

[com/patrickjrock/ALCL/zipball/gh-pages\)](https://github.com/patrickjrock/ALCL/zipball/gh-pages)

Clinical Hematopathology

A Case Study

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Case

Patient

- A 45 year-old woman with groin discomfort

Clinical History

- Lima-bean size mass in the right groin for 3 months
- Fever
- No weight loss

Family History

- None

Case

Medications

- None

Physical Examination

- Bilateral lymphadenopathy in pelvic region.
- No hepatosplenomegaly.

Imaging

- CT showed right pelvic mass encroaching on the bladder.
- Pelvic ultrasound showed a right pelvic mass measuring 6.5cm encroaching on the uterus.

CBC

TEST	VALUE
WBC	15.7
RBC	4.19
HGB	11.3
HCT	34.3
MCV	82
MCH	26.9
MCHC	32.8
PLT	255
RDW-CV	15.8

-WBC is high -HGB is low

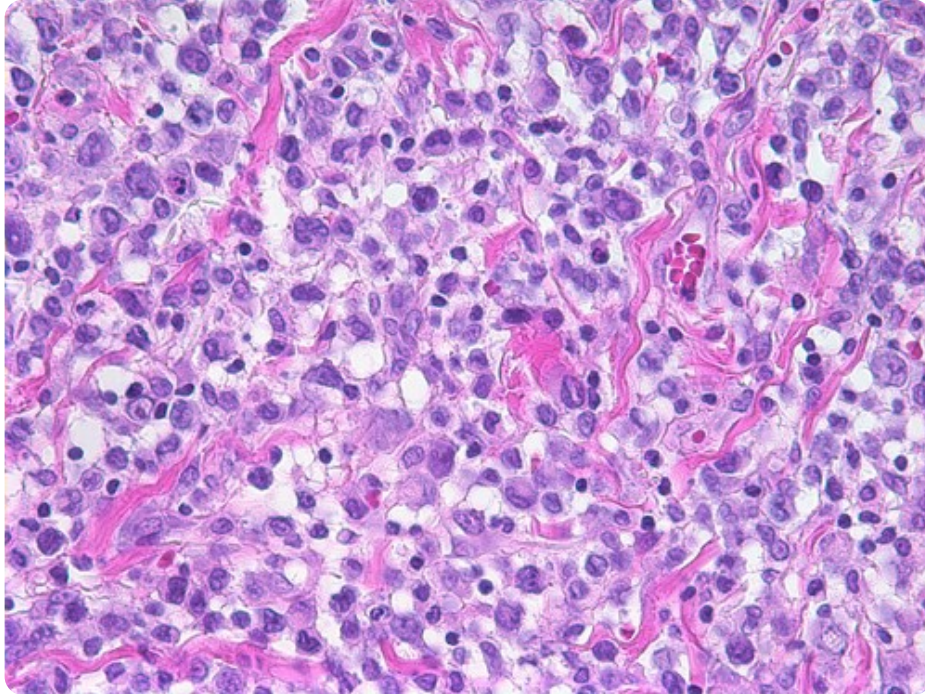
White Blood Cell Count

WBC DIFFERENTIAL	PERCENT	CONCENTRATION
Neutrophils	80	12.6
Bands	0	0
Lymphocytes	13	2.0
Monocytes	7	1.1
Eosinophils	0	0
Basophils	0	0

Histology

Figure 1

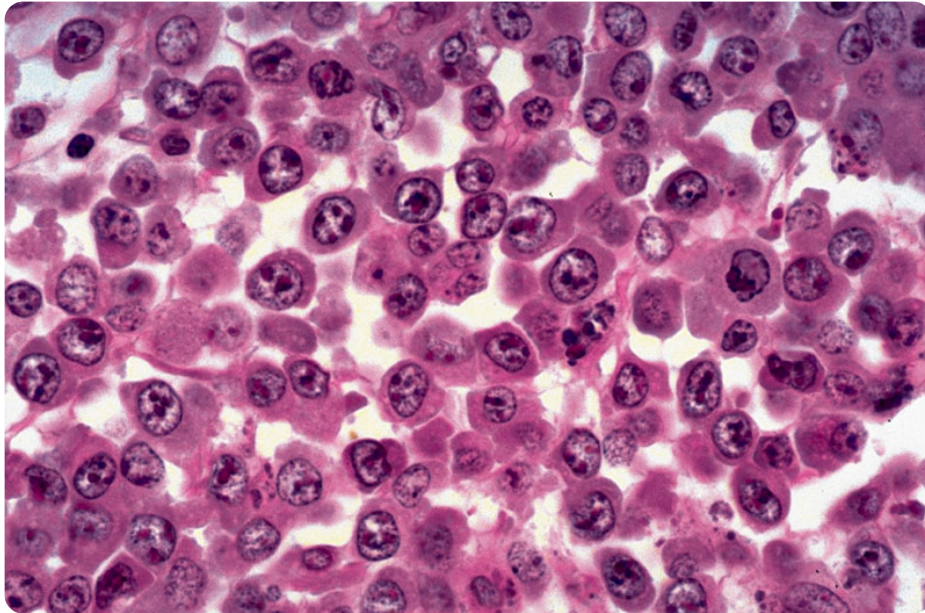
Pelvic mass showing large cells in cohesive clusters.



Histology

Figure 2

Lymph node showing large cells with ample amount of cytoplasm and visible nucleoli.



Differential Diagnosis

- Hodgkin disease
- B-cell lymphoma
- Diffuse large cell lymphoma
- Malignant histiocytosis
- Anaplastic Large-Cell Lymphoma (ALCL)
- Metastatic melanoma
- Viral infection

Additional Workup

- Excisional biopsy of lymphadenopathy
- Bone marrow biopsy
- Cytogenetics
- Immunohistochemistry
- LDH
- beta2-microglobulin
 - LDH and beta2-microglobulin are prognostic indicators associated with tumor activity and size.

Most Likely Diagnosis

Anaplastic Large-Cell Lymphoma (ALCL)

- This rare neoplasm is suggested by large anaplastic cells with horseshoe or embryoid nuclei in Figure 2.
- The diagnosis is confirmed by "the presence of rearrangements in the ALK gene on chromosome 2p23" - Robbins
- ALK is not expressed in normal lymphocytes so its presence is a good indicator.
- These tumors usually express CD30.
- "Immunophenotypically, most neoplastic lymphocytes have a unique CD4+, CD8-, and cytotoxic T-cell phenotype (TIA-1 and granzyme B+), with variable loss of pan-T-cell antigens (eg, CD2, CD3, CD5)." -medscape

Course of Management

- Multifocal presentation requires chemotherapy
 - Methotrexate
 - Combination regimens
 - CHOP
 - Most common therapy
- Surgery (hysterectomy)
- Recurrence expected within 2 years

Salient Features

- T-Cell neoplasm
 - CD4+, CD8-, CD30+,
 - CD30+ is also associated with classical Hodgkin's lymphoma
 - CD30 is the target of Brentuximab Vedotin
- Usually ALK+
 - ALK- associated with poor prognosis
- Associated with HSV, syphilis, leishmaniasis, ...
- Possible association between breast implants and ALCL

Question

Which of the following markers is suggestive of ALCL?

- ☐ Hyper-segmented neutrophils
- ☐ Foam cells
- ☐ Horseshoe cells
- ☐ Schistocytes
- ☐ FLT3

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References

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- <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/BreastImplants/Products/DePuyStryker/DePuyStrykerBreastImplants/DePuyStrykerBreastImplants.htm>
(<http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/BreastImplants/Products/DePuyStryker/DePuyStrykerBreastImplants/DePuyStrykerBreastImplants.htm>)

