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### Publication Date

2022

### DOI


10.1177/23247096221089505

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# Two Cases of Pelvic Diffuse Large B-Cell Lymphoma

Journal of Investigative Medicine High  
Impact Case Reports  
Volume 10: 1–4  
© 2022 American Federation for  
Medical Research  
DOI: 10.1177/23247096221089505  
journals.sagepub.com/home/hic  


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## Abstract

Primary diffuse large B-cell lymphoma presenting as an extranodal site in the pelvis is rare and can mimic a gynecological malignancy. Although management for diffuse large B-cell lymphoma is standardized and curative, prognosis depends on timely diagnosis and therapy. Diagnosis can be challenging as patients lack classical symptoms of fever, night sweats, weight loss, and lymphadenopathy associated with lymphoma. A multidisciplinary approach is recommended to diagnose and treat judiciously. In this article, we present cases of 2 females who presented with pelvic masses with initial suspicion of a gynecological malignancy but were ultimately diagnosed as diffuse large B-cell lymphoma of the pelvis and managed accordingly.

## Keywords

diffuse large B-cell lymphoma of the pelvis, pelvic tumors, R-CHOP, non-Hodgkin lymphoma

## Introduction

Diffuse large B-cell lymphoma (DLBCL) is 1 of the most common subtypes of aggressive non-Hodgkin lymphoma (NHL).<sup>1</sup> Double hit lymphoma (DHL) accounts for 5.6% of all cancers and the overall 5-year survival rate is 60%.<sup>2</sup> Although the primary site for lymphomas is the lymphoid tissue or lymph nodes, 10% to 30% of the patients have primary extranodal sites at the time of diagnosis. Of these cases, less than 1% originate in the pelvis. This disease can be diagnosed at any age and the risk for NHL increases with age.

Although the etiology is yet unknown, there are known risk factors for developing DLBCL which include immunosuppression, family history of hematologic malignancy, autoimmune diseases, diet, and exposure to pesticides and hair dyes.<sup>1,3,4</sup> Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone inclusively known as R-CHOP is currently the initial treatment of choice for DLBCL.<sup>4-6</sup>

## Methods

Approval was obtained from the Institutional Review Board of Kern Medical for publishing this report. A retrospective review of patients's records was performed. A literature search was conducted on PubMed, ResearchGate, and Google Scholar. The following search terms were applied: diffuse large B-cell lymphoma of the pelvis, pelvic tumors, and R-CHOP.

## Case Presentation I

A 27-year-old female with a medical history of human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) presented to the emergency room with increasing abdominal pain and distention for the last 2 months associated with 20-pound unintentional weight loss, fatigue, and bedridden for the last 1 week. She was known to be nonadherent with her medications.

On presentation, she was tachycardic with a heart rate of 138 beats per minute, dyspneic with a respiratory rate of 37 breaths per minute, and a temperature of 37.2°C. On physical examination, a hard mass was palpable in the lower abdominal area with diffuse tenderness without rebound or guarding. Laboratory results were significant for elevated lactose dehydrogenase at 2776 unit/L (140-280 unit/L), uric acid of 5.9 mg/dL (2.4-6.0 mg/dL), and corrected calcium of 11.9 mg/dL (8.5-10.2 mg/dL).

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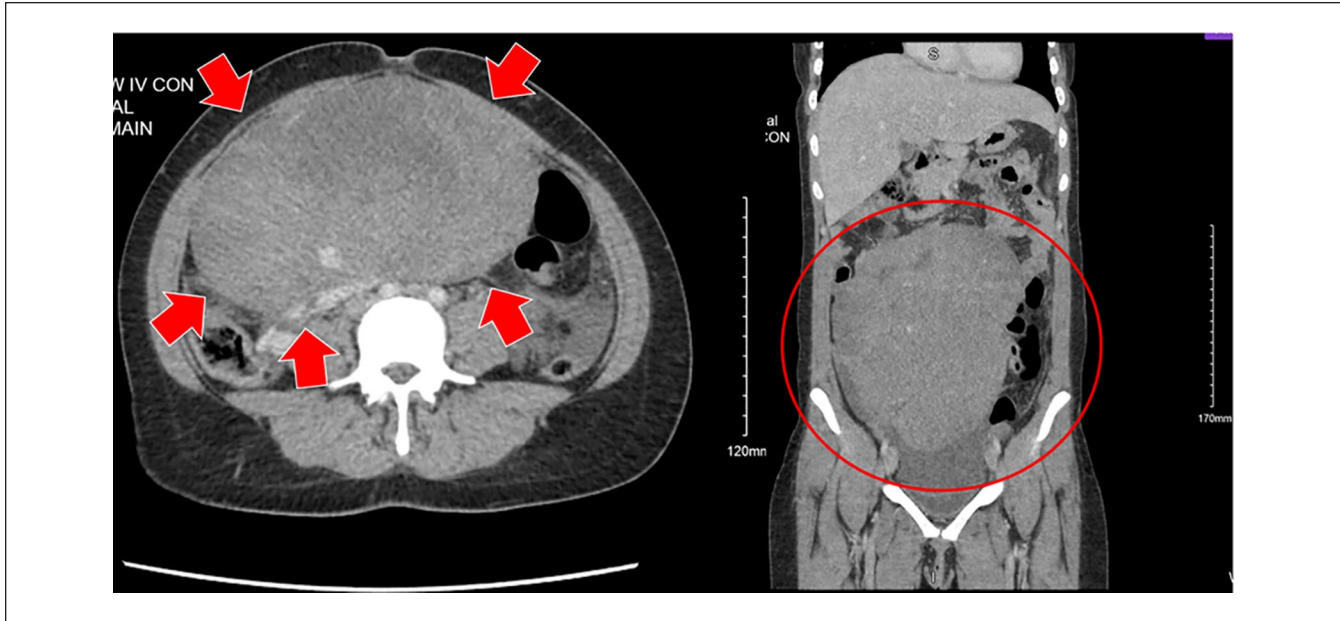
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Received February 2, 2022. Revised February 28, 2022. Accepted March 5, 2022.

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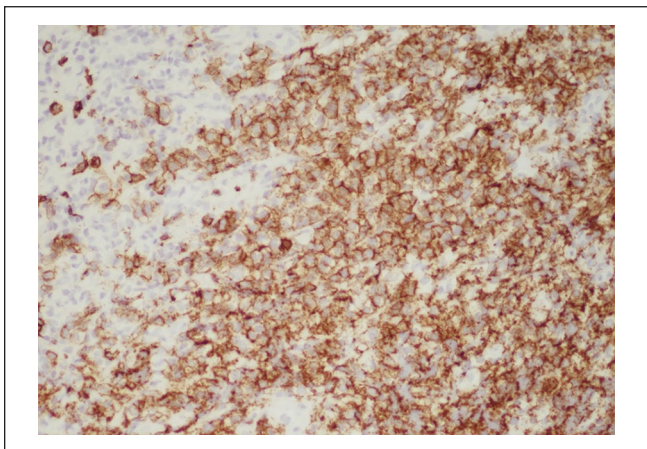
**Figure 1.** Computed tomography (CT) of the abdomen and pelvis revealing solid pelvic masses measuring  $18.8 \times 13.6 \times 22.5$  cm and  $10.1 \times 13.7 \times 15.1$  cm.

Computed tomography of the abdomen and pelvis revealed 2 solid pelvic masses measuring  $18.8 \times 13.6 \times 22.5$  cm and  $10.1 \times 13.7 \times 15.1$  cm (Figure 1) and multiple enlarged retroperitoneal lymph nodes with the largest conglomerate measuring  $4.1 \times 2.1$  cm in the left perinephric region.

The patient was admitted and started on antiretroviral treatment in a fixed combination with emtricitabine and tenofovir alafenamide (Biktarvy). Interventional radiology performed a biopsy of 1 of the pelvic masses and the retroperitoneal left periaortic juxta renal lymph node. Given concern for ovarian malignancy, CA-125 was ordered and was 649 units/mL. It was determined that her hypercalcemia is secondary to the underlying malignancy; therefore, calcitonin and bisphosphonate were administered.

Biopsy of the pelvic mass and the retroperitoneal left periaortic juxta renal lymph node both revealed diffuse B-cell lymphoma. (Figure 2) Neoplastic B-cells were positive for CD45+, CD20+, TCL1+, and CD4+ in small peripheral cells. Fluorescence in situ hybridization (FISH) analysis did not reveal double or triple hit for mutations and/or rearrangements (negative: c-myc, bcl2, bcl6).

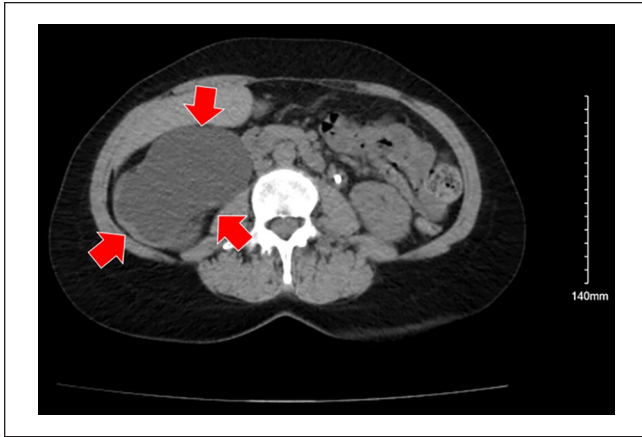
She was initially treated with the 6 cycles of immunotherapy of the monoclonal antibody against CD20 (rituximab) in combination with cyclophosphamide, doxorubicin, vincristine, prednisone (R-CHOP) in addition to standard treatment to prevent tumor lysis and neutropenia. After the first cycle of chemotherapy, her condition improved, and she was stable and discharged home. She initially had excellent response to chemotherapy but was noncompliant and eventually had progressive disease. This led to her enrollment in hospice care due to relapse disease.



**Figure 2.** 20 $\times$  immunohistochemical stain with magnification of 200 $\times$  revealing positive CD20 cells, a B-cell marker.

## Case Presentation 2

A 58-year-old female with a history of uterine fibroids status after total abdominal hysterectomy and bilateral salpingo-oophorectomy was in her usual state of health until 2 months before presentation when was noted to have abnormal kidney function tests by her primary care physician who referred her to urology. Her workup revealed bilateral hydronephrosis and severe atrophy of the right kidney. In addition, on a bimanual physical examination, a hard immobile mass between the vagina and the bladder on the right side was noted. A biopsy of the trigone area resulted benign squamous metaplasia negative for atypia, dysplasia, or malignancy. Due to the obstruction identified, the patient had a ureteral



**Figure 3.** Computed tomography abdomen and pelvis revealed a large soft tissue mass measuring  $10.6 \times 4.8 \times 7.3$  cm arising in the right adnexa and right presacral region.

stent placed on the left. She also underwent a transvaginal biopsy which was inconclusive.

A month later, she presented to the emergency department with severe abdominal pain, bilateral lower extremity edema, and shortness of breath. Her vital signs on presentation were as follows: temperature  $37.2^{\circ}\text{C}$ , blood pressure 172/81 mm Hg, and a heart rate of 67 beats per minute. On physical examination, her abdomen was soft, nontender, and nondistended with positive bowel sounds. The patient's laboratory values were significant for serum creatinine of 1.97 mg/dL (0.59-1.04 mg/dL). Computed tomography of abdomen and pelvis revealed a large soft tissue mass measuring  $10.6 \times 4.8 \times 7.3$  cm arising in the right adnexa and right presacral region (Figure 3).

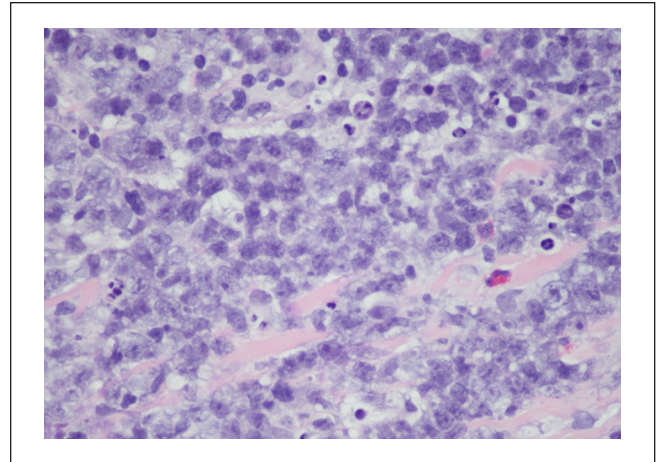
She underwent bilateral nephrostomy tube and stent placement to relieve the uropathy (serum creatinine 1.97 mg/dL, blood urea nitrogen 28 mg/dL, estimated glomerular filtration rate (eGFR): 27 mL/min). As the transvaginal biopsy was inconclusive, a left inguinal lymph node excisional biopsy was performed by gynecologic oncology.

Excisional biopsy revealed DLBCL with malignant cells staining positive with CD20, BCL-6, and CD34 and negative with desmin, S-100, and STAT6 (Figure 4).

Fluorescence in situ hybridization analysis did not reveal double or triple hit for mutations and/or rearrangements. She was treated with 6 cycles of R-CHOP with complete resolution and no further evidence of disease. In addition, nephrostomy tubes were successfully removed with kidney function improved (serum creatinine down trended from 1.97  $\rightarrow$  1.41).

## Discussion

Diffuse large B-cell lymphoma is the most common type of NHL and constitutes approximately 30% of cases. Extranodal form occurs in approximately 30% of patients. Diagnosis of primary DLBCL in unusual anatomic locations is not only



**Figure 4.** 40 $\times$  hematoxylin and eosin stain with magnification of 400 $\times$  revealing positive CD20 cells, a B-cell marker.

difficult but also often delayed because of the infrequency of the disease and the absence of specific clinical symptoms. Extranodal origin of lymphoma to the pelvis poses a significant diagnostic challenge as it typically presents with symptoms typical of traditional gynecologic primary pathology. The diagnosis of retroperitoneal lymphoma is usually difficult due to its ability to present as other tumors such as gynecologic, hepatic, pancreatic, and urologic.<sup>7</sup> In particular to pelvic lymphomas, nonspecific abdominal pain with or without back pain, pelvic mass, vaginal bleeding, and presence of urinary manifestations have been reported.

This report presents 2 cases of primary pelvic DLBCL that were initially suspected to be gynecologic malignancies. There is no consensus on what is the treatment of choice for the management of patients with extranodal female genital tract DLBCL and various treatment approaches have been published. It is known that regardless of the site of origin, the first-line therapy in DLBCL is R-CHOP and most patients are successfully treated by this approach. Prompt diagnosis and appropriate therapy among patients can prevent unnecessary surgery.

In recent years, an increased rate of extranodal lymphomas has been noted among HIV-positive patients. Therefore, HIV testing should be performed in patients with a new diagnosis of lymphoma.<sup>8</sup> Based on the literature, HIV status does not alter treatment outcomes for lymphoma if standard treatment is administered.<sup>9</sup> Excisional or incisional biopsies, immunohistochemical panel with or without flow cytometry, karyotype, or FISH for *MYC* rearrangements are all tests used to diagnose DLBCL.<sup>10</sup>

## Conclusion

Extranodal sites for lymphoma can occur in any site of the body but the pelvis itself is rare. Pelvic DLBCL should be considered in the pool of differential diagnosis when

evaluating a pelvic mass as prompt diagnosis and effective chemoimmunotherapy could be curative without the need for a surgical approach. If an index of suspicion is high, a multidisciplinary approach with a team of gynecology, oncology, radiology, and pathology experts would result in early diagnosis and treatment, leading to a higher chance of remission and prevention of progression and complications.

### Authors' Note

This case was orally presented at the American Federation for Medical Research Western Medical Research Conference in Carmel, California in January 2022.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### Ethics Approval

Ethical approval to report this case was obtained from the Kern Medical Institutional Review Board; approval ID: 21064.

### Informed Consent

Informed consent for patient information to be published in this article was obtained.

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