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Haritha V.S *

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Case Report

Primary Adrenal Lymphoma

Shyamji Rawat[1], V.S. Haritha[2*]

[1]Dept Of Radiation Oncology, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India.

[2]Senior Resident, Dept of Radiation Oncology, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India.

Corresponding Author: Haritha V.S, Senior Resident, Dept of Radiation Oncology, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India.

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Abstract

Primary adrenal lymphoma is a rare disease entity with only less than 200 cases reported till date. We have seen a single case among the 260 cases reported in our hospital in the last 5 years. Review of the English literature showed 65 such cases reported so far most of them being single case reports. The striking similarity in all of them were – median age of 68 years, bilateral involvement in 60% and predominantly diffuse large cell histology with B cell immunophenotype. adrenal insufficiency was seen in two – thirds of them at diagnosis. About one half respond to treatment with median survival of 4 months. A high index of suspicion is needed for early diagnosis and prompt treatment. We herein report a case of a 65-year-old male who was diagnosed with primary adrenal lymphoma.

Key Words: primary adrenal lymphoma; rare

Introduction

Adrenal lymphoma consists of primary and secondary adrenal lymphoma. Secondary adrenal lymphoma accounts for approximately 4% to 5% of all non-Hodgkin lymphoma cases, and primary adrenal lymphoma (PAL) is extremely rare, accounting for only approximately 1% of non-Hodgkin lymphoma cases [1]. Primary adrenal tumors are most commonly adenomas

or carcinomas [2]. Primary adrenal lymphomas is usually a non-Hodgkin lymphoma, with diffuse large B-cell lymphoma being the most common subtype, and seen in about 70% of patients [3-6]. PAL tends to affect elderly males aged 60 to 70 years old with a male-to-female ratio of approximately 1.8:1, usually involving bilateral adrenal glands (70%), with an average diameter of 8 cm. Most patients with PAL show adrenal insufficiency, B symptoms (fever, night sweats, weight loss), etc, and most patients can be accompanied by elevated lactate dehydrogenase (LDH) and Epstein–Barr virus (EBV) positivity [1]. The characteristic clinical features also include a high incidence of bilaterality and a low incidence of extra-adrenal disease at diagnosis [7] In the imaging examination, PAL mostly presents as bilateral or unilateral large adrenal masses without the appearance of normal adrenal tissue. However, how PAL develops from the adrenal gland is still unclear [1].

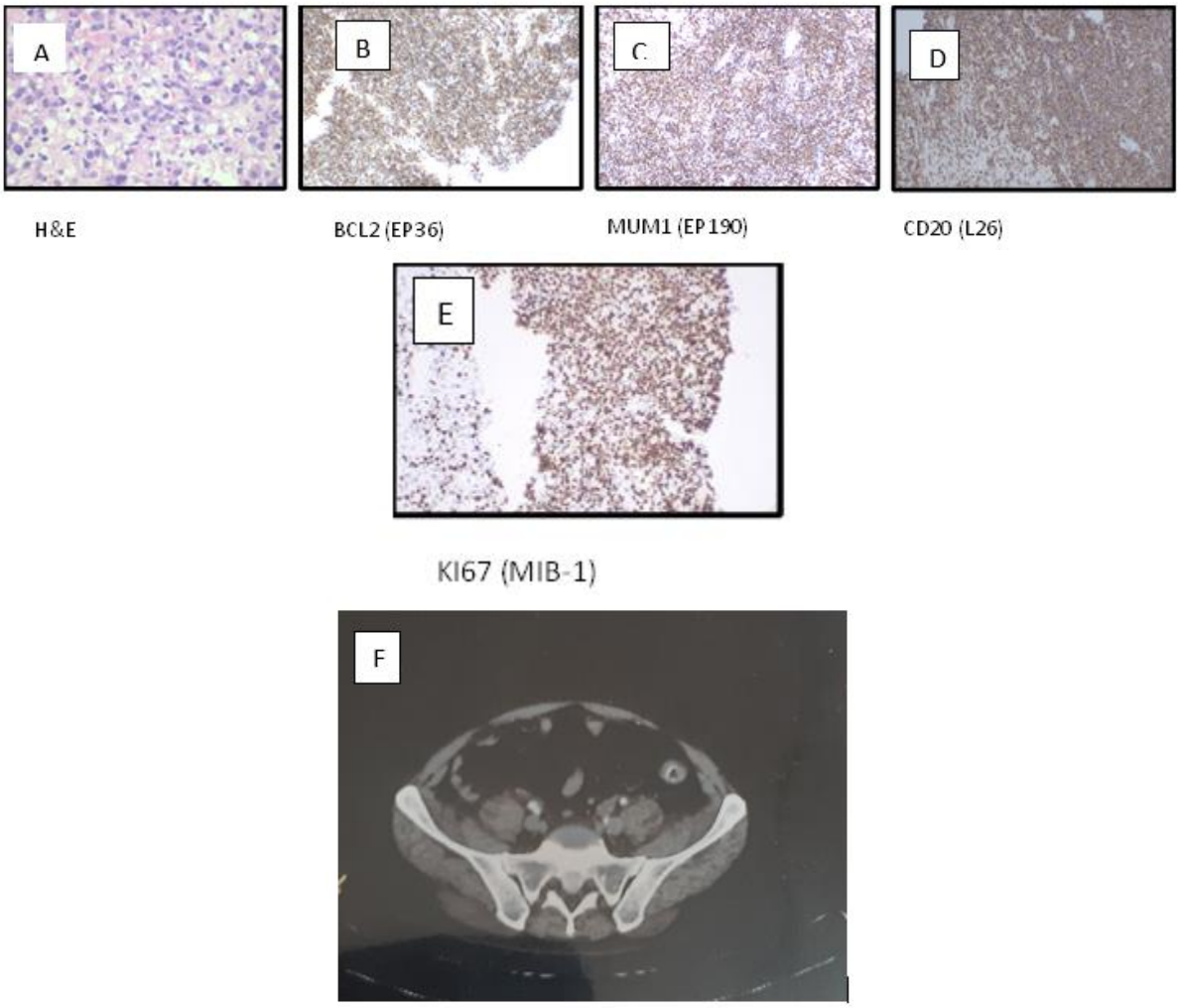
Patients with PAL usually have a poor prognosis [8]. Recently, studies have suggested that BCL-2 and MYC co-expression predict poor prognosis in patients with diffuse large B-cell lymphoma (DLBCL), but there are few reports on BCL-2 and MYC co-expression in patients with PAL [9].

Herein we report a case of primary adrenal lymphoma in a 65 year old elderly man who had presented at our centre.

Case Report

A 65 year old elderly man without significant co-morbid conditions who was diagnosed to have bilateral adrenal masses in an ultrasonography done as a part of workup for abdominal pain with bilateral lower limb pain with reduced appetite for 2 months. He didn't have complaints of fever, night sweats or weight loss. Ultrasonography showed heteroechoic well defined mass lesion in the bilateral supra renal region with internal vascularity of size 100 x 80 mm on right side and 57x43 mm on left side. A contrast enhanced computed tomography of abdomen and pelvis was later done which showed well defined mass lesion in bilateral supra-renal region of size 12x10x10 cm on right side and 7x6.5x6 cm on left side. No calcification or cystic changes were seen. His blood biochemistry was done which showed a deranged renal function tests. Blood urea was 53.5 mg/dl, serum creatinine was 1.5 mg/dl, serum uric acid was 8.5 mg/dl, serum phosphorous was 6.60 mg/dl, serum sodium was 126 mmol/l, serum potassium was 5.3 mmol/l, serum chloride was 95 mmol/L. A ultrasonography guided biopsy (Panel A) was done from the adrenal masses which reported as high grade non hodgkins lymphoma – diffuse large B cell variety (non – germinal centre variety) after IHC confirmation. IHC showed positivity for CD 20, BCL2, BCL 6 and MUM1(Panel B,C,D) and tumour cells were negative for CD10, CD3,SOX11 and CK. Ki- 67 was 85 -90%.(Panel E) A whole body PET-CT was done to look for primary elsewhere which reported no evidence of primary disease elsewhere . It reported bilateral adrenal lesion with perilesional fat stranding (right - SUV max -11.8, left – 11.6), (Panel F)

Multiple enlarged lymph node groups were found in the abdominopelvic, left inguinal (SUV max – 6.2), mediastinal (SUV max – 4.8, and left cervical and supraclavicular region (SUV max -2.6) with mild ascites. A stage IV disease was thus diagnosed and the patient was started on chemotherapy with R-CHOP regimen. At present he has completed 4 cycles of chemotherapy with the same regimen with good symptomatic response.



Discussion

Primary adrenal lymphomas are rare, but remain a diagnostic possibility in the evaluation of adrenal masses. The diagnosis of a patient with primary adrenal lymphoma can be challenging because symptoms are non-specific, and only 50% of patients have concomitant adrenal insufficiency, which occurs when there is at least 90% destruction of adrenal parenchyma [10]. Primary adrenal lymphoma is defined when both of the following conditions are present: a. There is no prior history of lymphoma elsewhere; b. If lymph nodes or other organs are involved, adrenal lesions are unequivocally dominant [7]. If PAL was suspected according to clinical features (bilateral adrenal lesions in imaging, B symptoms, elevated LDH, decreased HDL, EBV positivity, etc), CT, or ultrasonography-guided biopsy should be performed once pheochromocytoma was excluded. The final diagnosis of PAL is based on the biopsy results of the adrenal mass [1].

Histologic diagnosis is confirmative, but requires functional assessment prior to tissue biopsy. The predominant type of primary adrenal lymphoma in more than 70% of cases is diffuse large B-cell lymphoma (DLBCL), with a nongerminal center B-cell phenotype. Most cases of primary adrenal DLBCL has BCL6 gene rearrangement and is associated with a poor prognosis . Diagnostic modalities include imaging with ultrasonography (US), CT, magnetic resonance imaging (MRI) and functional imaging, such as gallium 67 scintigraphy imaging or positron emission tomography scans [7].

Several studies showed that 61% of patients with PAL could develop AI.The risk factors included older age, bilateral involvement, and previous autoimmune adrenalitis. However, other studies proposed that AI caused by malignant tumors required destruction of approximately 90% of the adrenal glands, and the correlation between tumor size and AI was weak [11].

lymphoma cells spread in the adrenal gland firstly and diffusely grow subsequently, leading to adrenal gland enlargement, then destruction of the normal structure, and finally merging into a huge mass [1]. Several studies reported that the rapid increase in PAL tumors might be due to the overexpression of Ki-67, an important indicator that reflects tumor cell proliferation [12].

Double-expressor lymphoma (DEL) is defined as positivity of both MYC and BCL2 in lymphoma tissues by IHC (Cut-off values: 40–50% for MYC, 50–70% for BCL2). Studies have shown that most of DLBCL (not PAL) patients with DEL usually had an aggressive clinical course characterized by poor prognosis, advanced stage (III, IV), more extranodal involvement (including bone marrow, the central nervous

system, lung, liver etc), high serum lactate dehydrogenase levels, and an intermediate to high international prognostic index (IPI) score [13].

Numerous treatment regimens for the management of primary adrenal lymphoma have been proposed, however owing to the rarity of this condition, no comparisons have been made between the various treatment modalities. These modalities include bilateral adrenalectomy chemotherapy, radiotherapy, and a combination of these [10]. The role of bilateral adrenalectomy remains controversial and has been associated with poor prognosis [7].

Chemotherapy remains the mainstay of treatment. CHOP (cyclophosphamide, doxorubicin, vincristine and prednisone) which is the most commonly used regimen for lymphomas [14] has been used for the treatment of primary adrenal lymphoma [7]. The addition of rituximab to the CHOP regimen in patients with primary adrenal lymphoma was studied in a retrospective review by Kim et al and showed encouraging improvements in overall survival as well as complete remission rates. The study also concluded that complete remission was associated with improved overall survival rates. In contrast, surgery and radiotherapy have not been shown to have survival benefit for patients [6]. Studies have shown that compared to traditional CHOP regimens, R-CHOP regimens have higher complete response (76% vs 56%, $P < .005$) and higher 2-year OS and PFS rates (57% vs 38%, $P < .001$; 70% vs 57% $P = .007$, respectively) [15].

Conclusion

This case report concludes that timely diagnosis and treatment with R-CHOP regimen is key in improving the survival outcome in patients with PAL. This condition must be kept in mind when clinicians comes across large bulky bilateral adrenal masses in imaging.

References

1. Yang Yunyun BSa, Xie Wei BSb, Ren Yan MDa, Tian Haoming MDa, Chen Tao MDa. (2020). A case report of primary adrenal lymphoma, Medicine. 99(28):20938.
2. Mansmann G, Lau J, Balk E, Rothberg M, Miyachi Y, Bornstein SR. (2004). The clinically inapparent adrenal mass: update in diagnosis and management. Endocrine reviews. 25(2):309-340.
3. Al-Fiar FZ, Pantalony D, Shepherd F. (1997). Primary bilateral adrenal lymphoma. Leukemia and lymphoma. 27(5-6):543-549.
4. Grigg AP, Connors JM. (2003). Primary adrenal lymphoma. Clin lymphoma. 4(3):154-160.
5. Ozimek A, Diebold J, Linke R, Heyn J, Hallfeldt K, Mussack T. (2008). Bilateral primary adrenal non-Hodgkin's lymphoma and primary adrenocortical carcinoma-review of the literature preoperative differentiation of adrenal tumors. Endocrine j. 55(4):625-638.
6. Kim YR, Kim JS, Min YH, Hyunyoon D, Shin HJ, Mun YC, Park Y, Do YR, Jeong SH, Park JS, et al. (2012). Prognostic factors in primary diffuse large B-cell lymphoma of adrenal gland treated with rituximab-CHOP chemotherapy from the consortium for improving survival of lymphoma (CISL). J Hematol Oncol. 5:49.
7. Parameswaran R, Chan DKH, Michelle PLM, Wang S. (2015). Primary Adrenal Diffuse Large B-cell Lymphoma: A Mini Review. World J Endoc Surg. 7(3):65-68.
8. Yuan L, Sun L, Bo J, et al. (2019). Systemic and prophylactic intrathecal chemotherapy for primary adrenal lymphoma: a retrospective study of 20 case reports. Medicine. 98:15662.
9. Peña C, Villegas P, Cabrera ME. (2020). Double or triple-expressor lymphomas: prognostic impact of immunohistochemistry in patients with diffuse large B-cell lymphoma. Hematol Transfus Cell Ther. 42:192-193.
10. Ercolak V, Kara O, Gunaldi M, Usul Afsar C, Bozkurt Duman B, Acikalin A, et al. (2014). Bilateral primary adrenal non-hodgkin lymphoma. Turk j haematol. 31(2):205-206.
11. Rashidi A, Fisher SI. (2013). Primary adrenal lymphoma: a systematic review. Ann Hematol. 92:1583-1593.
12. Yang L, Zhang M, Zhao S, et al. (2019). Correlations between MDCT features and clinicopathological findings of primary adrenal lymphoma. Eur J Radiol. 113:110-115.
13. Mohammed AA, Rashed HE, Abdelrahman AE, et al. (2019). C-MYC and BCL2: correlation between Protein over-expression and gene translocation and impact on outcome in diffuse large B-cell lymphoma. Asian Pac J Cancer Prev. 20:1463-1470.
14. Fisher RI, Gaynor ER, Dahlberg S, Oken MM, Grogan TM, Mize EM, Glick JH, Coltman CA Jr, Miller TP. (1993). Comparison of a standard regimen (CHOP) with three intensive chemotherapy regimens for advanced non-Hodgkin's lymphoma. N Engl J Med. 328(14):1002-1006.
15. Coiffier B, Lepage E, Brière J, et al. (2002). CHOP chemotherapy plus rituximab compared with chop alone in elderly patients with diffuse large-B-cell lymphoma. N Engl J Med. 346:235-242.

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