Case Report

A Rare Case of Primary Uterine Non-Hodgkins's Lymphoma with Involvement of Right Ovary: Staging with 18F FDG PET/CT and Iodinated Contrast CT

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Abstract

Primary uterine non-Hodgkin's lymphomas are extremely rare, and consequently, imaging findings of this disease have rarely been reported in the literature. We present fluorine-18-fluorodeoxyglucose (^{18}[F] FDG) positron emission tomography/computerized tomography (CT) and iodinated contrast CT findings in a young patient with primary uterine non-Hodgkin's B-cell lymphoma with right ovary involvement.

Keywords: *Extranodal lymphoma, non-Hodgkin's lymphoma, positron emission tomography/computerized tomography, uterine lymphoma*

Introduction

Primary uterine non-Hodgkin's lymphomas are extremely rare (0.5% of all extranodal non-Hodgkin's lymphomas);[1] the presentation of this disease lacks specific clinical symptoms and it is often difficult to distinguish from other uterine neoplasms. Due to its low incidence, diagnosis is often delayed and treatment is not defined. Based on the literature published to date, localized treatment with radiation therapy or surgery combined with chemotherapy is reported to improve outcome, with 10-year disease-free survival.[2,3] Diffuse large B-cell subtype is the most common variant in the literature.[4] The uterine cervix is the most common site of primary uterine non-Hodgkin's lymphomas.[5]

To the best of our knowledge, few imaging reports are available in the literature on this disease. In this paper, we present fluorine-18-fluorodeoxyglucose (^{18}[F] FDG) positron emission tomography (PET)/computerized tomography (CT) and iodinated contrast CT findings in a young patient with primary uterine non-Hodgkin's B-cell lymphoma.

Case Report

A 28-year-old woman (the authors certify that they have obtained all appropriate patient consent forms, in the form the patient has given her consent for her images and other clinical information to be reported in the journal), with a previous history of melanoma of the back, came to our hospital for irregular menstrual cycles in February 2018. Laboratory tests showed decreased lymphocytes count (9.3%; range 20%–45%). Ultrasounds examinations revealed a big solid mass in the cervix with an inhomogeneous echogenicity and no evidence of significant ovarian alterations [Figure 1]. After a cervix biopsy, the histological examination showed that the tumor cells were positive for LCA, CD20, CD3, CD10, bcl6 and negative for s100 protein, CD56, smooth muscle actin, desmin, chromogranin, synaptophysin, HMB45, CD99, cyclin D1, and CD30; Ki-67 staining showed that the proportion of the positive tumor cells was about 70%. These findings were consistent with a diagnosis of primary uterine high-grade non-Hodgkin's B-cell lymphoma.

For staging purposes, PET/CT with ^{18}[F] FDG (250 MBq ev) and iodinate contrast (iobitridol; volume: 100 mL and flow rate: 2.5 mL/s) was performed. The images showed an uterine mass extended from fundus to cervix (longitudinal diameter 58 mm and axial diameter 64 mm), with a high uptake of ^{18}[F] FDG (maximum standardized uptake value [SUV_{max}]) 16.2 g/ml bw, metabolic volume tumor 17 cm^3) [Figure 2]. The mass also showed contrast

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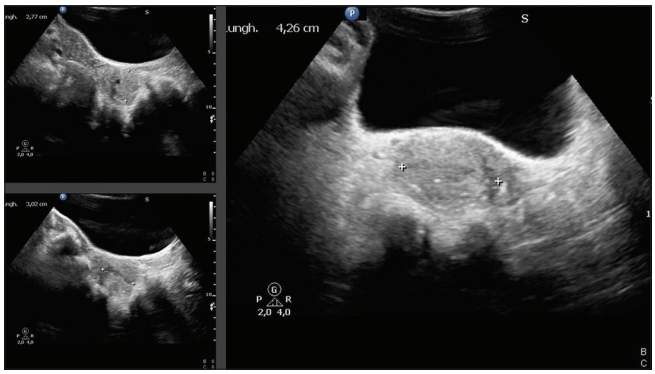

Figure 1: Pelvic ultrasound showing a big uterine mass with inhomogeneous echogenicity

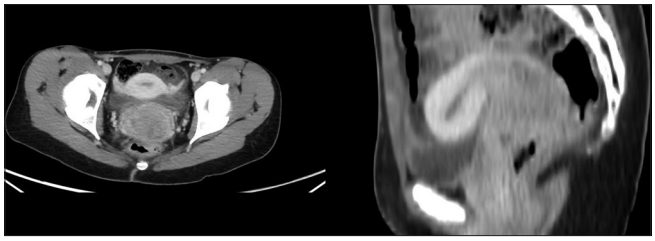

Figure 3: Axial and sagittal computerized tomography scan showing contrast enhancement in the uterine mass

enhancement after iodinate contrast administration [Figure 3]. Moreover, the right ovary presented a moderate enlargement (40 mm × 23 mm) and a big uptake of the radiopharmaceutical (SUV_{max} 7.7 g/ml bw) [Figure 4]. Compression of the right ureter at the bladder outlet was observed. Nonpathological pelvic and abdominal lymph nodes were noticed. In March 2018, the patient underwent laparoscopic right ovarian biopsy that showed the involvement of non-Hodgkin's B-cell lymphoma in the ovary.

Discussion

Primary uterine non-Hodgkin's lymphomas, and consequently, the imaging of this malignant disease are extremely rare. PET/CT combines the functional information of PET with the structural details of the CT. PET/CT scan confirmed the presence of a voluminous uterine mass with high glucose metabolism, proving the presence of pathology with a high-rate malignancy and allowing a better definition of the extension and the size of the lesion. Metabolic and morphological imaging also showed an involvement of the right ovary with compression of the ipsilateral ureter and absence of pathological lymph nodes, thus leading to correct staging and an appropriate planning of therapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

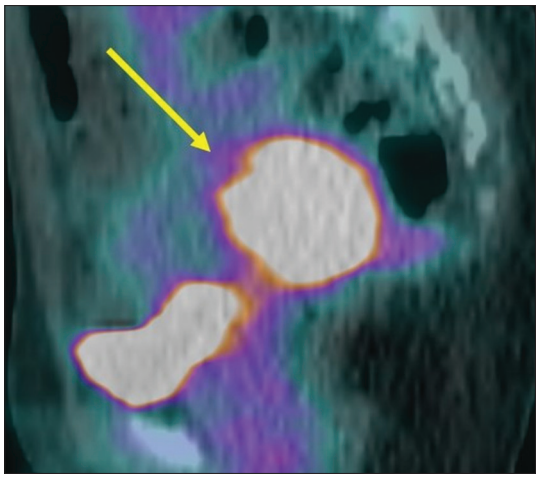

Figure 2: Positron emission tomography/computerized tomography sagittal scan showing a big hypermetabolic uterine mass (yellow arrow) with maximum standardized uptake value 16.2 g/ml bw

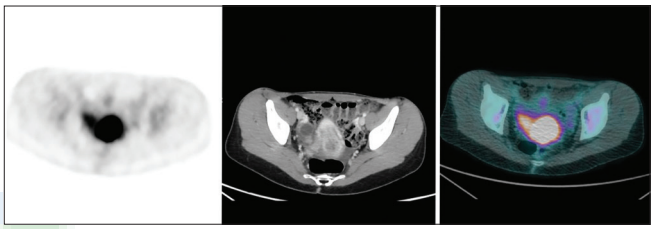

Figure 4: Positron emission tomography, computerized tomography with iodinated contrast and positron emission tomography/computerized tomography axial scans showing the involvement of the right ovary (orange arrows)

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Nil.

Conflicts of interest

There are no conflicts of interest.

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