ISSUE
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QSP Monthly

HORIBA Medical

NEWSLETTER OF THE QUALITY SLIDE PROGRAM

This issue

Last Month's Slides P.1
Monthly Case Study P.1
Using QSP to Assess Parasitemia P.2
Myeloproliferative Disorders-Part 2 P.2
QSP Christmas Crossword P.3

Last Month's Slides

November 2020 Slide Summaries

Slide 1
Acute Myeloid Leukaemia

Slide 2
Normal Blood film

Slide 3
Malaria Falciparum

Slide 4
Normal Blood film

Slide 5
Normal Blood film

Slide 6
Normal Blood Film

Monthly Digital Case study

November 2020 Slide 3

Presentation

Male 38 years old, recent travel abroad, sore throat and mild fever.

FBC

WBC	5.8 (10^3/mm³)	Neutrophils	73.1 (%)
RBC	4.96 (10^6/mm³)	Lymphocytes	15.7 (%)
HGB	15.2 (g/dL)	Monocytes	6/0 (%)
HCT	43.8 (%)	Eosinophils	-
MCV	88 (fL)	Basophils	0.7 (%)
MCH	30.6 (pg)		
MCHC	34.7 (g/dL)		
PLT	209 (10^3/mm³)		

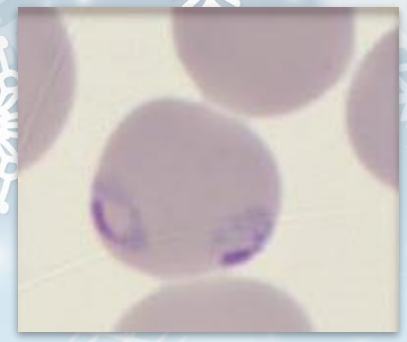


Figure 1

Figure 2

Slide review

Emergency unit consultation for fever, after return from a trip abroad. Parasitaemia estimated at 3,5% of Plasmodium (ring stage) on RBC's wall, accolé forms (Fig.2). Red cells contain multiple parasites((Fig. 1)

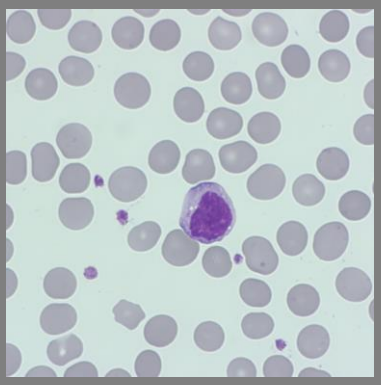
Diagnosis

Confirmation of Plasmodium Falciparum following blood film examination, rapid test kit and confirmation of malarial species from reference centre.

QSP Quality Slide Program 2.0

Monthly Morphology Quiz

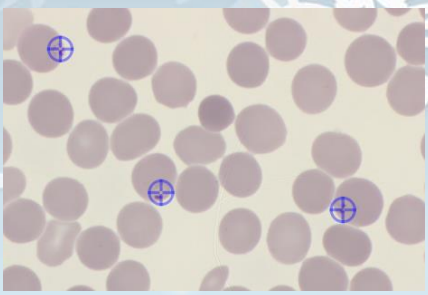
Last month's cells:



The film indicates a normal film, red blood cells are normochromic and normocytic, WBC morphology normal, with a normal distribution of platelets. The film is from a female, 43 yrs old: with the following parameters:
WBC 7.82 (10^3/mm3)
RBC 4.92 (10^6/mm3)
HGB 15.3 ((g/dL)
MCV 94 fL
PLT 193 (10^3/mm3).
Nothing abnormal detected. It is extremely valuable as a morphologist to be able to identify a normal blood film. This means that when you observe something abnormal in a blood film, you are able to notice this instantly. You may not know exactly what is going on, but you will know the film is not normal, this is an essential step when examining blood films.

Using QSP to assess parasitaemia

The number of red cells containing parasites (parasitaemia) is an important diagnostic factor and is calculated by counting the number of parasitised red cells in 1000 red cells in a thin blood film as per UK National External Quality Assessment Service (UKNEQAS). QSP can assist the laboratory in assessing user's ability to count parasitaemia.
On installing the slide package into QSP the local expert can see the parasites counted by the external expert by accessing the RBC tab and left clicking on the Parasites line, all parasites detected will be identified by a blue crosshair
To add additional parasites, point to and right click on the parasite. To remove an incorrectly identified parasite, point to the blue crosshair and right click, the crosshair will disappear. The parasite count will be adjusted accordingly.



Assistant User
Navigate to the RBC tab, and use the zoom option to magnify the cells.
Point to and click on the Parasite line in the morphology table and when a parasite is found right click on the red cell , the blue crosshairs will be displayed and the parasite will be counted in both absolute and percentage. Other red cell features e.g. schistocytes, sickle cells can be counted in the same manner.

Myeloproliferative Disorders – Part Two

Essential Thrombocytosis

This is most indolent myeloproliferative disorder and is characterised by increased platelet production (thrombocytosis) alone. Its complications include transient ischemic attacks, ocular migraine, erythromelalgia (burning pains in the hands and feet), bleeding or pseudohyperkalemia (falsely elevated blood potassium levels) due to extreme thrombocytosis, and occasionally, arterial or venous thrombosis, rarely splenomegaly. In some patients, transformation to bone marrow failure, myelofibrosis and acute leukaemia. Essential thrombocytosis is a diagnosis of exclusion because isolated thrombocytosis is frequently the first manifestation of polycythaemia vera and primary myelofibrosis as well. It is compatible with a normal life span.

Primary Myelofibrosis

This is least common and most aggressive myeloproliferative disorder. It characteristically presents with bone marrow fibrosis, splenomegaly due to extramedullary haematopoiesis, anaemia, variable changes in the platelet and leukocyte counts, constitutional symptoms due to increased inflammatory protein production and a progressive course with bone marrow failure, pulmonary hypertension and transformation to acute leukaemia.

Systemic Mastocytosis

This is a rare disorder due to mutations that allow the increased production of an uncommon blood cell, the mast cell. This is rich in proteins that destroy tissues, and other inflammatory mediators, such as histamine that cause severe allergic reactions. Expansion of mutated mast cell population results in spleen and liver enlargement, bone marrow failure, skin lesions, marrow fibrosis, osteoporosis, abdominal pain, peptic ulcer and diarrhoea, flushing of the skin and itching. Occasionally, systemic mastocytosis is complicated by another myeloproliferative disorder such as polycythaemia vera.

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Season's Greeting from the HORIBA UK Medical Team and best wishes for a happy 2021.

Scroll down for our QSP Christmas crossword.

Other News

QSP 2.0 Available now!

Options for a single PC license or site license which allows up to 10 concurrent users on multiple PC's

Bibliography

QSP December 2020

Hoffbrand's Essential Haematology 7th edition Wiley Blackwell

Crossword courtesy of EclipseCrossword

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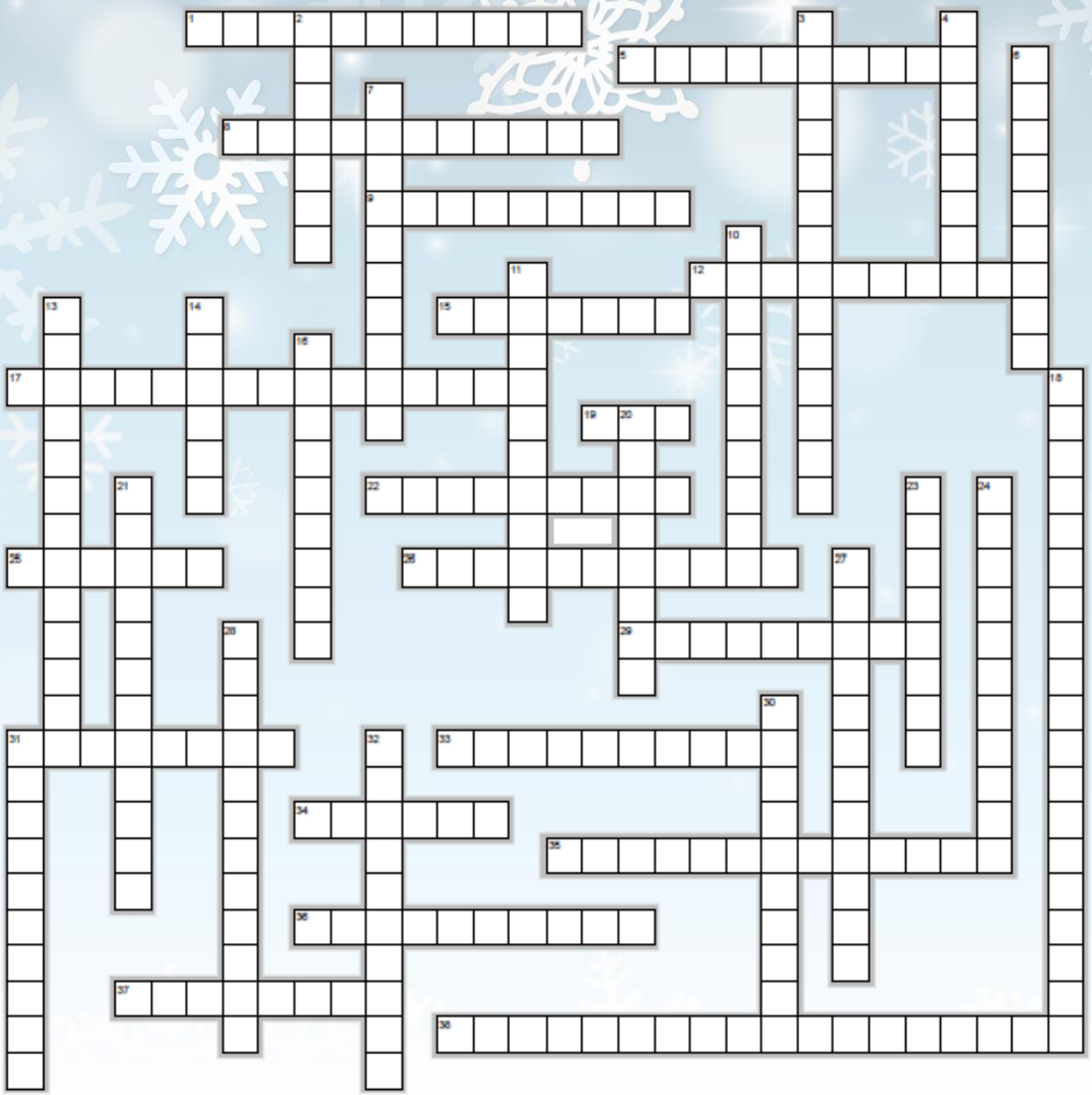
QSP Christmas crossword

Our last QSP newsletter for 2020 comes to you with a crossword. Download and print the crossword and the questions. Answers to be announced in our next newsletter. Enjoy!



***if the answer contains more than one word, there is a space in between the words**.

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QSP Christmas crossword

Clues Across

1. Term to describe blood cell production in the body (11)
5. Red cell no longer a biconcave disc (10)
8. Mature Neutrophil with only one or two lobes is called this (2 words 6-4) (11)
9. Red cells that are shaped like when you cry (2 words 4,4) (9)
12. This type of malaria is very neat and have ring forms (10)
15. What does the Q stand for in QSP (7)
17. Be careful under the mistletoe you might catch this (2 words 9,5) (15)
19. What month is in the name of a stain and the name of a disorder characterised by large platelets (3)
22. What species of insect is responsible for transmitting Malaria (9)
25. Which company produces Quality Slide Program (6)
26. You may aim for this cell (2 words 6,4) (11)
29. This lens on a microscope is the closest lens to the slide (9)
31. What white cell is the least common in normal blood (8)
33. This cell can either be T or B (10)
34. This cell may be Russian (6)
35. Platelet pre cursor (13)
36. If you are Iron deficient your red cells are (10)
37. What cell has a normal volume of 9 -12 fl (8)
38. Rare hereditary disease where the red cells may look like those from burn patients (18)

Clues Down

2. This disorder can give background stain on the blood film (7)
3. Word to describe the changes in red cell shape (14)
4. You use this chamber to count cells manually (8)
6. what festive period gives its name to a coagulation disorder (9)
7. What feature can be seen in Neutrophils in infection (2 words 4,4) (10)
10. Not a bald cell (10)
11. A monocyte becomes one of these cells when it enters the tissue (10)
13. Immature red cells are characterised by showing this colour change (13)
14. Another name for smear cells (6)
16. Neutrophils from Females may show this appendage (9)
18. A "happy" red cell inclusion 3 words (6,5,6) (19)
20. A needle like structure found in blast cells (8)
21. These red cell inclusion may be produced by bake bean manufacturers (2 words 5,6) (12)
23. Red cells stacked like pennies (8)
24. A "mouthy" cell (11)
27. To describe difference in the size of red cells (12)
28. Red cells you need a supravital stain to manually count (12)
30. Most commonly found white cell in normal patients (10)
31. What you might find on a castle but also describes the technique of navigating through the slide when performing a differential (10)
32. Term to describe red cells larger than normal and seen in B12 or Folate deficiency (10)