ISSUE
28
September
2022

QSP Monthly

HORIBA Medical

NEWSLETTER OF THE QUALITY SLIDE PROGRAM

This issue

Last Month's Slides

Slide 1
See case study on right.

Slide 2
Nothing to report.

Slide 3
Nothing to report.

Slide 4
Nothing to report.

Slide 5
Nothing to report.

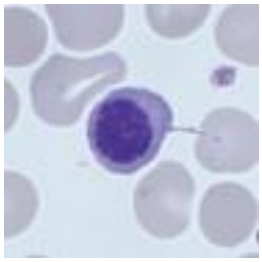
Slide 6
Nothing to report.

Monthly Digital Case Study

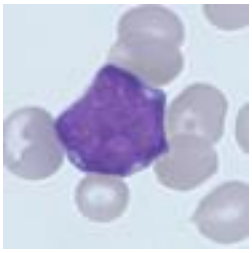
Presentation September 2022, Slide 1

FBC Results

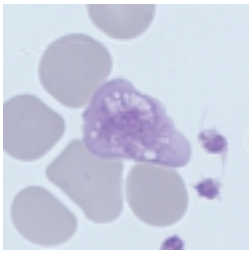
WBC 23.2 (10^3/mm3)
RBC 3.7 (10^6/mm3)
HGB 11.0 (g/dL)
HCT 34.1 (%)
MCV 9330.0 (fL)
MCH 32.1 (pg)
MCHC (g/dL)
PLT (10^3/mm3)
Neutrophils 81.6 %
Lymphocytes 9.6 %
Monocytes 2.4 %
Eosinophils 0.0 %
Basophils 0.8 %
Blasts 0.8 %



Normoblast/Erythroblast



Blast



Large Platelets

Slide review

01 September 2022

Male (70 years old).
Perioperative resuscitation unit. Anisocytosis (RDWsd at 66 fL). Microcytes(+). Macrocyte(+). Myelemia. Thrombocythemia. Presence of macroplatelets.
Expert's comments : Look for a myeloproliferative syndrome if the thrombocytosis persists.

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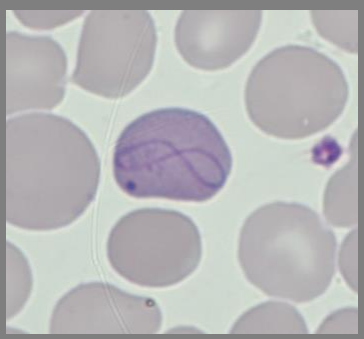
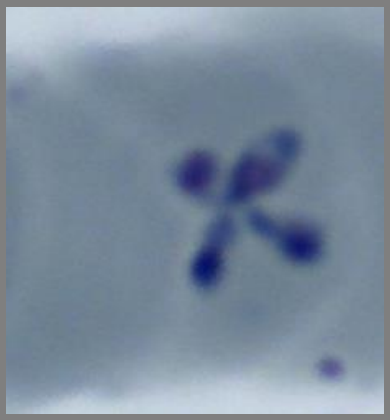
Monthly Morphology Quiz

Look closely at this red cell:



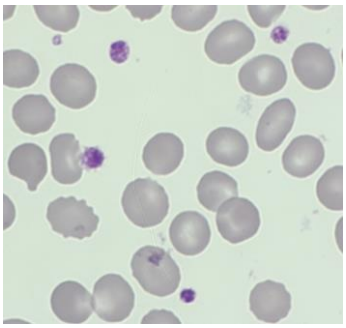
What is unusual about it and what could this indicate?

Last month's cells:



What is the parasite (Field stain)?
a) P Ovale
b) Babesia Divergens
c) P Malariae

Answer:
The blood film shows The cell is from a patient with red cell parasitised by Babesia Divergens and shows a Maltese cross form which if present is diagnostic of Babesia.



Platelet morphology in peripheral blood - An overview of laboratory findings

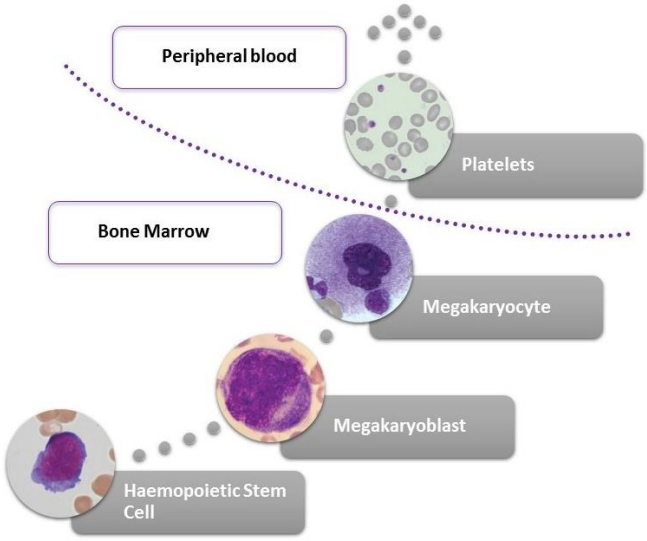
Introduction

Platelets are cell fragments circulating in the peripheral that are involved in secondary haemostasis. Aggregated platelets, platelet polymorphism, platelet satellitism and the presence of platelet precursors, megakaryocytes, in the peripheral blood are useful indicators of a variety of conditions.

Platelet production

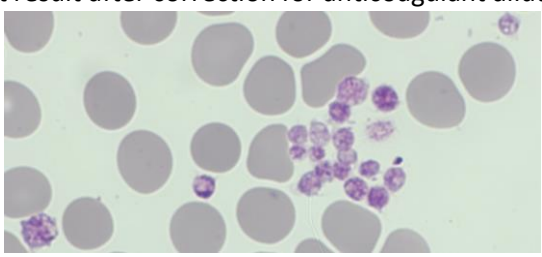
Platelets are produced in the bone marrow by fragmentation of the tips of cytoplasmic extensions of cells, called megakaryocytes. Each cell produces approximately 1000 to 5000 platelets. They are released into the blood stream through the endothelium of the vascular niches of the bone marrow.

There is a 10-day cycle for the production and release of platelets:



Platelet aggregates

Platelet aggregates are very common and can give rise to falsely low platelet counts and occasional interference with other parameters. They can be caused by slow or difficult venepuncture but in some individuals, platelets may be sensitive to EDTA anticoagulant and invariably clump when blood samples are taken. In these instances, a sample taken into tri-sodium citrate can give a correct result after correction for anticoagulant dilution factor.



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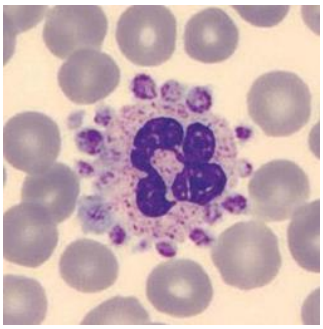
Platelet Satellitism

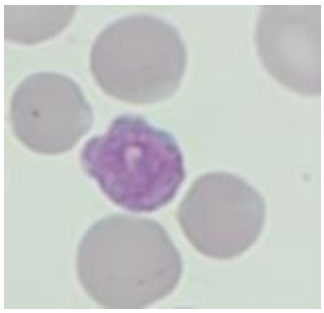
Platelet satellitism (seen right) is a rare phenomenon in EDTA blood where the platelets congregate around a white cell (usually a neutrophil).



It is generally considered to be an artifact, but it has been observed in some conditions including lymphoproliferative disorders, lupus, vasculitis and liver disease but a cause has not been established.

Giant platelets

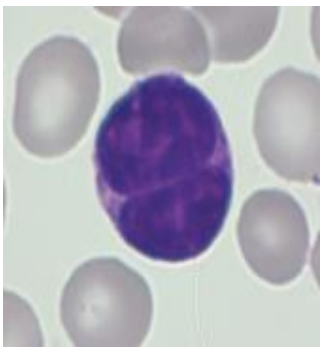
The presence of giant platelets may indicate that there is increased platelet production, as younger platelets tend to be larger. It is also associated with Idiopathic Thrombocytopaenia Purpura (ITP). In this case, the platelets may not function correctly as they are unable to stick to the injured blood-vessel wall.



Giant platelets also occur in hereditary platelets disorders, such as Bernard-Soulier Syndrome.

Megakaryocytes

Megakaryocytes are normally not seen in the peripheral blood and their presence is indicative of bone marrow, such as Myelodysplastic Symdrome, Myeloid Leukaemia, Polycythaemia Rubra Vera and myelofibrosis. Megakaryocytes in the peripheral blood are often 'bare' – ie. with minimal cytoplasm (see right).



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Hoffbrand's Essential Haematology 7th edition
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