المحاضرات العملي

المادة: التحضيرات المجهرية microscopic technique

المحاضرة : الأولى

المرحلة : الأولى. **الدراسة : الصباحية**

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Chapter 1

Introduction

Microscopic preparations

The process of microscopic preparations, although very complex and accurate, is of great importance in practical, research and diagnostic life, as it is considered the first basis for diagnosing disease, so these microscopic preparations were of great importance in the medical and research aspect until the present time. The electronic form is only evidence of that importance.

The preparations are divided into two parts:

(1) Non-sectional preparations in which sections cannot be made, such as blood tissue.

(2) Sectional preparations for light microscopy and electron microscopy.

And the fact that this technique has a close relationship with many sciences such as pathology, histology, tissue chemistry, cell science and other sciences that microscopic preparations serve, it was necessary to define some of these sciences:

Cytology: It is the science that studies cells in terms of structure, shape and function

Histology (Microscopic Anatomy): the science of tissues It is the science that studies the microscopic structures of each of the cells, tissues, and organs that make up a living organism.

Pathology: It is the science that studies disease in terms of its causes, mechanism of development, relationships, symptoms and consequences.

Microtechniques (microscopic preparations)

Microscopic (accurate) preparations mean that they are the steps by which the cellular structures that make up the body of

a living organism that are not visible to the naked eye, parts of it, or organs of the body can be studied using special devices and equipment for this presentation.

There are many methods of microscopic preparations, among which we mention the most common at the present time:

1) Total Whole mount:

Where the entire sample is placed on the slide for examination, such as liver worms and lice, of which there are two types:

A_ Temporary total download.

B_ Permanent total load.

(2)_Smearing Method :

It is one of the fastest preparatory methods for soft tissues such as animal testicles and vital fluids such as blood, sputum and vaginal fluid.

(3) Publication or publication Teasing Method :

It is used to study parts of a tissue, such as muscle, for example, where a small piece of muscle is taken and then, using a dissection needle, it is disassembled into structural units such as muscle fibers, where microscope light can penetrate.

(4)_Squashing Method :

It is used for sorting soft samples and converting them from the tissue state to the cellular state on the slide of the bottle, such as studying the stages of cell division and watching the chromosomes.

(5) Direct Method :

It is used for the rapid study of live samples for a very short time, as in the examination of oral squamous cells, amoebae and paramecium.

(6) Sectioning Method:

It is the most important for studying samples at the tissue and cellular levels, and its purpose is to obtain a sector My fabric is very companion There are three main methods used to make tissue sections:

1- **The paraffin technique (which is the most popular method)**
2- **The celloidin technique (which is the most accurate)**
3- **The freezing technique (And it's the fastest)**

First :Paraffin Technique

In it, molten and solid paraffin wax is used, and the following are the steps used to make sectors histologic.

They are summarized as follows:

1_ Obtaining the specimen

2_ Fixation

3_ Washing

4_ Dehydration

5_ Clearing

6_ Impregnation or Infiltration

7_ Embedding

8-Trimming

9_ Sectioning

10_ Mounting

11_ Staining

12 _ Making a permanent slice.

We will go over each step in some detail: