



PRACTICAL BLOOD PARASITES

OBJECTIVES:

No objectives !

Done by: Joharah Almubrad



Very important

Additional information

Male doctor's notes

Female doctor's notes



COMMON METHODS FOR DIAGNOSIS OF MALARIA:

1. Light microscopy
2. Rapid diagnostic tests (RDTs):

Formats of the RDT:

- Plastic cassette
- Card
- Dipstick
- Hybrid cassette dipstick

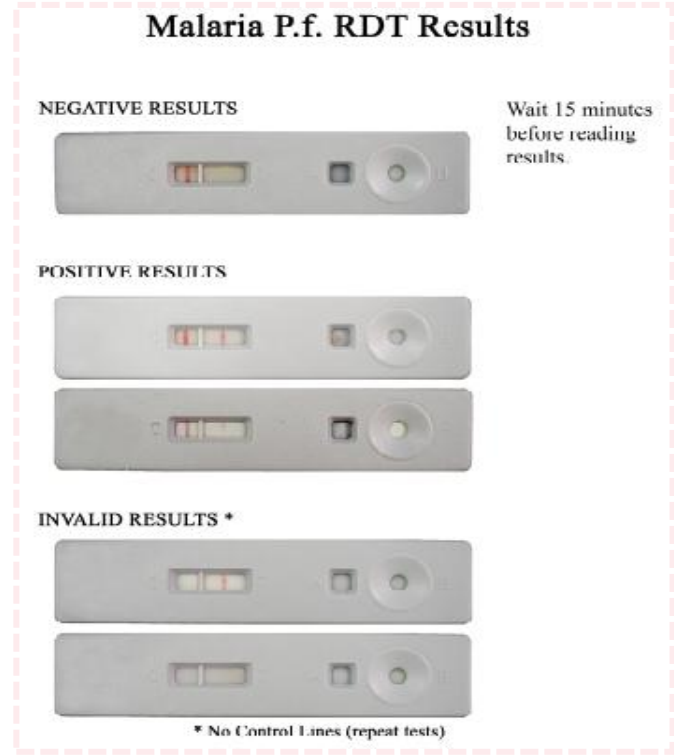
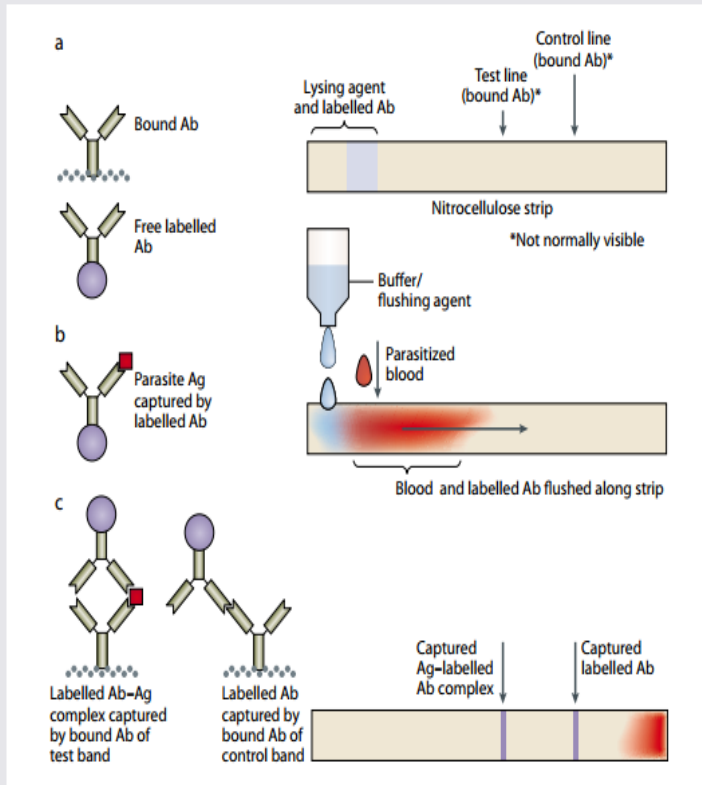


Figure 1: Mode of action of antigen-detecting malaria RDTs



Mode of action of common malaria RDT format: (a) Dye-labeled antibody (Ab), specific for target antigen, is present on the lower end of the nitrocellulose strip or in a well provided with the strip. Antibody, also specific for the target antigen, is bound to the strip in a thin (test) line, and either antibody specific for the labeled antibody, or antigen, is bound at the control line. (b) Blood and buffer, which have been placed on the strip or in the well, are mixed with the labeled antibody and are drawn up the strip across the lines of bound antibody. (c) If antigen is present, some labeled antibody will be trapped on the test line. Other labeled antibody is trapped on the control line.

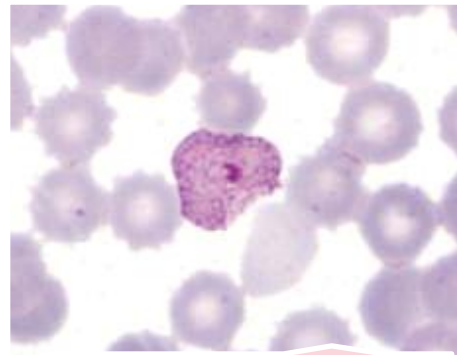
This picture not from the slides but its more clear one



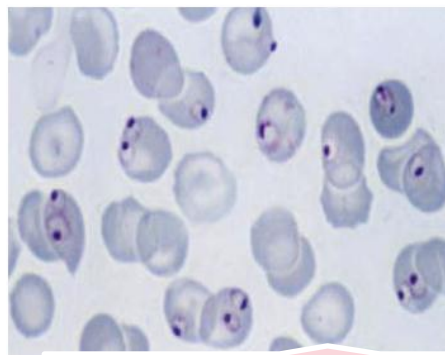
LIGHT MICROSCOPY

Three developmental stages of malaria seen in blood films:

1. Trophozoite
2. Schizont
3. Gametocyte



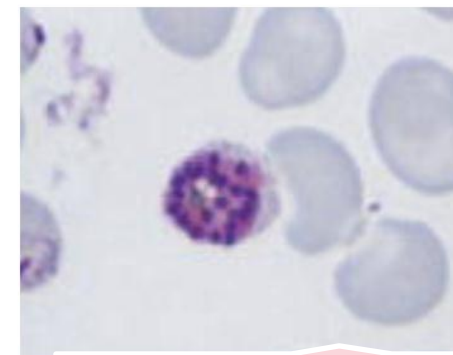
Trophozoite



Trophozoite

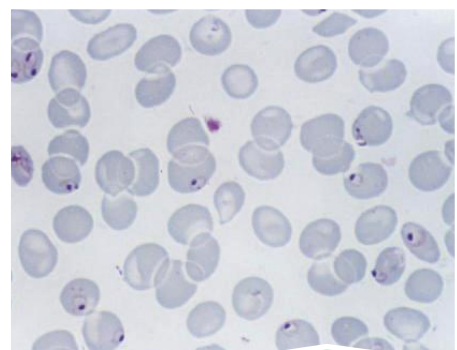


Gametocyte

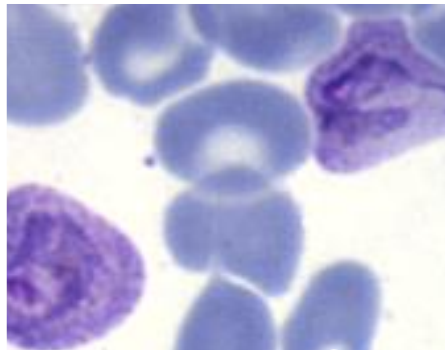


Schizont

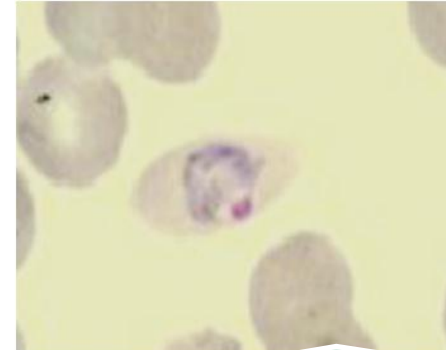
Species of malaria is identified by its characteristic microscopic appearance:



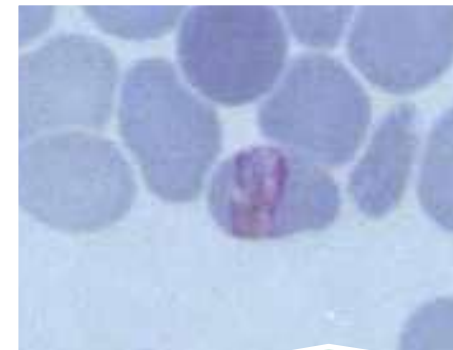
Plasmodium falciparum



Plasmodium vivax



Plasmodium ovale

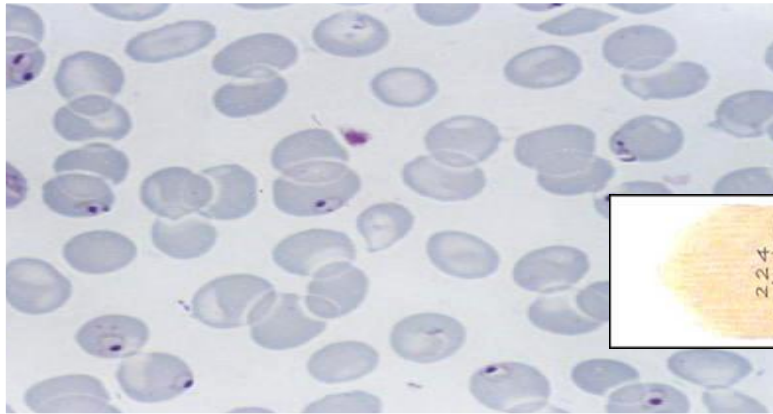


Plasmodium malariae

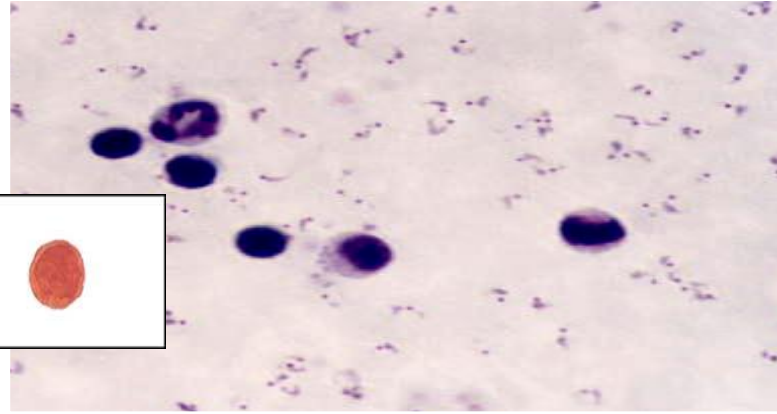
PLASMODIUM FALCIPARUM

- Trophozoite stage

In thin smear

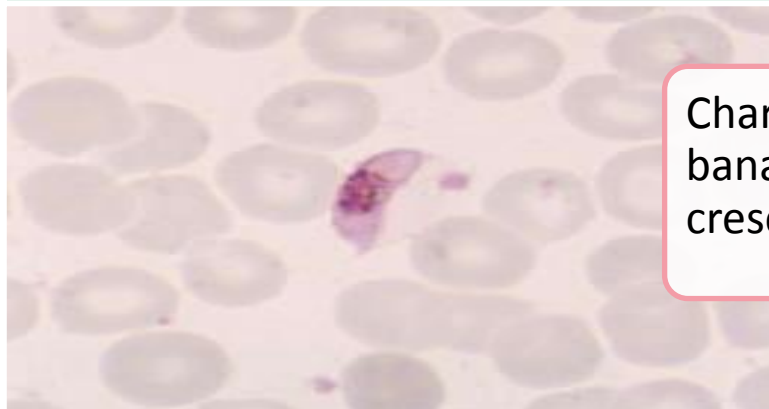


in thick smear



- Gametocyte stage in thin smear

Gametocyte stage in thin smear



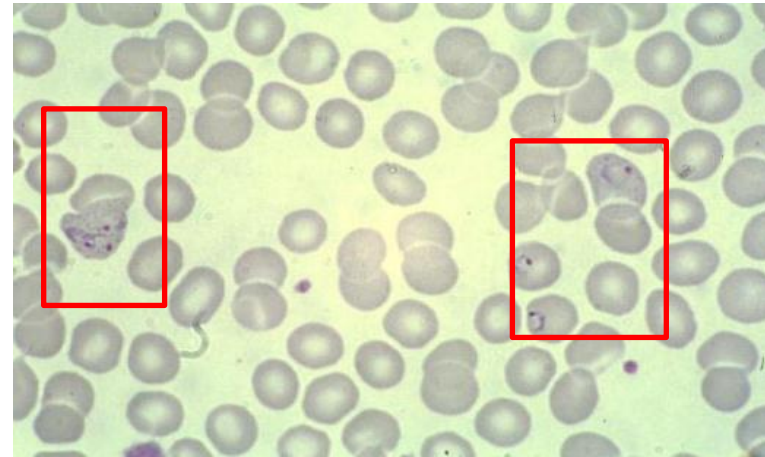
Characteristic:
banana-shaped or
crescent-shaped

CASE 1:

A 25 year-old male from india, who **came 3 months ago** was admitted in KKUH with a history of severe anaemia and intermittent high grade fever for the last two months not responding to antibiotics.

What is the diagnosis?

Diagnosis: malaria or Plasmodium vivax



CASE 2:

A businessman who makes frequent trips to thailand , presents with intermittent fever .

What is the diagnosis?

Diagnosis: malaria or Plasmodium vivax



For your knowledge only: As the name indicates plasmodium ovale infected RBC is oval in shape . plasmodium vivax Infected red cells usually enlarged, Irregular (Amoeboid)

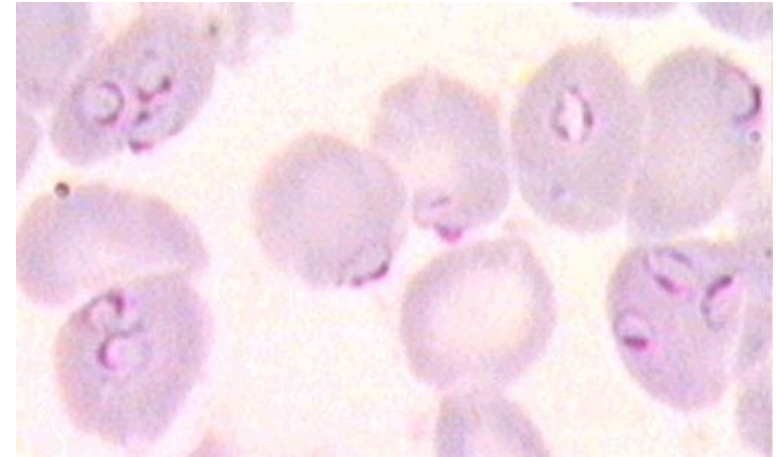


CASE 3:

A student in KSU who **returned three weeks from** vacation in africa , he developed intermittent fever last week and lost consciousness a short time ago.

What is the diagnosis?

Diagnosis: malaria or plasmodium falciparum

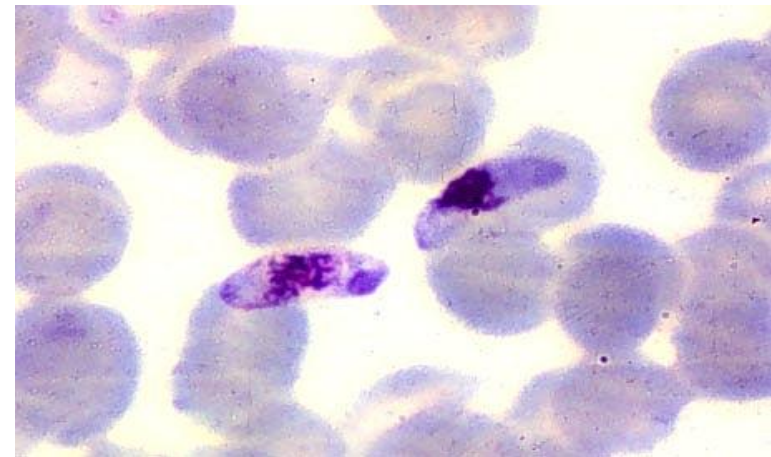


CASE 4:

The patient was then treated with schizontocidal antimalarial drugs, a follow-up blood film is shown .

Are there any parasites? What stage ?

Plasmodium flaciparum , gametocyte stage

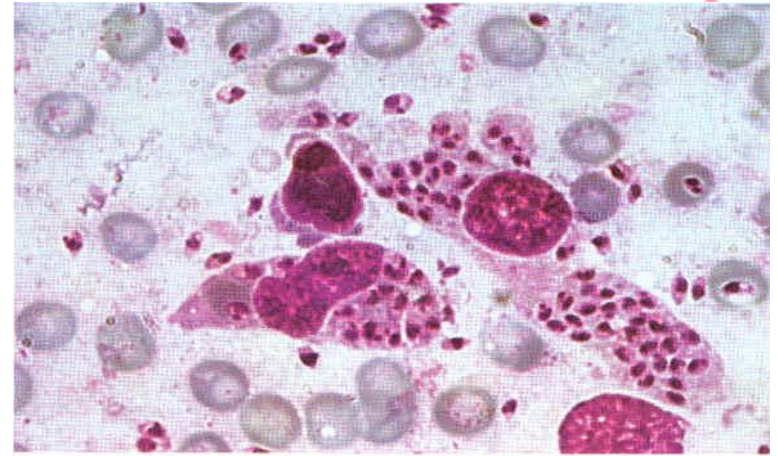


CASE 5:

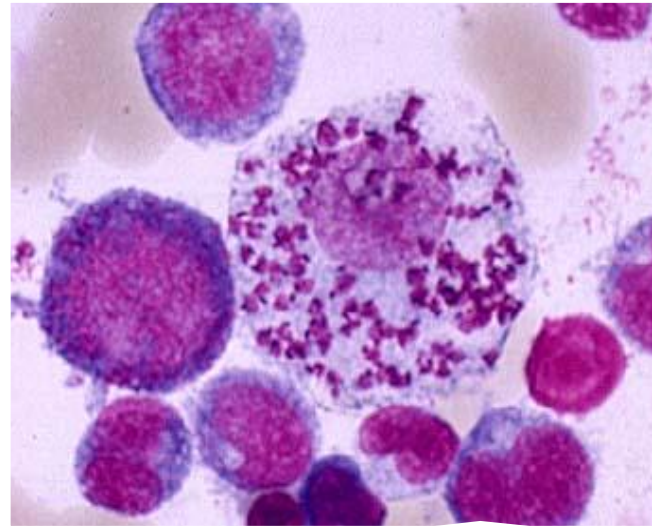
A 7 year old child presented with anemia , hepatospenomegaly and fever .Not responding to antimalarials and antibiotics . bone marrow smear is shown

Are there any parasites? What stage ?

Leishmania , amastigote stage



Bone marrow aspiration



Bone marrow amastigotes

FOR ANY SUGGESTIONS AND PROBLEMS PLEASE CONTACT:

MICROBIOLOGY TEAM LEADERS
KHALED ALOSAIMI AND JOHARAH ALMUBRAD
MICROBIOLOGY432@GMAIL.COM

