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THE BLOOD

• Definition:-
• It is the viscid fluid, present in the closed circulatory system.

• Contents:

1-blood cells:
• They form about 45% of the blood volume.
• The Blood cells are:-
  – a- Red cells (erythrocyes).
  – b- White cells (leukocytes).
  – c- Blood platelets (thrombocytes).

2-Plasma: it forms 55% of the blood volume.
How to stain a blood film?
Preparation of blood film

1- **Spreading:**
   - A drop of blood is put near one end of a dry clean slide.
   - Spreading by the edge of another smooth clean slide.
   - We leave the film in air to dry for 5 minutes.
Preparation of blood film

2- Staining with Leishman’s (neutral) stain:

• It is formed of eosin & methylene blue dissolved in methyl alcohol as a fixative.

• The blood film is covered with drops of Leishman’s stain for 2 minutes.
Preparation of blood film for microscopic study:

3-Then dilution of the stain distilled water for 10 minutes.
4-Washing of the slide in tap water then left to dry in air.
Preparation of blood film for microscopic study:

5-Then the film is examined by oil immersion lens.
Practical Cession
RBCs:

**Size:** 6-9 μm

They are non-nucleated cells (now called corpuscles).

In stained sections, RBCs with normal HB appear acidophilic with pale centre (normochromic).

PLATELETS
Neutrophils

- **Size:** 10-12 μm
- spherical in shape
- **Cytoplasm:** contain fine neutrophilic granules.
- **Nucleus:**
  Single, dark stained and segmented (2-5 segments connected by fine chromatin threads.
Eosinophils 12-15 μm

- **Size:** 12-15 μm
- **Cytoplasm:** contains acidophilic refractile granules.
- **Nucleus:** Bilobed “horse shoe-shaped”.

Blood film, Leishman’s stain
Basophils

- **Size**: 10-12 μm.
- **Cytoplasm**: Filled with large basophilic granules
- **Nucleus**: Large and irregular.
lymphocytes

- **Size**: 4-7 μm.
- **Cytoplasm**: basophilic and non granular.
- **Nucleus**: 
  - Central, round and dark.
Monocytes:

- **Size:** 15 μm.
- **Cytoplasm:** Abundant and appears pale blue.
- **Nucleus:** large, pale and kidney shaped.
PLATELETS

Size: 2 - 4 μm.
- Appear as oval or rounded non nucleated discs.
- Their outer part appears transparent and pale blue (called hyalomere).
- Their central part contains dark stained granules (called granulomere).
Answer the following question
Identify the structures labelled by the letters A…G.