

## Short report

# Primary peripheral T cell lymphoma of the endometrium

F Murdoch, P F W Chien, A T Evans

### Abstract

**A case of a primary peripheral T cell lymphoma arising in the endometrium is presented. Primary lymphomas of the female genital tract are rare, with endometrial lymphomas and those of T cell type being rarer still. Extensive investigations revealed no other sites of disease and the patient was treated by hysterectomy and chemotherapy. She remains well 33 months later. We believe that this case is exceptionally unusual.**

(*J Clin Pathol* 2001;54:74-75)

Keywords: endometrium; lymphoma

Approximately 25% of lymphomas arise in extranodal sites and 1% of these are reported to occur in the female genital tract.<sup>1</sup> In general, primary female genital tract lymphoma is encountered in the ovary and cervix, whereas lymphoma of the endometrium is extremely rare.<sup>2</sup> Most primary endometrial lymphomas described are reported to be of the B cell lineage,<sup>3,4</sup> although in some older series subtyping could not be done.<sup>2,5</sup> We describe a case of primary peripheral T cell lymphoma of the endometrium; we believe this case to be exceptionally rare.

### Clinical history

The 52 year old patient presented with continuous vaginal bleeding of several months duration. Clinical examination demonstrated modest enlargement of the uterus and hyster-

oscopy revealed two fleshy polyps projecting into the uterine cavity. Diagnostic curettage was performed. A diagnosis of primary peripheral T cell lymphoma was made and this was confirmed by an expert in lymphoreticular pathology. Despite rigorous investigation there was no evidence of disease outside the uterus and a bone marrow examination was entirely normal. Three weeks after diagnostic curettage the patient underwent a hysterectomy, together with the removal of both fallopian tubes and ovaries. The patient then received four cycles of chemotherapy (cyclophosphamide, hydroxydaunorubicin, Oncovin (vincristine), and prednisolone) and she remains well with no evidence of recurrent disease 33 months later.

### Histological findings

The stromal component of the endometrial tissue was greatly expanded by an infiltrate of large atypical lymphoid cells, in places showing focal extension into endometrial glands (fig 1). The infiltrate was patchy, involving only some areas of the curetted material, and in many foci

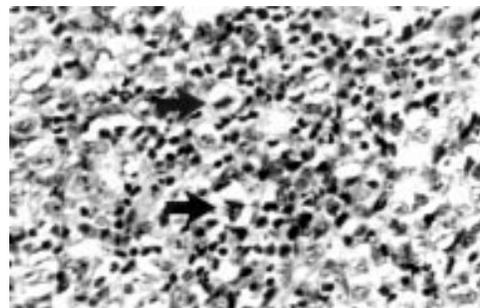


Figure 2 Higher power view (haematoxylin and eosin) showing the morphology of the atypical lymphoid cells, two containing mitotic figures (arrows).

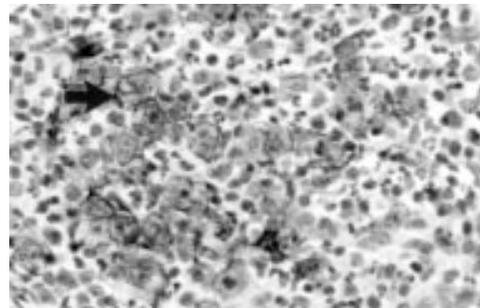


Figure 3 Immunoperoxidase staining for the CD30 antigen showing strong membrane positivity (arrow).

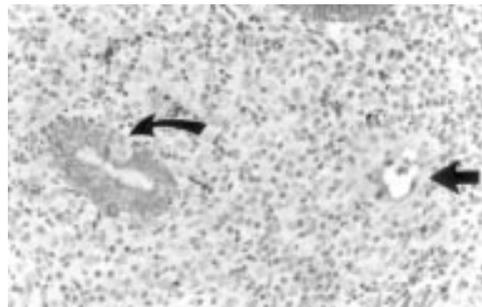


Figure 1 Immunoperoxidase staining for a keratin marker (MNF 116) of a representative field shows the endometrial stroma to be expanded by atypical lymphoid cells. Focally the cells infiltrate endometrial glands (curved arrow), and the remnant of an effaced gland is also demonstrated (straight arrow).

Directorate of  
Pathology, Ninewells  
Hospital and Medical  
School, Dundee  
DD1 9SY, UK

F Murdoch  
A T Evans

Department of  
Obstetrics and  
Gynaecology,  
University of Dundee,  
Dundee DD1 9SY, UK  
P F W Chien

Correspondence to:  
Dr Murdoch  
murdoch\_fiona@hotmail.com

Accepted for publication  
7 March 2000

the atypical cells appeared to cuff endometrial glands. The cells had large vesicular nuclei containing conspicuous nucleoli, with mitotic activity being readily discernable. Accompanying the atypical cells were numerous small lymphocytes and frequent neutrophil polymorphs (fig 2). Immunohistochemical studies showed strong positive staining with the T cell markers CD3, CD43, CD45RO, and UCHL1. In addition, many of the large cells displayed strong membranous staining with CD30 (fig 3).

#### Additional findings

DNA was extracted from paraffin wax embedded sections and the T cell receptor  $\gamma$  gene amplified by the technique described by McCarthy *et al.*<sup>6</sup> A single band was seen, demonstrating a definite T cell receptor gene rearrangement, and supporting a diagnosis of lymphoma.

The case was referred for NPM/ALK (p80) immunostaining, which showed that the lymphoma did not express the fusion protein and therefore was unlikely to harbour the t(2;5) translocation.<sup>7</sup>

The hysterectomy specimen showed no pronounced macroscopic abnormality. The entire endometrial cavity was processed for histological examination. This showed a late secretory pattern with patchy menstrual breakdown. In many areas stromal plasma cells were evident, suggesting low grade endometritis, and in several foci modest numbers of mature lymphocytes were apparent within the stroma and also extending into gland epithelium. These apparently mature lymphocytes stained as T cells, and molecular genetic analysis demonstrated the same T cell specific band as that obtained from the curettage specimen. Large atypical lymphoid blasts were not found in the hysterectomy specimen, despite a thorough search.

#### Discussion

The clinical, histological, immunohistochemical, and molecular genetic findings in this case combine to give strong support to a diagnosis of primary peripheral T cell lymphoma. Such a diagnosis is unusually rare; however, the case is also remarkable in the apparent localisation of the tumour to only a few fragments of curetted endometrium.

Of the few examples of endometrial lymphoma reported, the case described here resembles most closely that reported by Jack and Lee in 1986.<sup>8</sup> They described a 25 year old woman with a primary T cell lymphoma composed of medium sized cells. The patient died six months after diagnosis; however, the disease did present at an advanced stage. A notable feature was the presence of lymphoma cells invading endometrial gland epithelium, and such "epitheliotropism" was also prominent in our case. It has been suggested that these very rare primary mucosal T cell lymphomas of the endometrium are related to the epitheliotropic T cell lymphomas of the gastrointestinal tract, perhaps best exemplified by enteropathy associated T cell lymphoma of the small bowel.<sup>9</sup>

The cause of primary T cell lymphoma of the endometrium is not known. However, it is interesting to note that the hysterectomy specimen in this case showed chronic endometritis, with plasma cells and modest numbers of small T cells within the stroma. One might therefore speculate that chronic inflammation within the endometrium could be a predisposing factor for this rare tumour.

We are indebted to Professor PG Isaacson (Department of Histopathology, University College London Medical School) who gave his opinion on this case, as well as Dr KM Wood and Dr B Angus for performing immunohistochemical staining for the NPM/ALK (p80) fusion protein.

- 1 Young RH, Harris NL, Scully RE. Lymphoma-like lesions of the lower female genital tract. A report of 16 cases. *Int J Gynecol Pathol* 1985;4:289-99.
- 2 Harris NL, Scully RE. Malignant lymphoma and granulocytic sarcoma of the uterus and vagina. A clinicopathologic analysis of 27 cases. *Cancer* 1984;53:2530-45.
- 3 Cahill LA, Stastny JF, Frable WJ. Primary lymphoma of the endometrium. A report of two cases diagnosed on cervicovaginal smears. *Acta Cytol* 1997;41:533-8.
- 4 Van de Rijn M, Kamel OW, Chang PP, *et al.* Primary low-grade endometrial B-cell lymphoma. *Am J Surg Pathol* 1997;21:187-94.
- 5 Maeda T, Kamegai H, Mori H. Malignant lymphoma presenting as initial symptom in the uterus. Case report. *Br J Obstet Gynaecol* 1988;95:1195-7.
- 6 McCarthy KP, Sloane JP, Kabarowski JHS, *et al.* A simplified method of detection of clonal rearrangements of the T-cell receptor- $\gamma$  chain gene. *Diagn Mol Pathol* 1992;1:173-9.
- 7 Wood KM, Parr A, Jack F, *et al.* Expression of the p80 NPM/ALK fusion protein in anaplastic lymphoma [abstract]. *J Pathol* 1997;182:38A.
- 8 Jack AS, Lee FD. Morphological and immunological characteristics of T-cell malignant lymphomas in the west of Scotland. *Histopathology* 1986;10:223-4.
- 9 Isaacson PG, Norton AJ. Malignant lymphoma of the urogenital tract. In: Isaacson PG, Norton AJ, eds. *Extranodal lymphomas*. Edinburgh: Churchill Livingstone, 1994:273-87.