

# Primary non-Hodgkin's lymphoma presenting as a uterine cervical mass

Ab Hamid S, Wastie M L

## ABSTRACT

We report a 43-year-old woman who presented with post-coital bleeding. Pelvic examination revealed a uterine cervical mass, which confirmed to be large B cell lymphoma on histopathological examination. Computed tomography showed a primary lesion in the uterine cervix with no lymph node or other extranodal involvement. The patient responded to CHOP (cyclophosphamide, adriamycin, vincristine and prednisolone) chemotherapy regime with no major side effects.

**Keywords:** B cell lymphoma, primary non-Hodgkin's lymphoma, uterine cervical lymphoma

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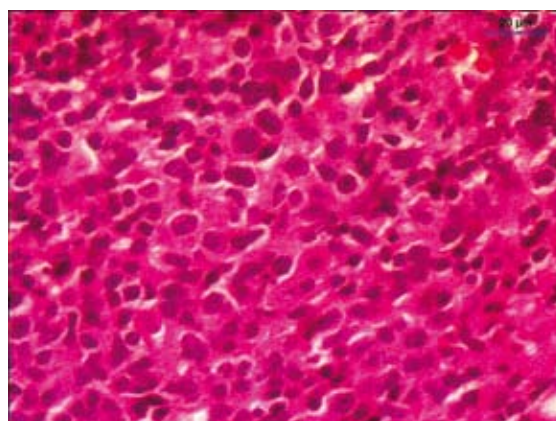
## INTRODUCTION

Non-Hodgkin's lymphoma arising from extranodal tissue and staying localised to that region is rare. Rarer still is primary non-Hodgkin's lymphoma of the uterine cervix. We describe a 43-year-old woman with primary extranodal non-Hodgkin's lymphoma of the uterine cervix that was treated with chemotherapy.

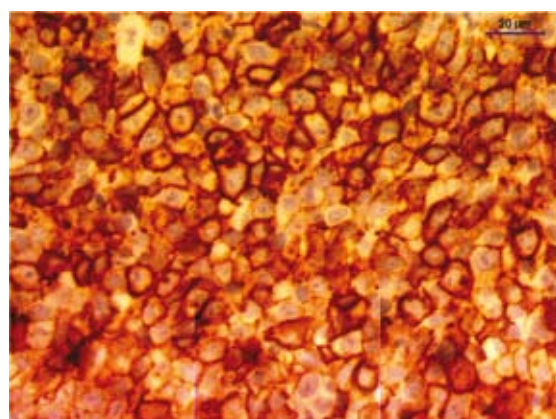
## CASE REPORT

A 43-year-old Malay woman, para five, presented to the gynaecology clinic in our institution with a one-month history of post-coital bleeding, which was preceded by a few months' history of prolonged menses for which no treatment was sought. She was apparently well prior to the illness, with regular menses of a 28-day cycle with no history of intermenstrual bleeding. Her past medical history was completely uneventful. Her last child was born six years ago. Following that, she was on regular oral contraceptive pills. She was not immunologically compromised nor was she taking any immune-modulating medication. Physical examination revealed a well-nourished middle-aged woman with no abnormal findings on systemic examination. No abdominal or pelvic mass was detected. No palpable cervical, axillary or inguinal lymphadenopathy was found. Pelvic examination revealed a bulky, exophytic cervical mass measuring 4 cm in diameter along with a normal size uterine corpus. No palpable parametrial or vaginal mass was detected.

Punch biopsy of the cervical mass was performed and histopathological examination confirmed a non-Hodgkin's



**Fig. 1** Diffuse large B cell non-Hodgkin's lymphoma. Photomicrograph of the cervical mass shows diffuse sheets of intermediate to large, round to ovoid, irregular nuclei with scanty cytoplasm. The cells contain prominent nucleoli.



**Fig. 2** Diffuse large B cell lymphoma. Immunohistochemistry shows that the cells are immunoreactive to L26/CD20, i.e. B cell phenotype.

lymphoma of the uterine cervix. Histologically, there was diffuse infiltration of the stroma of the ectocervical and endocervical tissues by monomorphic population of malignant lymphoid cells. The cells had intermediate to large, round to ovoid, irregular nuclei surrounded by scanty neoplasm. Neutrophilic infiltration was also noted (Fig. 1). Immunohistochemical study showed that the neoplastic cells were positive for B cell markers (Fig. 2). A diagnosis of diffuse large B cell non-Hodgkin's lymphoma was made. Pap smear cytology was normal. Blood investigations showed no abnormality. Serology confirmed she was negative for retrovirus as well as hepatitis B and C virus. Bone marrow aspiration and

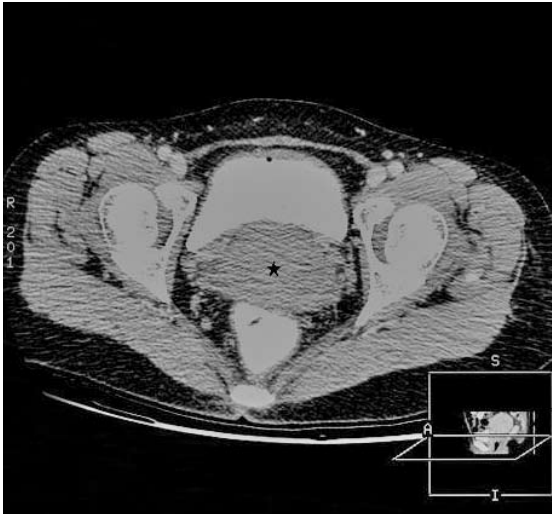
Department of  
Imaging,  
Faculty of Medicine  
and Health Sciences,  
University Putra of  
Malaysia,  
Jalan Serdang-  
Puchong,  
Serdang,  
Selangor 43100,  
Malaysia

Ab Hamid S, MMed  
General Radiologist and  
Medical Lecturer

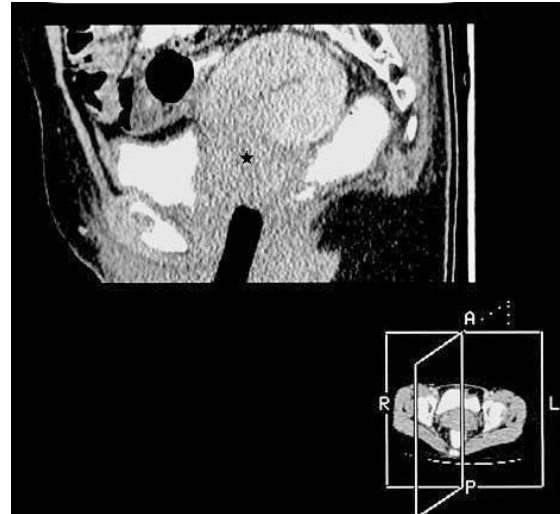
Department of  
Radiology,  
Faculty of Medicine,  
University of Malaya  
Medical Centre,  
Kuala Lumpur 59100,  
Malaysia

Wastie ML, FRCP,  
FRCR  
Consultant and  
Professor

**Correspondence to:**  
Dr Suzana Ab Hamid  
Tel: (60) 1 9615 6079  
Fax: (60) 3 8947 2585  
Email: sznah@yahoo.  
com; suzana@medic.  
upm.edu.my



**Fig. 3** Contrast-enhanced axial CT image of the pelvis shows a bulky hypodense uterine cervix (\*) which was confirmed to be non-Hodgkin's lymphoma by core biopsy.



**Fig. 4** Sagittal reformatted CT image of the pelvis shows the cervical non-Hodgkin's lymphoma (\*) with no evidence of infiltration of the uterine corpus and the adjacent organs.

trephine biopsy revealed no evidence of involvement by non-Hodgkin's lymphoma.

Contrast-enhanced axial computed tomography (CT) of the neck, thorax, abdomen and pelvis (Figs. 3 & 4) were performed. There was a diffuse, hypodense uterine cervical mass measuring 5.0 cm × 7.8 cm × 3.0 cm. No evidence of involvement of the uterine body, parametrium and the adjacent organs was seen. The liver, spleen and kidneys were normal. No pathologic lymphadenopathy, by size criteria, was noted in the neck, axillary, mediastinum, abdomen and pelvis. In view of the histology, a diagnosis of primary cervical non-Hodgkin's lymphoma stage 1E was made. She had completed six courses of cytotoxic chemotherapy according to CHOP protocol, which consisted of cyclophosphamide (Cytosan, Bristol Meyer Squib, NJ, USA), adriamycin (Doxorubicin, Pharmacia and Upjohn, MI, USA), vincristine (Oncovin, Eli Lilly, Indianapolis, IN, USA) and prednisone (Roxane, Columbus, OH, USA). No major side-effects were experienced during the course of treatment. She was asymptomatic and follow-up CT showed significant reduction in the size of the uterine cervical mass. There was no new lesion nor enlarged lymph node observed.

## DISCUSSION

Primary non-Hodgkin's lymphoma of the uterine cervix is extremely uncommon. Chorlton et al reported that only 0.12% of all non-Hodgkin's lymphoma originates from the uterine cervix.<sup>(1)</sup> The clinical symptoms are non-specific and may mimic other entities, such as cervical or endometrial carcinoma, uterine fibroids, adenomyosis and endometriosis. Cervical cytology is typically negative or non-specific. Diagnosis invariably requires a core biopsy. Magnetic resonance (MR) imaging is the most effective

method for imaging evaluation of the uterine cervix.<sup>(2)</sup> The appearance of cervical lymphoma is that of a bulky mass arising in the cervix or, less likely, the uterus. The mass typically involves the cervix or myometrium. However, unlike cervical carcinoma, the low signal intensity cervical stroma and mucosa are commonly left intact. This is the most useful method to distinguish lymphoma from cervical carcinoma; however, definitive diagnosis is not possible in all cases. The signal intensity of lymphoma is commonly similar to that of other tumours. The mass is of low signal on T1-weighted images, and intermediate to high signal on T2-weighted images, with contrast enhancement.

CT is commonly the study of choice for detection and staging of non-Hodgkin's lymphoma.<sup>(3)</sup> CT enables accurate measurement of both tumour size and extent, and provides information that can be used to plan an appropriate therapeutic regimen as well as follow response to treatment. On CT, the lesion usually appears as an enhancing mass in the uterine cervix, as seen in our patient. No calcification is detected. Since these lesions are often bulky, involvement of the vagina, bladder, rectum and adjacent lymph nodes should be considered. In cases of primary uterine or cervical lymphoma such as in our patient, however, bulky lymphadenopathy is rarely present. In the past, gallium-67 scintigraphy was the technique to assess tumour viability in the posttreatment evaluation of lymphoma. In patients with pretreatment gallium avid disease, it is valuable in monitoring treatment response, determining if residual mass contains active tumour cells, and in evaluating for recurrence.<sup>(4)</sup>

The latest technique for assessing lymphoma is flourodeoxyglucose-18 positron emission tomography (FDG-PET), which allows the detection of viable tumour cells independent of morphology.<sup>(4)</sup> Deoxyglucose labelled

with the positron emitter fluorine-18 is a glucose analogue that is transported into cells like glucose. Unlike glucose, it is trapped in cells in a phosphorylated form after uptake and further metabolism does not occur. Since cancer cells have a higher glycolytic rate than normal cells, the tracer concentrates in neoplastic tissues allowing their detection. Tracer uptake declines with therapy. Areas in which the utility of FDG-PET imaging is being evaluated include staging of disease, treatment monitoring, and detection of recurrence.<sup>(4)</sup> Delbeke compared CT and FDG-PET staging of lymphoma; the sensitivities of the two modalities have been comparable.<sup>(5)</sup> However, FDG-PET appears superior in treatment monitoring, particularly in distinguishing between residual viable tumour and fibrosis.<sup>(5)</sup> Identification of patients with viable tumour posttreatment allows early intensification of treatment (salvage chemotherapy or bone marrow transplantation) in order to induce complete remission.

A standard treatment for primary uterine cervical non-Hodgkin's lymphoma has not been clearly defined, as a consequence of its low incidence. According to case reports and short series, the cornerstone of therapy is radiation alone or irradiation combined with either chemotherapy or surgery.<sup>(6,7)</sup> Others used only combination chemotherapy,<sup>(6)</sup> as was given to our patient. Szantho et al

emphasised that using chemotherapy instead of irradiation can preserve ovarian function, as well as prevent and control the micrometastases.<sup>(8)</sup> This was proven effective, as significant improvement was observed in our patient with no evidence of metastasis to date.

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