ISOLATED CNS RELAPSE IN HODGKIN LYMPHOMA

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Abstract:
Central nervous system involvement in Hodgkin lymphoma is rare. We present a case report of a 38 year old male with isolated CNS Hodgkin Lymphoma involving the cerebellum. There are no guidelines for management of CNS involvement in Hodgkin Lymphoma. He was successfully treated with subtotal excision of the cerebellar mass, followed by whole brain radiotherapy, triple intrathecal chemotherapy and PCV (Procarbazine, Lomustine and Vincristine) chemotherapy.

Keyword : "Hodgkin lymphoma", "CNS involvement", "relapse", "PCV chemotherapy"

Introduction:
CNS involvement in Hodgkin lymphoma is rare (0.2% to 0.5% of all HL cases).\textsuperscript{1,2} Review of 14,868 patients by the German Hodgkin Lymphoma study group identified only 2 cases of HL involving the CNS\textsuperscript{3}. We present a case of isolated CNS relapse of Hodgkin lymphoma.

Case:
A 38-year-old man was diagnosed to have Hodgkin lymphoma (HL) stage IVB in October 2007, when he was evaluated for a 3 month history of fever, hepatosplenomegaly and pancytopenia. He was treated with 6 cycles of adriamycin, bleomycin, vinblastine, and dacarbazine (ABVD), with which he attained complete remission (CR).
He presented again in January 2010 with headache, vomiting and features of cerebellar involvement - swaying to the left side, unsteadiness of gait and a tendency to fall towards the left side. CT imaging of the brain with contrast (Fig.1) revealed a well defined mass in the left cerebellar hemisphere, 39mm x 36mm hyperdense lesion with central hypodensity, with perilesional edema and mass effect on the fourth ventricle causing obstructive hydrocephalus. The patient underwent a sub-occipital craniectomy and subtotal excision of the mass. The biopsy showed a tumor composed of scattered large cells with moderate amount of eosinophilic cytoplasm, vesicular nucleus and prominent eosinophilic nucleolus. These large cells are positive for CD30, CD15, PAX5 and negative for EBV LMP, consistent with Hodgkin lymphoma (Fig.2,3). CSF analysis revealed 8 Lymphocytes and 350 RBCs with mild increase in CSF protein (73mg/dl). CSF cytology was normal. Staging did not reveal the presence of systemic disease at the time of CNS relapse. He was not on any immunosuppressive therapy and was negative for HIV. He received Whole brain radiation therapy (45 Gy in 25 fraction) along with triple intrathecal chemotherapy (Methotrexate 12.5mg, Cytosine 40mg and Hydrocortisone 50mg), twice weekly for total of six doses. After completion of radiotherapy, systemic chemotherapy with PCV chemotherapy (Procarbazine 60 mg/m2, days 8 to 21;Lomustine (CCNU) 110 mg/m2, day 1; Vincristine 2 mg on days 8 and 29) was initiated, with a plan to give 6 cycles at 6 weekly intervals. He has presently completed five cycles of chemotherapy and a repeat CT imaging of the brain done after 4 cycles of chemotherapy showed no evidence of residual disease.

Discussion CNS involvement with Hodgkin lymphoma can occur prior to the diagnosis of systemic HL, concomitantly with the diagnosis of systemic HL or as part of relapse.1,4 At relapse it can occur either concomitantly with systemic disease or as isolated CNS involvement. Any immunosuppressed state (HIV, autoimmune disease on immunosuppressive therapy) is considered as a risk factor for CNS involvement of HL4. EBV positivity is probably an additional risk factor for CNS HL that needs to be evaluated in further studies5.
The median age at diagnosis of CNS HL varied between 32 to 45 years.\textsuperscript{1,4} CNS HL at relapse has been reported in 3 pediatric patients also (age: 4-15 yrs).\textsuperscript{7} The median interval between onset of systemic HL and CNS HL was 11.7 months to 47 months.\textsuperscript{1,4} CNS HL presents as cranial nerve palsies, motor deficits, headache or seizures\textsuperscript{1,4,6}. CNS involvement may be intraparenchymal (61%-73%), dural/meningeal based (26% - 33%) or leptomeningeal, while cerebellar involvement was rare (6% - 7%).\textsuperscript{1,4} There are no consensus guidelines for the treatment of CNS HL. Treatment strategies reported include surgical excision, radiotherapy, intrathecal and systemic chemotherapy, either in isolation or in combination.\textsuperscript{4,8,9} Gerstner ER et al\textsuperscript{4} reported a radiological response in 11 of 13 evaluable patients treated with chemotherapy or RT either alone or in combination, including a complete response (CR) in 9. Autologous PBSCT has been reported in 2 cases. One patient with CNS HL at the initial diagnosis of systemic disease was alive in CR at 128.5 months follow up. The second patient with CNS HL at relapse expired in CR at 58.8 months follow up\textsuperscript{4}. In our patient we decided to treat him with whole brain RT and intrathecal chemotherapy, followed by systemic chemotherapy with PCV. He is presently in CR at a follow up of 50 months from the initial diagnosis of Hodgkin lymphoma and 23 months from the isolated CNS relapse of Hodgkin lymphoma. Patients with isolated CNS HL either at initial diagnosis or relapse would probably benefit from whole brain RT with or without systemic and intrathecal chemotherapy. Autologous stem cell transplant could be offered to patients with relapsed disease.

References:


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