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Myelomatous Meningitis- a case report and review of literature

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Abstract: *Multiple Myeloma (MM) is a neoplastic disease of plasma cells characterized by the production of monoclonal immunoglobulin. Myelomatous meningitis is a rare occurrence in multiple myeloma. The signs and symptoms of meningeal myelomatosis are non-specific. The diagnosis of meningeal myelomatosis depends on the demonstration of malignant plasma cells in the cerebrospinal fluid. A combination of radiation therapy and chemotherapy is the usual treatment. We report the case of a woman with myelomatous meningitis. Multiple myeloma was diagnosed by serum protein electrophoresis and bone marrow aspiration.This case and a review of the literature show that clinical manifestations of meningeal myeloma are non-specific .*
Keywords: *Multiple Myeloma,Myelomatous Meningitis,Bone marrow*

I. Introduction

Multiple Myeloma (Mm) is a Neoplastic disease of Plasma Cells with a few cases of Central Nervous System (CNS) involvement reported. Signs and Symptoms of CNS involvement are non-specific. The diagnosis of Meningeal Myelomatosis depends on the demonstration of Malignant Plasma Cells in the CSF.[1] We report a case of Myelomatous Meningitis.

Materials and Methods: The present case was studied at Kasturba Medical College, Mangalore, Karnataka. A lumbar puncture was performed and the cerebrospinal fluid was subjected to biochemical and cytological analysis. Pap stained smears were examined. Serum electrophoresis, and a non-contrast computed tomography (CT) scan were also done.

II. Results

The serum electrophoresis showed a prominent M-band. Non-contrast CT scan was normal. The CSF biochemistry revealed an increased protein (92.6mg%), a low glucose (56mg%) and a high white cell count (24cells/mm^3). The CSF cytology showed cells with eccentric nucleus and paranuclear halo suggestive of plasma cells. Few showed prominent nucleoli suggestive of plasmablasts. Thus, a dignosis of meningeal myelomatosis was confirmed. However, the patient refused further investigations and treatment. The patient expired one year after the diagnosis was confirmed.

III. Discussion

Plasma cells are not a component of normal CSF.[2] Approximately 1% of MM patients develop CNS myeloma.[3] Myelomatous meningitis may originate in the plasma cells that spread to the meninges through thin walled microscopic veins in the arachnoid membrane [3,4] or MM may disseminate via circulating lymphocytes that may be progenitors of myeloma cells.[5]

Meningeal involvement in MM may arise in the absence of circulating plasma cells[6]. Signs and symptoms of myelomatous meningitis are non specific and include altered mental status, muscle weakness,encephalopathic syndrome,cranial nerve palsy, spinal root involvement. Sensory disturbances are rare. Accurate diagnosis of myelomatous meningitis is made on CSF examination by demonstration of plasma cells[7], monoclonal spikes on electrophoresis[7] and monoclonal immunoglobulin in the cytoplasm of plasma cells.[8] The treatment of meningeal myeloma has not been established. Intrathecal administration of methotrexate,cytarabine and craniospinal irradiation has been given in most cases.[6] The ultimate prognosis is however, poor.

The other conditions which show plasma cells in CSF are Subacute Sclerosing PanEncephalitis[9] , Neurocysticercosis[10], Mollaret's meningitis[11], Tuberculous meningitis[12]

IV. Conclusion

The clinical features of leptomeningeal myeloma are non specific. Therefore cytological and immuno-cytochemical examination of CSF in patients with MM must be done to diagnose myelomatous meningitis in such patients

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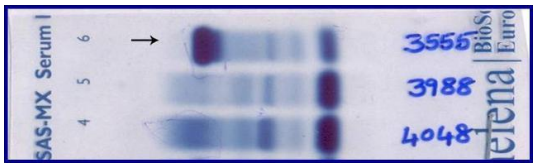

Figure 1: Serum electrophoresis showing M band (arrow)

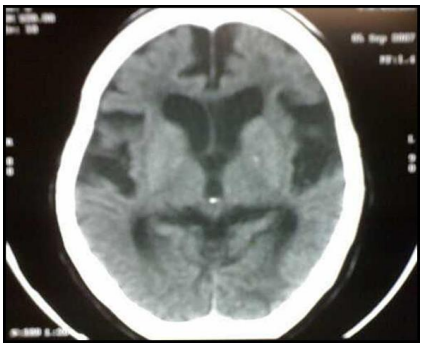

Figure 2: plain CT brain is unremarkable

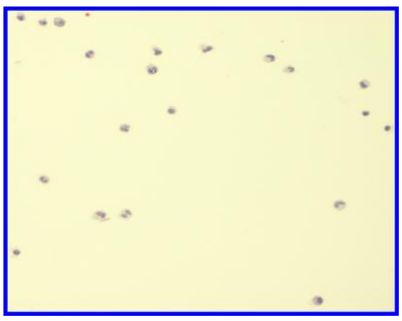

Figure 3: CSF pleocytosis (pap X 100)

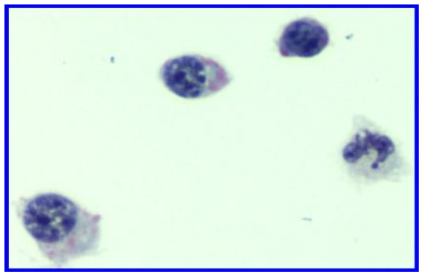

Figure 4: plasma cells in the CSF (pap X 400)