

WAX MOUNTING OF SPECIMEN IN ANATOMY MUSEUM

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ABSTRACT

Specimens in the Anatomy Museum are generally mounted on the plastic sheets by stitching them by using thread. As time passes the tissue becomes brittle, especially the brain specimen, which is very delicate and by putting sutures again and again leads to damage to the tissue. Paraffin wax, which is used in the Histology Laboratory for making the blocks, is tried for mounting the specimen instead of the plastic sheet. It was found that this method is quite cheap, easy to use and can be repeated without any problem in case anything goes wrong.

KEY WORDS : Mounting, Paraffin wax, museum specimen, mould.

INTRODUCTION

Museum is the integral and most important part of the Anatomy department in any Medical College, and just by seeing the museum one can tell about the department. Different types of exhibits are kept in the Anatomy Museum for educating the medical and other students at any time and for the show. The exhibits can be wet specimen kept in the formalin or any other preservative solution in the glass or plastic jars, dry specimen, bones, models, charts, cards, etc. Among these, wet specimen are most common in the Anatomy Museum.

The soft specimens like brain has to be mounted on some support, otherwise they can get disfigured. Other specimen can also get disfigured in the long run of time. The specimens are mounted on the plastic sheets, plaster of Paris, X-Ray sheets, etc. Of these plastic sheets are very common in different colours, usually white or black. For this appropriate sized plastic sheet is taken, holes are drilled in it, and specimen is stitched on it by using cotton thread or surgical twine.

The procedure described above is good enough for the little tough tissues like bones, muscles, etc. But for the soft tissues like brain problem faced during stitching, as if sutures are too tight they cut through the specimen, or if they are loose the tissue hangs on the plate and little bit of jerk can damage the specimen and give the bad look. Another problem comes when the specimen is shifted due to some unavoidable situations or even by some teachers

taking them to the classrooms away from the museum. This may leads to suture becoming loose or cut through the specimen and specimen gets damaged. To avoid sutures at some places plaster of Paris is used to mount the brain specimen. But it gives specimen a dull look and becomes yellow after some time. The paraffin wax, which is used commonly in the Histology Laboratory, is used to mount the specimen, base on the plastic sheet.

MATERIAL AND METHODS

Specimen of different sizes and thickness were taken from the dissection hall of the Department of Anatomy And Department of Pathology of Kasturba Medical College, Mangalore. The specimen included brain, kidney, heart, spleen, stomach, liver, aorta and its branches of adults as well as of foetus were used for the procedure.

- L-blocks (wooden lined by plastic sheet) 2.
- In case L-blocks not available four glass strips of 3 to 5 cm. Width can be used, supported from outside.
- Paraffin wax.
- Plastic / acrylic sheet for mounting.
- Glycerin.
- Glass or plastic/acrylic jar.

The paraffin wax was melt in an incubator just above the melting point. Appropriate size plastic or acrylic sheet was cut and put in the center of a clean glass plate. Glycerin was smeared on the inner surface of the L-blocks and these blocks were kept on the sides of the plastic sheet so that it forms a rectangular mould. Molten wax was poured in the mould so that it made a layer of about 1cm. Thick. When the wax start getting solidify, i.e. a thin film formed on the surface, the specimen was kept in the center of the rectangle with face up and then wax was poured around the specimen till it reached at the level

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of the specimen. It was allowed to cool slowly. When it was cold enough, the L-blocks were removed, the specimen in the wax block along with the plastic/acrylic sheet was lifted from the glass plate. Sides of the wax block were trimmed and smoothed by using a hot scalpel. Then it was kept in an appropriate sized glass or acrylic jar, filled with the preservative solution and labeled.

If L-Blocks are not available, 4 Glass sheets or plastic sheets, supported from outside by some blocks or even books to make the block, and then rest of the procedure can be carried out as described above.

After mounting the specimen they were kept in the Anatomy Museum and asked for the opinion of teaching staff, technical staff of different departments and students (undergraduate and post-graduate) after comparing the specimen mounted by this technique with the specimen mounted by the old techniques for the clarity, easiness of the technique, relations and effects on the preservative.

RESPONSES

Table-I : Responses from the teaching staff (10).

Sl. No.	Criteria	Better	Same	Worse	No Comments
1	Clarity	2	8	---	---
2	Easiness	7	3	---	---
3	Relations	4	1	1	4
4	Effect on Preservative	2	4	---	4

Table-II : Responses from the technical staff (12).

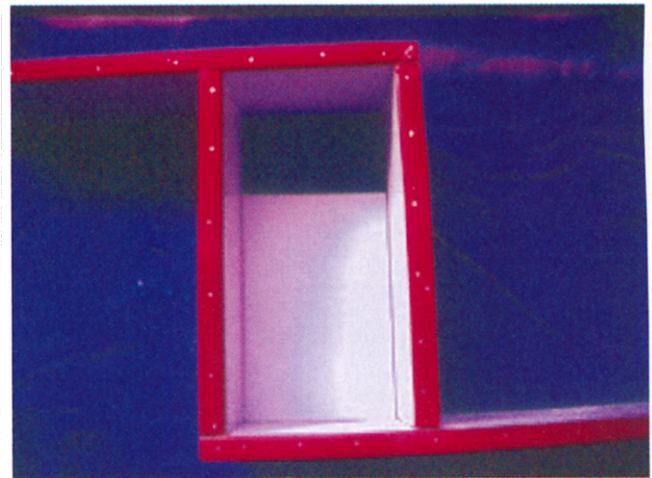
Sl. No.	Criteria	Better	Same	Worse	No Comments
1	Clarity	4	3	---	5
2	Easiness	11	1	---	---
3	Relations	2	4	---	6
4	Effect on Preservative	2	5	---	5

Table- III: Responses from the students (42).

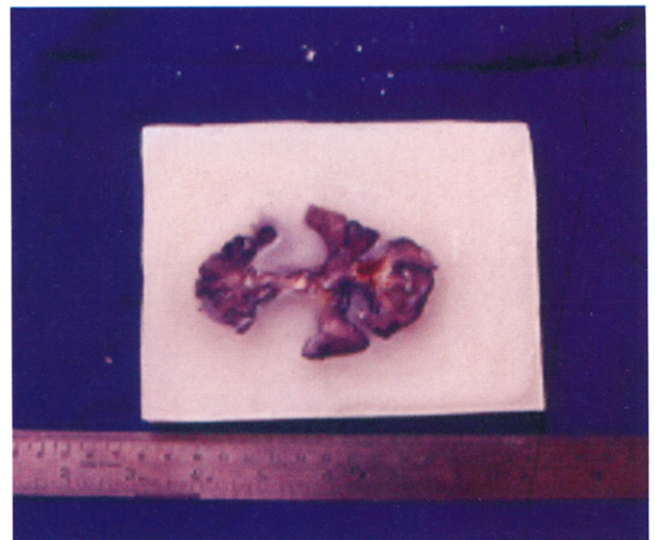
Sl. No.	Criteria	Better	Same	Worse	No Comments
1	Clarity	14	14	12	2
2	Easiness	13	20	5	4
3	Relations	9	21	6	6
4	Effect on Preservative	10	11	8	13

Table-IV : Total Responses (64).

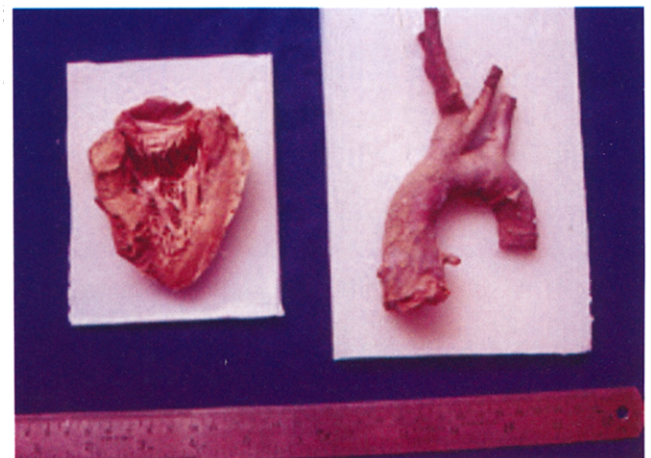
Sl. No.	Criteria	Better	Same	Worse	No Comments
1	Clarity	20	25	12	7
2	Easiness	31	24	5	4
3	Relations	15	26	7	16
4	Effect on Preservative	14	20	8	22



L-blocks forming rectangle with plastic sheet at bottom



Brain specimen mounted in wax.



Heart and arch of aorta mounted in wax.

DISCUSSION

Cares to be taken :

- Always use the fresh wax, never recycle it.
- Wax should not be too hot.
- Dry the specimen before procedure so that there is no water film between the wax and specimen.
- Wax should be cool slowly under the fan, not by pouring water on the wax.
- While cooling the surface should not be touched, as it may lead in formation of the fingerprints on the surface.
- Do not allow the specimen to dry after mounting.

Advantages :

- Low cost.
- Wax is easy to work with.
- Wax is easily available.
- It is easily moldable.
- No sophisticated equipments required.
- In case of any mistake, procedure can be repeated without any problem any number of times.
- The mounted specimen can be transported easily by just wrapping in the wet cotton, and then in a plastic cover.

Suggestions and other Comments received:

- Better for the delicate and fragile tissues.
- Suitable for the small tissues.
- Technically easier to carry out with lesser tissue damage.
- Probably more durable.
- Base should be broadened.
- It will be better to use the transparent wax.
- Want to see how it workout in long run.
- Better fixed in the wax.
- If wax is less, clarity and easiness will improve.
- Not getting 3-D picture.
- Wax is looking better.
- In some cases old method is better for observation.

We received 64 responses from different people that included 10 teaching staff, 12 technical staff and 42 students. We found that 20 respondents found specimen mounted by this technique were clearer, 25 felt no difference, while 12 felt clarity is lost and all these were students. As easiness of the technique was concerned 31 respondents found that this technique is easier than the old technique, 24 found no difference, while 5 respondents (all students) found that old technique was easier. As

easiness is concerned 11 out of 12 technical staff found this one is easier than the old, this can be more reliable as these are the persons who are more benefited with this technique. Most of the teaching staff felt that by this technique relations can be maintained in the better way and technical staff felt not much difference, while some of the students (7 out of 42) felt that the relations were maintained in better way by the old technique while rest of the students were of the opinion of better or not much difference. Most of respondents found not much difference on the effect on the preservative by this technique (20 said same and 22 with no comments), while again 8 students found this technique is bad for the preservative.

As regarding this technique whatever negative responses we got were from the students, this may be due to the reason that they are concerned with the technique. Most of the technical staff gave the positive responses, may this is due to the fact that these are the people who are concerned with the technique development and their modification if and whenever they are given chance. Teaching staff also gave responses in the same manner.

References are not included as I could not get any reference on this subject.

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