Paper – IV: Hematology & Histopathology

Hematology

MUST KNOW

Vein puncture

Instruments used in hematology

Common anticoagulants and their use

Composition of blood cellular elements, functions of blood

Estimation of Hemoglobin

Methods and counting of red blood cells, white blood cells, platelets and reticulocytes.

Estimation of erythrocyte sedimentation rate, packed cell volume, blood indices

Preparation of blood films, staining methods and preparation of different stains and diluting fluids

Study of blood smear examination for red blood cells, different white blood cells, normal and abnormal cells, platelets, and parasites.

Studies for blood coagulation and haemostasis

Sickling tests, red cell fragility test and LE cell test. Foetal Hemoglobin Estimation and Hemoglobin electrophoresis.

Basics of automated Blood Cell counters

NICE TO KNOW

Quality control in Hematology

Born Marrow Examination

Laboratory diagnosis approach on Anemias, Leukemias, and Bleeding disorders.

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Unit: 2. Histopathology/Cytology

MUST KNOW

- introduction to Histology
- Handling Biopsy Specimen
- Instruments in Histopathology
- Fixation & common fixatives
- Tissue processing: dehydration, clearing, embeddi ng, methods of tissue processing: automated & manual, Preparation ob block.
- The manipulation and use of microtomes, Microtom knives and methods of sharpening. Paraffin block, section cutting, picking up sections, drying sections,
- Staining : principle of staining, preparation and use of Hematoxyline and eosin stain.
- Mounting,
- Frozen section apparatus: a theoretical knowledge of its application, construction and use.
- Diagnostic Cytology: preparation of smears and Pa panicolaou stain.

NICE TO KNOW

1. Quality control in Histopathology

- Methods in common use for decalcification
- recognition and correction of faults·in section cutting
- Preservation of slides and blocks

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List of Practials/skills

1.Pathology:

Students should be able to perform:

Haematology :

1. Microscopy
2. Collection of Blood
3. Preparation of bulbs for collection
4. Blood cell counter
5. Estimation of Hemoglobin
6. RBC count
7. PCV & RBC indices
8. Platelet count
9. Total WBC count
10. Differential count
11. Peripheral smear
12. Reticulocyte count
13. ESR
14. Sickling tests
15. Bleeding time & Clotting time

Clinical Pathology

1. Urine Exam. R & M
2. Stool R & M
3. Semen examination R & M
4. CSF Exam. R & M

Blood Banking

1. Blood Group
2. CM Tests
3. Du Tests
4. Comb's Tests,
5. Antibody Tests

Histopathology & cytology

Must acquire

1. Preparation of fixatives
2. Haematoxylin and eosin

Nice to acquire:

1. Logging of tissue processing
2. Paraffin embedding
3. Section cutting
4. Staining
5. Mounting
6. Pap Stain.

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