Clinical picture

Myelomatous pleural effusion

A 67-year-old woman of stage IIa IgA λ-type multiple myeloma (MM) was hospitalized because of progressive dyspnea for 1 month. Physical examination showed pallor and decreased breath sounds over the left lower lung field. Renal and cardiac systolic functions were normal by biochemistry studies and echocardiogram. A chest X-ray showed left pleural effusion (Figure 1). A diagnostic thoracocentesis was performed and revealed exudative effusion without microorganism. Microscopic examination showed many immature plasma cells (Figure 2), and immunohistochemical staining for anti-λ antibody demonstrated monoclonality (Figure 3). A final diagnosis of myelomatous pleural effusion (MPE) was made.

MM is a malignant proliferation of abnormal plasma cells with overproduction of monoclonal immunoglobulin or light chain.1–3 It affects mainly bone marrow, but may involve other organs as well and relate to advanced disease.1 The typical clinical manifestations include anemia, fractures, hypercalcemia and renal failure, but pleural effusions uncommonly.2 Pleural effusions are represented in ~6% of patients with MM and resulted from several etiologies requiring different types of therapy. These are, most commonly, heart failure secondary to

Figure 1. Chest X-ray on admission showing left-sided pleural effusion.

Figure 2. Giemsa-staining of the pleural effusion showing infiltration of malignant immature plasma cells with prominent nucleoli and bi-nucleated forms (×1000).

Figure 3. Immunohistochemical staining for anti-λ antibody. The cells with brown cytoplasm are abnormal monoclonal plasma cells producing λ light chain (×1000).
amyloidosis, followed by pulmonary embolism, chronic renal failure, nephrotic syndrome, second neoplasm, tuberculosis and very rarely MPE (<1%).\textsuperscript{1–3} Approximately 80 cases have been reported till 2005,\textsuperscript{2,3} and 80% of MPE are due to IgA MM in the previous literature.\textsuperscript{1,3}

The pathogenesis of MPE is unclear, but direct extension of skeletal lesions or chest wall plasmacytoma to the pleura has been suggested.\textsuperscript{2} In addition, diagnostic criteria consist of a monoclonal protein in pleural fluid electrophoresis and detection of atypical plasma cells in pleural fluid and biopsy.\textsuperscript{1} Resolving of MPE can be achieved by pleurodesis and aggressive chemotherapy, but survival duration is still short (\textasciitilde 4 months).\textsuperscript{1–3} Therefore, the etiology is very important in MM patients with pleural effusions. If the fluid is exudative, the next step should be cytologic examination of the pleural effusion to exclude MPE.\textsuperscript{1} Novel agents, like Bortezomib and autologous stem cell transplantation are considered as salvage therapy, especially in patients with good performance status.

References