

Mock FRCPath Part 2 Morphology Paper
June 2021
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“It’s just another exam, like all the rest”

Please answer all questions

Time Allowed: 90 minutes

Normal ranges for purposes of this test:

Haemoglobin (Hb) 130-150

Platelets (Plt) 150-400

WBC 4-10

Neutrophils 2-7

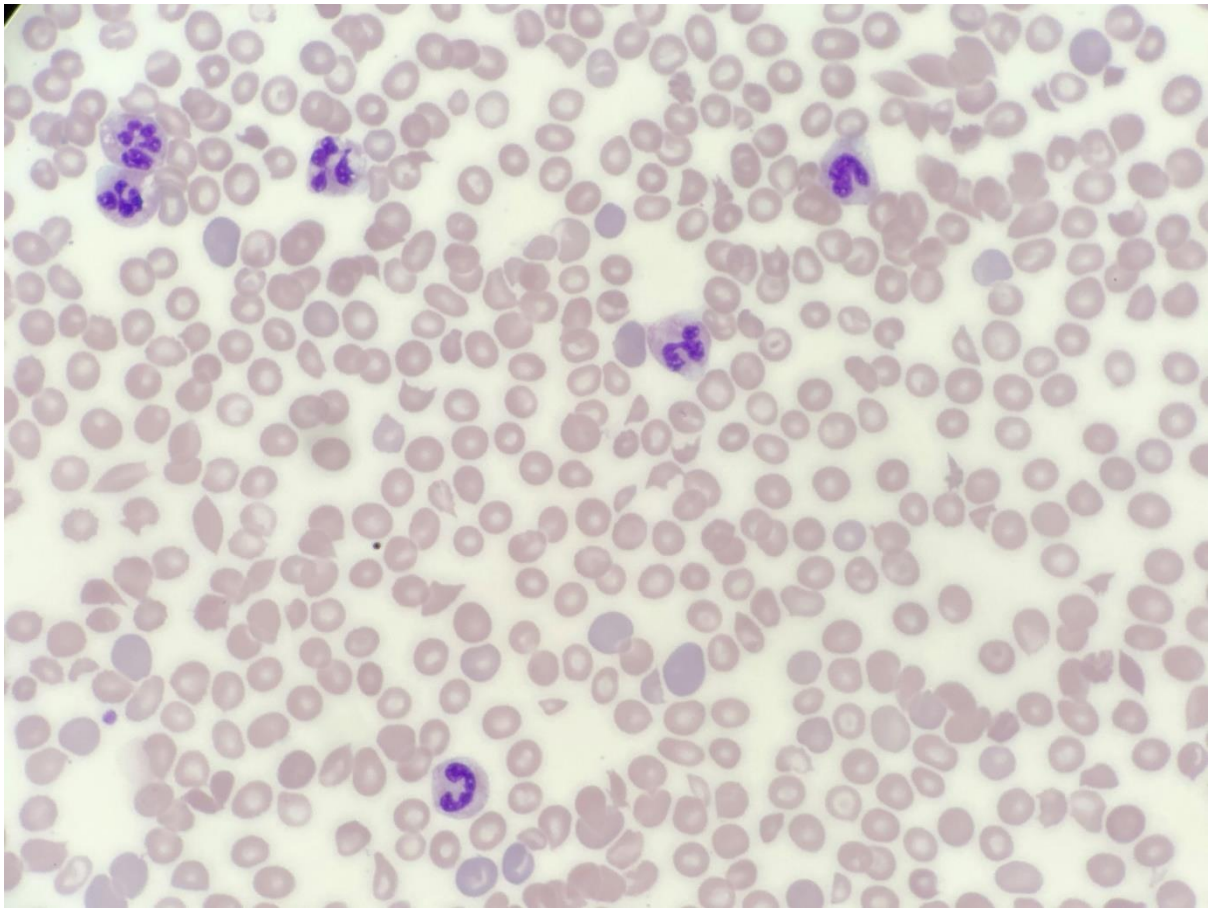
Lymphocytes 1-3

Monocytes 0.2-1

Eosinophils 0.02-0.5

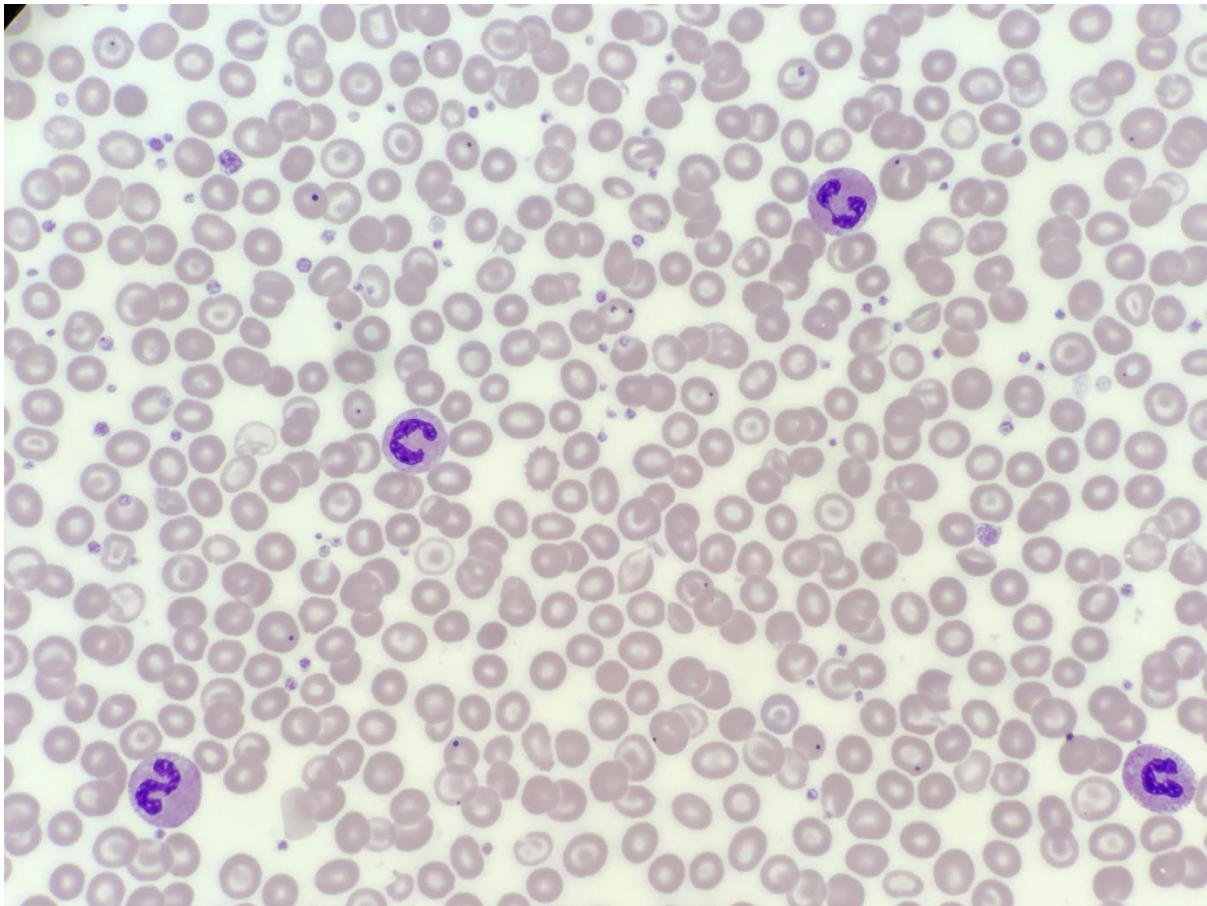
Creatinine <120

Question 1: A 40 year old receiving gemcitabine chemotherapy for pancreatic cancer presents to the acute oncology service with breathlessness and lethargy. They have had diarrhoea for the last week following the most recent chemotherapy cycle. Hb 80, Creatinine 150.



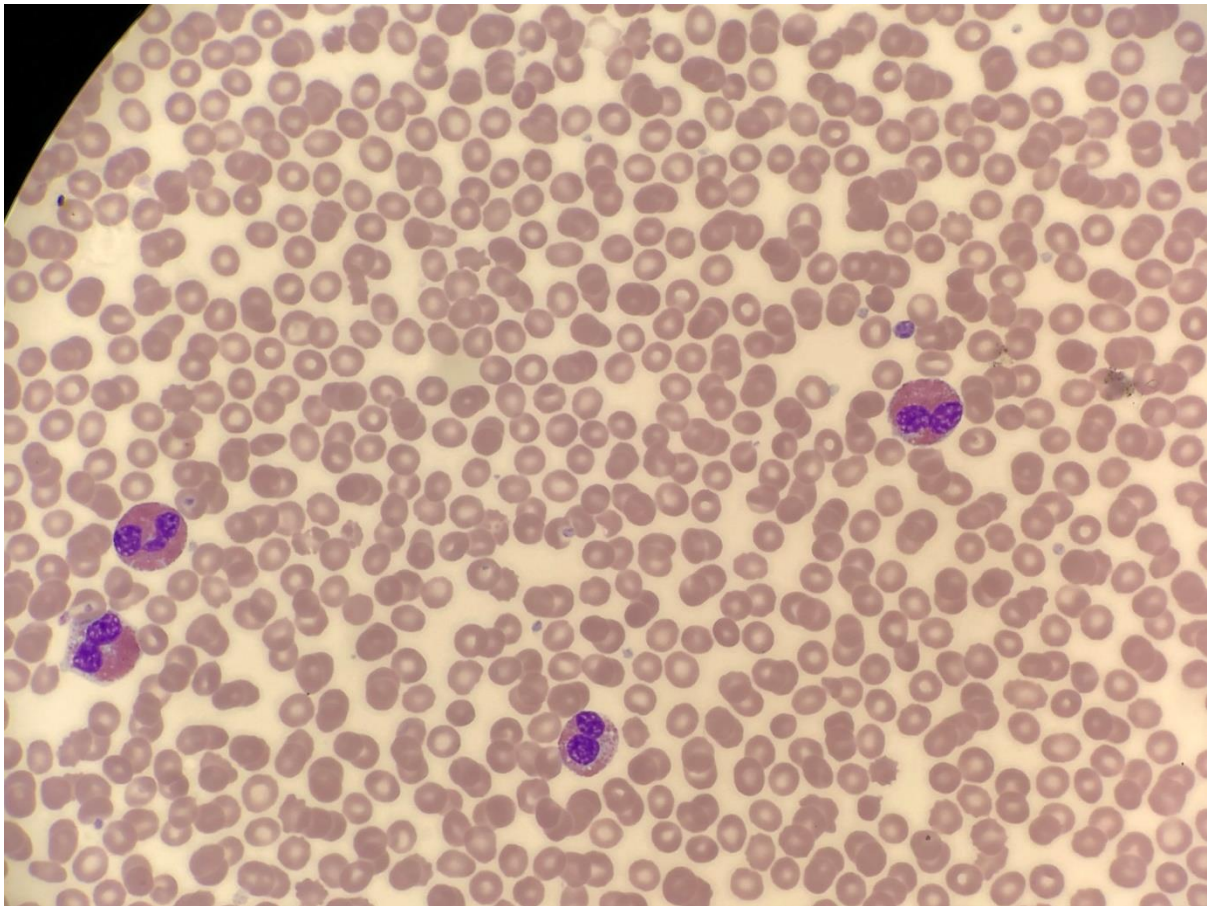
- Report the blood film (3 marks)
- State the diagnosis and differential causes (3 marks)
- List the further tests you would request at this point (3 marks)

Question 2: A 65 year old has an annual review at his GP surgery. He is a nursing home resident following a severe road traffic collision five years previously. Hb 120, Plt 550, WBC 15.



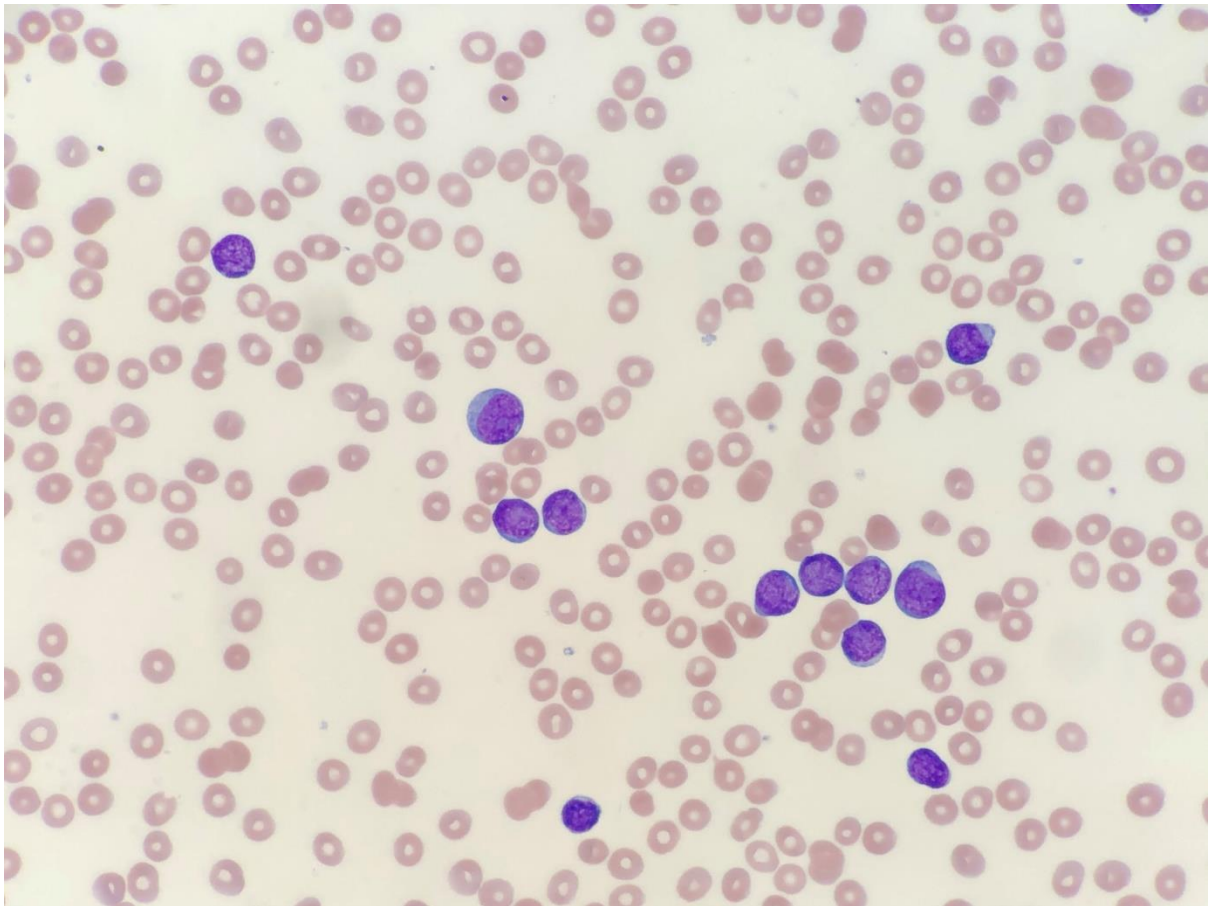
- a. Report the blood film (3 marks)
- b. State the cause of your findings (1 mark)
- c. Regarding the cause of this patient's abnormal blood film, what prophylactic measures should be offered to the patient at their annual review, and why? (3 marks)

Question 3: A 60 year old woman presents to the emergency department with a progressive history of breathlessness and lethargy. Chest X-ray reveals bilateral pleural effusions and cardiomegaly.



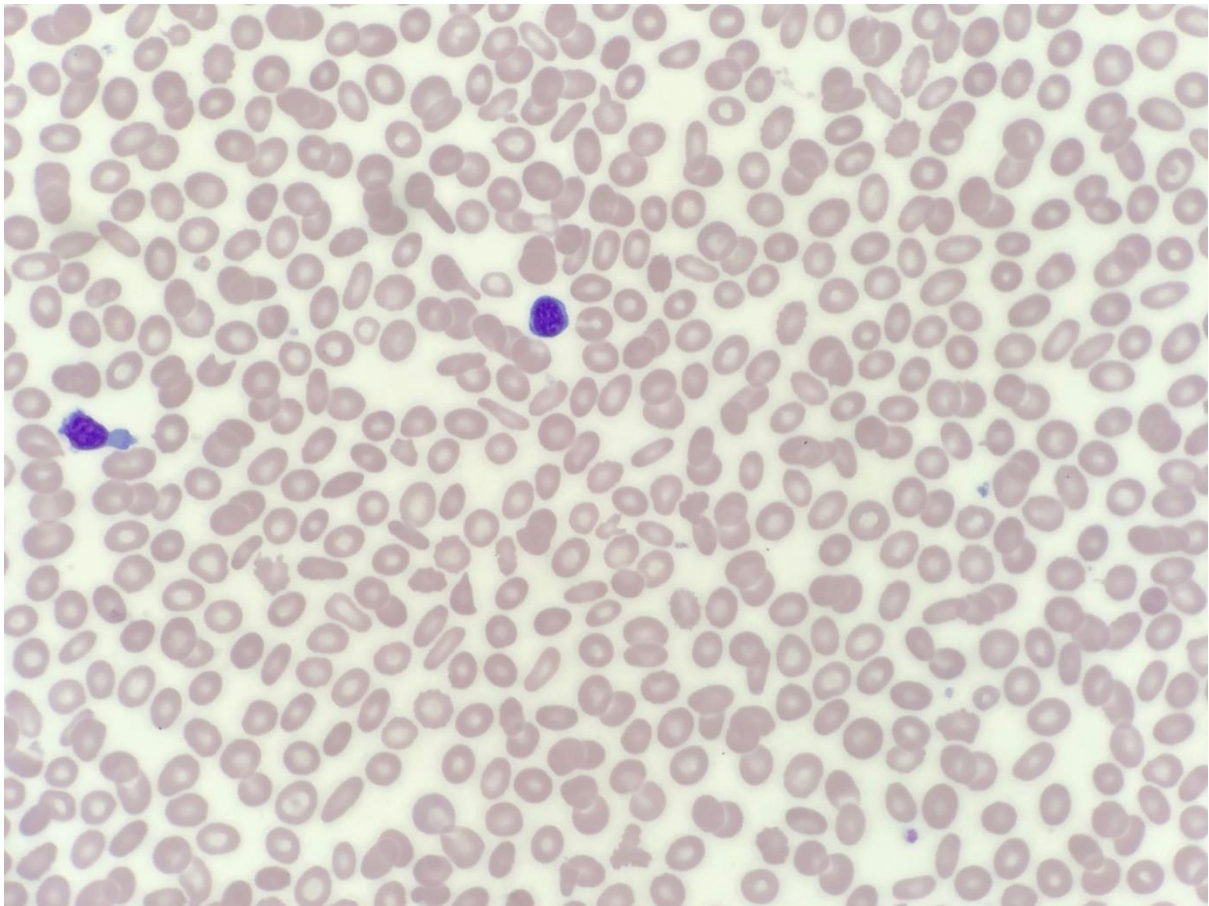
- Report the blood film (3 marks)
- Provide a differential diagnosis for your finding(s). Include examples of primary haematological causes. (5 marks)
- State your initial investigation and management of this patient in the first instance (3 marks)

Question 4: A two year old boy presents generally unwell with a fever that has not responded to antibiotics. Hb 42, WBC 260.



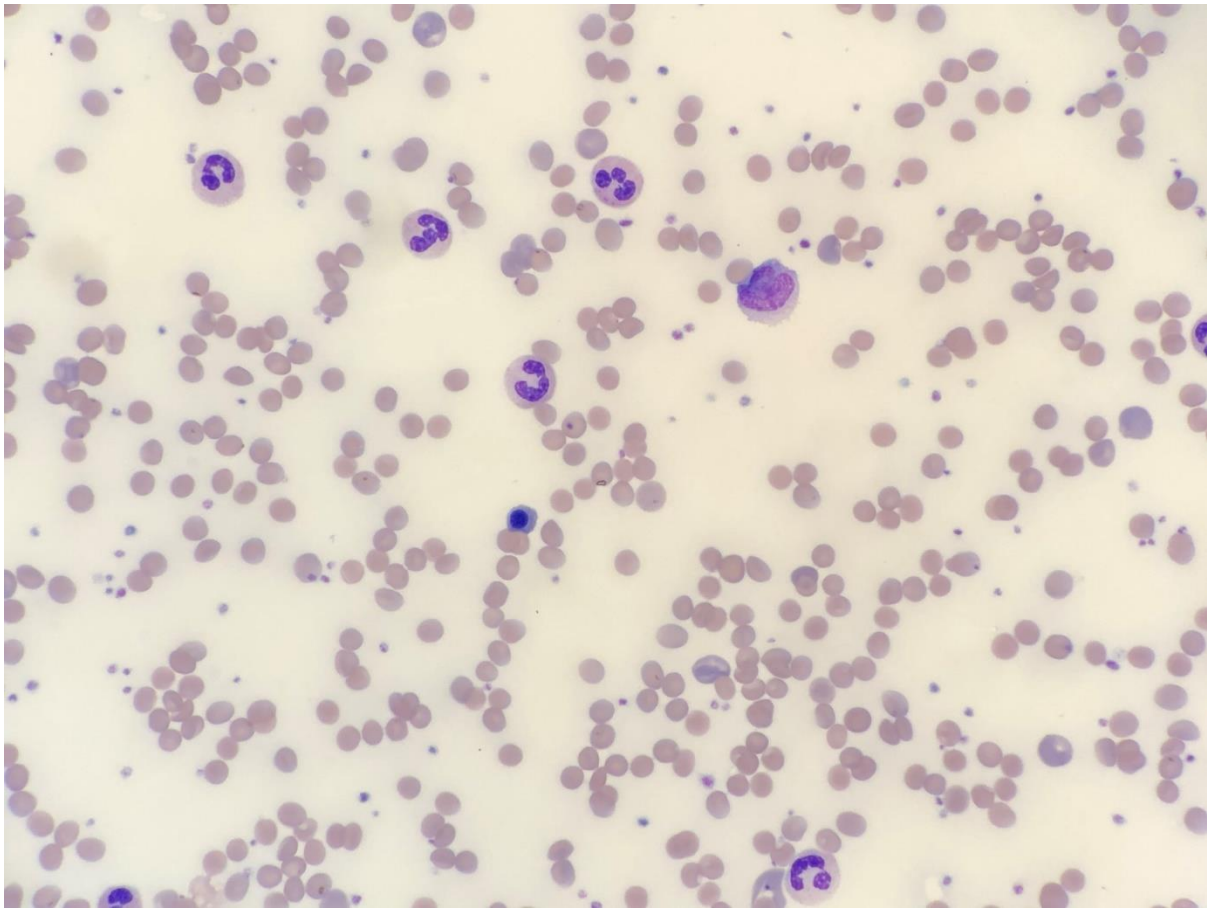
- Report the blood film (3 marks)
- Immunophenotyping of the peripheral blood was reported as follows: CD19+, CD79a+, CD9+, HLA-DR+, TdT+, CD13-, CD33-, CD10-, CD20-, CD34-. What is the diagnosis? (3 marks)
- Fluorescent in situ hybridisation (FISH) of the peripheral blood identified re-arrangement of KMT2A (MLL) (11q23). Give four examples of high/poor risk stratifying features in this patient's illness (4 marks)

Question 5: An 80 year old gentleman attending the renal low clearance clinic. The blood film has been examined previously and shown similar findings. WBC 3.4, Hb 121



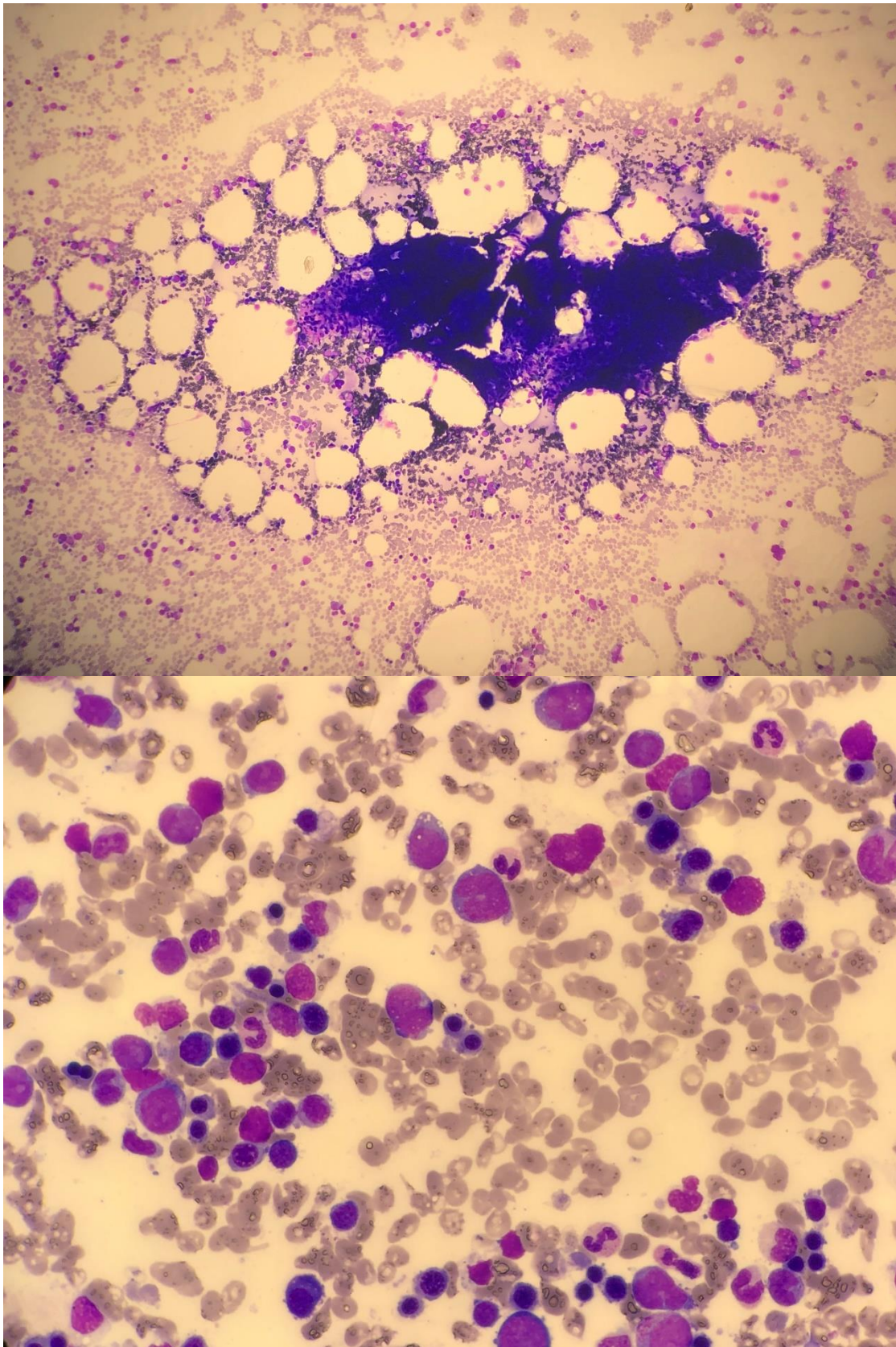
- Report the blood film (3 marks)
- State the likely diagnosis and the site of the causative red cell defect (3 marks)
- Briefly describe two potentially diagnostic tests for this group of red cell disorders (5 marks)

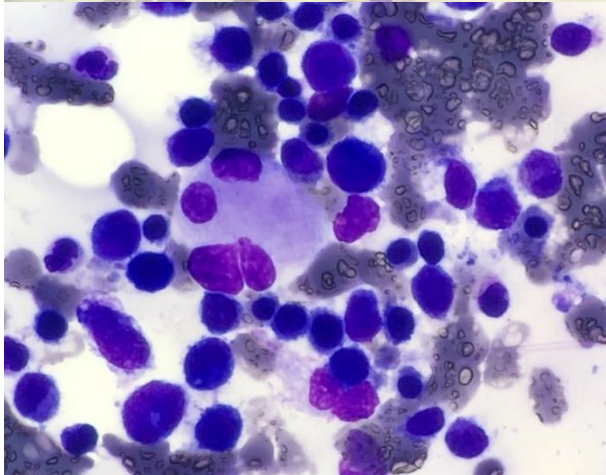
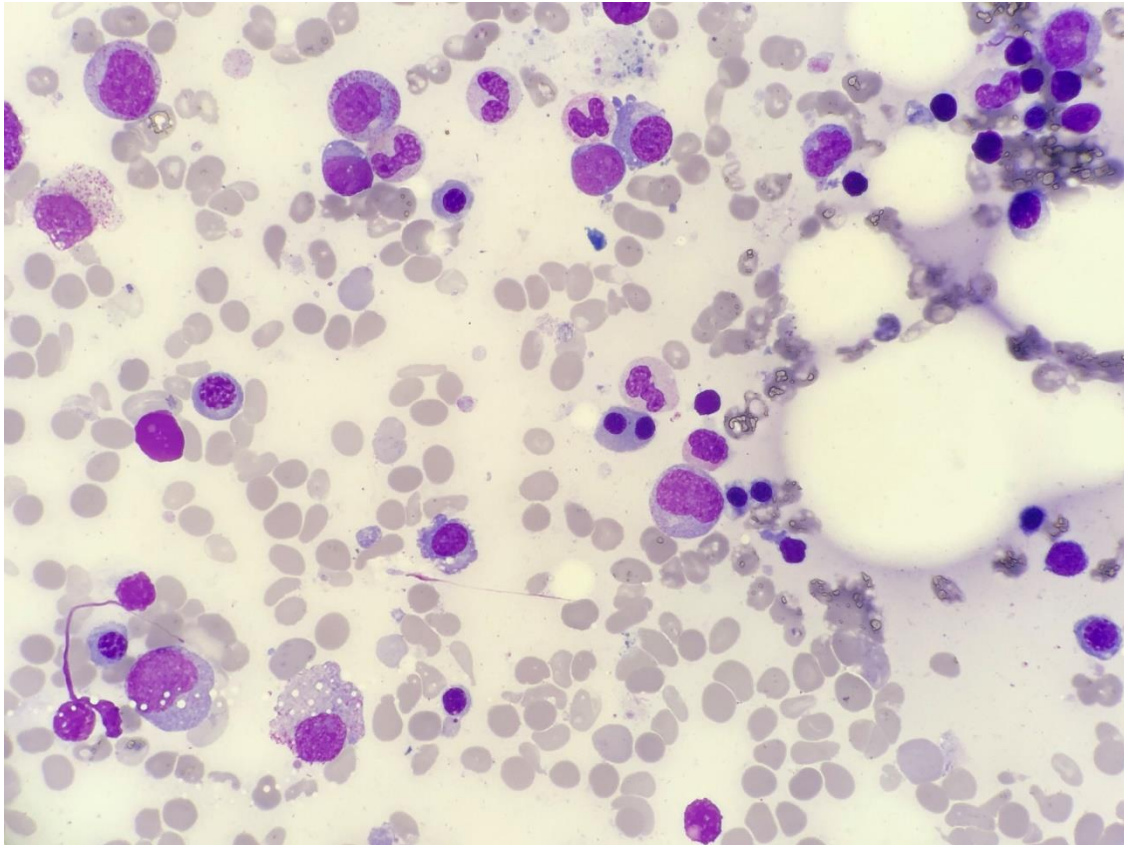
Question 6: A six year old child presents to the emergency department with a three day history of fever, lethargy, back pain and jaundice. She had recently recovered from an upper respiratory tract infection.



- Report the blood film (3 marks)
- Further results: Bilirubin 60. Blood group O Rh D positive. Direct antiglobulin test – IgG 4+, C3d 2+. List the differential diagnosis (3 marks)
- Briefly describe the principles of the Donath-Landsteiner test (5 marks)

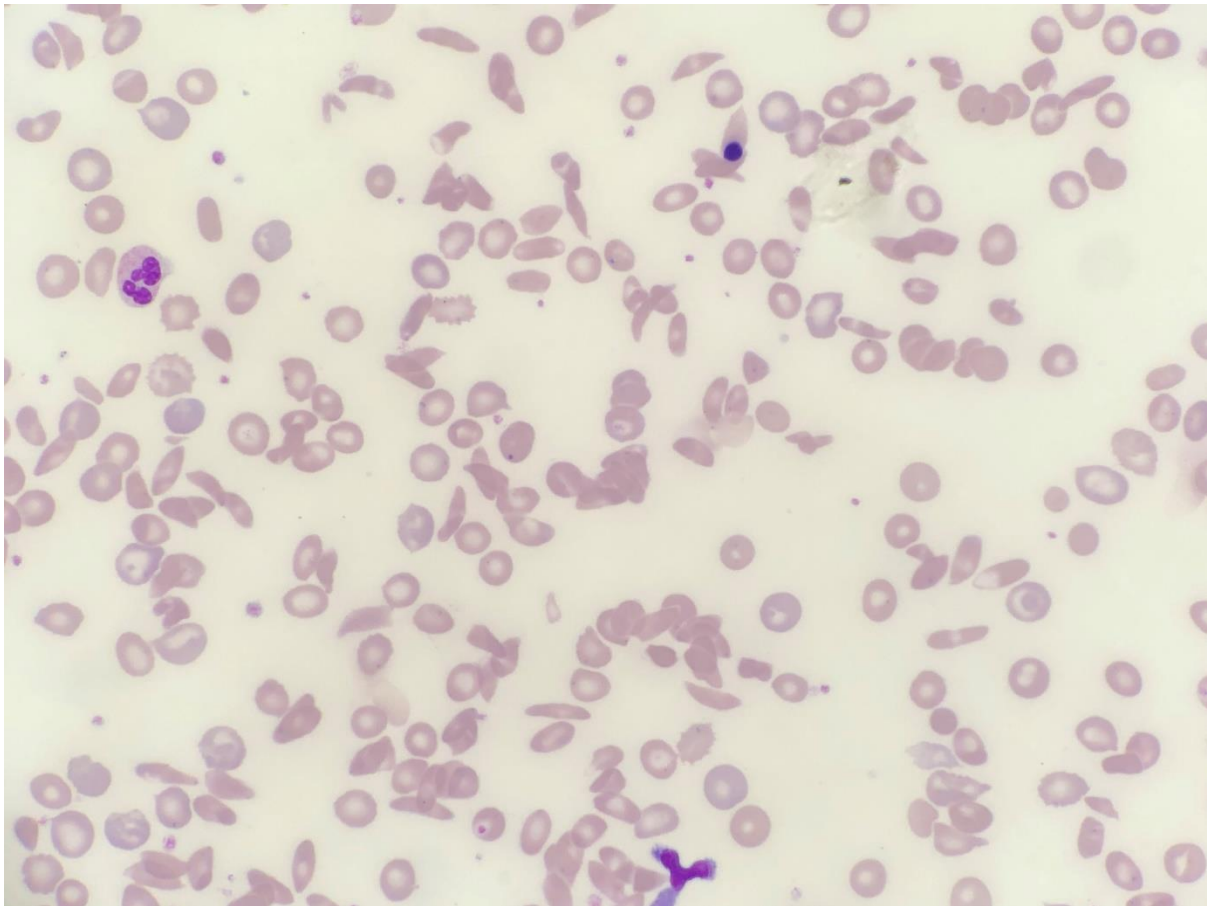
Question 7: A 64 year old man is referred by his GP with a four month history of progressive lethargy and easy bruising. WBC 2.6, Hb 98, Plt 57.





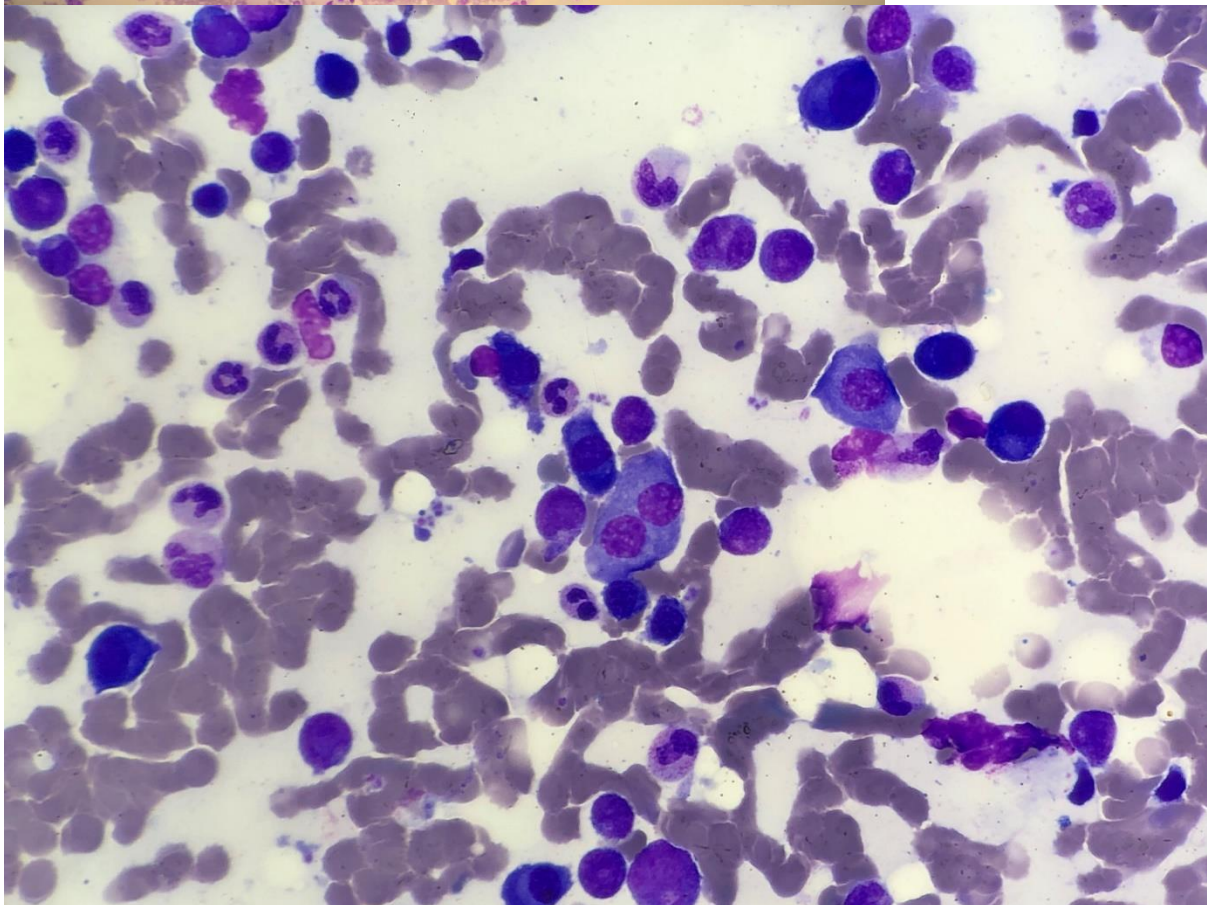
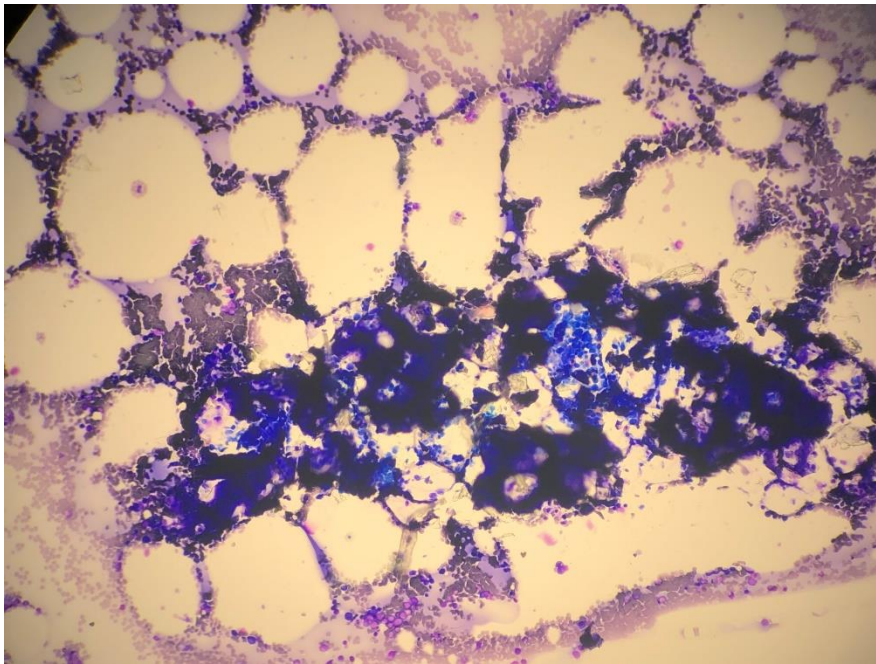
- a. Report the bone marrow aspirate. A quantified differential is not required. (5 marks)
- b. List a typical immunophenotype that might be expected for myeloid blasts (3 marks)
- c. List the additional tests you would request on this bone marrow biopsy, and very briefly justify each (4 marks)

Question 8: A 25 year old presents to the emergency department with severe, bilateral leg pain. Hb 60, Plt 500, WBC 12



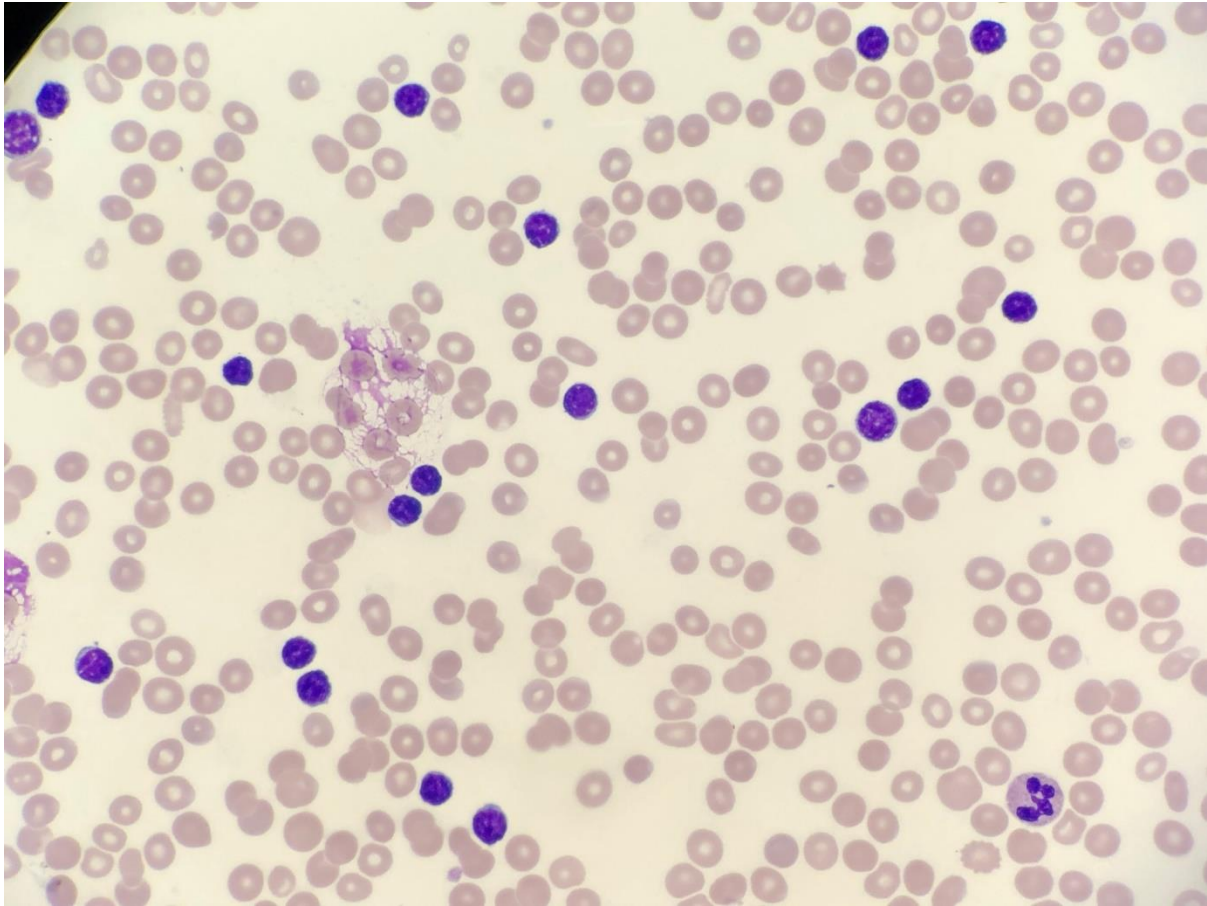
- Report the blood film (3 marks)
- State the likely diagnosis and the pathogenic mutation responsible (3 marks)
- The patient's haemoglobin is 20g/l below normal baseline and decision is made to offer top up red cell transfusion. State the preferred red cell specification for transfusion of this patient (5 marks)

Question 9: An 85 year old is admitted to critical care with acute kidney injury and sepsis of presumed urinary tract source. Hb 97, WBC 23, Plt 133, Cr 500



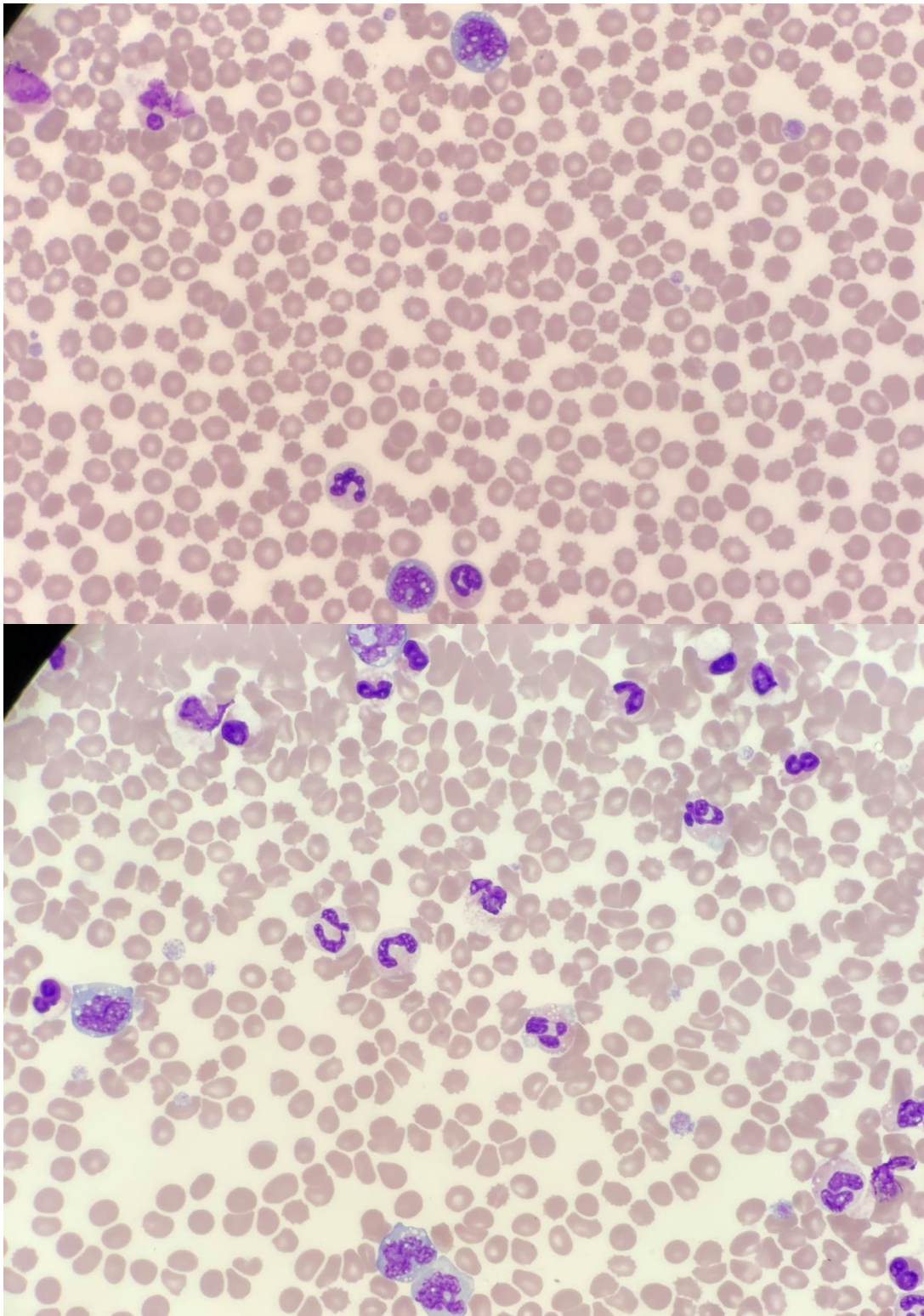
- Report the bone marrow aspirate. A quantified differential is not required. (5 marks)
- State the remaining tests you would request to complete this patient's initial workup (3 marks)
- Give one example each from the standard risk and high risk cytogenetic risk groups for this condition (2 marks)

Question 10: A 67 year old man attends clinic and reports worsening breathlessness and feeling dizzy on standing. Hb 67, WBC 137



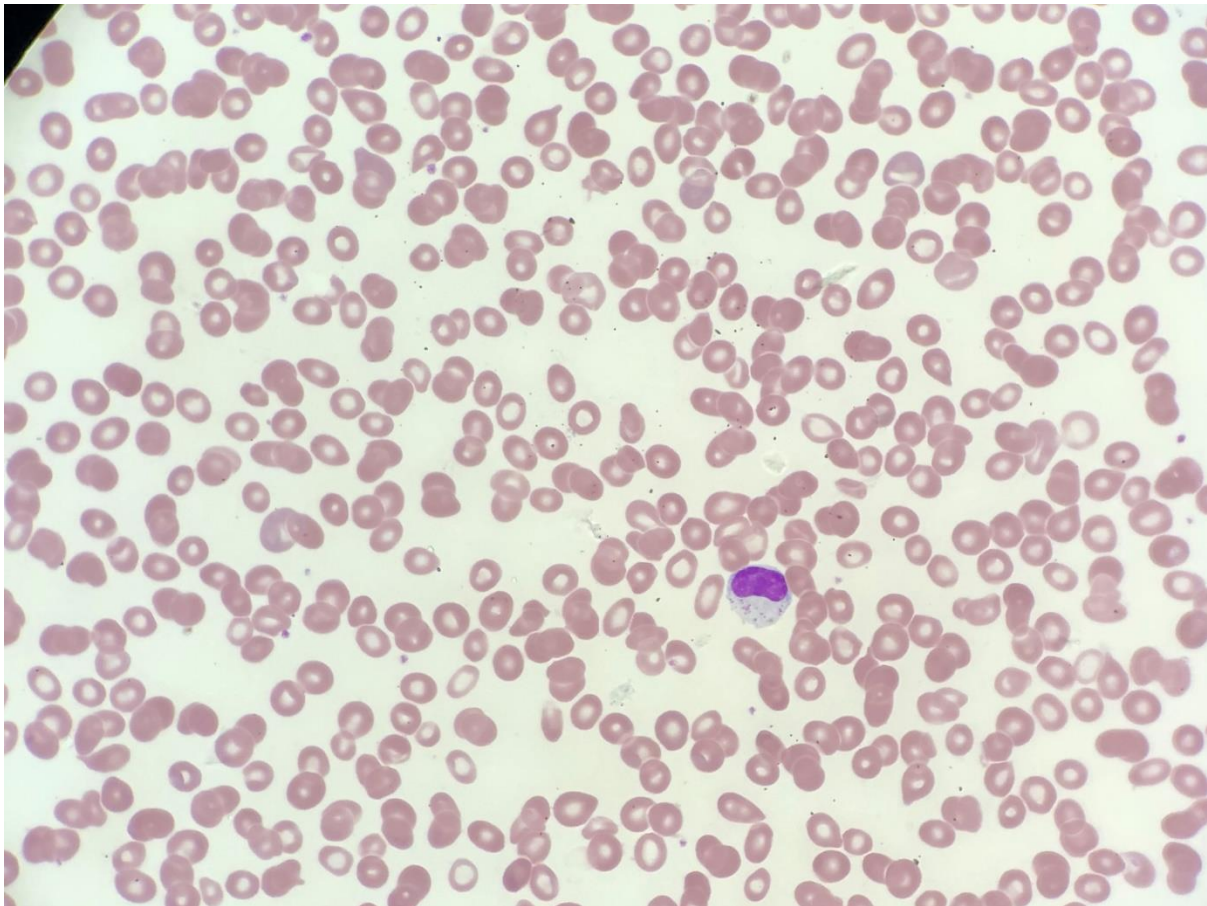
- a. Report the blood film (3 marks)
- b. Immunophenotyping of this peripheral blood sample is as follows: CD5+, CD23+, CD43+, CD200+, FMC7-, Cyclin D1-, CD2-, CD3-. State the additional tests you would arrange prior to starting treatment for this patient (5 marks)
- c. State the potential indications for starting treatment in patients with this condition (5 marks)

Question 11: A 75 year old presents with a 6 month history of weight loss, early satiety and recurrent infections. His spleen is palpable 7cm below the costal margin. WBC 36, Hb 128, Plt 84, Neut 27, Monocytes 7.9



- Report the blood film (3 marks)
- List your differential diagnosis (3 marks)
- State the WHO 2016 criteria for a diagnosis of chronic myelomonocytic leukaemia (3 marks)

Question 12: 66 year old man referred to clinic after a recent hospital admission with severe pneumonia and prolonged recovery post-discharge. WBC 1.7, Hb 91, Monocytes 0.06



- Report the blood film (3 marks)
- Immunophenotyping of the abnormal cell population is as follows: CD19+, CD20+, CD11c+, CD25+, CD103+, CD5-, CD23-, CD38-. What genetic mutation would be expected to be detected? (2 marks)
- Summarise your first line management of this patient (3 marks)