

Last Month's Slides

Slide 1

Monomorphic hyperlymphocytosis associated with numerous naked nuclei. Expert comment: Aspect of CLL.

Slide 2

See case study on right.

Slide 3

Intensive care unit. Lipaemic sample. Anemia. Anisocytosis (++) . Erythroblastosis. Thrombocytopenia. Hypergranulation of neutrophils (+).

Slide 4

Nothing to report.

Slide 5

Nothing to report.

Slide 6

Nothing to report.



This issue

Last Month's Slides [P.1](#)
Monthly Digital Case study [P.1-2](#)
Cell Quiz [P.2](#)
Malaria [P2-3](#)

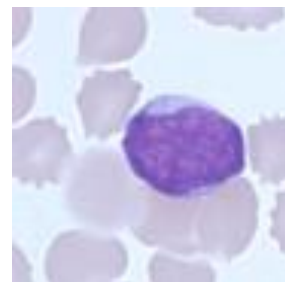
Monthly Digital Case study

Presentation

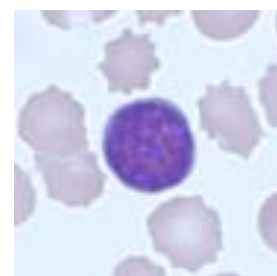
Slide 2
Female (83 years old)

FBC Results

WBC 80.6 ($10^3/\text{mm}^3$)
RBC 3.82 ($10^6/\text{mm}^3$)
HGB 11.0 (g/dL)
HCT 25.6 (%)
MCV 93 (fL)
MCH 28.7 (pg)
MCHC 30.8 (g/dL)
PLT 186 ($10^3/\text{mm}^3$)
Neutrophils 21.7 %
Lymphocytes 72.9 %
Monocytes 4.3 %
Eosinophils 1.1 %
Basophils 0.0 %



Lymphocyte

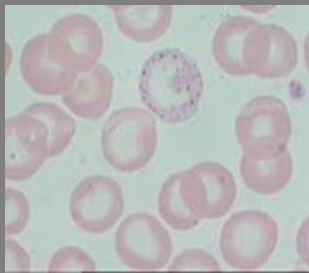


Slide review

Clinical Haematology Department. Hyperleukocytosis. Anisocytosis (+). Lymphomatous population with a high nucleo-cytoplasmic ratio, fine chromatin and sometimes cleaved nucleus, associated with very many smudge cells. Immunophenotyping required of circulating lymphocytes. Expert comment: appearance in favour of a lymphoproliferative syndrome.

Cell Quiz:

What can be seen in the red cell?



Last Month's Cell

Quiz:

What is the feature within the red cell:

- A) Howell Jolly Body
- B) Ring form of P. Falciparum
- C) Platelet



Answer: B

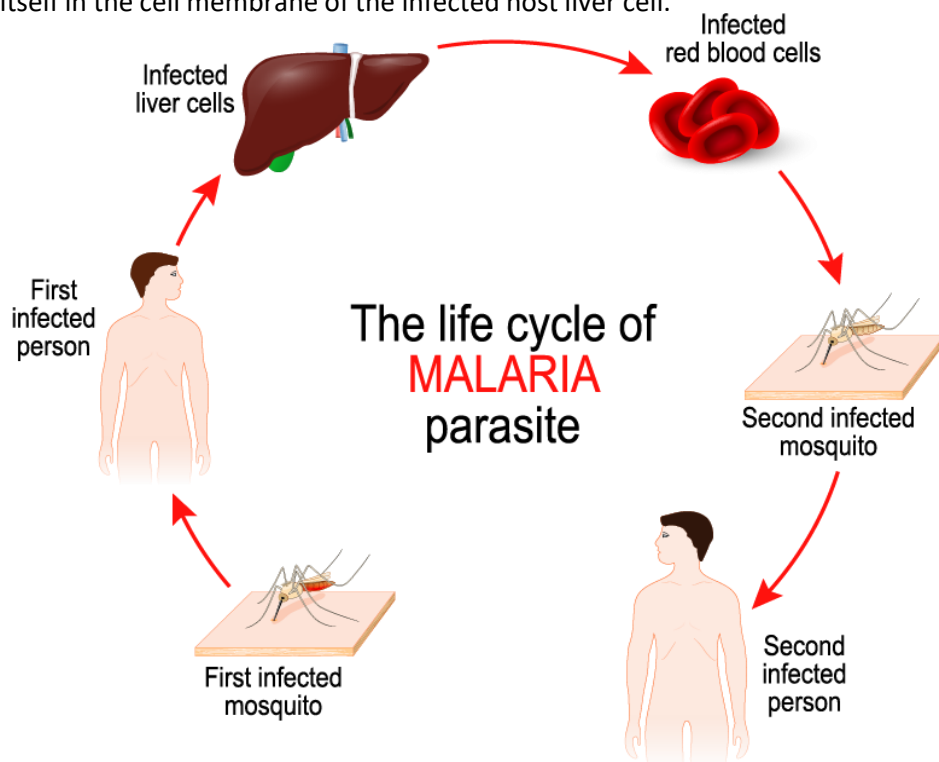
Malaria is a global infectious disease, which is a major cause of morbidity and mortality across the world. It is transmitted via the female Anopheles Mosquito. The slide shows ring form trophozoites of P. falciparum (B) in the red cell (RBC). These are usually a thin, delicate ring, about 1/5 of the diameter of the RBC. The ring can contain 1 or 2 chromatin dots and multiple rings within one RBC are commonly found in P. falciparum. Rings seen in the periphery of the RBC are known as Acrocolle or applique.

Malaria-Part 1

Malaria is a worldwide disease, it is transmitted to humans via the Anopheles Mosquito, through a bite. Malaria is found in tropical and subtropical regions of the world.

The mosquito bite introduces the parasite into the human's blood via sporozoites in the saliva. The parasites then migrate to the liver, where they mature and reproduce. This is known as the exoerythrocytic phase.

The organisms multiply in the liver in infected hepatocytes. These differentiate into thousands of merozoites, which rupture the host cell, infiltrating the blood and infecting red blood cells. This next stage is known as the erythrocytic stage of the life cycle. The parasite is able to leave the liver undetected as it envelopes itself in the cell membrane of the infected host liver cell.



Types of Malaria

There are five known types of malaria parasite: Plasmodium falciparum, Plasmodium Vivax, Plasmodium Ovale, Plasmodium Malariae and Plasmodium knowlesi. The most severe is P. falciparum and the lesser common is P. Knowlesi.

Plasmodium Falciparum: found mainly in Africa, it's the most common type of malaria parasite and is responsible for most malaria deaths worldwide, though treatment does cure the infection.

Plasmodium Vivax: mainly found in Asia and South America, this parasite causes milder symptoms, but it can stay in the liver for years which can result in symptoms reoccurring if it isn't treated properly.

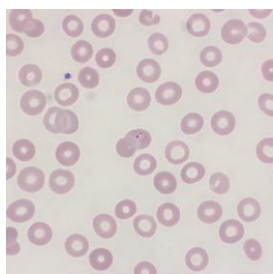
Plasmodium Ovale: uncommon and usually found in West Africa.

Plasmodium Malariae: this is quite rare and usually only found in Africa.

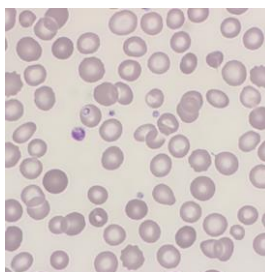
Plasmodium Knowlesi: this is **very rare** and found in parts of southeast Asia.

These each have variations which help identification, see table below:

Observation (RBC)	P. Falciparum	P. Vivax	P. Malariae	P. Ovale
Size	Not enlarged	Enlarged	Not enlarged	Enlarged
Shape	Round, sometimes crenated	Round or oval	Round	Round or oval, often fimbriated
Colour	Normal, but may become darker or may have a purple rim	Normal to pale	Normal	Normal
Stippling	Maurer's spots, appear as large red spots, loops and clefts	Schuffner's dots, appear as small red dots, numerous	Ziemann's dots, few tiny dots, rarely detected	Schuffner's dots (James's dots). Numerous small red dots
Pigment	Black or dark brown	Seen as a haze of fine golden brown granules scattered through the cytoplasm	Black or brown coarse granules, scattered	Intermediate between P. Vivax and P. Malariae
Trophozoite	Smallest, delicate, sometimes two chromatin dots, multiple rings commonly found	Relatively large, one chromatin dot, sometimes two, often two rings in one cell	Compact, one chromatin dot, single	Compact, one chromatin dot, single
Schizont	Medium size	Large	Small	Medium Size
Gametocyte	Crescent shaped	Spherical	Similar to P. Vivax, but smaller and less frequent	Like P. Vivax, but smaller



P.FALCIPARUM (shows Double dots)



Malaria

Testing for the diagnosis of malaria is confirmed by a microscopic (blood films) and no-microscopic (FBC, rapid test) tests. See next newsletter.

QSP 2.0

Available as a single use license and a site license which allows up to 50 concurrent users.

To find out more, [contact us](#).

Bibliography

<https://www.ncbi.nlm.nih.gov/books/NBK555962/>

Essential Haematology

A.V .Hoffbrand & J.E.Pettit

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

