Case Report :

Primary cutaneous diffuse large B-cell lymphoma NOS with short-term relapse .

Salem A. Balhamar,[1] Mohammed S. Alqarni,[1] Abdulrahman N. Alotaibi,[1] Abdulrahman M. Alkathiry, [1] Areej M. Al Nemer,[2] Osamah J. Refai,[3] Ali M. Al-Amri [1]

1. Department of Internal Medicine, King Fahd Hospital of the University, Imam Abdulrahman bin Faisal University, Al-Khobar, Saudi Arabia.
2. Department of Pathology, King Fahd Hospital of the University, Imam Abdulrahman bin Faisal University, Al-Khobar, Saudi Arabia.
3. Department of Radiology, King Fahd Hospital of the University, Imam Abdulrahman bin Faisal University, Al-Khobar, Saudi Arabia .

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Corresponding Author:

Dr. Salem A. Balhamar, MD
Phone number: 00966565889886
E-mail: salem.a.balhamar@gmail.com

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Abstract

Primary cutaneous B-cell lymphomas are a unique, heterogeneous group of lymphoproliferative disorders without evidence of extra-cutaneous manifestations. Primary cutaneous diffuse large B-cell lymphomas (PCDLBCLs) are aggressive neoplasms with poor prognosis. The infiltrate in some cases could involve the underlying subcutaneous tissues, but rarely reported. Accurate diagnosis is mandatory as these patients respond well to systemic anthracycline-based chemotherapy (R-CHOP). In this article, we report a case of PCDLBCL/NOS that presented with skin manifestations and was diagnosed based on clinical features, pathology, and immunohistochemical staining. The patients were treated with systemic chemotherapy, CHOP-R, and responded well and the PET scan showed no evidence of residual disease after the 5th cycle. After 3 months of follow-up, the patient succumbed to his disease involving almost all his skin.

Keywords:
Lymphoma, DLBCL, Cutaneous, Relapse, Case Report.

Introduction

Primary cutaneous lymphomas are defined as lymphoproliferative neoplasm of T and B cells with primary skin presentation and no evidence of extra-cutaneous disease at the time of diagnosis. However, late presentation or delay of diagnosis can affect this definition.

Primary cutaneous diffuse large B-cell lymphoma (PCDLBCL) is an aggressive type of lymphoma with at least 10% of extra-cutaneous spread and with a poor prognosis[1].

According to the 2018 update of the

WHO-EORTC classification, there are three common types of skin B-cell lymphomas. These entities include primary cutaneous marginal zone lymphoma, primary cutaneous follicle center lymphoma, and PCDLBCL, (LT leg type)[1].

The treatment of primary cutaneous B-cell lymphoma with poor prognosis and with multiple lesions includes mono-chemotherapy as liposomal doxorubicin, poly-chemotherapy as CHOP or poly-chemotherapy plus immunotherapy as CHOP-R[2].

Case report

A 57-year-old Saudi man came to King Fahad University Hospital in Al-Khobar, Eastern province of Saudi Arabia, complaining of fast-growing right-sided face swelling associated with tingling sensation and inability to chew because of cheek swelling, with progression over 2 months. Clinical examination revealed right-sided face soft tissues swelling with hyperemia of the skin but no tenderness. The swelling affected the right neck, right face including lips, maxilla, and right eye but the rest of the body was not involved. Clinical examination showed no lymphadenopathy or organomegaly. The patient denied B symptoms. The patient had well-controlled primary hypertension.

Complete blood count, ESR, urea, glucose, serum creatinine, total protein, albumin, electrolyte, and liver enzyme were within physiological limits. Viral profiles including HIV were negative.

MRI of the neck showed a large soft tissue mass, 4×7×8 cm located at the right pre-maxillary regions extending to the right nasolabial folds down to the upper lip as well as extra coral regions of the right orbits. Multiple small right cervical lymph node enlargements, the largest one is 1.3 cm as shown in Figure 1.

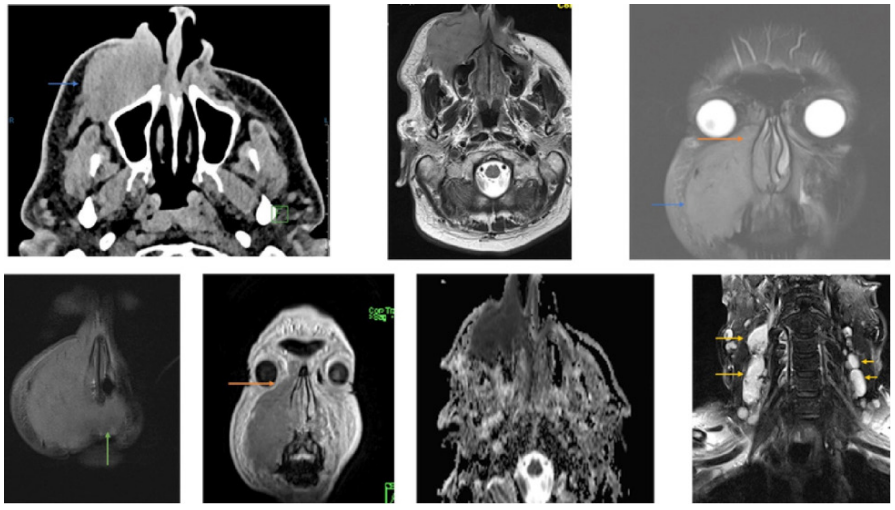


Figure 1 shows multiple right cervical lymph nodes (arrows)

The microscopic examination of the right cheek biopsy revealed a subepithelial diffuse infiltration by neoplastic cells with intermediate morphology between DLBCL and Burkitt lymphoma, characterized by medium to large-sized cells showing prominent mitotic and apoptotic figures. The Ki67 proliferation index was high (80%). The immunoprofile is shown in Table 1.

Table 1. Classification of primary cutaneous B-cell lymphomas and their immune profile versus the reported case.

	CD20	CD10	CD5	BCL-2	BCL-6	IgM	CD43	CD1	KI67
Primary cutaneous MZL	+	-	-	+	-	+/-	+/-	-	30%
Primary cutaneous FCL	+	+	-	-	+	-	-	-	30%
Primary cutaneous DLBL, leg type	+	-	-	+	+/-	+	-	-	>70%
Primary cutaneous BCL other*	+	+	+	+	-	+	+	-	80%

In addition, the tumor cells were negative for SOX11, CD23, and EBV. Cytogenetic studies revealed positivity for c-myc rearrangement in 82% of cells, and negativity for IgH/CCND1 rearrangement. The final diagnosis was DLBL/High-grade B-cell lymphoma [WHO-HEAM-5], with c-myc rearrangement and aberrant expression of CD5 and CD43 (Figure 2).

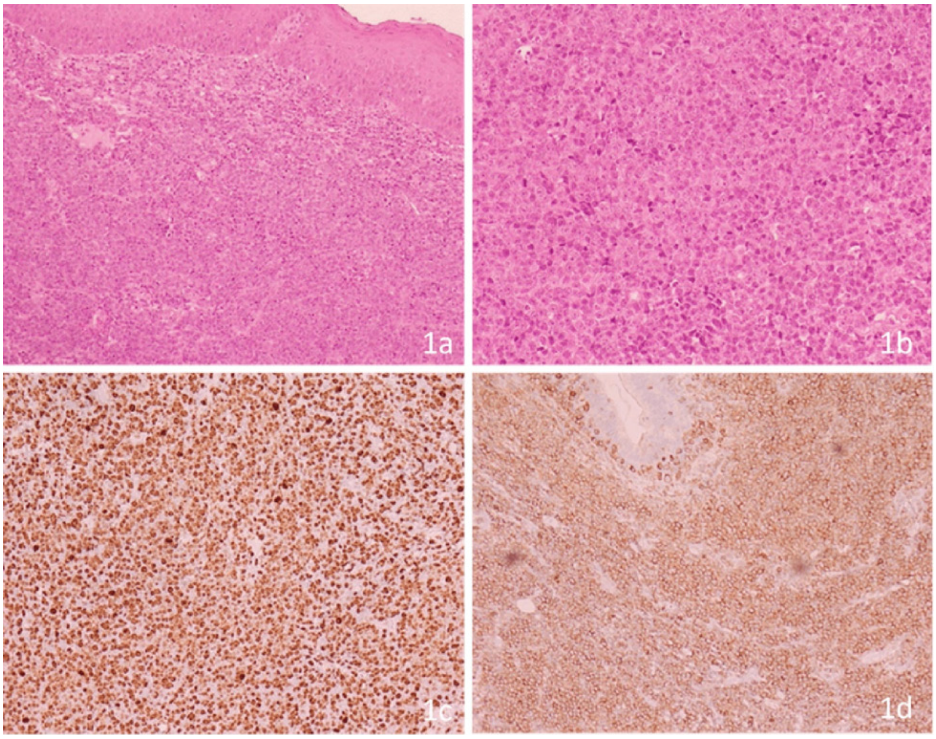


Figure 2 shows c-myc rearrangement and aberrant expression of CD5 and CD43

The patient declined the PAN-CAT scan and bone marrow biopsy since the management would not change. The patient was then managed as a case of diffuse large B-cell lymphoma stage II A with skin and soft tissue involvement with ECOG PS 1.

We started chemotherapy in the form of CHOP-R: cyclophosphamide, Doxorubicin, vincristine, prednisone, and rituximab. The patient tolerated this regimen for 7 cycles without complications. After the 5th cycle; a PET scan was performed, and it was reported negative and showed no evidence of residual disease.

Unfortunately, three months after completing chemotherapy, the patient succumbed to a recurrence of his disease involving almost all his skin. He presented with diffuse skin involvement of the face, upper limbs, and the whole back with clinical findings typical of the previous right cheek findings.

Skin biopsy of the upper back showed findings consistent with recurrent diffuse large B-cell lymphoma. The immunohistochemical stains were identical to the previous biopsy from the cheek.

The patient was finally diagnosed with primary cutaneous B-cell lymphoma- NOS early relapse.

The patient was then treated with dexamethasone 8 mg bid and rituximab 375 mg/m^2. He improved by about 70%, but we are still looking for the best option of intervention.

Discussion

The etiology of cutaneous B-cell lymphoma is not yet known. Primary cutaneous B-cell lymphomas are defined as primary cutaneous lymphomas that are present in the skin and lacking extra-cutaneous disease at the time of presentation. Microscopic morphology and immunohistochemistry should be investigated in detail to distinguish PCDLBCL-leg type since it is an aggressive type of cutaneous lymphoma with a poor prognosis[2,3].

Currently, there is no evidence-based standard of care for PCDLBL due to a lack of randomized controlled trials, and therefore therapeutic interventions are based on retrospective studies and experts' experience. Our patient was treated as a systemic DLBCL with CHOP-R chemo-immunotherapy. The patient was treated with 7 cycles of CHOP-R and tolerated therapy without complications. After the 5th cycle of chemotherapy, a PET scan was done and showed no evidence of disease. We completed 7 cycles of CHOP-R therapy as planned. After 2 months of follow-up, the cutaneous lesions had disappeared, and the PET scan showed no evidence of residual disease. Two months later, the patient succumbs to his disease. Even though the data

shows the outcome of patients with PCDLBCL has improved, the prognosis is still poor. Primary cutaneous B-cell lymphomas include three subtypes: namely primary cutaneous marginal zone lymphoma (MZL), primary cutaneous follicle center lymphoma (FCL), and primary cutaneous DLBCL-leg type (Figure 2). These types of primary cutaneous B-cell lymphoma have different immuno-histochemical staining (Table 1). MZL and FCL are considered indolent types of lymphoma with good prognosis and 5 years of disease-specific survival ≥95%.

DLBCL-leg type is considered an aggressive type of lymphoma with a poor prognosis[3,4]. Our case is a rare one with aggressive behavior that responded well to chemotherapy but just for a short remission, less than 3 months, and with a unique immunohistochemical profile as shown in Table 1. The proliferative index of our rare case is very high 80% similar to the proliferative index of PCDLBCL-leg type[4].

Up to now, the debate regarding the classification of primary cutaneous B-cell lymphomas, prognosis, and the standard intervention is still not determined.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that names and initials will not be published, and due efforts will be made to conceal their identity.

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