

## Clinical Image

# Central Nervous System Relapse in Multiple Myeloma

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## ABBREVIATIONS

CNS: Central Nervous System; CSF: Cerebrospinal Fluid; MM: Multiple Myeloma; SCT: Stem Cell Transplantation.

## CLINICAL IMAGE

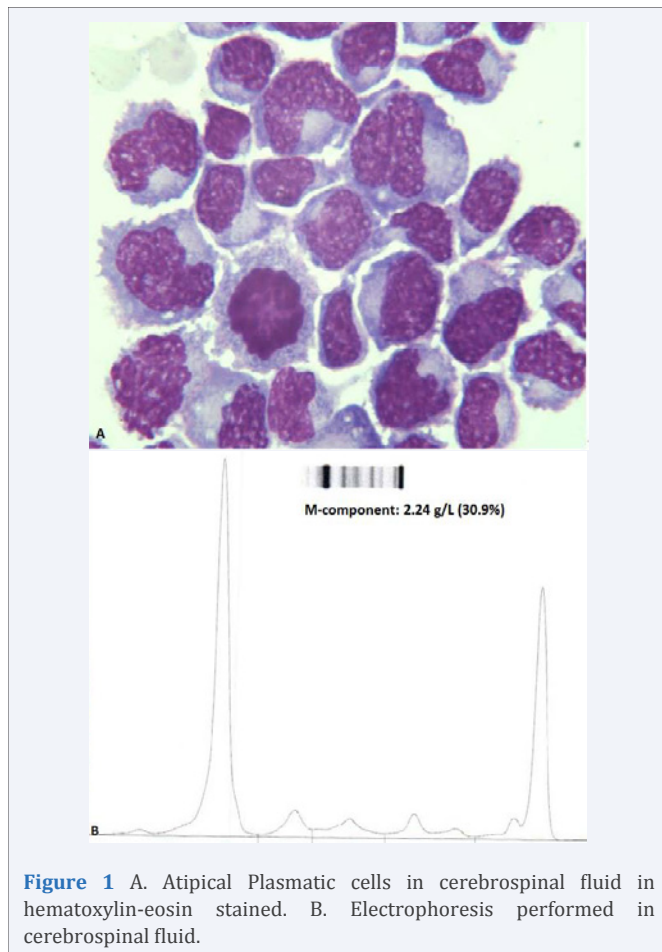
A 65-year-old patient with a newly diagnosed IgG kappa multiple myeloma (MM) achieved a very good partial response after induction treatment with four cycles of bortezomib, dexamethasone and doxorubicin that was followed with high dose melphalan and autogenic stem cell transplantation (SCT) as consolidation. Four months after SCT he presented the acute onset of intense and bilateral leg pain of

neuropathic characteristics and left leg paresis. X-ray and magnetic resonance imaging did not reveal any abnormality, including the absence of plasmacytomas, medullar compression or bone marrow infiltration signs. However, a cerebrospinal fluid (CSF) study identified atypical plasma cells in CSF (image A), the electrophoresis of CSF also revealed measurable M-component in a 2.2 g/L concentration (image B). Interestingly, M-component had remained stable in serum and negative in urine since completion of treatment and there were no plasma cells in the peripheral blood. Systemic and intrathecal chemotherapy was started and symptoms resolved, intrathecal therapy was maintained until CSF was cleared. Despite the favorable initial response, two months later he presented neurological symptoms again accompanied by plasma cells appearing in peripheral blood and full-blown systemic relapse that led to the patient's death.

MM neurological involvement can be related to a primary parenchymal brain lesion, osteodural or leptomeningeal involvement [1] and may develop in patients in any stages of disease. Paravertebral plasmacytomas with or without spinal cord compression are relatively common both at diagnosis and relapse in MM. On the other hand meningeal involvement by MM is rare accounting for about 1% of MM cases [2], but must be suspected in case of negative imaging results [3]. It can be diagnosed by microscopy or flow cytometry [1]. CSF electrophoretic studies are not standard practice but they can detect monoclonal protein in the absence of evident biological relapse in serum or urine, as it happened in our report. Treatment should be systemic and directed to CNS such as intrathecal chemotherapy or cerebrospinal irradiation to achieve optimal results [2]. Systemic treatment do not always penetrate blood-brain barrier, recent studies showed that the a good option are IMiD-based therapy [4,5], such as lenalidome and pomalidome, oppositely to treatment with bortezomib that did not show penetrance. However, the prognosis of patients with CNS involvement is very poor (the median time from diagnosis to death is 2 months) [1], and the long term prognosis of patients with an early and aggressive relapse is dismal.

## REFERENCES

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**Figure 1** A. Atypical Plasmatic cells in cerebrospinal fluid in hematoxylin-eosin stained. B. Electrophoresis performed in cerebrospinal fluid.

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