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SHORT COMMUNICATIONS AND CASE REPORTS

Multiple myeloma presenting as massive ascites

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Summary

Ascites is a rare complication of multiple myeloma and may occur either at presentation or more often during the disease course. Most reported cases have been associated with IgA type of myeloma. When it occurs, it is usually associated with extensive liver infiltration with plasma cells, infectious peritonitis or myelomatous peritoneal infiltration. Herein, we describe a case of IgG type multiple myeloma diagnosed by further examinations due to the presence of plasma cells in ascitic fluid.

Key words: ascites, diagnosis, multiple myeloma

Introduction

Ascites is a rare presenting sign of multiple myeloma. It can occur seldom at presentation or, mainly, develop during the disease course [1-8]. The majority of previously reported cases have been associated with IgA type of multiple myeloma. Herein, we describe a case of IgG type of multiple myeloma with ascites being the presenting sign.

Case presentation

A 40-year-old female was admitted to the hospital with progressive abdominal swelling during the last 2 weeks and hip pain. Physical examination revealed a grossly distended abdomen with fluid wave sensation. The rest of the examination seemed normal. Laboratory results showed: Hb 9 g/dl, white blood cells (WBC) 6.79×10^9/L (granulocytes 56%, lymphocytes 29%, monocytes 12%, eosinophils 3%), platelets $220X10^9$ /L, creatinine 0.84 mg/dL, normal electrolyte levels. Abdominal ultrasonography revealed massive ascites with normal-sized spleen, and liver with dilated hepatic veins. To rule out congestive heart failure, echocardiography was made. Ejection fraction was normal. There were mild mitral and tricuspid insufficiency. Abdominal paracentesis revealed a yellow fluid. Cultures of the fluid were negative. Wright's stain of a centrifuged specimen of ascitic fluid showed sheets of plasma cells (Figure 1). Then, plasma albumin and total protein levels were determined. Albumin level was 4.4 g/dL and globulin 7 g/dL. The finding of plasma cells in the ascitic fluid prompted further investigations. Skeletal survey showed multiple osteolytic lesions. Bone mar-

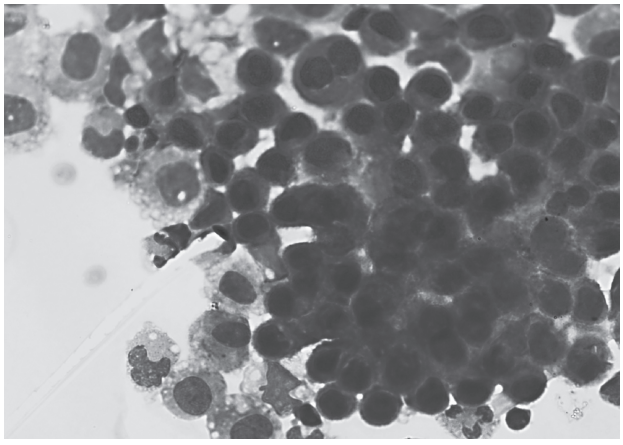

Figure 1. Ascitic fluid showing sheets of plasma cells (Wright ×100).

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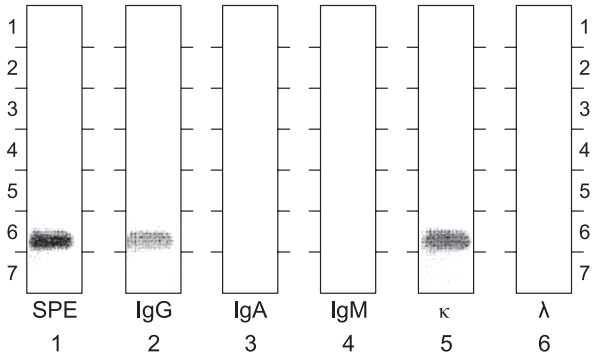

Figure 2. Immunofixation analysis of ascitic fluid showing IgG κ.

row aspiration revealed 90% atypical binuclear plasma cells. Serum and urine immunofixations showed IgG κ monoclonal gammopathy. Quantitative serum IgG level was 6.5 g/dL, so the patient was characterized as having IgG κ type multiple myeloma. Immunofixation analysis of the ascitic fluid was positive for IgG κ, consistent with multiple myeloma diagnosis (Figure 2).

The patient was initially treated with 4 cycles of VAD (vincristine, doxorubicin, dexamethasone) chemotherapy. Although ascites disappeared, bone marrow aspiration revealed 70% plasma cells and serum IgG level was 6 g/dL with VAD. Because of stable disease, 2 cycles of bortezomib (1.3 mg/m^2, days 1,4,8 and 11, repeated every 21 days) and dexamethasone (40 mg/m^2 days 1-4, repeated every 21 days) were subsequently administered. After obtaining partial response (IgG 1.8 g/dL with positive serum immunofixation), high-dose melphalan 200 mg/m^2 supported by autologous peripheral blood stem cells' transplantation (ASCT) was applied. Patient's evaluation 100 days after ASCT showed negative serum and urine immunofixations with 1 g/dL serum IgG level, while no plasma cells were detected on new bone marrow aspiration and biopsy. The patient is in complete remission 11 months after diagnosis.

Discussion

Ascites in multiple myeloma may occur due to liver infiltration, heart failure, renal damage, portal hypertension, infectious peritonitis or peritoneal infiltration [3,8,9]. No heart failure and renal damage were identified in our patient. No liver biopsy was carried out due to patient's refusal. Abdominal ultrasonography did not reveal any peritoneal implant, but ascites disappeared with VAD. Presence of ascites in a case of multiple myeloma should be evaluated whether it is myelomatous or not. Infectious etiology should be excluded. In our case, cultures of ascitic fluid were negative. Also, ascitic fluid cytogenetic examination and immunofixation should be made for definite diagnosis.

In the literature, plasma cells in the ascitic fluid are reported to show highly atypical and immature appearance [1,6,10]. In our patient bizarre binuclear plasma cells in the ascitic fluid were seen. Also, in the literature [11,12] the diagnosis was made by cytologic examination of smears of ascitic fluid, like in our patient. These patients respond poorly to therapy and the disease has a rapid fatal course with a median survival of 1.5-2 months from the development of ascites [11,12].

Plasmacytic ascites may reflect large tumor burden or the terminal phase of disease. However, VAD chemotherapy followed by high dose chemotherapy with ASCT have been used with favorable outcome in a few patients [12]. We also applied this therapeutic approach to our patient who is still alive 11 months after diagnosis.

In conclusion, multiple myeloma may initially manifest atypically as myelomatous ascites and may respond for protracted periods of time to high dose chemotherapy with ASCT.

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