

Received: 2017.06.24
Accepted: 2017.08.01
Published: 2017.10.25

Fast-Growing Subcutaneous Tumors with Lower-Extremity Edema and Rib Lesions: A Case of Non-Hodgkin's Lymphoma in an HIV-1-Infected Patient

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

B 1 **Man Lai***
C 2 **Xiuqun Zhang***
F 1 **Qunhui Li**
D 1 **Caiping Guo**
EF 1 **Yulin Zhang**

1 Department of Infectious Diseases, Capital Medical University Affiliated Beijing You An Hospital, Beijing, P.R. China
2 Department of Hematology, Nanjing Medical University Affiliated Nanjing First Hospital, Nanjing, Jiangsu, P.R. China.

* Co-First Authors

Corresponding Authors: Yulin Zhang, e-mail: zhangyulin1968@126.com, Caiping Guo, e-mail: gcpdt001@126.com
Conflict of interest: None declared

Patient: Male, 41
Final Diagnosis: Non-Hodgkin's lymphoma
Symptoms: Fast-growing subcutaneous tumors with lower-extremity edema
Medication: —
Clinical Procedure: —
Specialty: Hematology

Objective: Unusual clinical course
Background: Diffuse large B-cell lymphoma (DLBCL) accounts for the large majority of AIDS-related non-Hodgkin's lymphoma (NHL). DLBCL usually arises in lymph nodes, presenting as a painless rapid swelling mass in the neck, armpit, or groin.
Case Report: Here, we report a case of DLBCL that needed only 3 months to develop a tumor 20×15 cm in diameter in the right groin and even caused scrotum swelling and lower-extremity edema. Furthermore, this case of DLBCL had developed other 3 subcutaneous tumors in the chest wall and their diameters were 16×9 cm, 7×7 cm, and 3×3 cm. A thoracic computed tomography (CT) scan presented with bilateral pleural effusion and the chest wall tumors with rib lesions.
Conclusions: It is rare that a DLBCL needed only 3 months to develop a tumor 20×15 cm in diameter and even caused scrotum swelling and unilateral lower-extremity edema due to the large mass located in the right groin. Furthermore, it is extremely rare that this lymphoma infiltrated the chest wall and even resulted in rib lesions.

MeSH Keywords: Case Reports • HIV Infections • Lymphoma, B-Cell

Full-text PDF: <https://www.amjcaserep.com/abstract/index/idArt/905904>



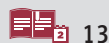
942



1



3



13



Background

High-grade B-cell non-Hodgkin's lymphoma (NHL), Kaposi's sarcoma, and invasive cervical cancer are 3 AIDS-defining malignancies. Since the introduction of combined antiretroviral therapy (cART), HIV-related lymphomas have increased as a percentage of first AIDS-defining illness, in particular diffuse large B-cell lymphoma (DLBCL) [1]. Immunosuppression is the primary culprit leading to lymphomas [2], and immune reconstitution with cART is considered to be an important factor in maintaining long-term lymphoma remission [3]. It is well known that swollen painless lymph nodes are the most common symptoms of systemic lymphoma. Here, we report a case of DLBCL with 3 fast-growing large subcutaneous tumors located in the right groin and the chest wall, accompanied with unilateral lower-extremity edema and rib lesions.

Case Report

A 41-year-old man complained of a 3-month history of a fast-growing lymph node in the right groin, and a 2-month history

of 3 subcutaneous tumors in the right posterior chest wall and the right lateral chest wall. One month ago, the man began to experience right groin pain and surface ulceration and crusting of the swollen lymph node, resulting in right lower-extremity swelling and limited mobility. During the course of this case, the man complained of over 5 kg of weight loss, but not symptoms of fever, night sweat, hemorrhage, cough, or chest pain. He had a history of blood transfusion about 20 years ago, but had no history of sexual contact with men. A physical examination showed a tumor 20×15 cm in diameter in the right groin, with surface ulceration and crusting, high local skin temperature and tenderness, accompanied with scrotum swelling, right lower-extremity pitting edema, and weakened right dorsalis pedis artery pulse (Figure 1A–1D). Further, a painless subcutaneous tumor 16×9 cm in diameter was located in the right lateral chest wall, and another 2 circle subcutaneous tumors (7 cm and 3 cm in diameter) were found in the right posterior chest wall (Figure 1E, 1F). The systemic examination was otherwise unremarkable. Laboratory tests showed positive serum anti-HIV antibody and further Western blot analysis confirmed his HIV infection. The results of laboratory tests taken on admission are shown in Table 1. A thoracic CT scan showed bilateral

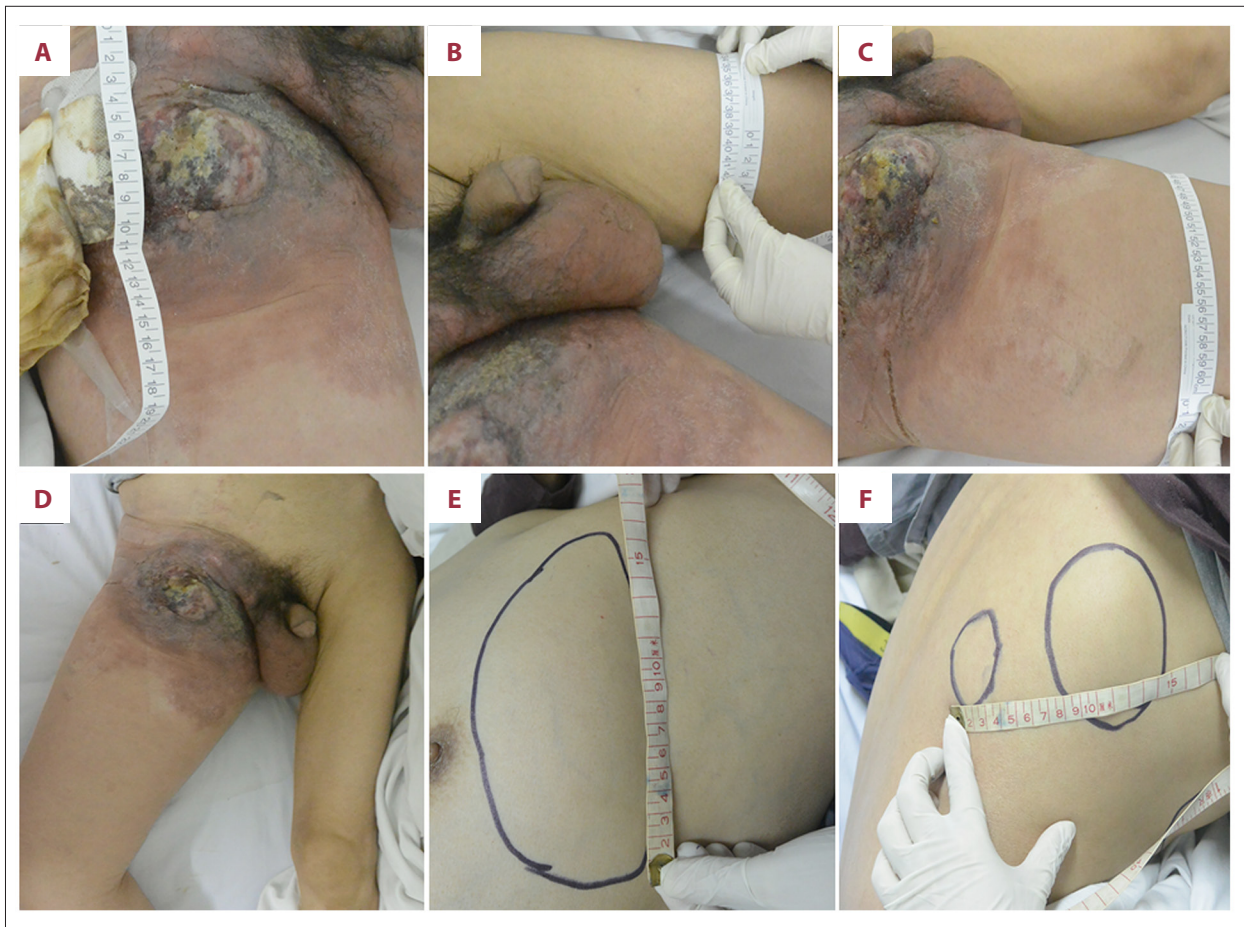


Figure 1. (A–F) Morphological presentations of the tumors.

Table 1. Laboratory test results on admission.

Plasma sample	Test value	Normal range	Plasma sample	Test value	Normal range
White blood cell counts ($10^9/L$)	7.12	3.5–9.5	High-sensitivity C-reactive protein (mg/L)	46.0	0–10
Neutrophils percentage (%)	61.9	40–75	Procalcitonin (ng/ml)	<0.05	<0.1
Lymphocyte percentage (%)	31.6	20–50	Anti-human immunodeficiency virus antibody	Positive	Negative
Hemoglobin (g/L)	130.0	130–175	Plasma (1,3) beta-D-glucan (pg/ml)	78.4	<60
Platelets ($10^9/L$)	314	125–350	Carcino-embryonic antigen (ng/ml)	0.456	0–4.7
Blood urea nitrogen (mmol/L)	5.54	2.9–8.2	Carbohydrate antigen 19-9 (U/ml)	6.48	0–27
Creatinine ($\mu\text{mol/L}$)	73.9	59–104	Carbohydrate antigen 72-4 (U/ml)	6.59	0–6.9
Alanine transaminase (U/L)	21.9	9–50	Carbohydrate antigen 125 (U/ml)	62.10	0–35
Glutamic-oxal acetic transaminase (U/L)	25.4	15–40	Carbohydrate antigen 15-3 (U/ml)	6.11	0–25
Total bilirubin ($\mu\text{mol/L}$)	8.2	5–21	Neuron-specific enolase (ng/ml)	49.36	0–16.3
Direct bilirubin ($\mu\text{mol/L}$)	3.1	<7	Cytokeratin protein fragment 21-1 (ng/ml)	5.940	0–3.3
Albumin (g/L)	41.0	40–55	Total prostate-specific antigen (ng/ml)	0.256	0–2.0
CD4 cell counts (cells/ μL)	411.0	544–1212	Free prostate-specific antigen (ng/ml)	0.074	0–0.934
Erythrocyte sedimentation rate (mm/hr)	17.0	0–15	Ferritin (ng/ml)	441.10	30–400



Figure 2. CT presentations of the tumors. (A, B) A thoracic CT scan showed right chest wall tumors (the sword denotes chest wall tumor). (C) A thoracic CT scan showed right chest wall tumors with rib lesions and right pleural effusion (the sword denotes chest wall tumor with rib lesion). (D) A pelvic CT showed right inguinal mass (the sword denotes right inguinal mass). (E) A leg CT scan showed right inguinal mass (the sword denotes right inguinal mass). (F) A leg CT scan showed right subcutaneous soft-tissue swelling.

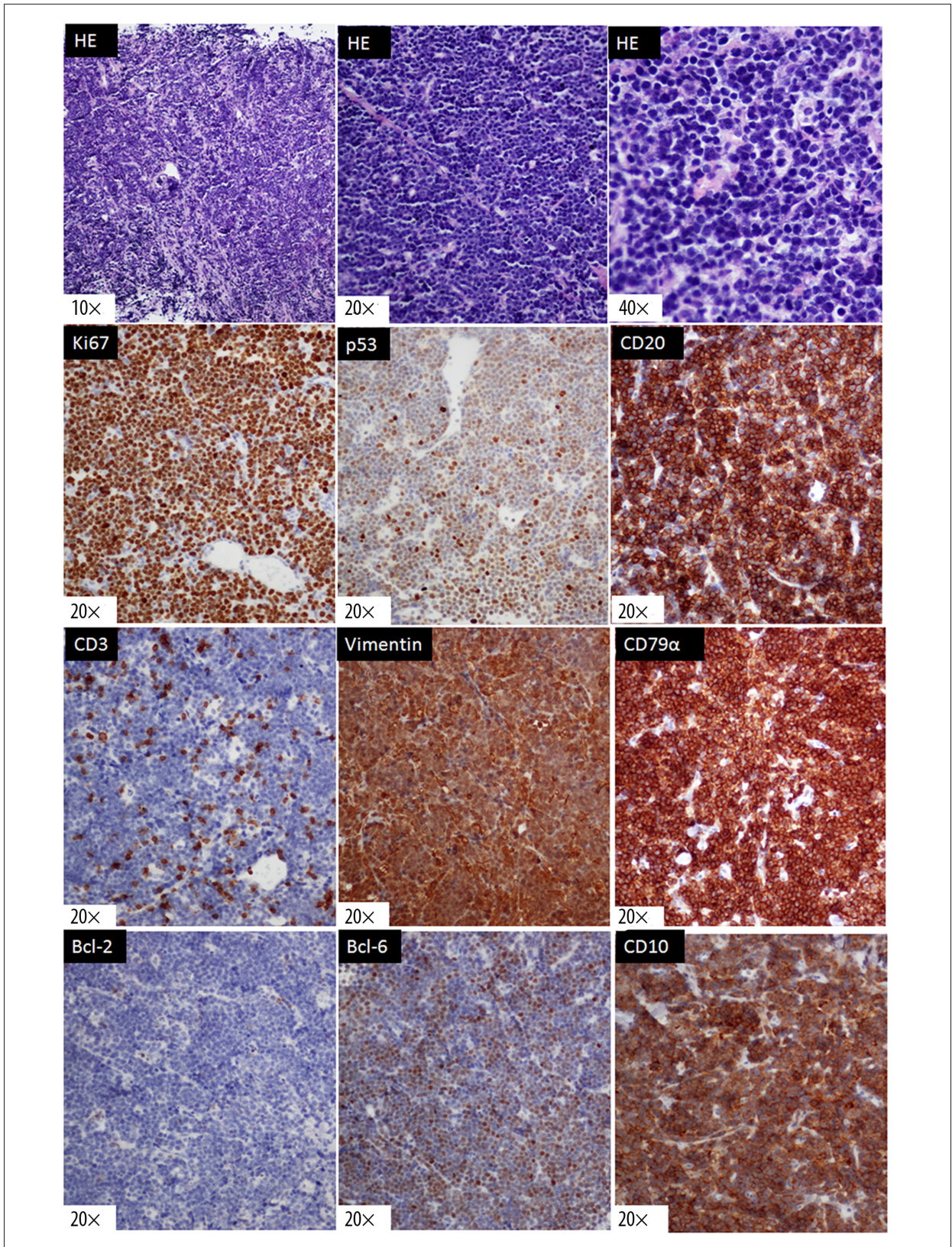


Figure 3. Pathological morphology of the right groin mass biopsy. The morphology showed the following immunohistochemistry results: Ki67($\geq 95\%$ +), P53(+), CD20(+++), CD3(minor+), Vimentin(+++), CD79a(+++), Bcl-2(-), Bcl-6(+), and CD10(++).

pleural effusion and the right chest wall tumors with rib lesions (Figure 2A–2C). A pelvic and leg CT showed right inguinal masses and multiple swollen lymph nodes in retroperitoneal and pelvic areas (Figure 2D–1F). Color Doppler ultrasound did not show any lower-extremity deep venous thrombosis. A needle biopsy of the right groin mass was performed and the histology revealed many medium-to-large-sized lymphocytes with oval or round nuclei containing fine chromatin scanty and cytoplasm (Figure 3). Immunohistochemistry was consistent with a diagnosis of DLBCL (Figure 3). The patient had no lymphoma cells in his bone marrow but had a loss of over 10% body weight within the previous 6 months. Furthermore, the lymph node regions were on both sides of the diaphragm and 1 extra-lymphatic organ (rib) was involved. Therefore, this case of NHL was classified as stage IIIE, B group.

The patient and his family refused chemotherapy or radiotherapy for lymphoma due to financial and other reasons, and decided to leave the hospital and receive oral cART, including tenofovir (300 mg once per day), lamivudine (300 mg once per day), and efavirenz (600 mg once per day) at home.

Discussion

DLBCL accounts for the large majority of AIDS-related NHL [3]. Even among non-HIV infected people, about one-third of newly diagnosed NHL is DLBCL in the United States [4]. DLBCL usually arise in lymph nodes, presenting as a painless rapidly swelling mass in the neck, armpit, or groin. Sometimes, organs outside the lymphatic system are involved in this pathology [5]. The speed of growth of the mass correlates to the lymphoma stage, and high-stage lymphoma often grows rapidly, but a rapidly progressing lymphoma tumor often grows for over 6 months [6]. Thus, our report of DLBCL in a AIDS patient which only took 3 months to develop a tumor 20×15 cm in diameter

is rare. Furthermore, although an enlarged lymph node in the groin can theoretically cause scrotum swelling and lower-extremity edema, unilateral lower-extremity edema is a rare initial presentation for lymphoma [7,8]. It was doubtful that this rapid lymphoma growth was correlated with the severe immunosuppression because this patient had a CD4 cell count of 411 cells/μL.

Most chest-wall tumors arise from metastasis, and primary chest wall and pulmonary lymphoma is extremely rare [9]. Shah et al. reported a case of a 52-year-old female patient who presented with a primary chest wall DLBCL [10]. Lau et al. reported a case of DLBCL with a chronic unilateral-sided pleural effusion, but without rib destruction [11]. Qiu et al. reported the case of an elderly man with a primary chest wall DLBCL who presented with unilateral-sided chest pain and a solid mass in the interior chest wall [12]. Interestingly, Ueda et al. reported a primary chest wall marginal zone B-cell lymphoma with a 15-year history of a right chest wall mass lesion without any symptoms or evidence of malignancy [13]. Therefore, a chest wall lymphoma is rare and such a rapidly-growing chest wall lymphoma with rib lesions is extremely rare.

Conclusions

Although DLBCL accounts for the large majority of AIDS-related NHL, it is rare that a DLBCL took 3 months to develop a tumor 20×15 cm in diameter and even caused scrotum swelling and unilateral lower-extremity edema due to the large mass located in the right groin. Furthermore, it is extremely rare that this lymphoma infiltrated the chest wall and even resulted in rib lesions. We present the clinical characteristics of this case to help clinicians in making a timely definitive diagnosis of this disease.

References:

- Shiels MS, Pfeiffer RM, Gail MH et al: Cancer burden in the HIV-infected population in the United States. *J Natl Cancer Inst*, 2011; 103: 753–62
- Malik F, Ali N, Jafri SIM, Fidler C: Casual or causal? Two unique cases of Hodgkin's Lymphoma: A case report and literature review. *Am J Case Rep*, 2017; 18: 553–57
- Birendra KC, Afzal MZ, Wentland KA et al: Spontaneous regression of refractory diffuse large B-cell lymphoma with improvement in immune status with ART in a patient with HIV: A case report and literature review. *Am J Case Rep*, 2015; 16: 347–52
- Howlader N, Morton LM, Feuer EJ et al: Contributions of subtypes of non-Hodgkin lymphoma to mortality trends. *Cancer Epidemiol Biomarkers Prev*, 2016; 25: 174–79
- Liu TY, Dei PH, Kuo SH, Lin CW: Early low-grade gastric MALToma rarely transforms into diffuse large cell lymphoma or progresses beyond the stomach and regional lymph nodes. *J Formos Med Assoc*, 2010; 109: 463–71
- Zheng S, Xu H, Ouyang Q et al: A case of rapid growing colonic NK/T cell lymphoma complicated by Crohn's disease. *Chin J Cancer Res*, 2013; 25: 119–23
- Elgendy IY, Lo MC: Unilateral lower extremity swelling as a rare presentation of non-Hodgkin's lymphoma. *BMJ Case Rep*, 2014; 2014: pii: bcr2013202424.
- Li D, Huang L, Guo B et al: Primary cutaneous gammadelta-T-cell lymphoma (CGD-TCL) with unilateral lower extremity swelling as first-onset symptom: A rare case report. *Int J Clin Exp Pathol*, 2014; 7: 5337–42
- Zhu Z, Liu W, Mamlouk O et al: Primary pulmonary diffuse large B cell non-Hodgkin's lymphoma: A case report and literature review. *Am J Case Rep*, 2017; 18: 286–90
- Shah BK: Primary chest wall lymphoma: A rare entity. *J Cancer Res Ther*, 2015; 11: 661
- Lau MC, Mhandu P, Parissis H, McGuigan J: Primary diffuse B-cell lymphoma presenting as a solitary chest-wall lesion. *J Surg Case Rep*, 2015; 2015: pii: rjv069
- Qiu X, Liu Y, Qiao Y et al: Primary diffuse large B-cell lymphoma of the chest wall: A case report. *World J Surg Oncol*, 2014; 12: 104
- Ueda K, Nakanishi K, Satoh Y et al: Slow-growing primary marginal zone B-cell lymphoma arising in the chest wall in a patient without a history of tuberculosis. *Acta Radiol Short Rep*, 2013; 2: 2047981613477402