Platelet Film Review

Adult and paediatric samples

FBE analysis and slide making

- FBE aspiration is 88ul total
- WBC 17ul each mode
- Retics/PLT-0 or PLT-F 5ul
- RBC/PLT-I/HgB 4ul

- Platelet clumps and/or fibrin strands without co-involvement are less likely to significantly alter the fbe results.
  - This can be managed within the blood film commenting

- Sample clots are more likely to significantly alter fbe results due to the 4ul sample volume
  - Samples should be recollected in the first instance
  - If subsequent samples are clotted
    - consult with a senior scientist or haematologist on-call

Clot checking and film making

- Wooden Orange stick x 2 for FBE checks
  - Check all paediatric samples before running for FBE.
  - 2 wooden sticks are more likely to grab a slippery clot
  - Sticks can be pulled apart to demonstrate fibrin strands
    or wiped across a tissue to visualise fibrin stands
  - Clots may be macroscopic or microscopic
  - Report clot check as “NCD” if no clots or fibrin stands visualised
  - Do not release FBE if platelet clumping flag is 300 - check the diff quick/blood film first

- Fibrin / clots adhere to orange sticks so these should not be used to transfer blood to a slide for making a blood film

- Use a capillary tube to transfer blood to the slide when making a blood film manually

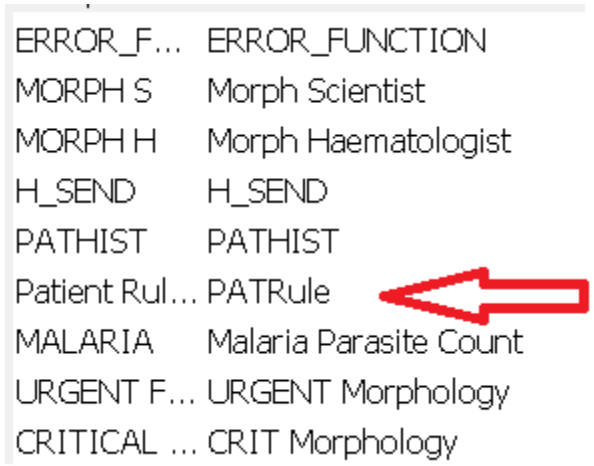
- SP50 Automated Blood film volume = 3.5ul

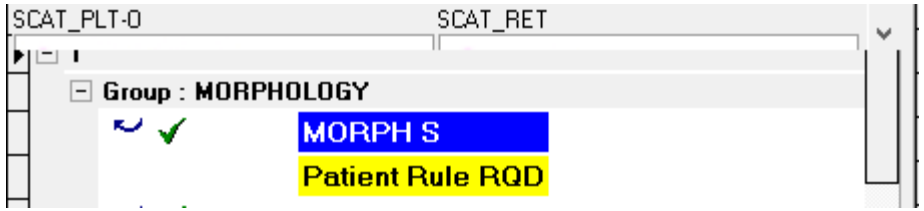
Final FBE reporting

- The morphologist is the scientist taking final responsibility for releasing the entire FBE

- If the FBE has been reported and subsequently needs to be withdrawn
  - *A senior scientist or haematologist should be consulted*
  - *An OILSLIC should be completed*
  - *Appropriate investigation/education should follow*

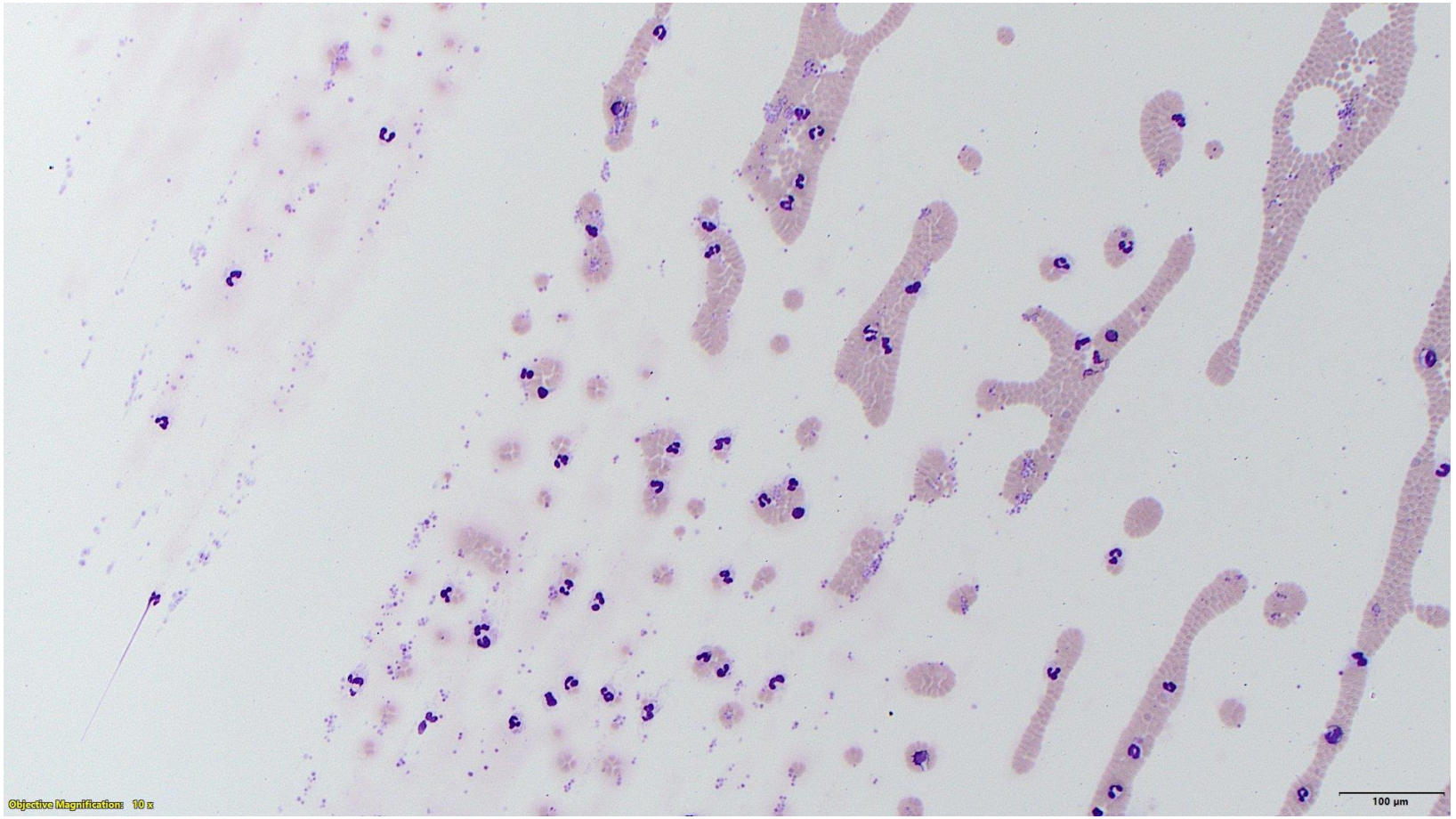
For persistent platelet issues please add “Patient Rule”.



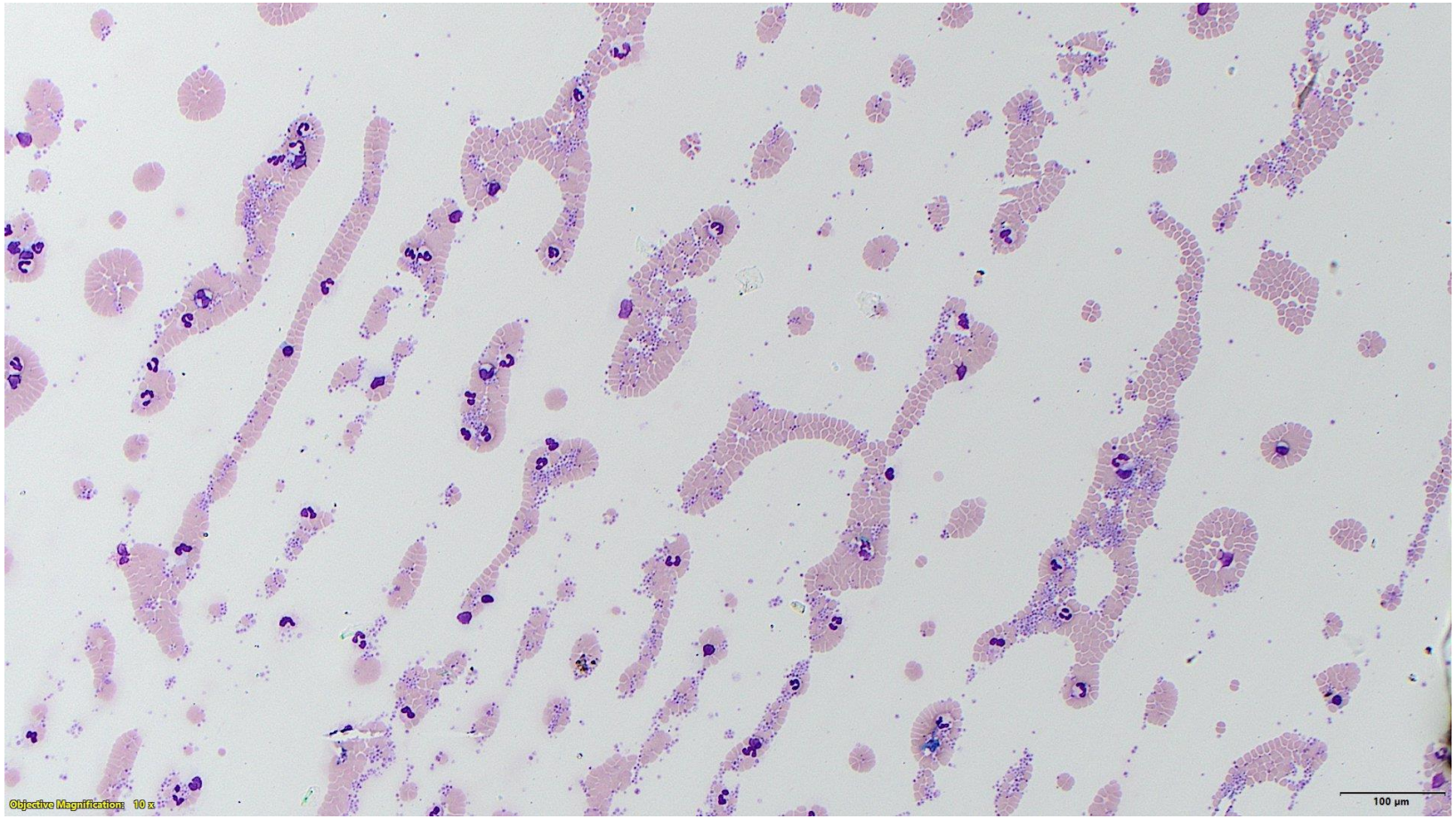


This will appear under MORPH S as Patient Rule Required and a senior will review the “Needs a rule” filter and action appropriately

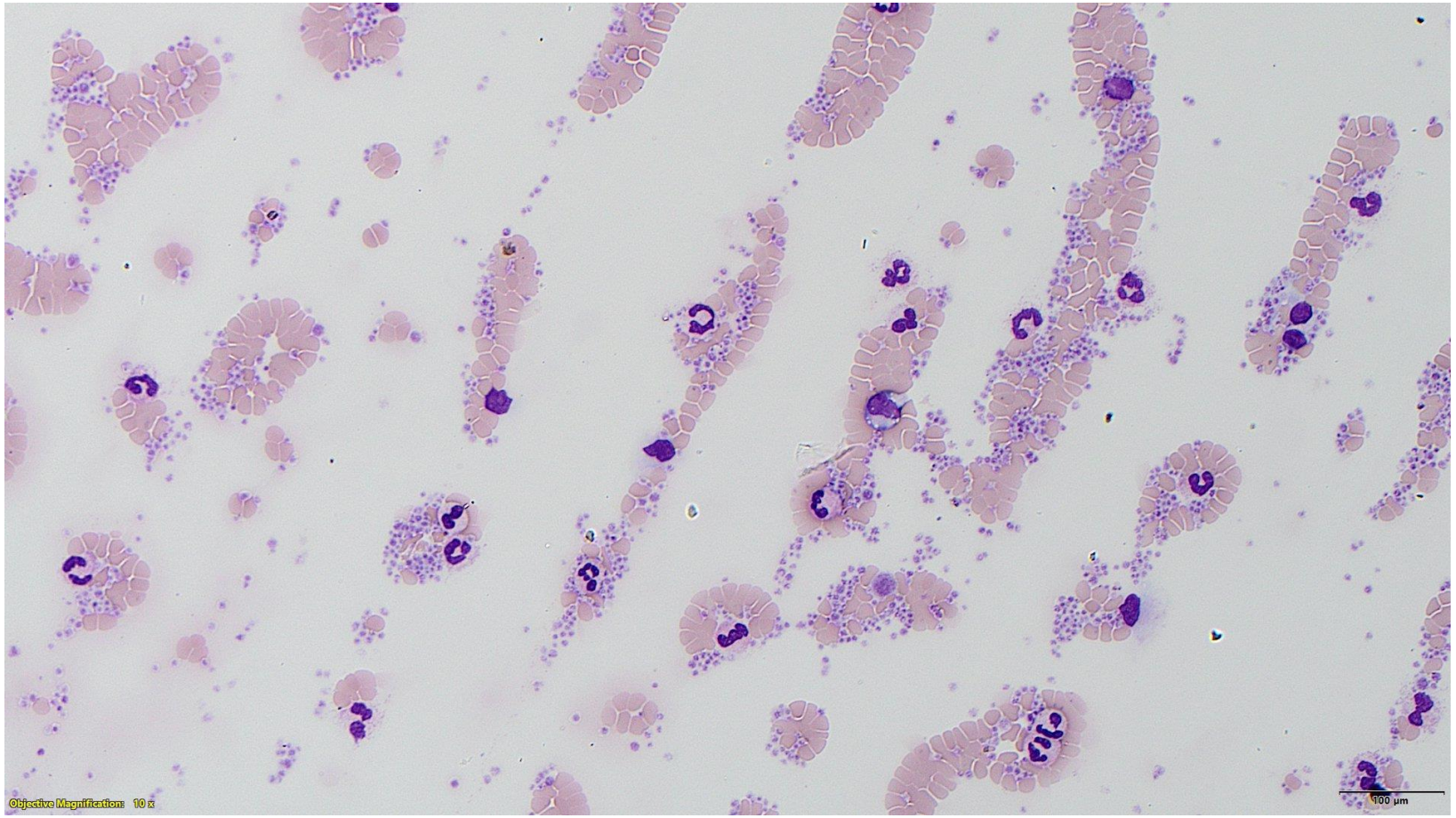
Platelet clumping – No fibrin present



Platelet clumping



Platelet clumping



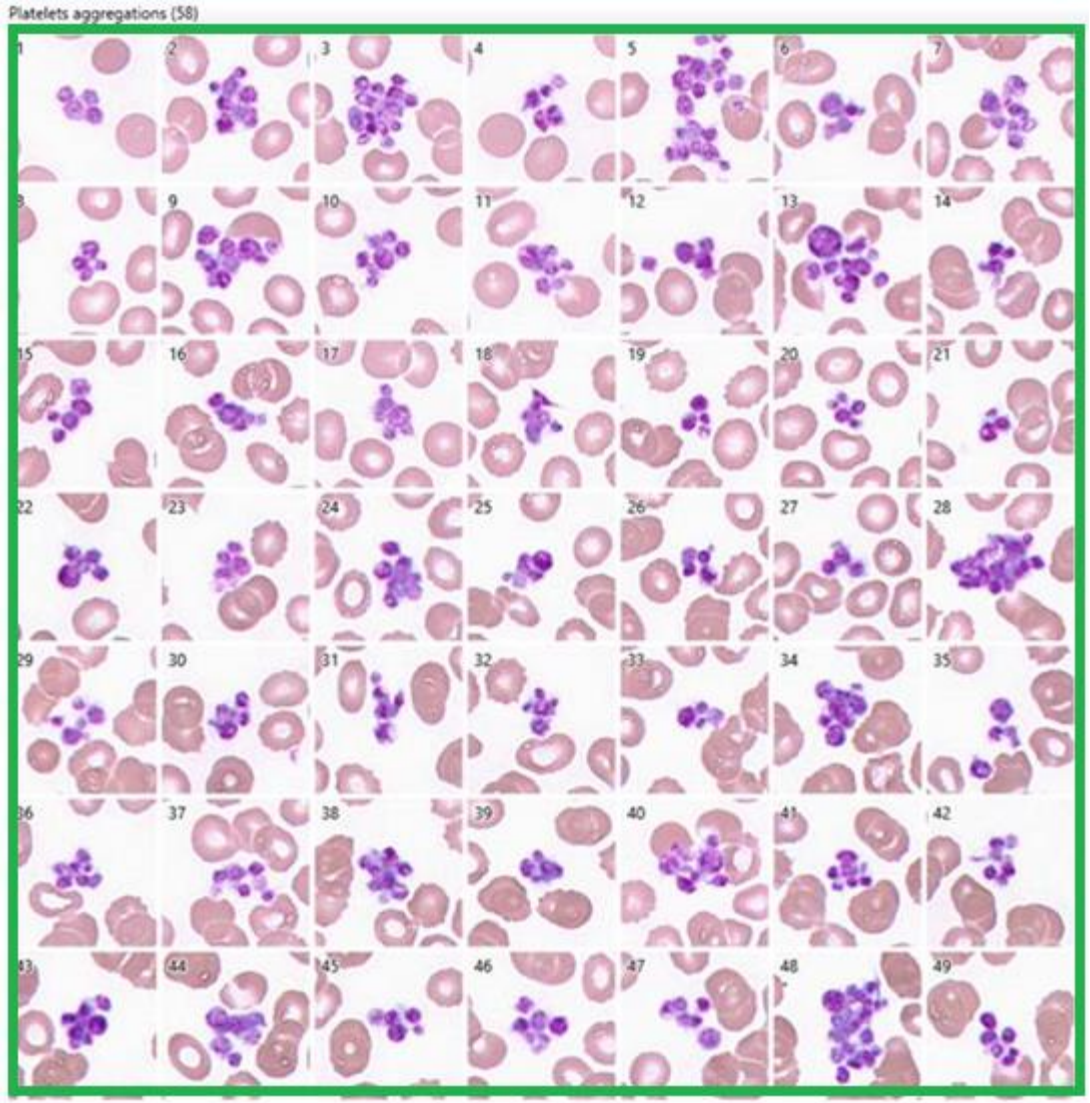
Platelet Clumps

Report film check as “clumped”
Report platelets if occasional clumps or as “clumped” if more than occasional.

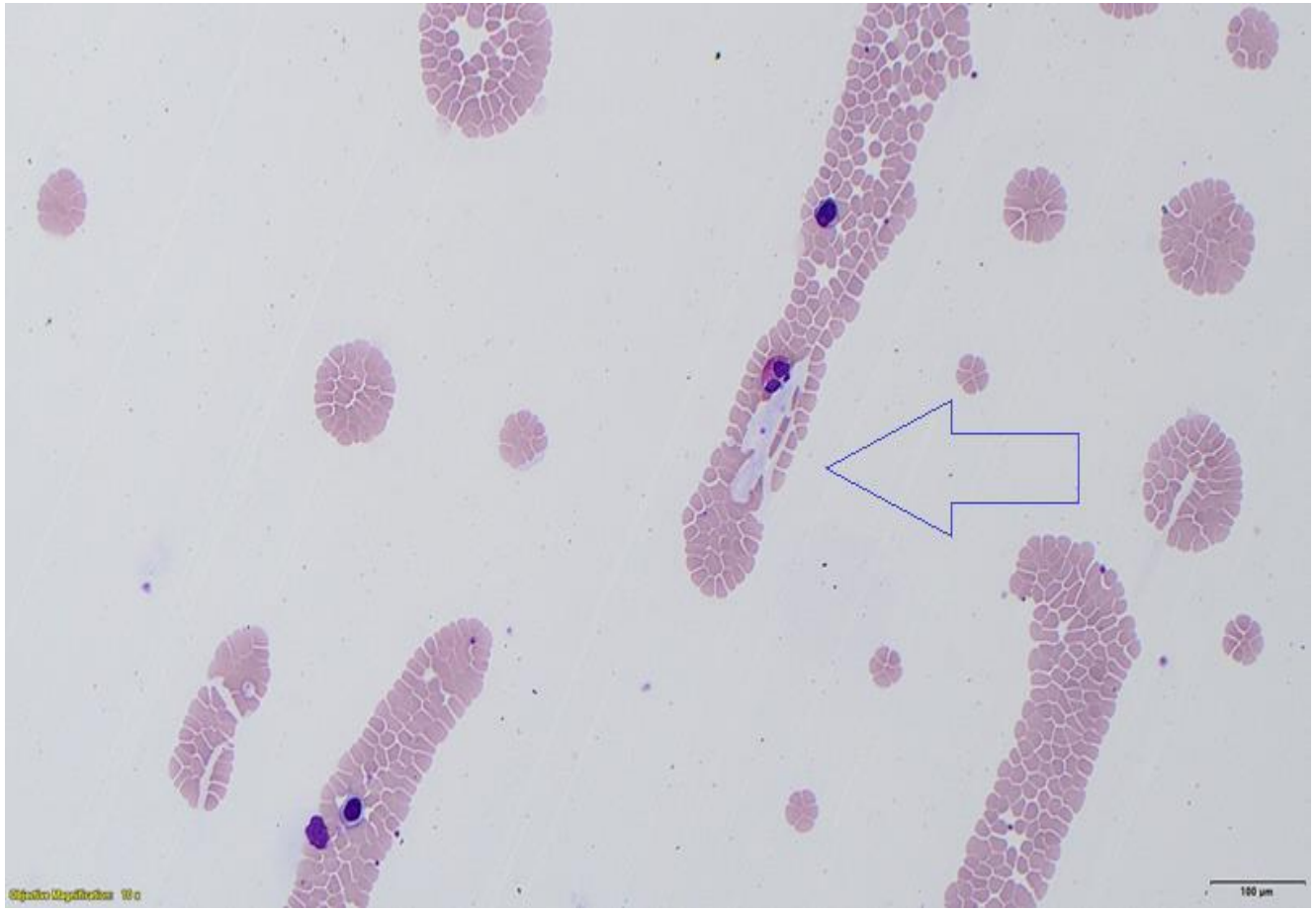
Comment on platelets as

- Occasional platelet clumps seen. Platelet count may be slightly higher than reported.
- Platelets clumped on blood film. Platelet count appears markedly reduced in number.
- Platelets clumped on blood film. Platelet count appears mildly reduced in number.
- Platelets clumped on blood film. Platelet count appears normal in number.
- Platelets clumped on blood film. Platelet count appears mildly increased in number.
- Platelets clumped on blood film. Platelet count appears markedly increased in number.

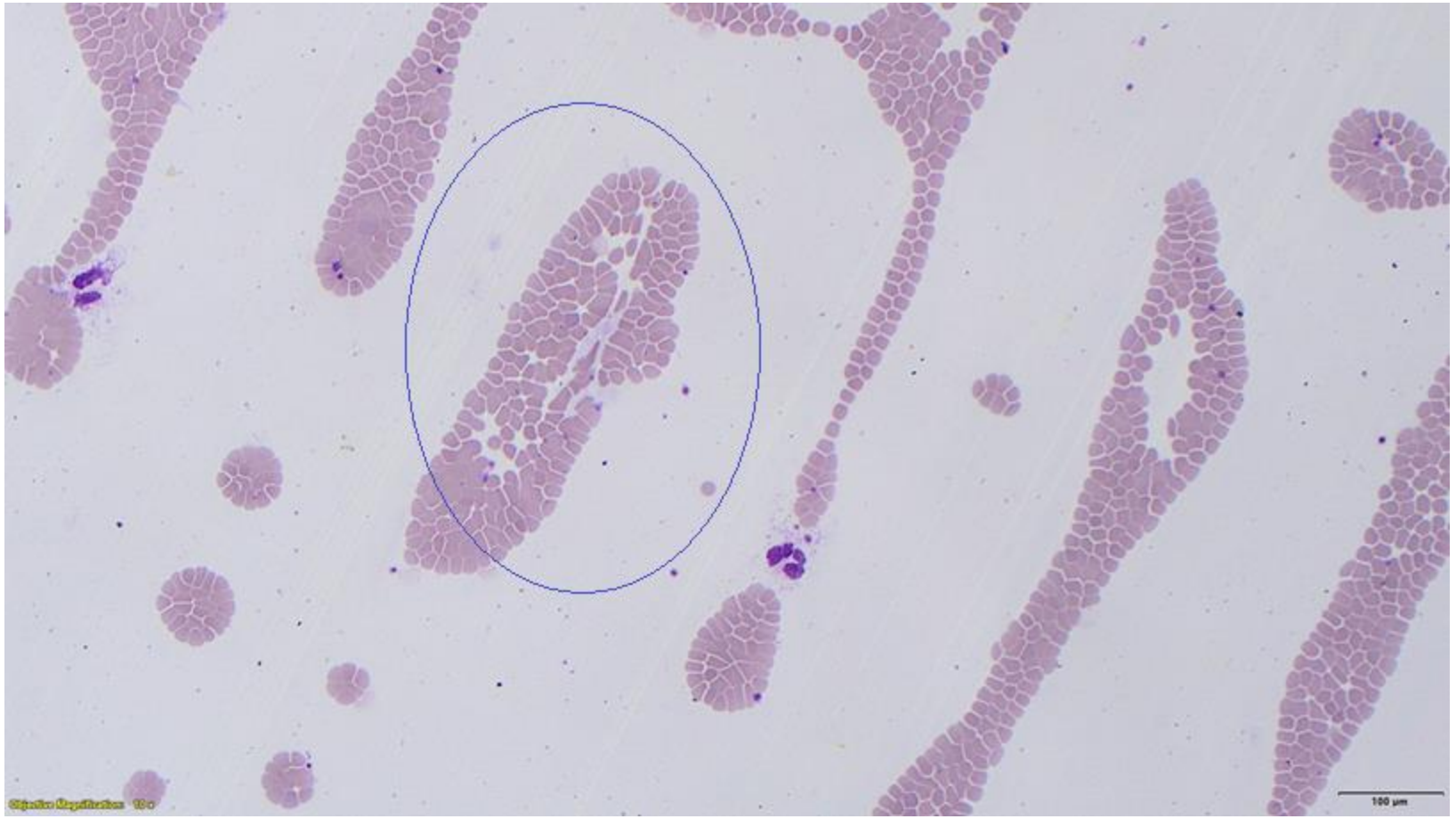
- If persistent suggest citrate tube *(37°C has been removed)*
  - *Please request a PLT-CIT test and FBE. Collect and send a citrate and EDTA sample for correct platelet enumeration. Liaise with the Haematology department (ext 62468).*



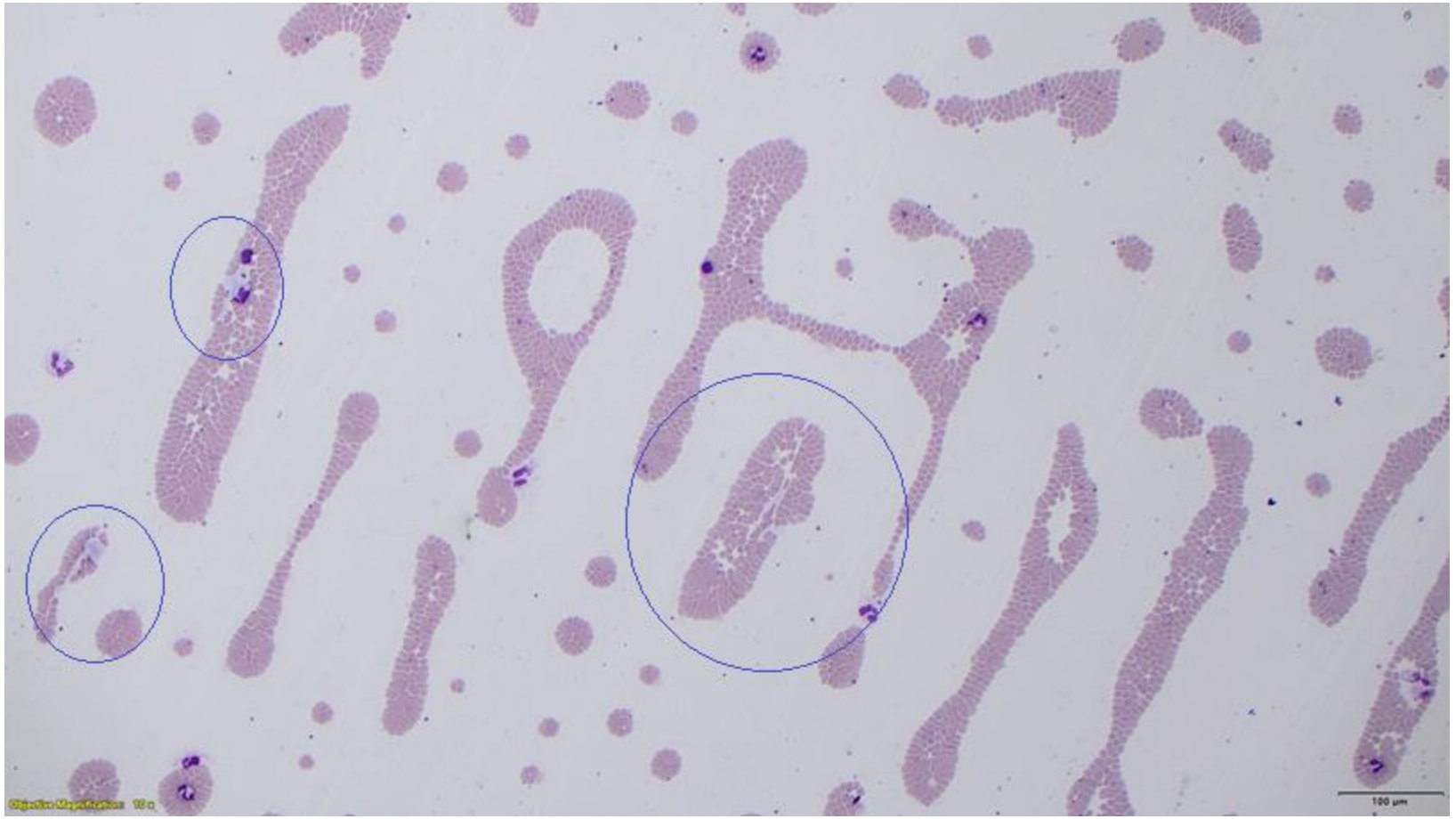
Fibrin



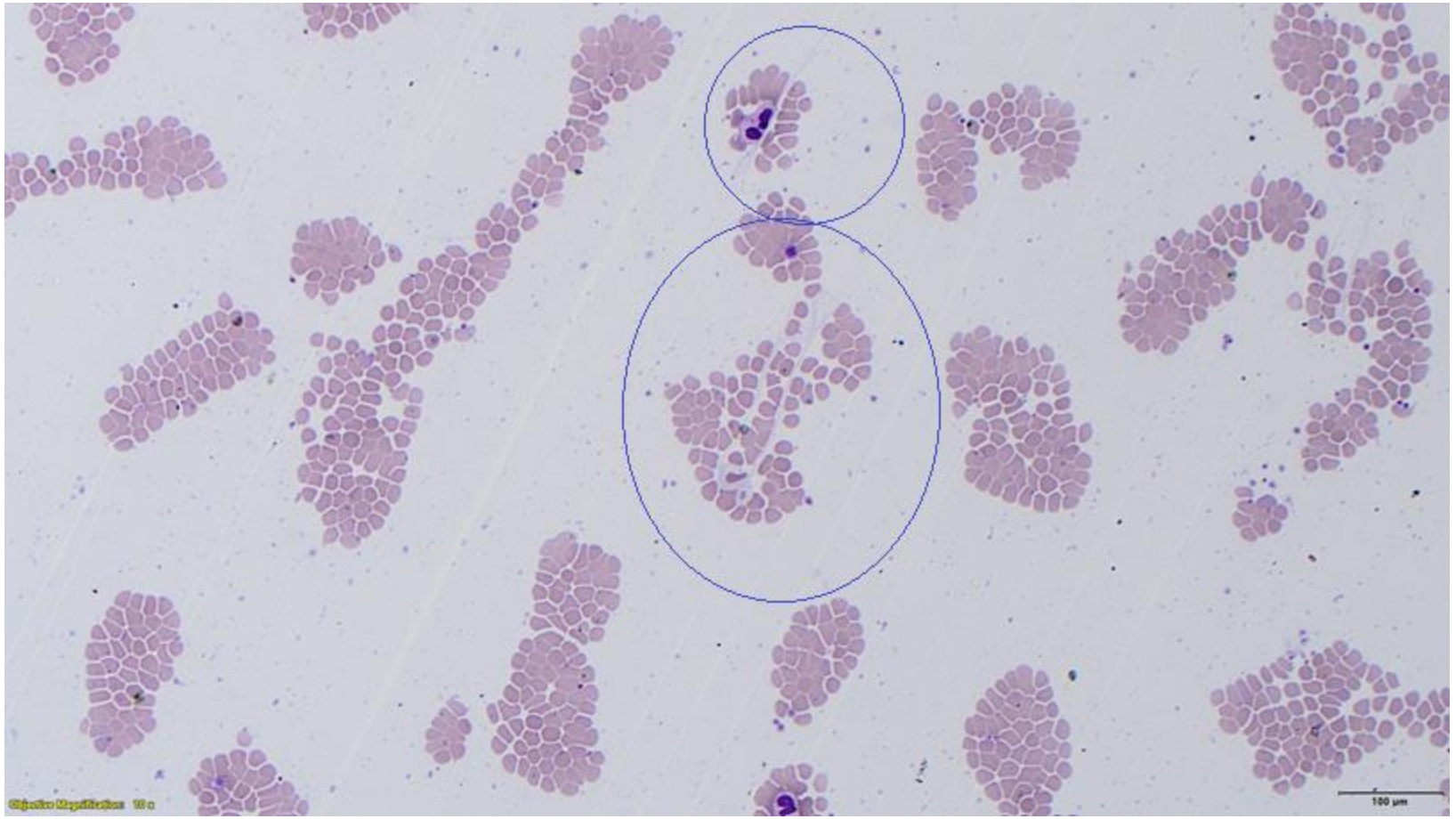
Fibrin



Fibrin



Fibrin



Fibrin

Fibrin strands present with no platelet involvement.

Release platelet count if film estimate matches analyser count

Report “film check” as fibrin

In morphology comment include the comment

Fibrin strands present. Results may be spurious. Query difficult or compromised collection. Suggest repeat FBE for confirmation.

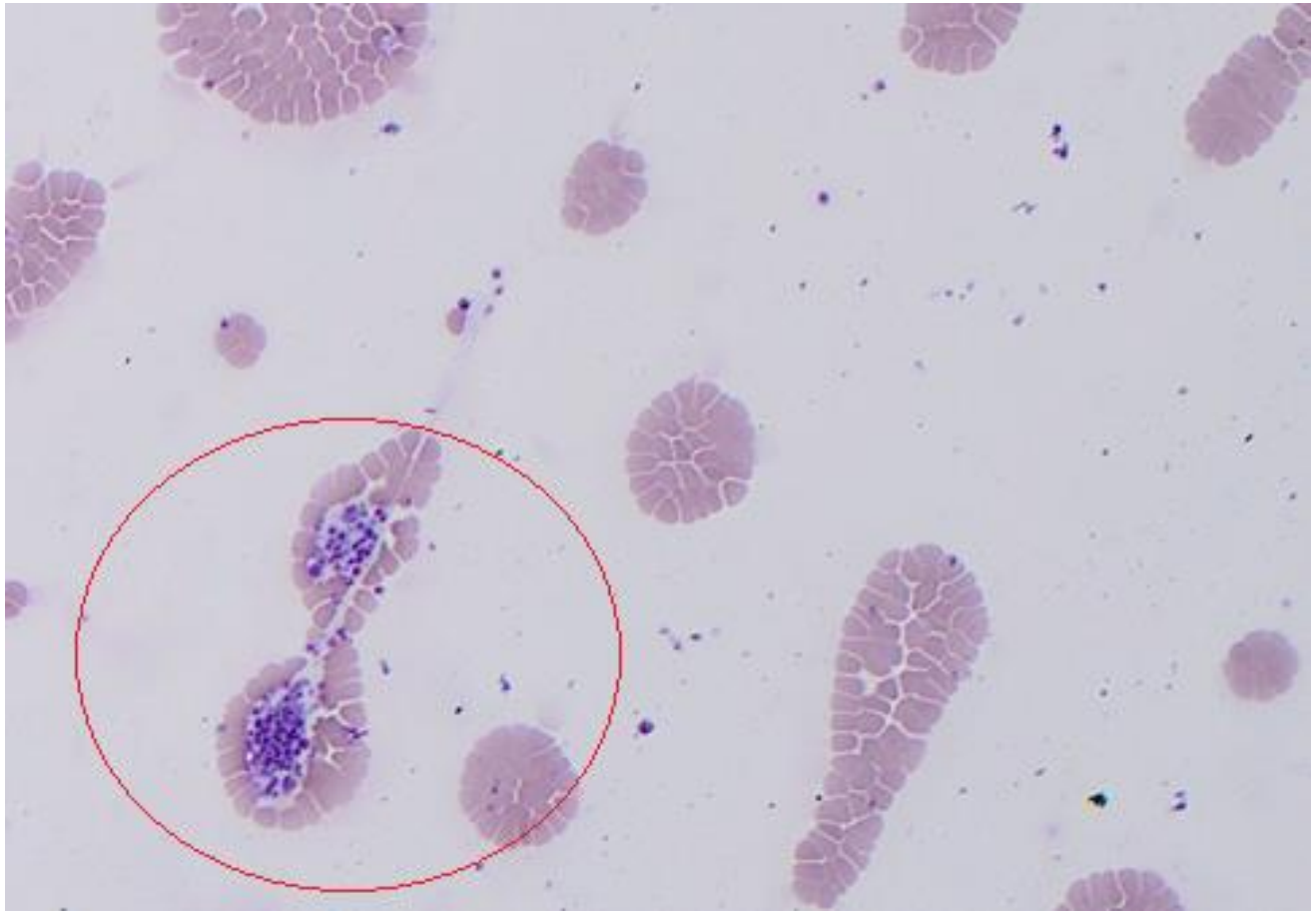
Fibrin formation may develop over time as a traumatic collection may generate a small amount of thrombin which slowly activates fibrinogen.

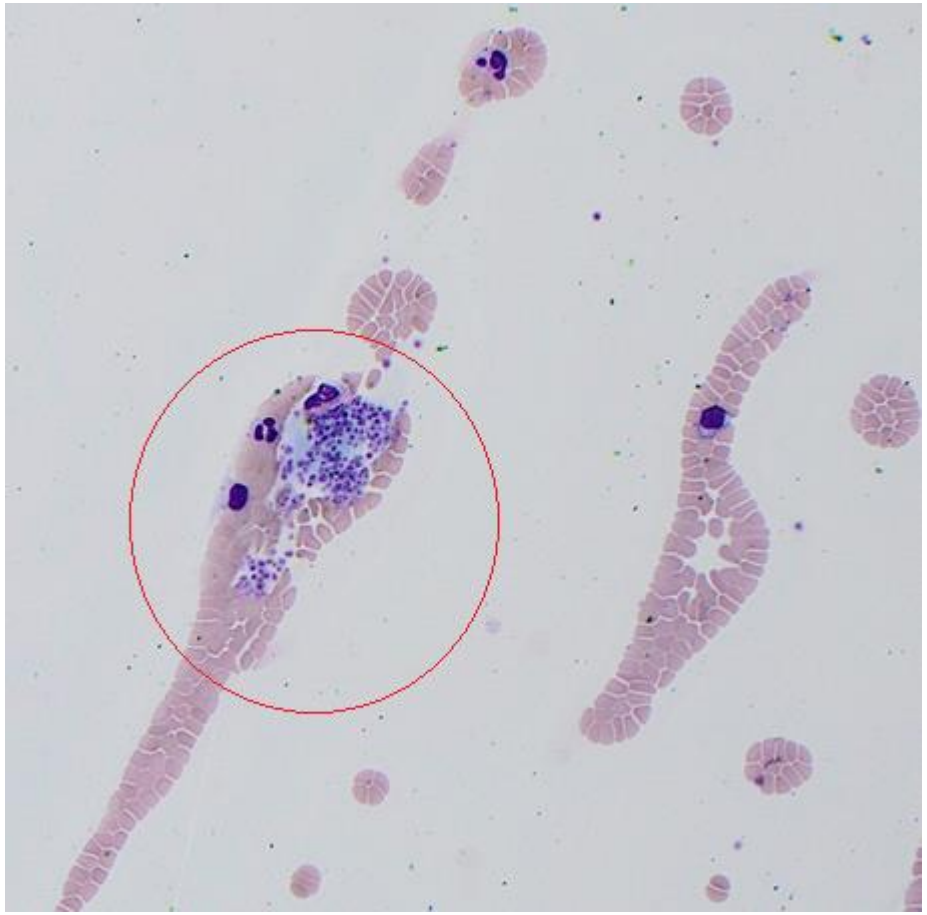
Slides should be made using capillary tubes and not orange sticks

Diff quick slides should be assessed along side any subsequent slide made when reporting morphology.

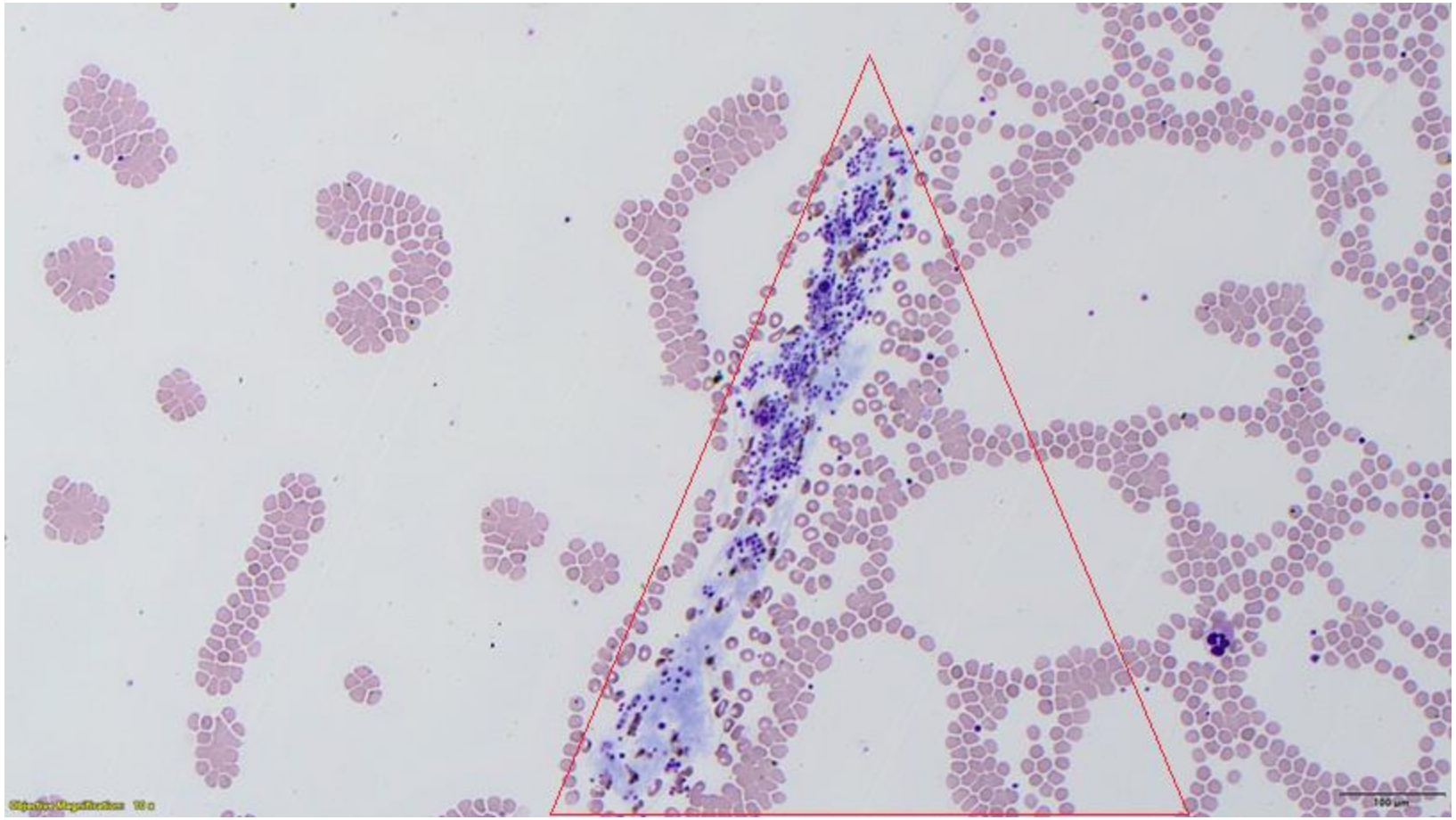
Check concurrent Coagulation samples for clots

Clots

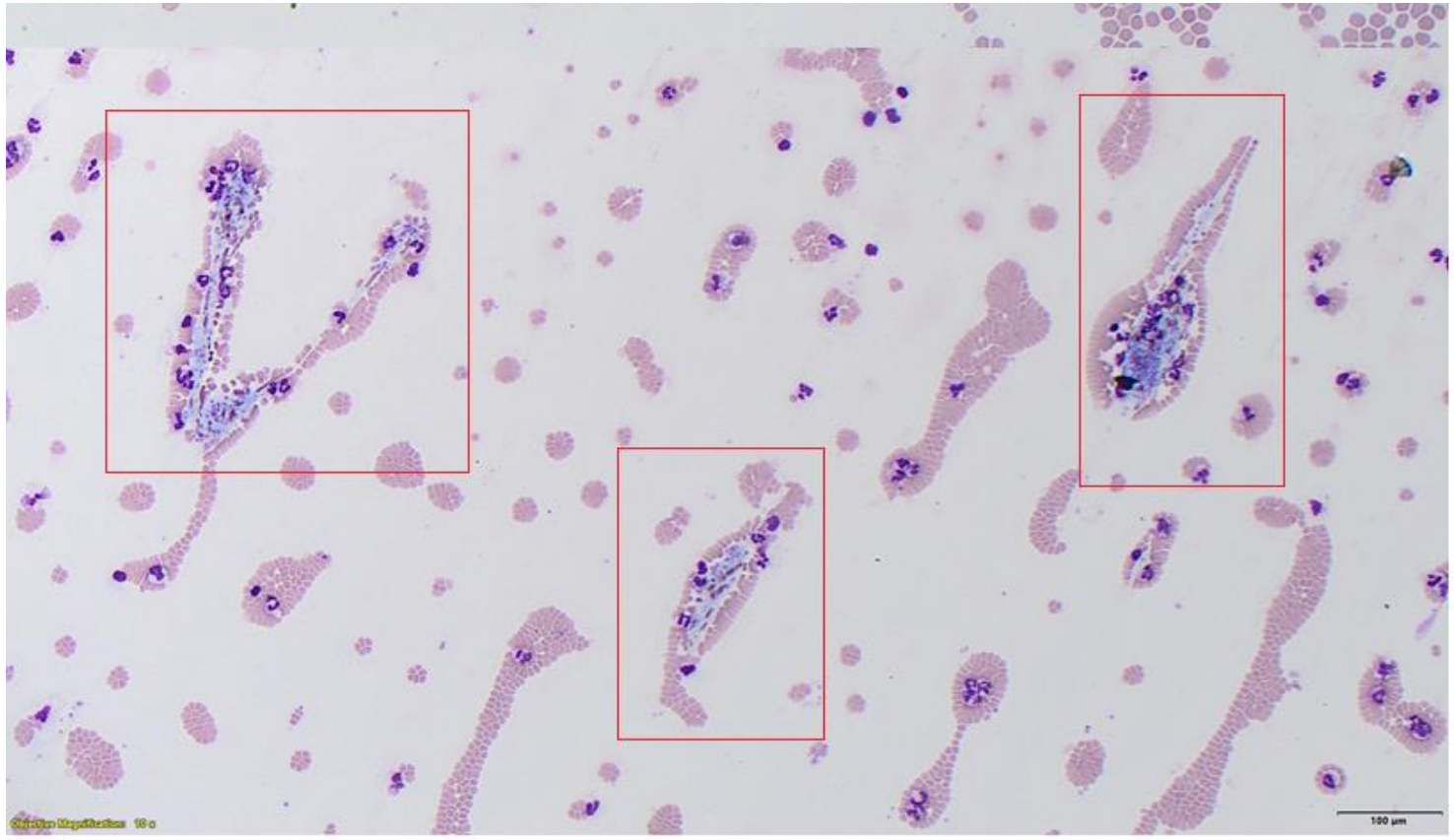


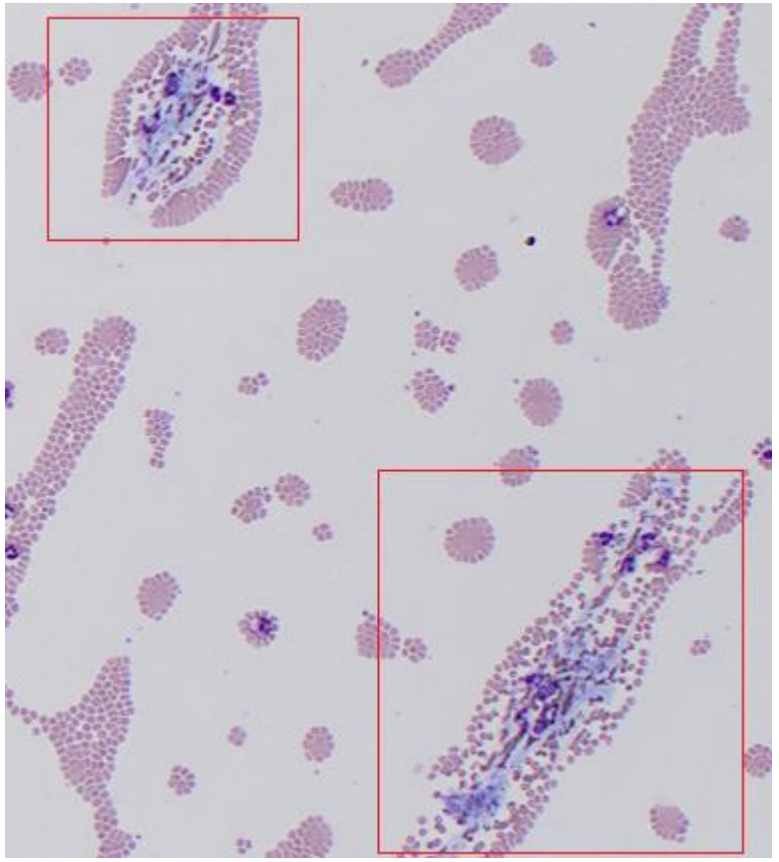


Clots

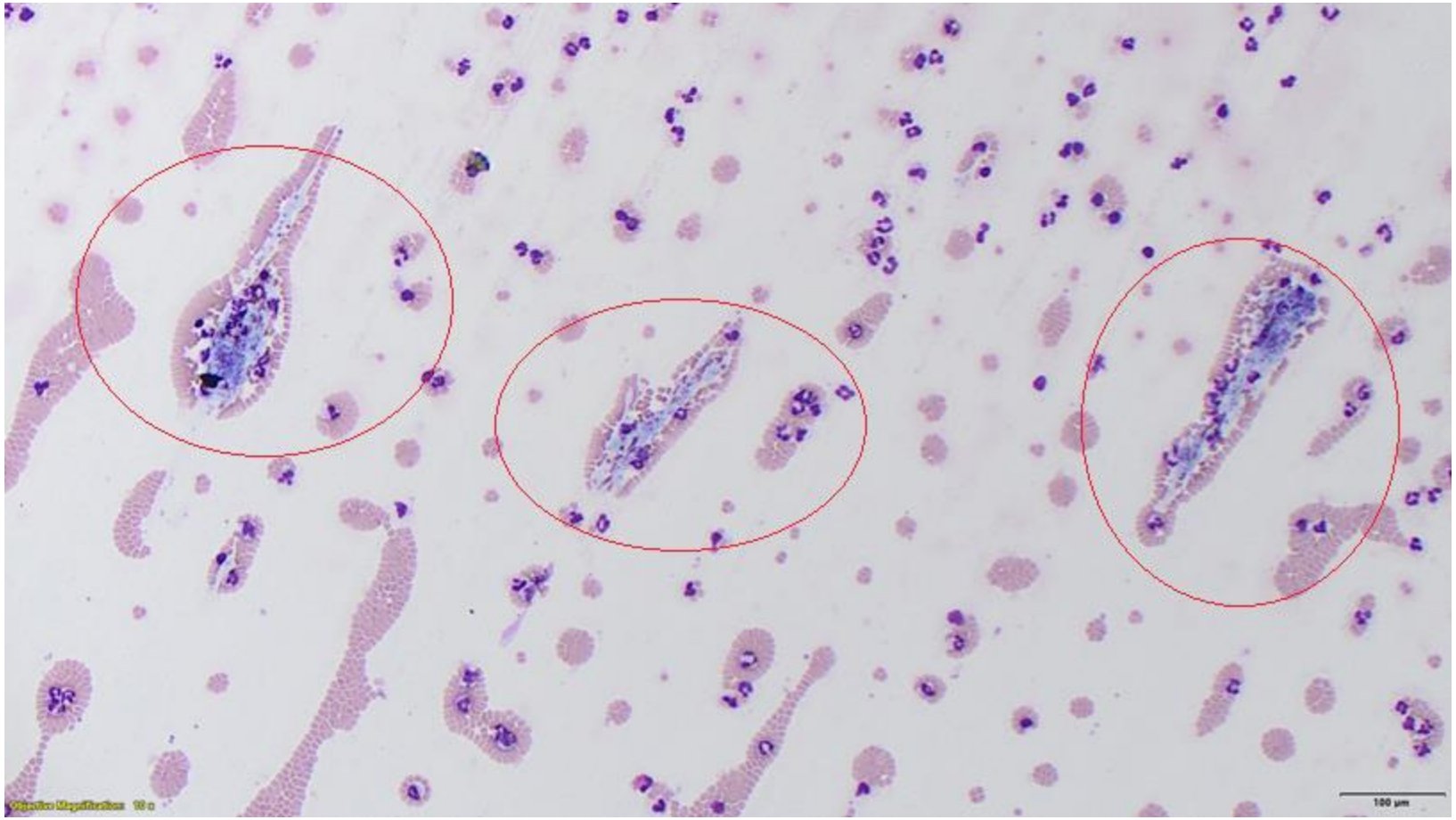


Clots

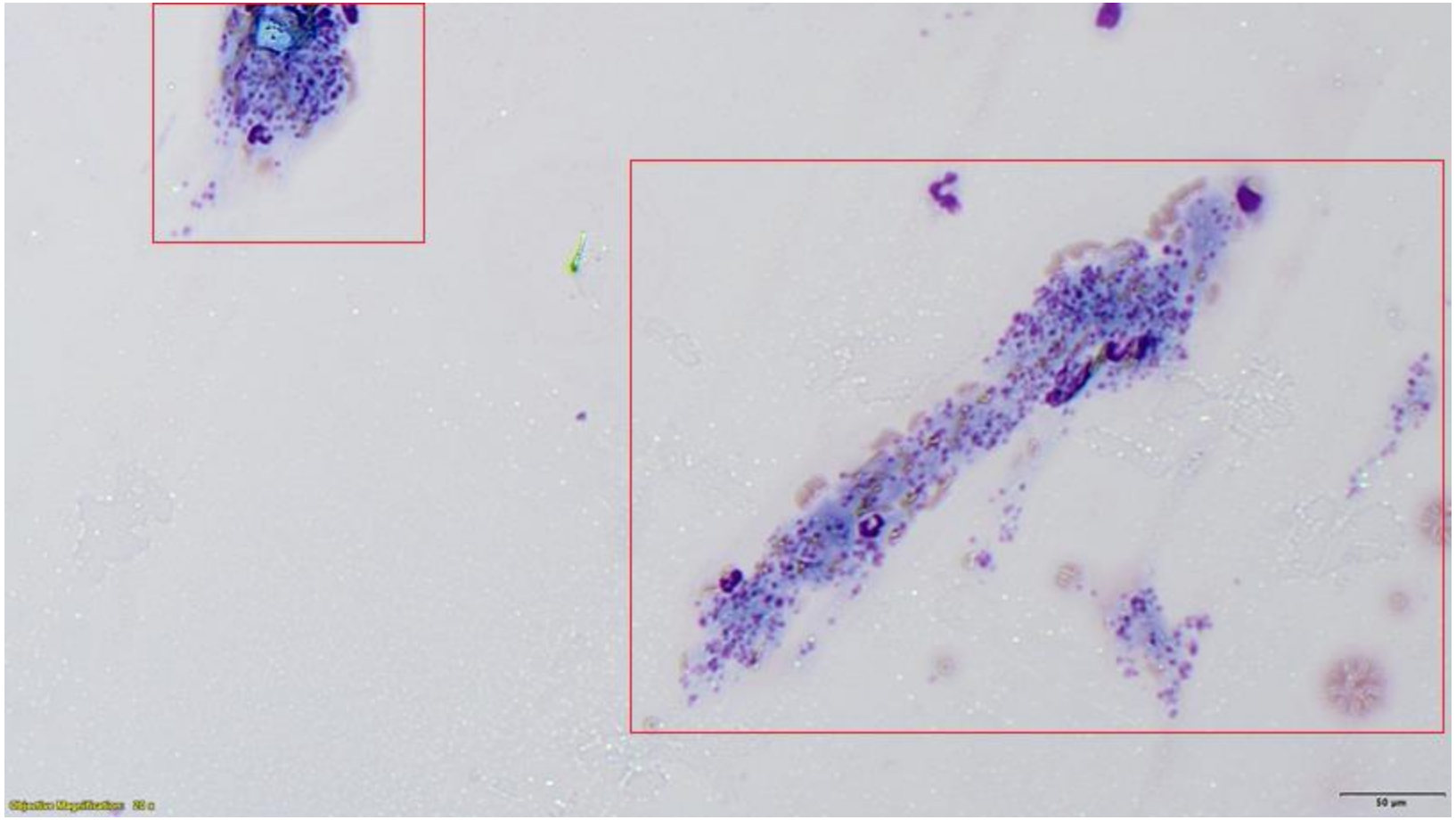




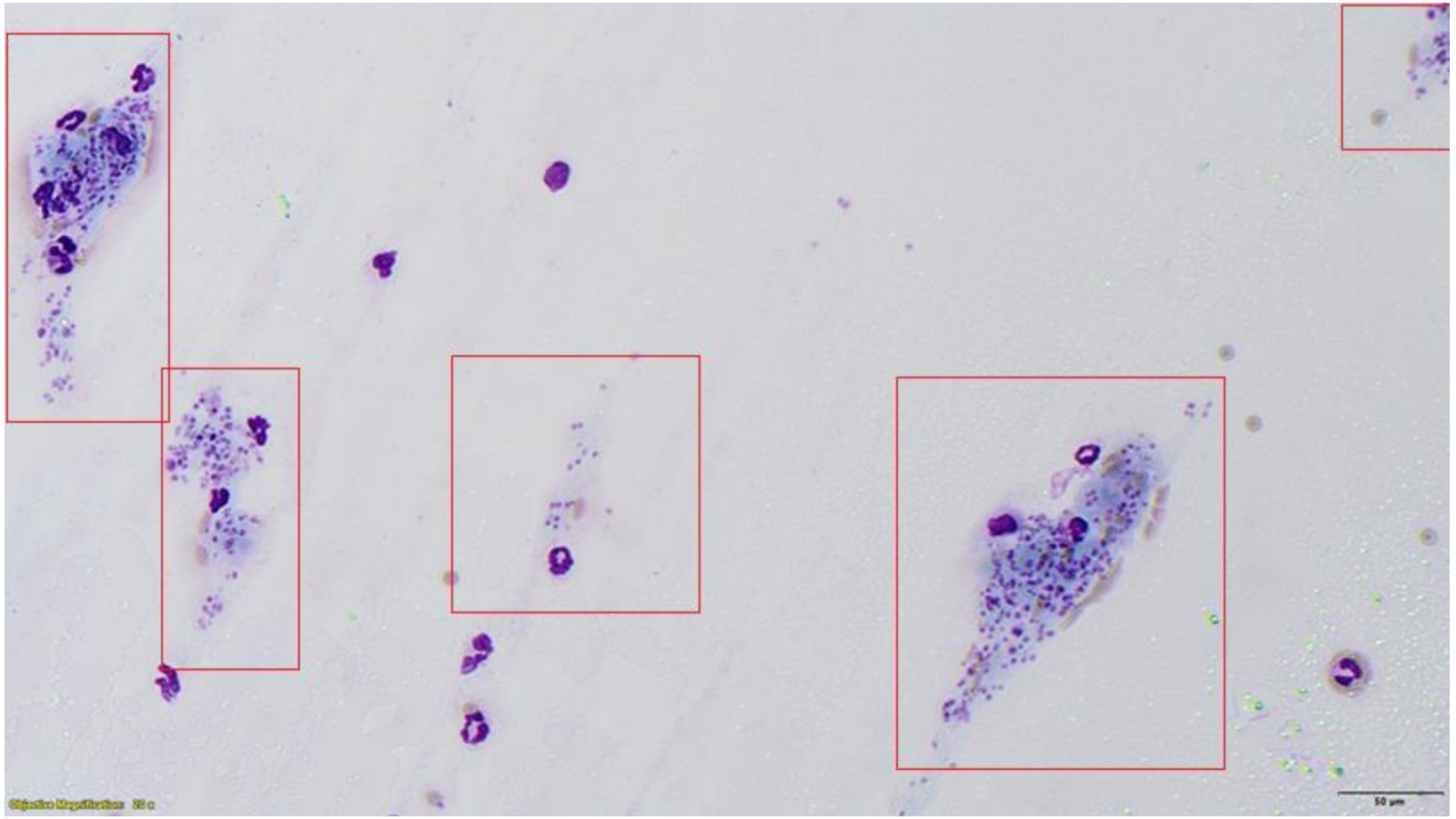
Clots



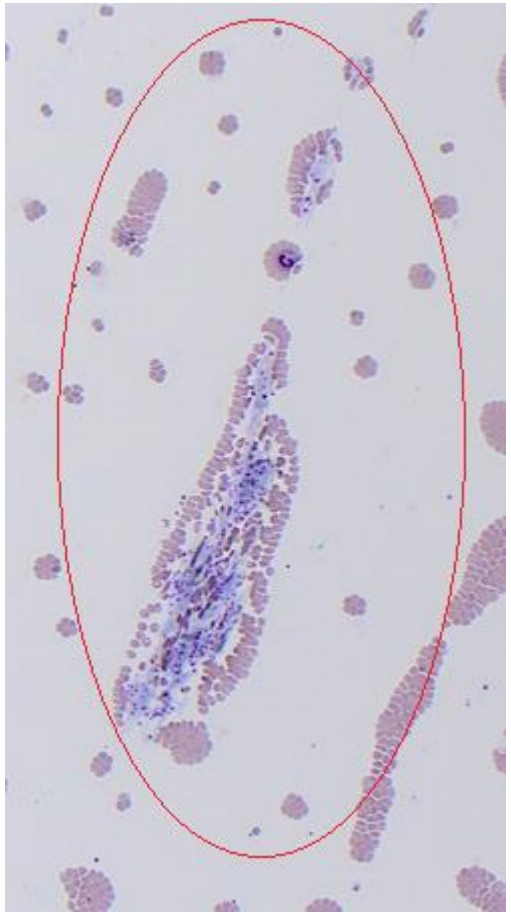
Clots



Clots

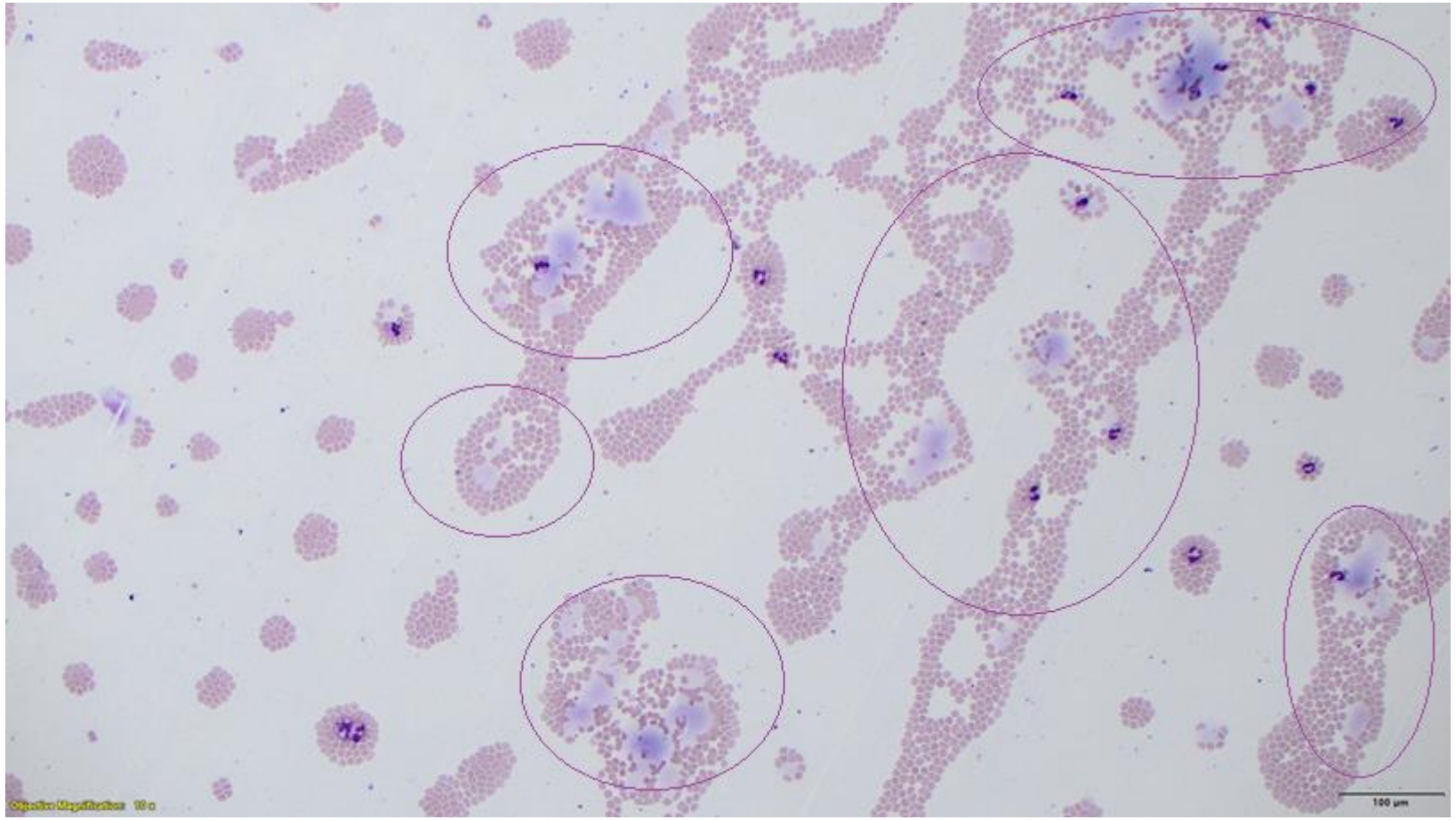


Fibrin strands with platelet &/or white cells included

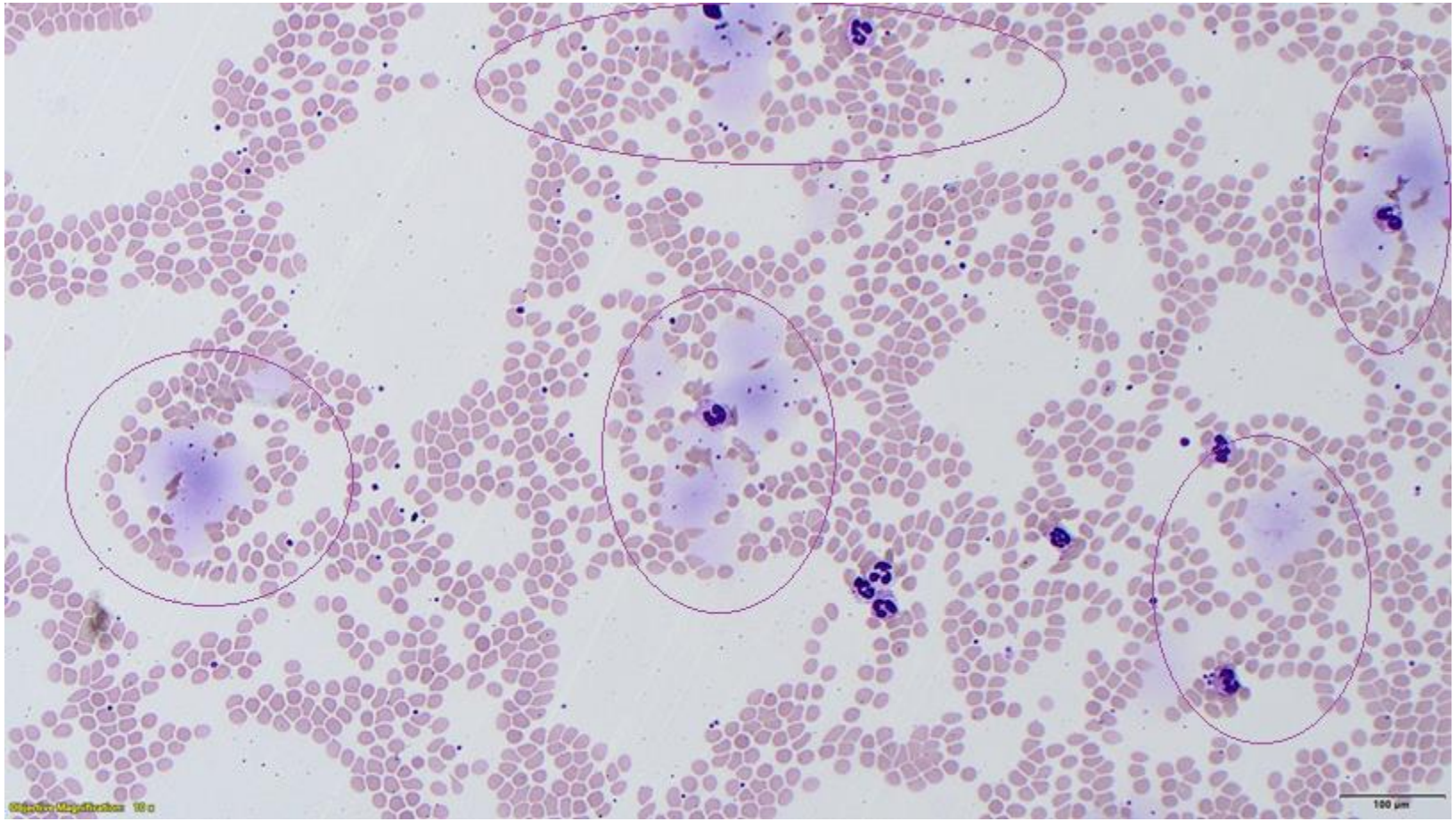


- Report “film check” as clotted
- Report H_Action as clotted
- Error correct in cerner if result have been released
  - Samples should be recollected in the first instance
    - If subsequent samples are clotted
      - consult with a senior scientist or haematologist on-call
- Check concurrent Coag samples for clots before organising recollect
- Check for other EDTA samples eg HBA1C, ESR, CD4/8

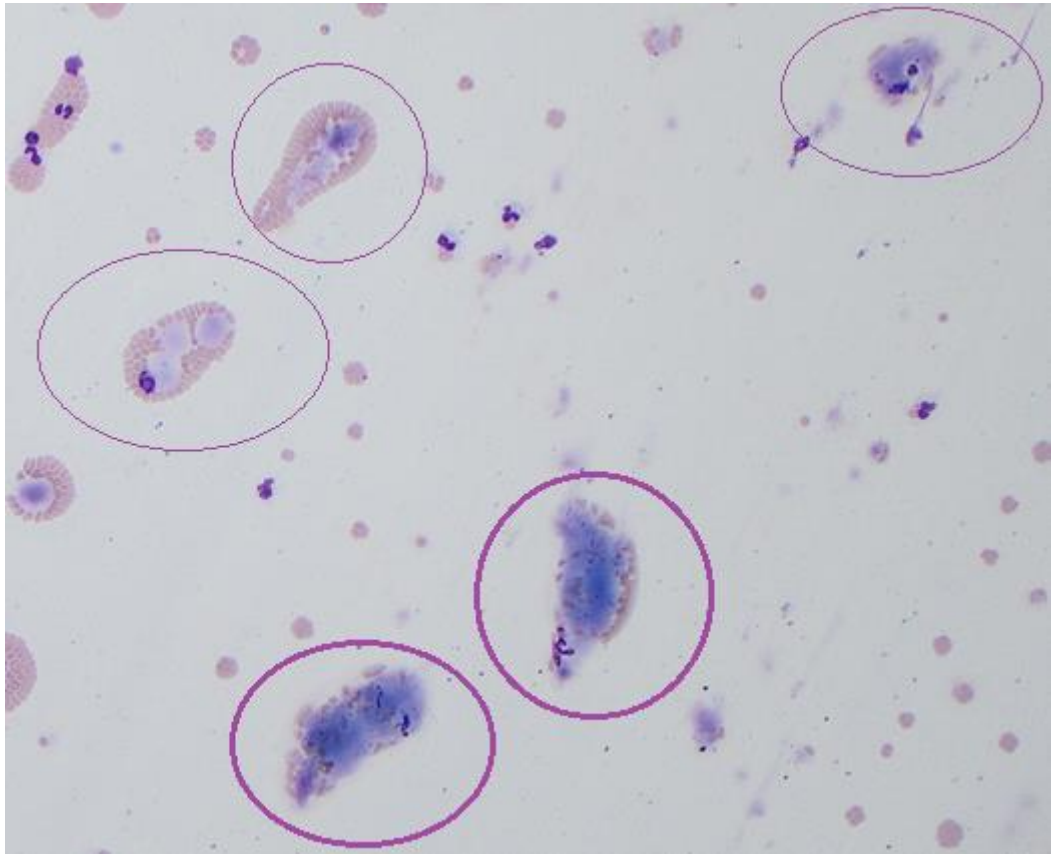
Amorphous material



Amorphous



Amorphous material



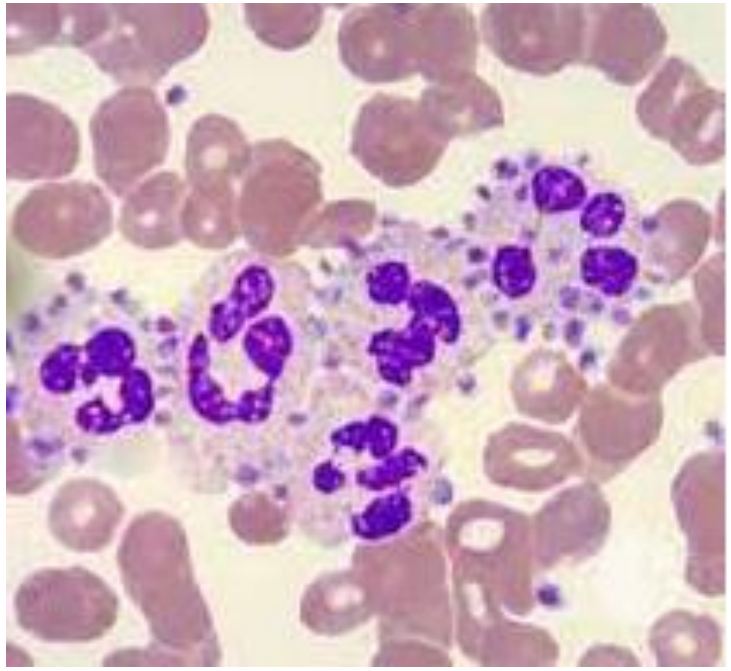
May be confused with fibrin strands / clots.

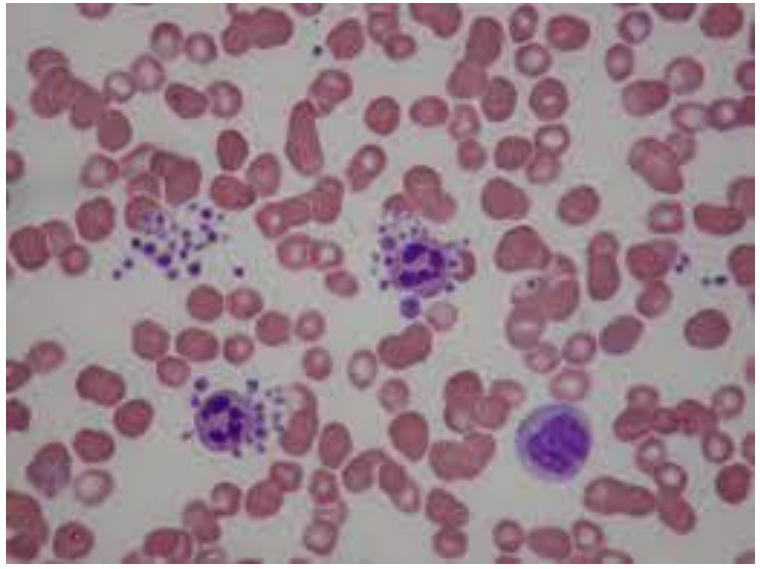
Consider making a warm blood film.

- Comment on amorphous material in the blood film
  - Refer to haematologist for further comment.
  - Suggest repeat FBE to confirm results.

Platelet Satellitism

Report film check as “clumps”





Comment on platelets as

- Platelets show platelet satellitism.

- Use the clumped commenting but delete the clumped text as below

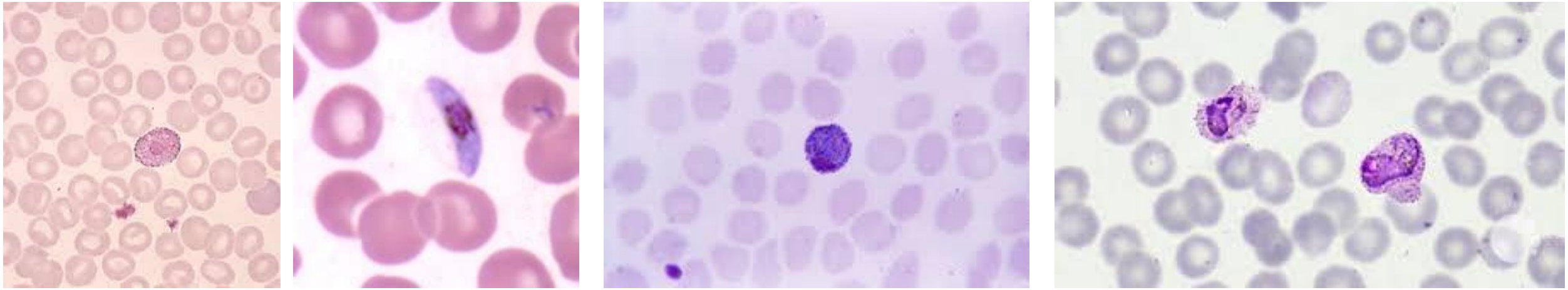
- ~~Platelets clumped on blood film.~~ Platelet count appears markedly reduced in number.
- ~~Platelets clumped on blood film.~~ Platelet count appears mildly reduced in number.
- ~~Platelets clumped on blood film.~~ Platelet count appears normal in number.
- ~~Platelets clumped on blood film.~~ Platelet count appears mildly increased in number.
- ~~Platelets clumped on blood film.~~ Platelet count appears markedly increased in number.

- Request a citrate tube
  - *Please request a PLT-CIT test and FBE. Collect and send a citrate and EDTA sample for correct platelet enumeration. Liaise with the Haematology department (ext 62468).*

Things to be aware of

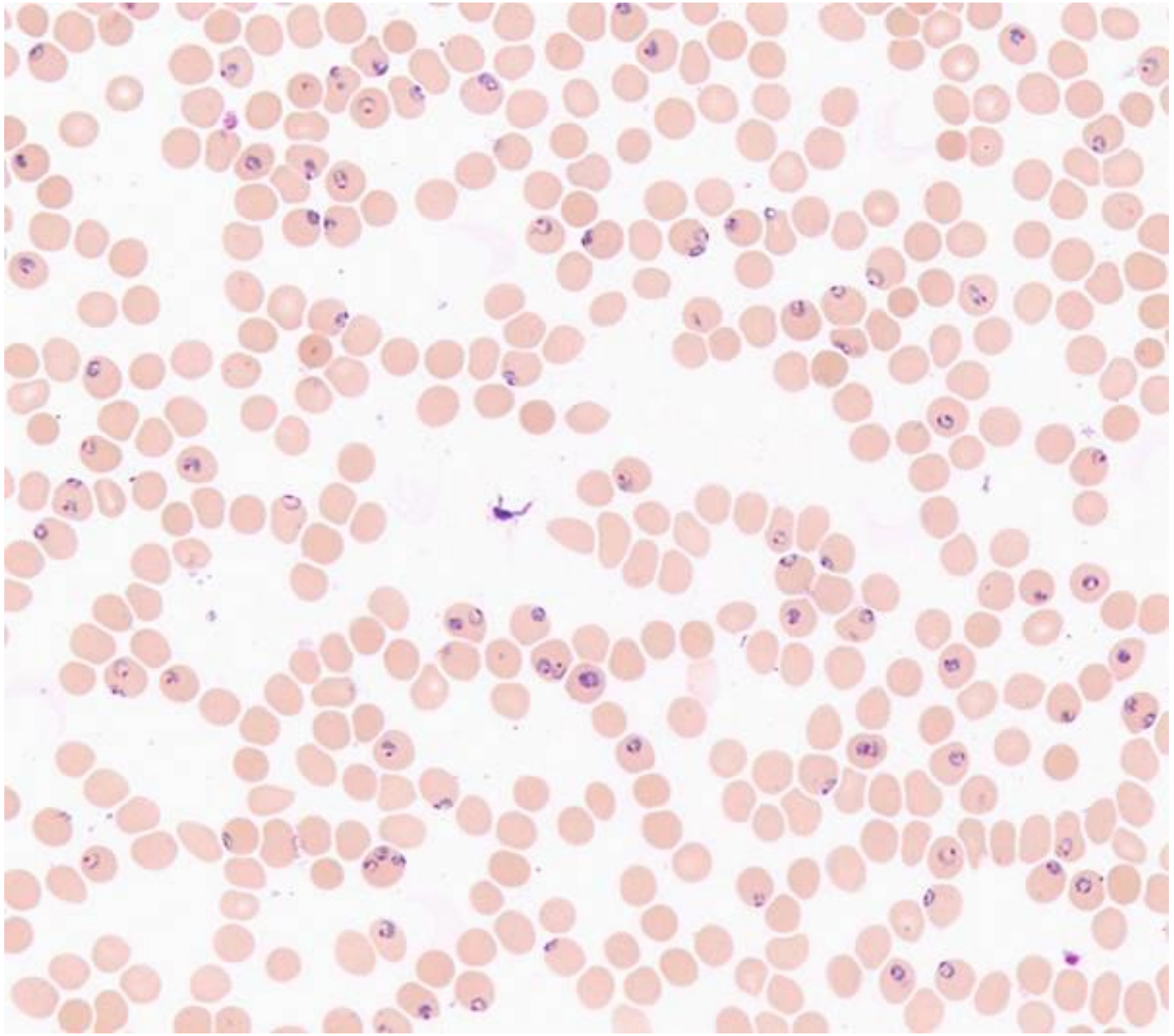
See the following slides

Malaria gametocytes masquerading as giant platelets

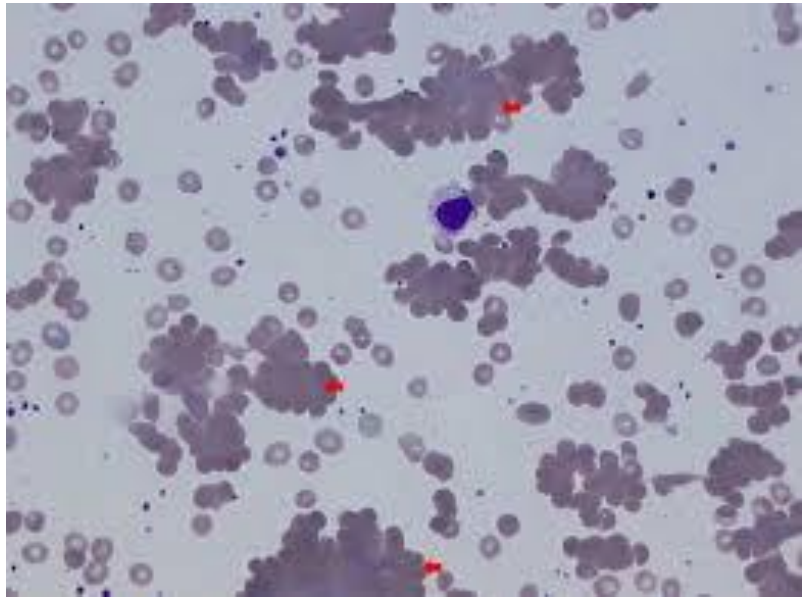


Just a reminder that malaria can be mistaken as giant or abnormal platelets

Malarial rings masquerading as platelets or stain deposit



Cold Agglutinins / High MCHC



Should not be mistaken as clots.

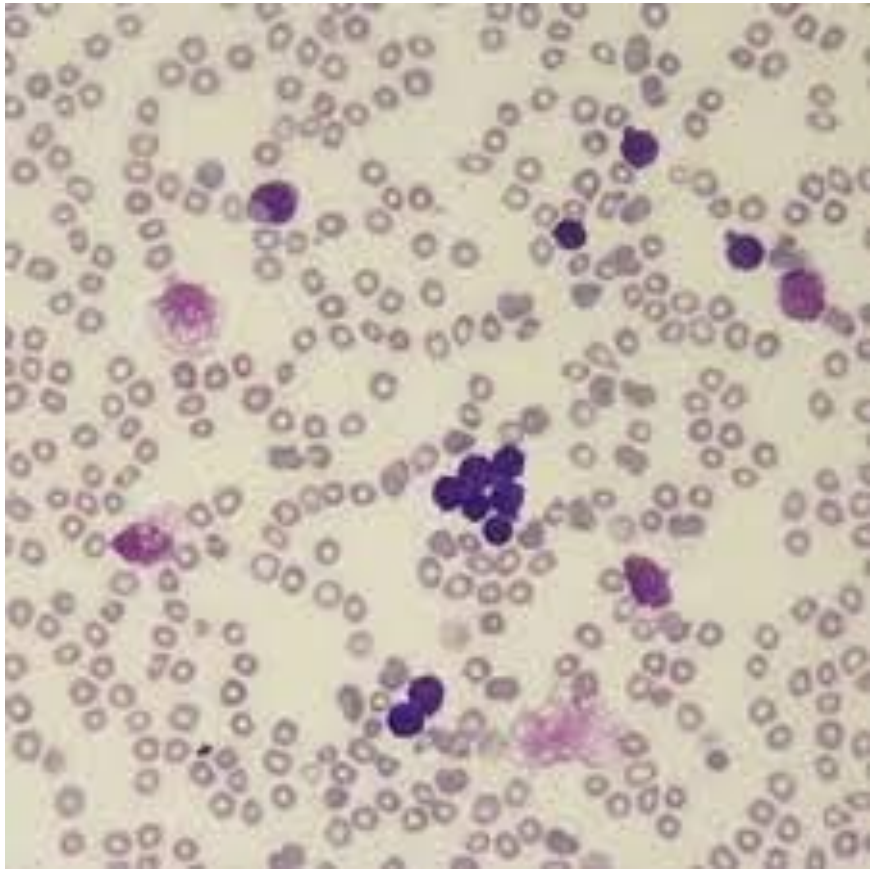
There is usually no fibrin, wbc or platelet involvement.

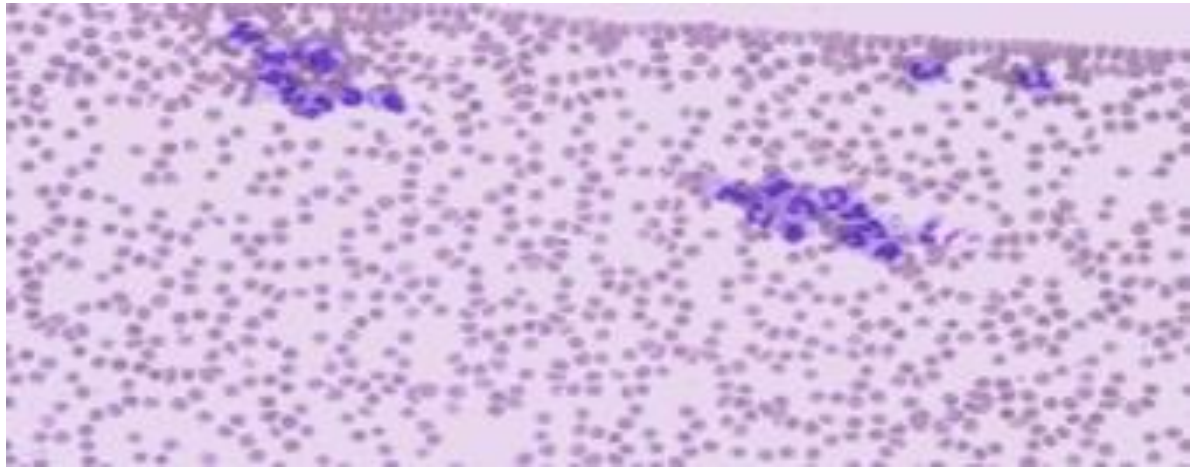
The issue should be resolved or improved by sample warming.

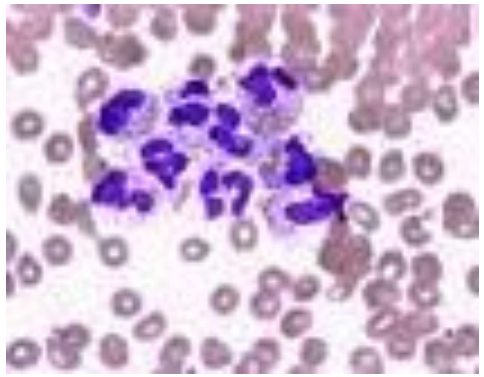
Assessment of the correction of a FBE by warming should involve independent review of the following

- Hgb – may change due to a primary mixing issue but shouldn't change for a mild cold agg
- RBC – should increase after warming – cross check with the RBC-O
- MCV – may change after a primary sampling issue or swell if over incubated and falsely correct the MCHC
- MCH – should drop after warming due increase in the RBC
- MCHC – should change after warming but consider a HgB or MCV change may be the reason, not a cold agg
- Blood film – should be made using pre-warmed capillary tube, slide and spreader.
- Common errors
- Overfilled EDTA tube unable to mix on the analyser – usually false high HgB
- Fibrin in sample affecting the rbc aperture and giving a false low MCV measurement
- Metabolic change ie low sodium giving false low MCV and false high MCHC

WBC clumping



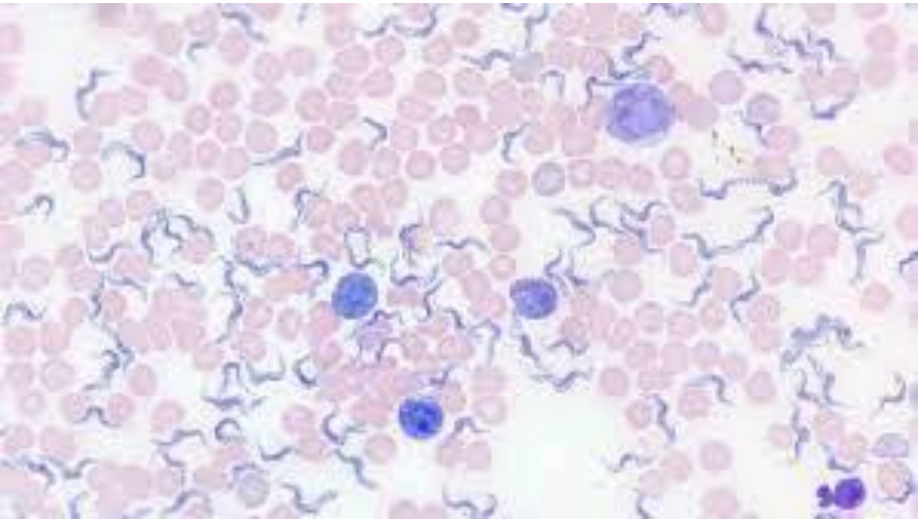


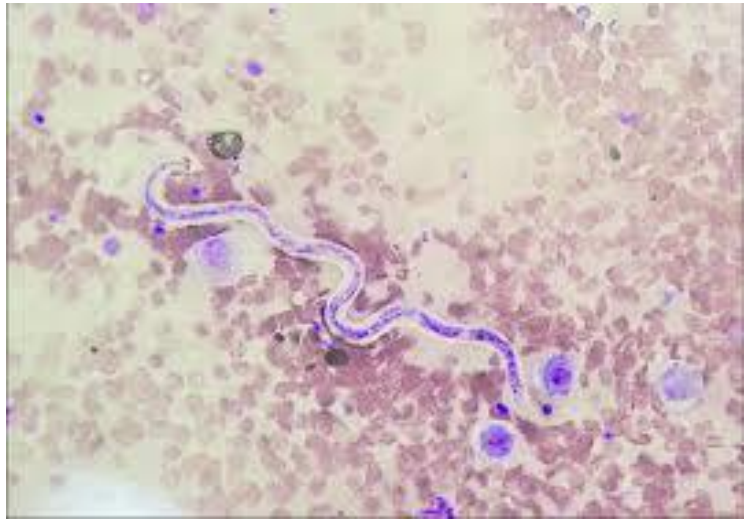


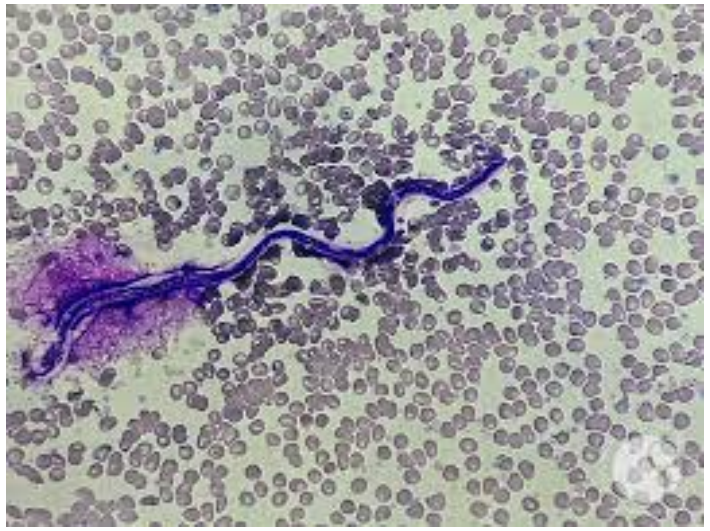
WBC clumping usually disaggregates in the FBE during sampling.

Platelet clumping does not.

Trypanosome and microfilaria

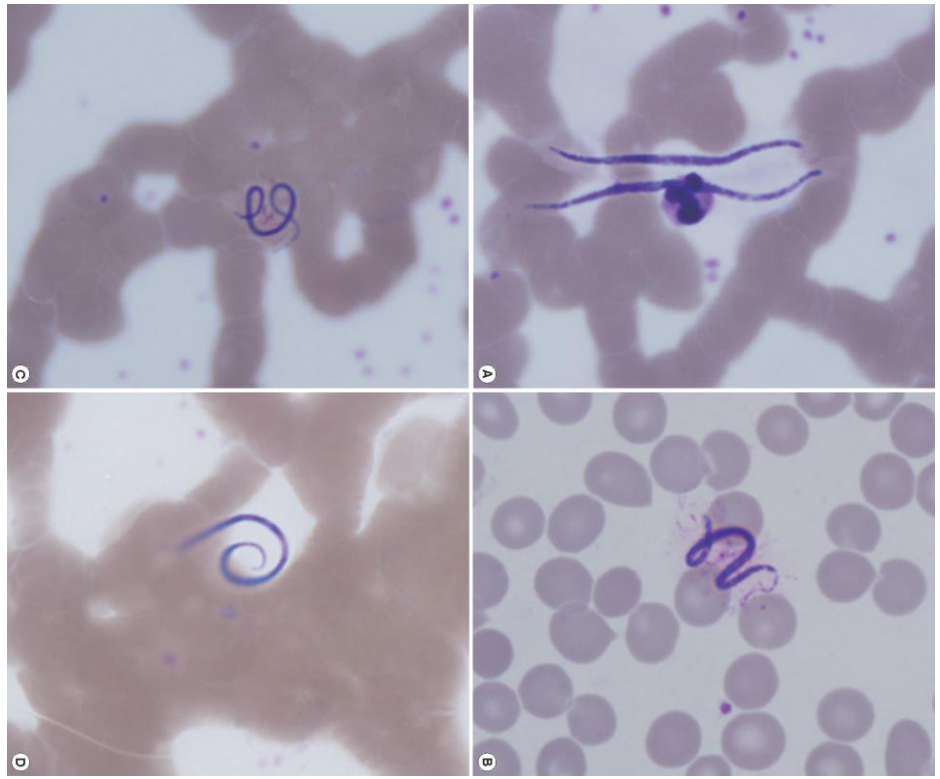


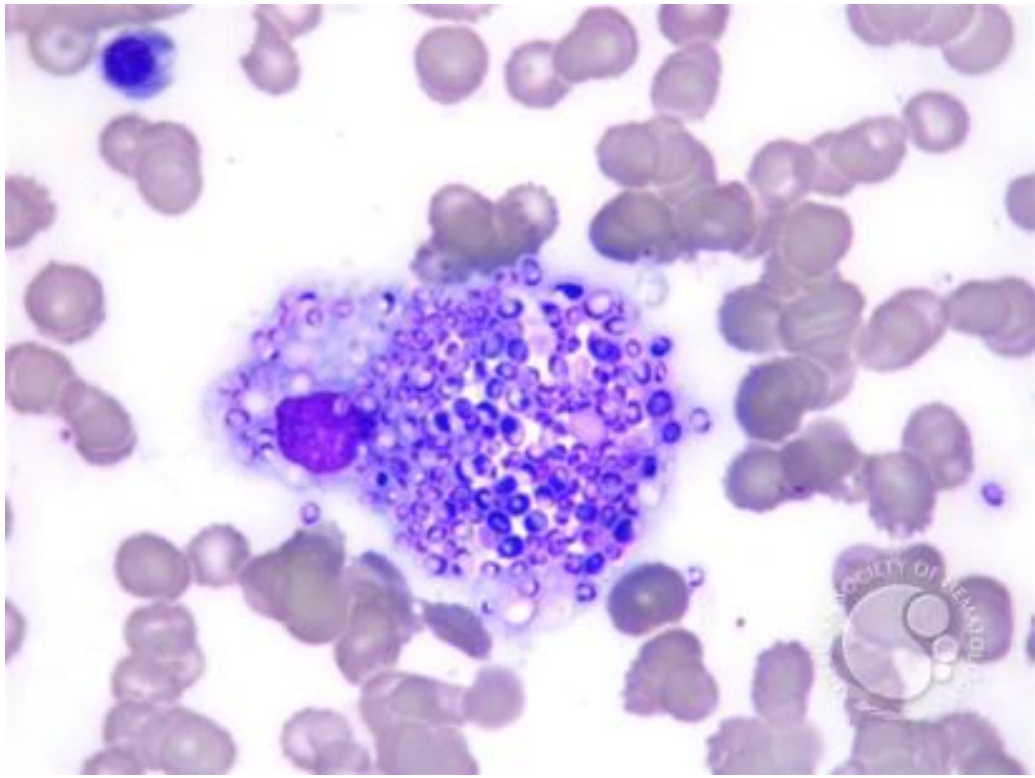




A reminder that some parasites look like fibrin stands and/or clots

Fungi, Helicosporium and histoplasmosis





A reminder that some fungi look like fibrin stands and/or clots