

PRACTICAL -4

IMBEDDING METHODS



There are four methods that are generally employed:

- (a) the paraffin method,
- (b) the celloidin (collodion) method,
- (c) the celloidin- paraffin method,
- (d) the freezing method.

Embedding tissue in paraffin wax:

- * With The tissue Tech system, paraffin wax is dispensed automatically from nozzle into a suitable sized mould which is then place on a small cool area to allow the wax at base of the mould to semi-congeal.
- * When this has been done, the base of the cassette is placed on top and together they placed on the cold plate so the paraffin wax can coo quickly these ensuring a small crystalline structure.
- * After the paraffin has solidified (5 min) the mould is removed and the block is them ready to sectioning.

Considerations *paraffin wax method:

- **A.** Embedding-orientation of the tissues to make a paraffin blocks.
- **B.** Each stage must be sufficient length to ensure complete processing of tissue.
- **C.** The tissue are completely filled with some substance that will give support and greater consistency.
- **D.** And homogeneity to the tissue, and thereby enable the cutting of much thinner and more perfect sections.
- **E.** After the tissues have been dehydrated, cleared, and infiltrated with the embedding material, they are ready for external embedding.
- **F.** During this process the tissue samples are placed into molds along with liquid embedding material (wax) which is then hardened.
- **G.** This is achieved by cooling in the case of paraffin wax and heating (curing) in the case of the epoxy resins.
- **H.** The hardened blocks containing the tissue samples are then ready to be sectioned.

PARAFFIN.	CELLOIDIN.
Heat required.	No heat required.
Sections relatively thin; 1 to 10 microns or more.	Sections relatively thick; 10 to 25 microns or more.
Imbedding mass removed.	Imbedding mass usually not removed.
Sections cut dry.	Sections usually cut wet (with alcohol or oil).
Knife usually set at right angles.	Knife oblique.
Cutting stroke usually rapid.	Cutting stroke slow.
Usually more or less distortion.	Form of the organ better preserved.
Imbedding requires less time.	Imbedding requires more time.
Better for smaller objects.	In general, better for larger specimens.

ADVANTGE OF THIS SYSTEM ARE:

- ✓ Ease of use
- ✓ Less paraffin wax is used
- ✓ Speed
- ✓ Tissue and holder are firmly attached
- ✓ Blocks can be filled immediately after sectioning
- ✓ Permanent identification

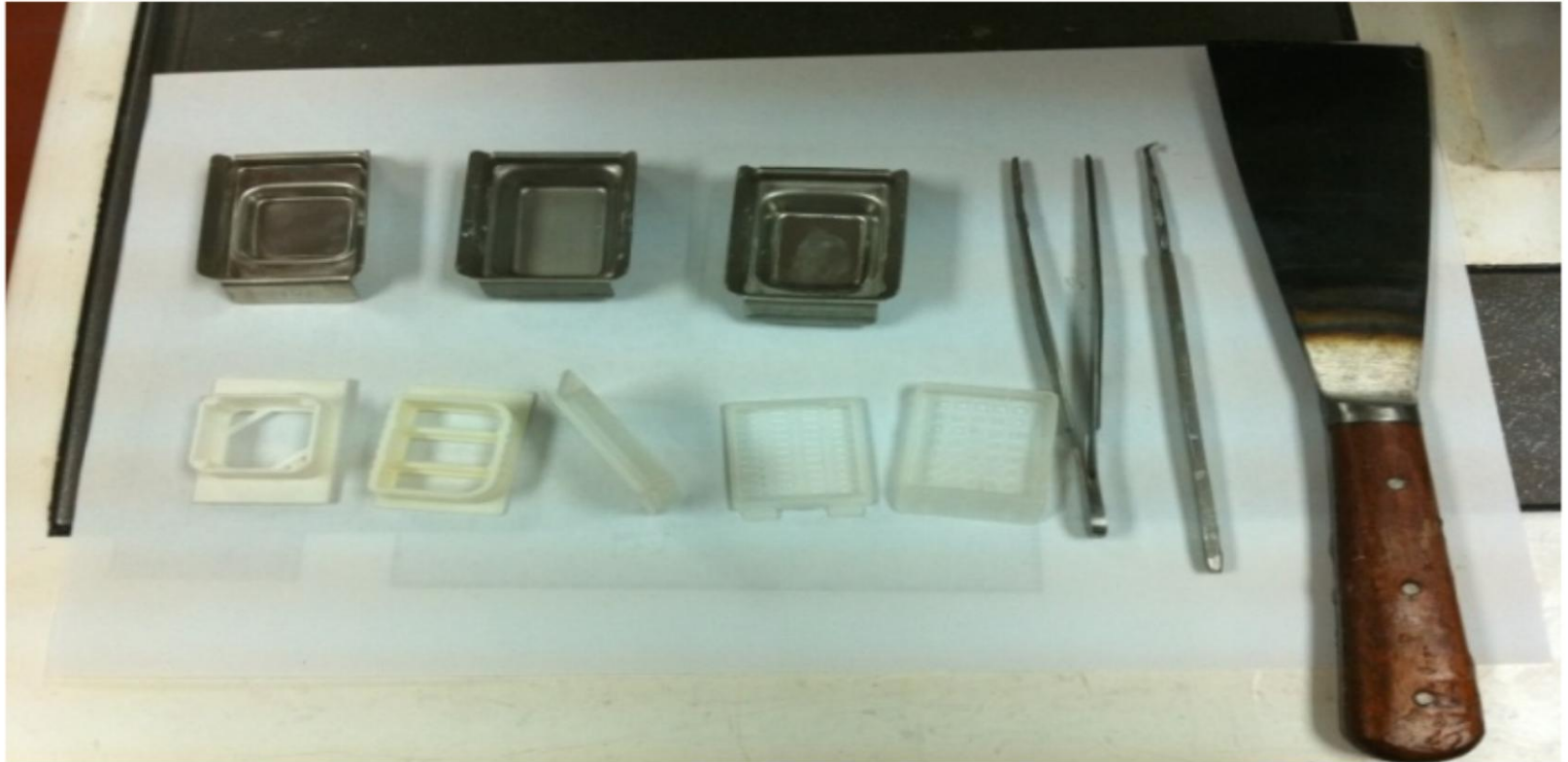
ORIENTATION OF THE TISSUE BLOCKS:

For most blocks, sections are cut from the largest area of the tissue but there are many important exceptions.

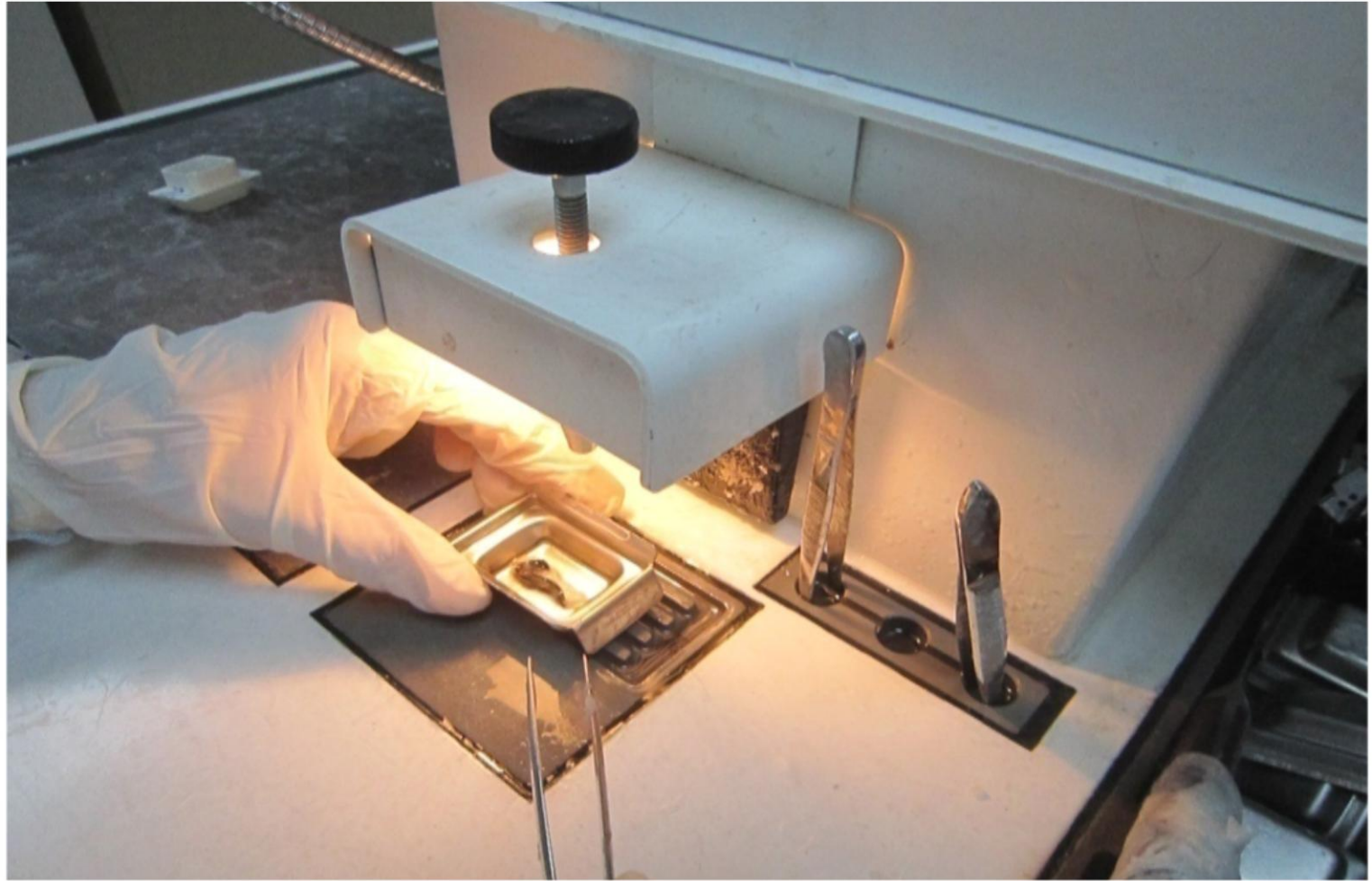
- Tubular structure, ex. Arteries and vast deferens are cut in cross section.
- Skin and other epithelial biopsies are cut in a plane at right angles to the surface.
- Muscle biopsies are section in both transverse and longitudinal planes.
- When a particular tissue feature is present on are aspect only.

EMBEDDING CENTER

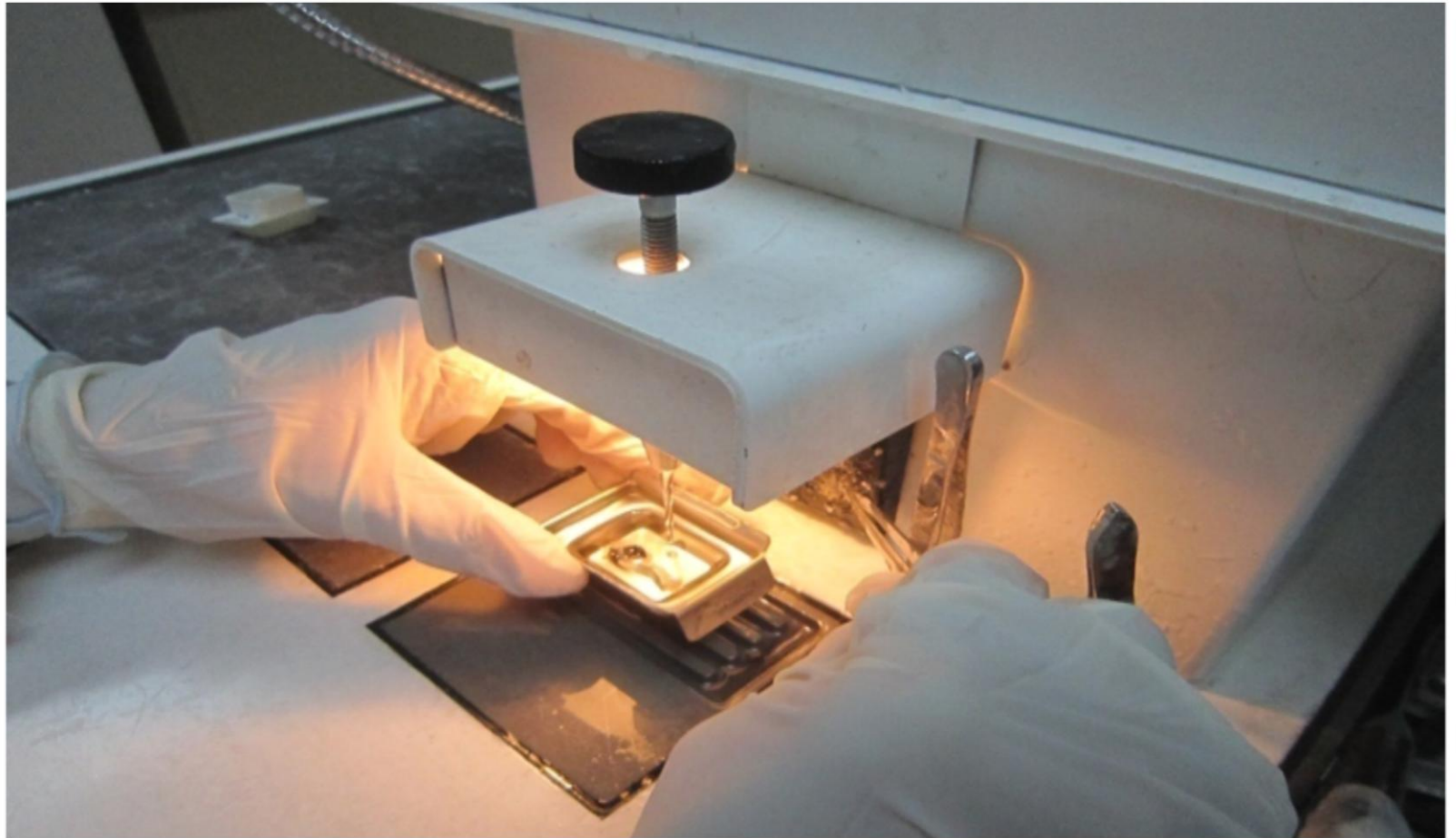




a. Embedding cassettes b. Automatic cold plate
c. Embedding ring d. Forceps e. Spatula



Put the tissue at the middle of the embedding ring...



Fill the embedding ring with paraffin wax, tissue at the middle...



Cover the embedding ring, cool until the paraffin wax turn into transparent.



Put the block into the cold plate or ice water for 5 to 20 minutes and remove the tissue block from the embedding rings....

That's It ! (: