ISSUE
38
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QSP Monthly

NEWSLETTER OF THE QUALITY SLIDE PROGRAM

HORIBA Medical

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July Slides

Slide 1
Haemodialysis unit
Aniso-poikilocytosis(++).
Microcytes/Macrocytes(++).
Hypochromic(++) RBCs.
Targets RBCs(++).
Echinocytes(++).
Erythroblastosis.
Presence of macroplatelets(++)
Expert's comments:
Presence of sickle cells.

Slide 2
Neonatal Unit
Echinocytes ++
Erythroblastosis

Slide 3
Nothing to report

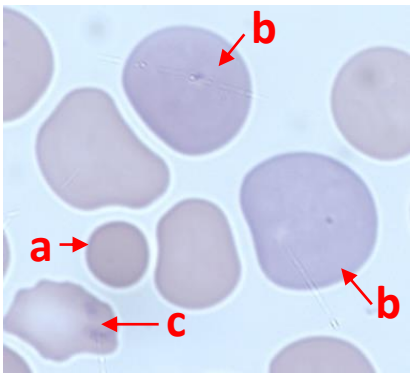
Slide 4
Emergency
Aniso-poikilocytes +
Elliptocytes +
Dacrocytes +
Expert's comment Plan an iron deficiency check up

Slide 5
Internal
Anisocytosis +
Hypochromic ++
Large Ptl ++Medicine Unit

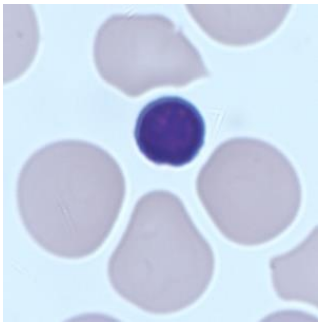
Slide 6
See case study opposite

Monthly Digital Case Study Presentation
July 2023, Slide 6

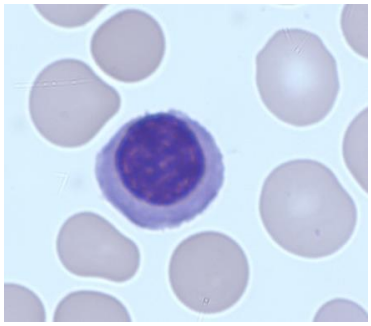
FBC Results
WBC 5.02 (10^3/mm3)
RBC 3.80 (10^6/mm3)
HGB 15.3 (g/dL)
HCT 46.4 (%)
MCV 122 (fL)
MCH 40.3 (pg)
MCHC 33.0 (g/dL)
PLT 247 (10^3/mm3)
Reticulocyte 6.8%
Neutrophils 30.4%
Lymphocytes 43.5%
Monocytes 17.4%
Eosinophils 8.7%
Total Nucleated RBC 42



Picture 1



Picture 2



Picture 3

Clinical Details
Baby, 1 day old

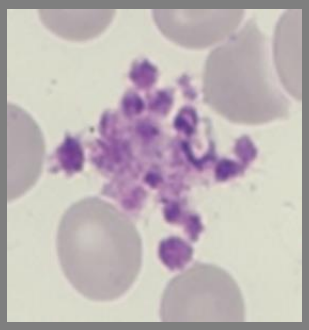
Slide Information
Anisocytosis (++)
Microcytes/Macrocytes (+)
Poikilocytosis/ Echinocytes
Erythroblastosis (different stages of maturity observed. NRBC with expelled nuclei/acidophilic NRBC/polychromatophilic NRBC/basophilic NRBC).

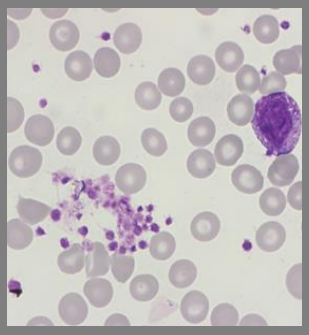
In picture 1: **a:** microcyte/microspherocyte , **b:** large polychromatic RBC
c: Echinocyte
Picture 2 and 3 show different types of NRBC.

QSP Quality Slide Program 2.0

Cell Quiz

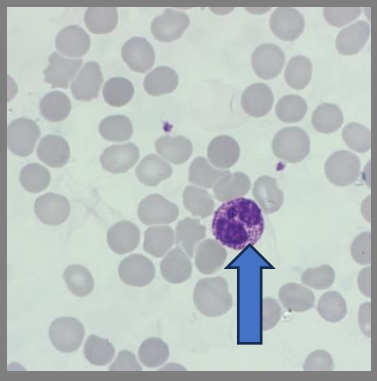
The slides below are from the same patient. What feature can be seen in both slides?





Last month's quiz:

Can you name the white cell in the slide image below?



A. Blast cell

B. Eosinophil

C. Basophil

Right answer: C

Basophils are the least common of all the white cells and are easily identified due to the presence of numerous large deeply stained granules which often obscure the bi-lobed nucleus.

Haemoglobinopathies - Part 3

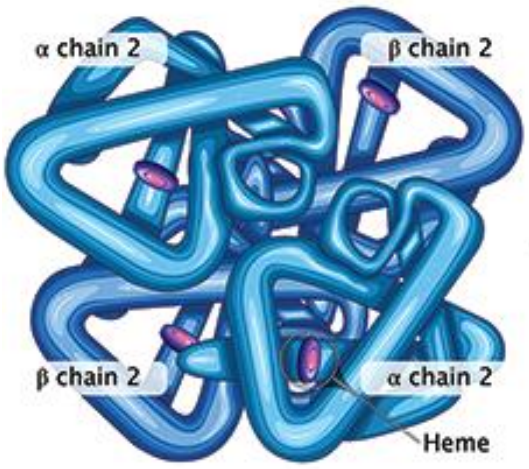
Introduction to thalassaemia

Thalassaemia is a hereditary blood disorder in which the body produces an abnormal amount of haemoglobin. Normal adult haemoglobin consists of two α and two β chains. In a healthy individual, there are produced in roughly the same amounts. Thalassaemia occurs when production in one of these chains is deficient, resulting in less than the normal amount of haemoglobin being produced. As the two main types of adult haemoglobin are A and B, thalassaemia are divided into two main categories, according to the effected globin gene: α-thalassaemia and β-thalassaemia. Each of these categories have a number of variants which differ in the severity of symptoms they produce. Beta thalassaemia major is the most severe type.

Other types include beta thalassaemia intermedia, alpha thalassaemia major, and haemoglobin H disease.

It's also possible to be a "carrier" of thalassaemia, also known as having the thalassaemia trait.

Being a beta thalassaemia carrier will not generally cause any health problems but increases the risk of having children with thalassaemia.



This disorder causes large amounts of red blood cells to be destroyed, which leads to anaemia.

Population patterns of thalassaemia

Thalassemia occurs across the globe, but is most prevalent among the following populations:

Beta Thalassaemia is most prevalent in populations that border the Mediterranean sea: Italy, Sicily, Sardinia, Greece, Lebanon, Turkey and Armenia.

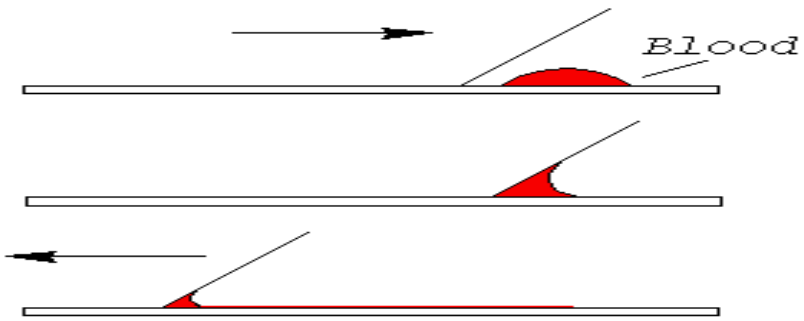
Alpha Thalassaemia is more common in the far east, such as China, India, and Thailand.

Both Alpha and Beta thalassaemia's are common in certain African populations.

Look out for our next newsletter on symptoms, testing and treatment of thalassaemia.

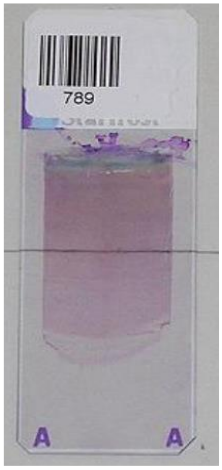
Blood Film Preparation

Paramount to the accuracy and precision of blood film morphology is a well-made and stained blood film. Traditionally blood films were made manually (wedge-spread) which appears an easy procedure but in fact, it takes a lot of practice to achieve uniform length and thickness. A drop of blood is placed near one end of the slide in a central position. The spreader (often a glass slide with a corner cut off) is placed at the front of the drop at an angle of about 25 – 30^{o} and then drawn back into the blood. Blood is allowed to run along the face of the spreader until the distribution is even. The spreader is then moved away from the drop in a smooth steady motion.



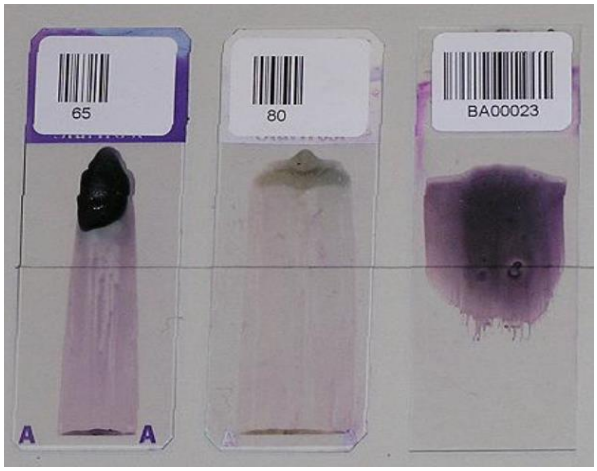
The blood film should end about 2/3 of the way along the slide and have a slightly curved leading almost straight tail (see examples below). An experienced operator will automatically take into the account the Hct of the blood sample and if the Hct is very high or low the angle and speed of the spreader to achieve a blood film of the appropriate length and density is altered.

Correctly made



Poorly made blood films

1 2 3



1) Too large drop of blood, not allowing enough time for the blood to reach both edges of the spreader
2) Too fast spreading? Low Hct, therefore the speed and angle should be amended
3) Not allowing enough time for blood to reach both edges of the spreader, speed too slow.

Making blood films is a time-consuming process and due to operator experience the quality of the blood film and therefore distribution of cells within the smear can be variable.

QSP 2.0

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