

Name: Okeke Chinyere

Florence

Matric no: 17/mhs02/068

1. **An autopsy** (post-mortem examination , obduction , necropsy , or autopsia cadaverum) is a surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause, mode, and manner of death or to evaluate any disease or injury that may be present for research or educational purposes. (The term "necropsy" is generally reserved for non-human animals; see below). Autopsies are usually performed by a specialized medical doctor called a pathologist . In most cases, a medical examiner or coroner can determine cause of death and only a small portion of deaths require an autopsy.

2. Histopathological techniques

Histopathological examination studies tissues under the microscope. During this study, the pathologist looks for abnormal structures in the tissue.

Tissues for histopathological examination are obtained by biopsy. Biopsy is a tissue sample from a living person to identify the disease. Biopsy can be either incisional or excisional.

Once the tissue is removed from the patient, it has to be immediately fixed by putting it into adequate amount of 10% Formaldehyde (10% formalin) before sending it to the pathologist

Once the tissue arrives at the pathology department, the pathologist will exam it

macroscopically (i.e. naked-eye examination of tissues).

Then the tissue is processed to make it ready for microscopic examination.

3. Cytopathologic methods

There are different cytopathologic methods including:

1. Fine-needle aspiration cytology (FNAC)

In FNAC, cells are obtained by aspirating the diseased organ using a very thin needle under negative pressure. Virtually any organ or tissue can be sampled by fine-needle aspiration. The aspirated cells are then stained & are studied under the microscope. Superficial organs (e.g. thyroid, breast, lymph nodes, skin and soft tissues) can

be easily aspirated. Deep organs, such as the lung, mediastinum, liver, pancreas, kidney, adrenal gland, and retroperitoneum are aspirated with guidance by fluoroscopy, ultrasound or CT scan. FNAC is cheap, fast, & accurate in diagnosing many diseases.

2. Exfoliative cytology

Refers to the examination of cells that are shed spontaneously into body fluids or secretions.

Examples include sputum, cerebrospinal fluid, urine, effusions in body cavities (pleura, pericardium, peritoneum), nipple discharge and vaginal discharge.

3. Abrasive cytology

Refers to methods by which cells are dislodged by various tools from body surfaces (skin, mucous membranes, and serous

membranes). E.g. preparation of cervical smears with a spatula or a small brush to detect cancer of the uterine cervix at early stages. Such cervical smears, also called Pap smears, can significantly reduce the mortality from cervical cancer. Cervical cancer is the most common cancer in Ethiopian women.

4. Immunohistochemistry (IHC)

IHC offers several distinct advantages when compared to traditional identification methods. This technique is rapidly expanding the diagnostic capability of the pathologist.

IHC permits rapid agent identification. The technique employs specific antibodies, which localize to the antigens of the etiologic agent of interest. Since this technique uses formalin-fixed tissues, specimen

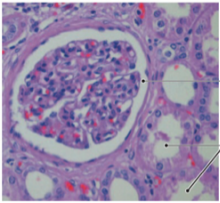
transport is simplified, allowing retrospective studies and minimizing laboratory worker exposure to infectious agents.

IHC is a sensitive and specific test methodology for many microorganisms, and unlike some traditional staining methods, they result in direct, highly interpretable visual evidence of the presence of an infectious agent within tissues. In addition, IHC detects organisms that are difficult to culture and those that cannot be cultured.

Cellular adaptation and cell death.

Necrosis is the pathologic death of cells and is one of the most common of pathologic findings in disease. It is to be distinguished from apoptosis, the programmed, normal death of cells. Necrosis usually occurs in blocks of cells forming a

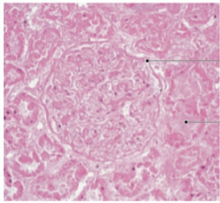
collective mass fed with blood from a single artery. For example, a heart attack is the death of a group of heart muscle cells fed by a single blocked coronary artery. Similarly, an abscess is a group of liquefied cells killed by localized bacterial infection. However, in certain circumstances selected groups of cells die because they are of a certain type in a certain organ. For example, in patients in shock from blood loss, kidney blood flow falls dramatically because blood vessels to the kidney and other abdominal organs constrict in order to conserve blood for the brain, heart, and lungs. In this circumstance, certain kidney cells are vulnerable to necrosis because they are metabolically very active and require more oxygen than does the remainder of the kidney.



Glomerulus

Tubules

A



Necrotic glomerulus

Necrotic tubule

B