Primary meningeal non Hodgkin lymphoma. Case report and literature review

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Abstract

Primary meningeal lymphoma is rare. We report a case of a 56 year-old immunocompetent man presented with 3 month's history of right lombosciatalgia, and progressive right leg weakness. MRI show a lesion in the foraminal area of L4. Patient was operated by laminectomy and histological exam was negative. Cytologic exam of CSF with immunophenotyping diagnosed a B high grade lymphoma. He reveived chemotherapy by R-ACVBP and high dose methotrexate associated to cerebral radiotherapy. With a follow-up of 22 months, this patient remains alive in complete remission.

Introduction

Central Nervous System primary lymphoma's (CNSPLs) are rare extranodal localisations affecting brain, leptomeninges, spinal cord or eyes, representing 2.7% of intracranial neoplasms in US from 1995 to 1999 (1). According to diagnosis criteria, they remain confined to CNS and affect brain, meninges, spinal cord and eyes(2). Leptomeningeal primary lymphoma with no associated cerebral lesions is uncommon representing 7% of CNSPLs (2). We report a new case with a litterature review.

Observation

A 56 year-old caucasian man with previous history since 9 years of moderate hypertension and without history of osteoarticular trauma presented with 3 month's history of right lombosciatalgia, and progressive right leg weakness. On examination, the patient had a distal amyotrophia associated with a diffuse lower right leg weakness(2/5) without sensory level. Electromyogram suggest a radicular lesion if the L4, L5 and S1 territory. Lumbar MRI revealed corporéal tassement of L3 d'aspect probably sequellar without recul of the posterior wall and a lesion in the foraminal region of L4 associated to a discal hernia of L4-L5. Based on this diagnosis, the patient have been operated the 8 november 2006 by L5 laminectomy. Histological examination of was free from any tumoral proliferation. Fifteen days after this surgery, there is an increase of the leg deficit and extension to the left contralateral limb. Examination show a distal and proximal deficit of the legs, more pronounced in the right side with a radicular L5 topography. Dorso-lumbar myeloscan show a discal hernia paramedian and foraminal of L4-L5 in the right side with caudal migration in 16 mm generating a conflict with the right root of L5 and a retromarginal posterior hernia L4-L5 left in conflict with the left root of L5. Few days after, appear a right peripheral facial paralysis.

Cytologic examination of CSF show the presence of 15 white cells probably lymphocytic , an increased proteinorrachia at 2,15g/l and a normal glucorrachia.

Cerebro-medullar MRI show postlaminectomy lesions at the level of L4-L5 associated to a posterolateral left discal discale and enhancement of gadolinium in the root of right L5.

An inflammatory post-surgical origin was suggested and patient receive a bolus of corticosteroids originating a functional improvement of the weakness of the left limb.

A second lumbar puncture was done and CSF examination show the presence of 46 white cells predominantly lymphocytic(figures 1 and 2), an hyperproteinorrachia à 3,8 g/l and normal glucorrachia.

Immunophenotypic technique show the presence of a lymphomatous proliferation polyclonal for 70% of them expressing Kappa CD19+, CD20+, CD10-, CD38+ and suggesting a high grade B lymphoma. On examination, the patient is in bad general status with a WHO 3 performance index related to the weakness of the right limb. There is also a right peripheral facial paralysis and absence of peripheral palpable nodes nor hepatosplenomegaly of testicular abnormality. Complete staging work-up including thoracoabdominal CT-scan, gastric and colorectal endoscopy and bone marrow biopsy did not show any evidence os systemic involvement.

Bone scintigraphy show an hyperfixation at the level if L3 considered arthrosic and in L5 post-surgical. HIV serology was noegative and seric LDH was normal.

Diagnosis of primary meinigeal non Hodgkin lymphoma in an immunocompetent patient was established and we treat him with 4 cycles of R-ACVBP bimonthly and 8 weekly lumbar punctures with intrathecal chemotherapy.

After the 2nd cycle and the 3rd LP CSF was normalised in conventional cytology but proteinorrachia remain increased with a normal glucorrachia. A consolidation treatment with 2 cycles of bimonthly high dose methotrexate(8 g/m2) was done and LP show the absence of lymphomatous cells in the CSF, a proteinorrachia at 0.67 g/l but presence in the immunophenotypic technique of 20% of B cells.

The patient receive a cerebro-cervical radiotherapy at the dose of 24Gy and LP show the absence of lymphomatous cells by immunophenotypic technique and proteinorrachia at 0.66g/l.

The presence of 2 IPI bad prognostic factors i.e general status and extension indicate an intensification with peripheral blood stem cells mobilisation done in september 2006.

Presently this patient has a moderate improvement of the limb weakness and facial paralysis with a slow improvement. At the date of September 2008, 22 months after initial chemotherapy, this patient is alive free of disease(clinical, imagery, CSF cytology).

Discussion

Primary leptomeningeal lymphoma is a rare disease revealed usually by signs of increased intracranial pressure, confusion, dysarthria, hearing loss or paraparesia and lumbosacral symptoms as we observed in our case(2).

For our patient, symptoms are dominated by lombosciatalgia and uni then bilateral paraparesia, followed by a peripheral right facial palsy and positive diagnosis was based on the presence in the CSF of a monoclonal B high-grade proliferation. We retain the diagnosis of PLML considering the positive CSF cytology and the negative work-up for any extra-CNS disease, this strict definition differentiate well the "true" PLML from primary cerebral lymphomas with meningeal involvement

and systemic lymphomas complicated by lymphomatous meningitis in concordance with the criteria proposed by Lachance et al(6). Our observation is close to the 9 cases reported by this author in 1991 presenting a neoplastic lymphomatous meningitis without parenchymal central nervous system nor systemic tumour at the time of presentation or throughout the course of their disease (6). Considering the Lachance criteria's PLML is probably a very rare disease with less than 100 cases reported in the literature.

Positive diagnosis is based on CSF cytology that does not consistently detect malignant cells in patients with PCNSL, abnormal in only 26 to 31% of cases, but repeated samples increase its sensitivity(3). In a study about 96 patients reported by Balmaceda et al, CSF initial CSF cytology study was positive in only 15% of cases(4). CDR III PCR as a routine diagnostic technique seems to be applicable even on CSF samples with low cell counts with a sensitivity and specificity of 54% and 97% (5). PLML are usually of B diffuse large cell lymphoma, the most common worldwide type of systemic lymphoma and more rarely low-grade or T-cell types (7). Our patient, presented a high grade B lymphoma based on CSF/ immunophenotyping examination.

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