Question 6
A 42-year-old woman presents with several weeks of lethargy and is found to be clinically anaemic and mildly icteric. There is no history or clinical evidence of overt blood loss. She has a normal varied diet and is on no medication.

Her full blood count shows:

- **Haemoglobin**: 67 g/L [120-155]
- **Mean corpuscular volume (MCV)**: 129 fL [80-95]
- **White cell count**: 3.1 x 10^9/L [3.5-9.5]
- **Differential**:
  - **Neutrophils**: 1.4 x 10^9/L [1.5-6.0]
  - **Lymphocytes**: 0.9 x 10^9/L [0.7-3.2]
  - **Monocytes**: 0.5 x 10^9/L [0.2-0.6]
  - **Eosinophils**: 0.2 x 10^9/L [0-0.4]
  - **Basophils**: 0.1 x 10^9/L [0.1-0.2]
- **Platelet count**: 98 x 10^9/L [130-330]
- **Reticulocyte count**: 4 x 10^9/L [8-104]

The blood film is shown in the photograph below.

The most likely diagnosis is:

A. Pernicious anaemia.

B. Evans' syndrome (autoimmune haemolytic anaemia and thrombocytopenia).

C. Aplastic anaemia.

D. Hypothyroidism.

E. Alcoholic liver disease.

**Answer:** A

- Pancytopenia, with macrocytosis, anisocytosis and hypersegmented neutrophils
- Classical film and FBC of B12/ Folate deficiency
- Pernicious anaemia → B12 deficiency
Evans’ Syndrome
- Is excluded by normal reticulocyte count

Aplastic anaemia
- Is characterised by pancytopenia plus absence of reticulocytes indicating bone marrow failure.
- Red blood cells are usually normocytic but can be macrocytic
- Cells on blood film are normal but reduced in number

Hypothyroidism
- Anaemia is usually normochromic, normocytic
- 10% of those with autoimmune thyroiditis however will have pernicious anaemia → B12 def
- They present with macrocytic anaemia with marrow megaloblastosis
- Otherwise hypothyroidism can cause macrocytosis in absence of anaemia and megaloblastosis
- Uncommon

Alcoholic liver disease
- Macrocytosis is usually <110
- Doesn’t tend to affect other cell lines