

**This issue**December Slides **P.1**Monthly Digital Case Study **P.1**Lymphocytosis **P.2-3**Cell Quiz **P.2****December Slides****Slide 1**

Nothing to report

**Slide 2**

Nothing to report

**Slide 3**

Patient in intensive care

**Slide 4**

Lymphocytosis see slide case study

**Slide 5**

Hyperlymphocytosis

**Slide 6**

Hyperlymphocytosis



## Monthly Digital Case Study Presentation December 2022, Slide 4

**FBC Results**WBC 22.91\* ( $10^3/\text{mm}^3$ )RBC 3.94 ( $10^6/\text{mm}^3$ )

HGB 11.8(g/dL)

HCT 35.9 (%)

MCV 91 (fL)

MCH 29.9 (pg)

MCHC 32.9 (g/dL)

PLT 439 ( $10^3/\text{mm}^3$ )

Neutrophils 49.6%

Lymphocytes 39.1 % (absolute  $8.96 \times 10^3/\text{mm}^3$ )**Female age 37****Clinical Details**

Digestive Surgery unit

**Slide Information**

Experts comment: Polymorphic lymphocytosis (no binucleated lymphocytes: to do follow up)

**Lymphocytosis**

In this month's slide package, slides 4, 5 and 6 all show a lymphocytosis (defined in adults as an absolute lymphocyte count  $>4 \times 10^3/\text{mm}^3$ ). Lymphocytosis is a relatively common finding and can be due to a wide range of conditions either reactive e.g. Viral infections Epstein Barr Virus (EBV) which can cause Infectious Mononucleosis (IM-), bacterial pertussis (whooping cough), or malignant Lymphoproliferative disorders, Chronic Lymphocytic Leukaemia (CLL), Non-Hodgkins Lymphoma (NHL), Hairy Cell Leukaemia.

## Festive Quiz

Rather than a morphology quiz we thought a festive quiz would be more appropriate!

### Question:

What cells colour is the same as Santa's clothes?

- a) Platelet
- b) Red Cell
- c) White cell

## Last Month's Cell Quiz

Look closely at the slide below:



What do you think it is

### Right answer:

The cell is a Giant Platelet or macrothrombocyte, the designation of a Giant Platelet is reserved for platelets with a diameter greater than red cells. Giant Platelets can be found in Bernard Soulier Disease, May Hegglin Anomaly and sometimes in recovering thrombocytopenia.

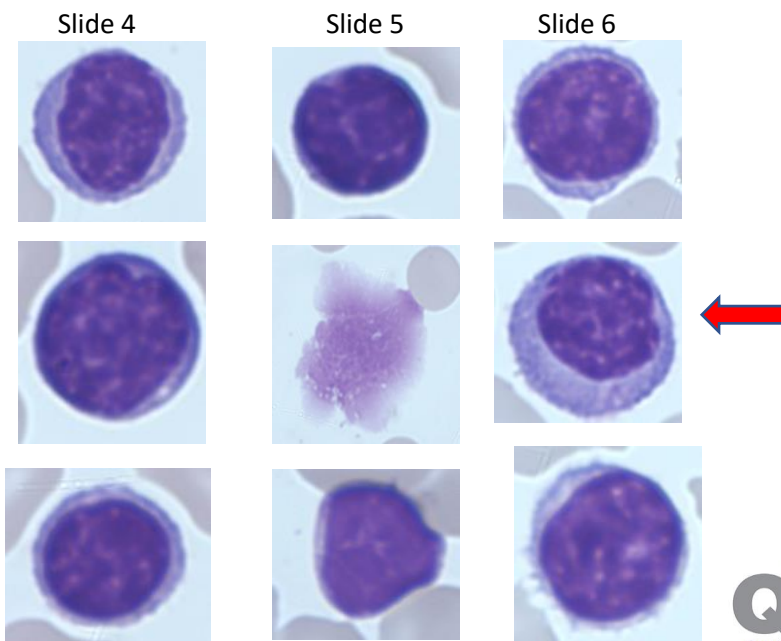
A full clinical history is important in diagnosing the reason for the Lymphocytosis. The age of the patient at presentation could indicate the reason e.g. CLL is more common in the elderly whereas IM is more common in the young/adolescent patient. Certain medication can cause lymphocytosis (allopurinol, vancomycin, carbamazepine). Severe medical conditions can increase the lymphocyte count e.g cardiac arrest, epileptic seizures, and epinephrine injections.

The blood film must always be examined if Lymphocytosis is detected as there could be important morphological features which are not necessarily detected by the analyser. When examining a blood film one should always view the cells without a pre-conceived diagnosis, for example just because the patient is 75 years old, it doesn't mean that they cannot have IM and conversely a younger person may have NHL. Try not to focus entirely on the lymphocytes, it is important to look at the blood film in its entirety e.g. any red cell abnormalities (Features of splenic dysfunctional or asplenic, presence of parasites), is there background staining in between the red cells which may indicate an increase in immunoglobulins.

In the December slide package, slides 4, 5, and 6 show different morphological features which can be very useful in the diagnosis of a lymphocytosis. The table below shows a brief description of the results:

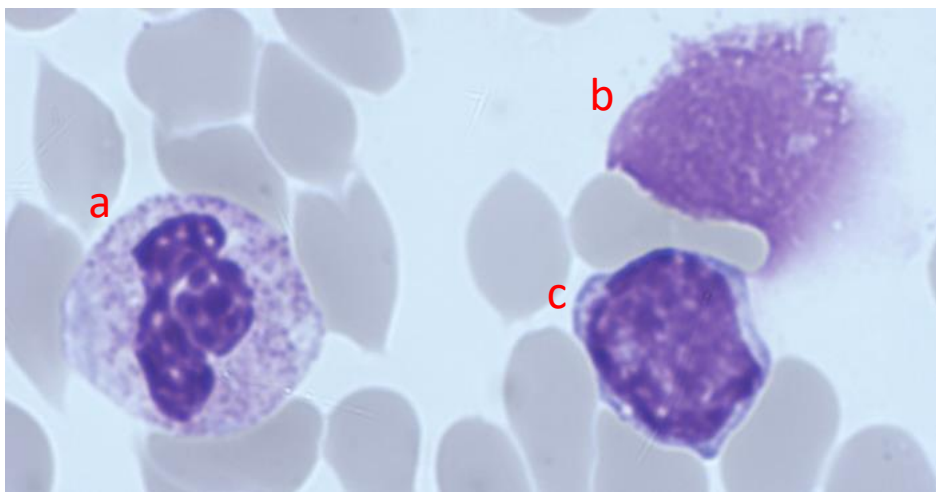
Slide	Age	Details	WBC $\times 10^3/\text{mm}^3$	Lymph $\times 10^3/\text{m}^3$
4	31	Digestive Surgery	22.9	8.9
5	71	Emergency	17.2 *	13.9 *
6	21	Emergency	10.2	6.6

- Slide 5 results calculated
- Lymphocyte Images from Blood films



As can be seen, the lymphocytes in slides 4 and 6 appear to be reactive in nature i.e vary in size and morphological features – nuclear shape, amount and colour of cytoplasm (polymorphic). The cell indicated by the arrow in slide 6 may even be described as being a plasmacytoid lymphocyte (dark blue cytoplasm, nucleus to the side of the cytoplasm).

When slide 5 is viewed, the predominant feature is the presence of numerous cells which are described as Smear, Smudge, Gumprecht shadow or basket cells. Lymphocytes in patients with CLL are known to be more fragile than normal lymphocytes. During the making of the blood film the fragile lymphocytes are crushed and form smear cells. Smear Cells are therefore indicative of CLL and the number present may be of prognostic value.



a) Neutrophil, b) Smear Cell, c) Lymphocyte

Further tests need to be performed on the patients from slide 4 and 6 including EBV status. The patients must be followed up.

Patient 5 appears to have CLL and the experts comment confirms CLL. Flow cytometry studies indicate a matutes score of 4/5 and cytogenetic studies confirm a 13q14 deletion.



Finally, we would like to wish you, your colleagues and your loved ones the very best for the upcoming festive season, and a safe and healthy 2023.

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## Bibliography

[Lymphocytosis](#)

## Editorial Team

Kelly Duffy  
Andrew Fisher

## About us

HORIBA UK Limited  
Kyoto Close  
Moulton Park  
Northampton, UK  
NN3 6FL

HORIBA Medical  
Parc Euromédecine, 390  
Rue du Caducée, 34790,  
France

[www.horiba.com/medical](http://www.horiba.com/medical)

