (renal and bladder ultrasonography, spiral CT scan). The patient also complained of recent mild symptoms: aching of the elbows, wrists and hands in the morning, bilateral leg swelling in the evening and photosensitivity. Medical history was unremarkable besides one uncomplicated pregnancy (5 years earlier), occasional smoking and allergic rhinitis. Medications comprised only a contraceptive pill. Physical examination revealed a high blood pressure (156/95 mmHg) and a mild livedo on the knees. There was no enlarged spleen or peripheral lymphadenopathy. Regular biochemistries showed a subnormal renal function (creatinine 81 µmol/L; estimated GFR 84 mL/min/m² by the MDRD formula), an abundant glomerular proteinuria (urinary protein/creatinine ratio of 4.5 g/g; albuminuria 1.19 g/L) and microscopic haematuria (4770/mm³) and leucocyturia (190/mm³). Complete blood count showed a mild normocellular anaemia and monocytopenia. Serum protein analysis revealed a mild hypoalbuminaemia (32 g/L; normal range, 39–48 g/L) and a hypogammaglobulinaemia (4.2 g/L; normal range, 7–15 g/L), without a monoclonal protein. Urinary Bence–Jones proteins were negative. Anti-nuclear antibodies (ANA) and double-stranded DNA antibodies were negative. C3 complement was moderately decreased (0.65 g/L; normal range, 0.75–1.50 g/L) and C4 complement was normal (0.19 g/L; normal range, 0.43–0.65 g/L).