ISSUE
47
June
2024

QSP Monthly

NEWSLETTER OF THE QUALITY SLIDE PROGRAM

HORIBA

This issue

June Slides

Slide 1
Anaemia follow up
Anisocytosis,
Hypochromasia +

Slide 2
Anemia.
Thrombocytopenia.
Leukocytosis (discreet myelemia).
Comments for the expert:
Morphological anomalies? (Some neutrophils appear hypogranulated and hyposegmented).
Aniso-poikilocytosis (+).
Presence of macro-platelets (and a naked nucleus of micromegakaryocytes?).
In short: Context of myelodysplastic syndrome?

Slide 3
Chronic Lymphocytic Leukaemia

Slide4
Anaemia

Slide 5
Neutrophiula, Hyposegmented, agranular, Monocytosis

Slide 6
See Case Study opposite

Monthly Digital Case Study Presentation
June 2024, Slide 6

FBC Results

WBC 37.9* (10^3/mm3)	Neutrophils 93.1%
RBC 3.01 (10^6/mm3)	Lymphocytes 1.0 %
HGB 10.1 (g/dL)	Monocytes 5.9%
HCT 31.0 (%)	Normoblasts/Erythroblasts 30
MCV 103.1 (fL)	
MCH 33.7 (pg)	
MCHC 32.7 (g/dL)	
PLT 511* (10^3/mm3)	
RDW-SD 78 (fL)	
RDW-CV 20 (%)	
Ret# 243 (10^3/mm3)	

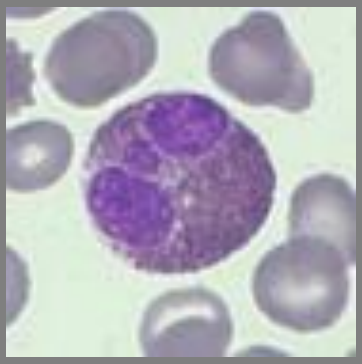
Clinical Details
Male age 69, Intensive Care Unit

Slide Information
Anaemia, Neutrophilia,
Anisocytosis +++ , Microcytosis ++, Macrocytosis ++
Echinocytes ++, Polychromasia +
Erythroblastosis (acidophilic, polychromatophilic/basophilic)
Punctuated RBC's, Reticulocytes, Presence of Howell-Jolly Bodies
NOTE: A Cabot ring is visible in the second image of the red blood cell wall

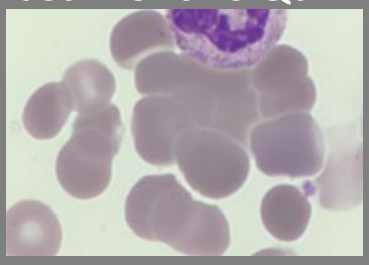
QSP Quality Slide Program 2.0

Cell Quiz

Name the cell below:



Last Month's Quiz



What red cell feature is shown above

Answer

Red Cell Auto agglutination – not to be confused with Rouleaux formation which appears more like stacked coins.

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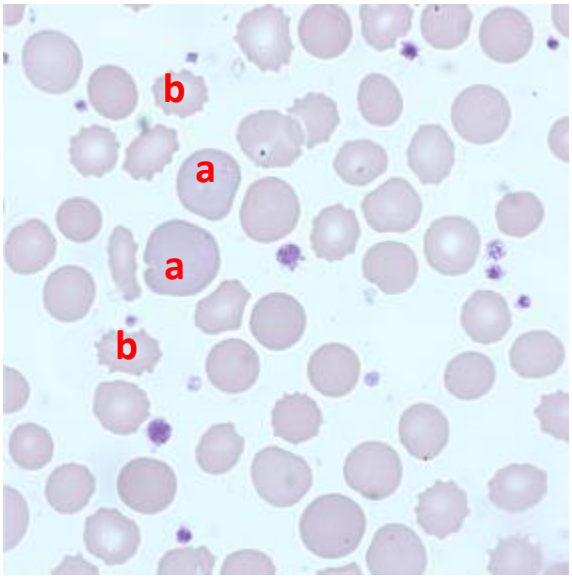
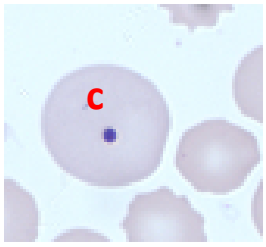
June 2024 Slide 6 Case Study

This is from a patient who is currently on Intensive Care Unit (ICU). We don't know any further details e.g. reason for admission into ICU, what if any surgical procedures had been performed, transfusion history or drug therapy. From the available data we can see that the patient is anaemic with a high MCV and has a high Reticulocyte absolute count indicating a bone marrow response. The raised MCV and Reticulocyte count would lead us to assume that there will be some polychromasia in the blood film. The fact that both the RDW-CV and RDW-SD are raised would indicate an increased degree of Anisocytosis, the shape of the RBC curve may indicate whether there is a dimorphic RBC pattern (as seen sometimes in post transfusion) or whether there is a general difference in size amongst the RBC population. The WBC and Platelet counts are high indicative of infection/post operative/trauma. Depending upon the analyser used there may be an increase in the number of NRBC or a flag indicating the possible presence of NRBC.

When focussing down on the blood film the first feature observed is the level of Anisocytosis and the presence of large Polychromatic RBC (**a**), which contain Punctate Basophilia or Basophilic Stippling. Echinocytes (b) and Nucleated Red Blood Cells appear frequently. If the analyser WBC is not corrected the WBC for the NRBC then this will need to be done as part of the manual differential. A few Howell Jolly bodies can be seen (c). Platelets are numerous and contain some large platelets.





One very unusual feature seen was the presence of a Cabot ring (**d**) inside a polychromatic RBC. The Cabot ring can just be seen as a very fine red or violet threadlike ring, Cabot rings may also adopt a figure eight like appearance and are formed from the remnants of the mitotic spindle. The presence of Cabot's rings is an indication of stressed or disordered erythropoiesis.

The general impression from the blood film is that there is disordered erythropoiesis, the underlying reason can not be elucidated without additional clinical information and further tests.