Acute Renal Failure and Mediterranean Spotted Fever

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Sir,

Herein we report a rather unusual case of acute renal failure associated with Mediterranean spotted fever.

The patient was a 58-year-old male living in the countryside of Central Italy. He was a heavy drinker (about 250 g of ethanol/day) but he had always been in perfect health.

He presented with fever (40 °C), chills and diffuse maculo-papular exanthema which had appeared 5 days before admission to the hospital. On admission, he was in good general condition, well oriented in space and time and the only subjective complaint was a moderate headache. Blood pressure was 150/90, heart rate ranged around 96/min, no sign of dehydration was clinically evident in spite of the high body temperature. Pulmonary auscultation revealed rales in the basal right side where X-ray examination showed a pneumonitis focus.

Serum creatinine was 3.2 mg/dl, urea 112 mg/dl, acute phase proteins were elevated, hematocrit was 40%, hemoglobin 14 g/dl, blood leukocytes were 9,210/mm3 (84% of neutrophiles), serum hepatic cytolysis enzymes were elevated, fibrinogen/fibrin degradation products were normal and the research of pathologic seric and urinary myoglobin was negative.

The patient was oliguric and the few urine contained hemoglobin and 1.5 g/l of protein. Urinary sodium was 38 mEq/l, urinary potassium was 11 mEq/l. Urinary sediment showed 15–20 erythrocytes pmf, 20–25 leukocytes pmf and a number of casts, mainly hemoglobinic ones. On ultrasound, both kidneys were normal in shape and size. Acute renal failure rapidly developed, the patient became absolutely anuric and hemodialysis was started 8 days after admission.

Table 1.

<table>
<thead>
<tr>
<th>Skin biopsy</th>
<th>Endothelial hyperplasia Perivascular lymphocytic infiltrates</th>
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<tbody>
<tr>
<td>Renal biopsy</td>
<td>Tubules: segmental necrosis and proximal tubule epithelium, hemoglobin casts, intact membranes</td>
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<tr>
<td></td>
<td>Glomeruli: intact</td>
</tr>
<tr>
<td></td>
<td>Interstitium: edema and inflammation Vasa: no lesions</td>
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<tr>
<td>Immunofluorescent staining</td>
<td>negative: IgG, IgA, IgM, C3, fibrinogen</td>
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In the meanwhile, the skin lesions had increased in spread and number, fever persisted high and, although the typical ‘tache noire’ was absent, the Weil-Felix reaction was performed in suspicion of Mediterranean spotted fever. The reaction was positive for OX-2 and OX-19 strains of Proteus vulgaris. Chemotherapy was then started: doxycyclin 100 mg/day and ofloxacin 600 mg/day. As shown in figure 1, fever, exantema and serum creatinine quickly decreased at the same time, urinary volume increased while indexes of hepatic damage as well as pneumonia improved. Hemodialysis was discontinued and after 5 further days both renal function and urinalysis became normal. The antibody titer (OX-19) went on increasing and the diagnosis of Mediterranean spotted fever could be definitely established.

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Skin and renal biopsies were carried out. In both cases the immunofluorescent staining was negative (anti-IgG, IgA, IgM, C3, fibrinogen). The histologic examination showed a typical pattern of acute tubular necrosis. The skin lesions where those of vasculitis (table 1).

As reported in figure 1, the patient was dismissed in complete clinical and biochemical remission. dehydration or peripheral hypoperfusion, disseminated intravascular coagulation and rhabdomyolysis could also be excluded from diagnosis.

The immunofluorescent staining was negative so that an immuno-mediated mechanism of nephrotoxicity could not be responsible. In conclusion, although we could not demonstrate any specific renal lesion, the possibility of an association between Mediterranean spotted fever and acute renal failure should be considered.

Discussion

Rickettsial infection has been somehow related to nephropathy. Authors from Mediterranean countries, who could collect numerous cases, report urinary abnormalities up to 50% of the patients and a mild elevation of blood urea and creatinine secondary to the fluid and electrolyte wasting associated with fever [1, 2].

Severe renal impairment with lethal outcome was described in the earliest reviews [3]. Other authors have included rickettsial infections in the number of causes of nephrotic syndrome [4]. Literature was carefully screened but acute renal failure in association with Mediterranean spotted fever has never been clearly described, so far. In our one-case experience the course of the nephropathy developed together with the evolution of fever and exantema. The renal function dramatically improved after antimicrobial therapy as well as fever and skin lesions. As reported, there were neither clinical nor laboratory indexes of

References
