

ANCIENT AYURVEDIC METHOD OF PRESERVATION OF DEAD BODY & DISSECTION

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ABSTRACT

As per Shusrutha to become a best Physician & Surgeon the dissection of the dead body is very necessary. The theoretical knowledge learnt from the teacher & observed in the dissection classes should be supplementary to each other. An effort is made by collecting all available literatures in the Ayurvedic science, how the body is collected, where it will be dissected, period of dissection etc. all these have highlighted in this literature with Pictures.

Keywords: Shusrutha, Extreme cold rivers, *Bambu* cage, Instruments, *Munja*, *Kusha* (Dharbha).

INTRODUCTION

Ancient physicians have explained many things about *shareera Anga Pratyanga* by doing dissection of the dead body. Here I am highlighting how they were selecting and collecting the dead body for the dissection purpose and what was the preservative method how many days they were conducting the dissection.

What was the study method and instruments used for the dissection all these are highlighted in this literature. This study Subject is collected from the various *samhitas* and *sangraha karas* and research papers both from Ayurveda and Modern.

STATUS OF ANATOMY DURING DIFFERENT PERIODS

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The historical changes in Ayurvedic status anatomy may be divided into different periods such as

1. The Vedic period: ¹There is reference regarding preservation of dead body of Raja Dasharatha in *tailadrona* for two years.
2. The Buddhist period & Post Buddhist period: ²A great setback for Anatomy in this period because of Buddhist ahimsa *siddanta*. Even sharp instruments were also not allowed.
3. Mughal period: They neglected and burned many Ayurvedic scripts. This was also a great setback for Anatomy.³
4. The British period: With a spreading of Christianity they have spread the British medicine also. The first Medical College began in India in Calcutta. The first body dissected was by *Madhusudan* Gupta in 1936.⁴
5. The post independent period and at present: The same British methodology of teaching is still now continuing.

6. But now a days the new method of teaching Anatomy with lumen casting and plastination which is very helpful to the students to study Anatomy.

Review of Literature⁵

Dissection of the dead body and its every organ is must to become a physician and surgeon. The theoretical knowledge learnt from the teacher and the same knowledge observed at the time of dissection should be supplementary to each other, which makes students to become more perfect in these methods of study. Then study of *shastra* makes the growth of knowledge after solving the difficulties.

The method of dissection & exploration according to Sushruta⁶

- (Text other than Times New Roman should not include in article, text must be in English and reference from classical texts must be given. in references at end.)

While securing a dead body the following points should be checked

- That all the limbs are intact
- Death is not due to poison
- The diseased must not have suffered from a prolonged illness
- The cadaver is not of a very old person
- After removing the intestines and the fecal matter place the body in a stout cage covered with mattresses or fibers of *kusha*, flax or similar material.
- The cage is then immersed in a running stream where the current is not very strong where there is no interference from the public. The body should be allowed to decompose in this water for 7 days. When every part is loose, it should be taken out and starting from the skin. Every organ should be examined and peeled off with a brush of bamboo bark, or similar material.
- Every internal and external part and organ should than be minutely observed & studied

Purpose of Dissection⁷

According to Susrutha, the study of human cadaver has two major aims such as;

- *Shariravichaya* – Dissection
- *Sharirashodana* - To explore or search

One is supposed to do this by keeping in mind that the purpose is *shariraupakarartha*

AYURVEDIC METHODOLOGY OF THE STUDY OF ANATOMY

It is based on the actual dissection of dead human body. The teachers at that time insisted on “*Pratyaksha Jnana* (Live Demonstration)”. This was almost 5000 years ago. This method is not helpful to dissect all parts of the body with clarity. The way the cadaver was effectively used to impart lessons in Anatomy are praiseworthy and admirable.

It is worthwhile making experimental models or the actual working experiments to test the claims made in Ayurveda and to know their value.

Preservation of dead body in the cold water

If the water contains some dissolved substances it may act as a “preservative”. Extreme cold water like Himalaya and Jammu Kashmir rivers could be an ideal river for dissection particularly when the water containing dissolved substances.

Suitable places for Dissection

Dissection also is dependent upon the flow of water and also the structure of the river bed which should be sandy and not muddy. From this point of view only the Himalayan rivers could be effectively used for dissection and possibly a few can be pointed out from Karnataka and Kerala i.e in winter seasons. In those days rivers were flowing with low temperature.

Himalayan rivers are very clean water as good as sterile; contain less number of bacteria, even though the mechanical washing action of the river water is the main factor to keep the cadaver sterile. The extreme cold water stops the decomposition further.⁸

The criteria for the selection of the site for dissection should be based upon

- Clarity and purity of water.
- Speed of water current-sufficiently strong
- River bed of sand and the pebbles.
- Approach up to water front absolutely clear and without any plant life.
- Place away from public site
- Away from the wild animals and crocodiles.
- Place should be ideal for teaching dissected body.

It is amazing that even at that there was a great curiosity to study the human body for the purpose of treatment and surgery, keeping the cadaver in the running stream at a lonely place which is not frequented by common public and the place away from water fetching places. This idea for selecting the place for dissection must have been finalized after a great experience.

Collecting the body for the dissection

Cadavers were collected from the *Dharmashalas* and places of pilgrimage where a traveler died and there was no near and dear one to cremate it. Probably, King's permission was necessary for this purpose.

Removing the GIT and the adnexa clearly indicates the awareness that if these are allowed to remain in cadaver, the purification of the body is uncontrollably quick. The knowledge about "Antras (Intestines)," "Amashayas" (Stomach) and "Pakwasha" (Large Intestine) etc was first gained and then attention was given to the rest of the parts.

- The lividity begins from caecum with the bacteria which spreads to all parts of the body. We must hats off to the knowledge that the ancient people had.⁹

After collecting the body the body is wrapped with *Munja* (Saccharum munja) and *Kusha* or *Darbha* (*Desmotachya bipinnata*). The recent researches show that these act as preservatives.¹⁰ The whole covering of the body will delay the decomposition.

Whenever it is needed for the dissection the wrapped grass is removed and dissected.

- Placing the cadaver in a cage is for protection from wild animals. Wrapping it in layers of grass may also help to delay the decomposition. The instruments were prepared from Bamboo or wood.
- A bird's eye view of the possible dissection site at the time of Ayurveda. The place is lonely, away from the human disturbances and interferences, clean, calm and quiet with plenty of water for the cadaver as well as from the students to bath and clean themselves.
- Natural canals and natural deviated water streams were selected.

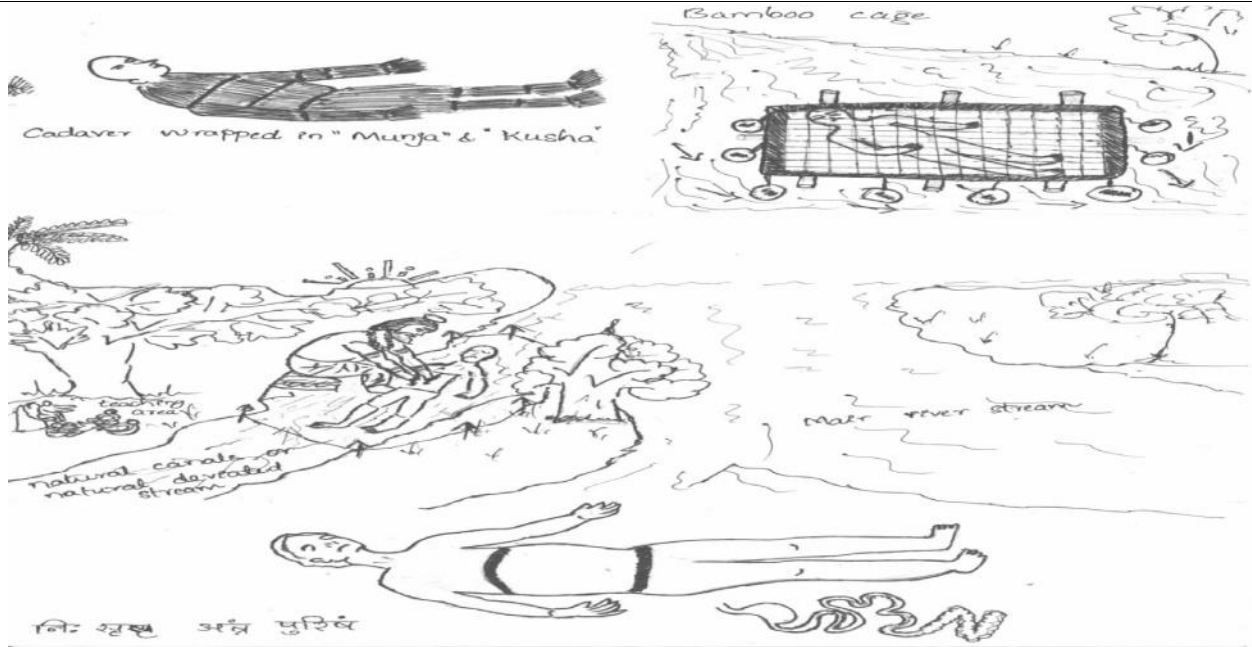
Time period for dissection

The course of dissection may be within a month. Probably the winter is the best season i.e. November, December and January and according to Hindu calendar *Kartik*, *Margasheersha*, *Pausha* and *Magha*.

Method of placing the cadaver in a bamboo cage in supine position wrapped with *Munja* and *Kusha* (*Darbha* grass) and fixing the same in running water stream.¹¹ The stones are used for weights to fix and to immerse the cadaver completely underwater. All the parts are fully dipped in water and no part is left exposed to air.

- An imaginary plan of the dissection site, prepared from the description available from the various texts.

IMAGINARY FIGURE:

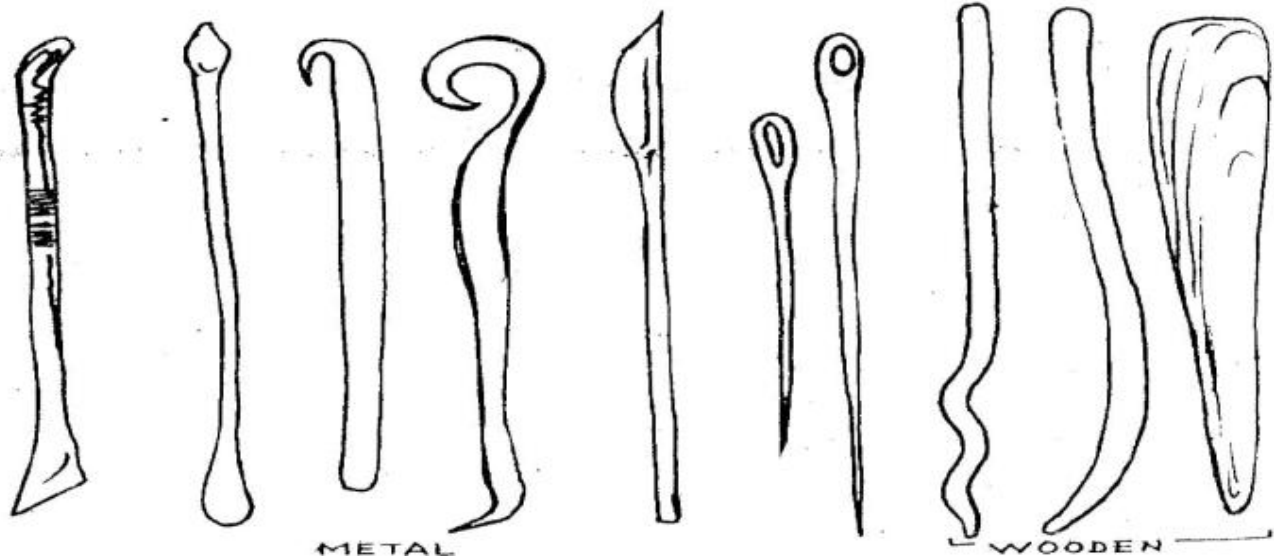


Dissection of Skin layers¹²

During the first 7 days of the dissection there was full separation of all seven layers of the skin. The skin came off with ease as time proceeded. The deep fascia and muscles perhaps got separated in the next 7 days or so and in the remaining fortnight the ligaments of the various joints separated.

Instruments used for the dissection:¹³

- With the help of these naturally occurring instruments one was able push, pull, tease or separate the various organs.
- The hollow horns and bones were used for blowing away the particles or the dirt. Some time they were used for sucking the fluids which interfered with the site and also used as measures.



Research work¹⁴

“One week of decomposition in air is equivalent to two weeks in water, which in turn is equivalent to eight weeks in the ground.”

Differential decomposition in Terrestrial, Fresh water and Salt water Environments – A Pilot

Study. By- Laura E Ayers, Texas State University - 2010

DISCUSSION & CONCLUSION

1. In ancient period only they know Anatomy by doing dissection of a cadaver, which is a fundamental knowledge to become a physician and a surgeon.
2. According to available literature an attempt to highlight the procedure of dissection and how cadaver was dissected.
3. According to the literature mentioned above the dissection was conducting in a extreme cold river. This low temperature will stop the further decomposition the body.
4. Bodies were collecting most probably from Dharmashala or Piligrames death, where there is no near and dear, with the permission of supreme authority.
5. The period of dissection where conducting within one month.
6. Layers of skin were dissected by the current of running water in 7 days.
7. Instruments for the dissection were made up of bamboo sticks, horns & bones of the animals.
8. Bodies were covered by grass which prevents further decomposition.
9. The diagram shown in the article which is imaginary and will give idea how they were conducting dissection in unknown place.
10. Natural Cannels or natural deviated water streams were selected as a spot of dissection area.

shloka

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8. Forensic Medicine and Toxicology by Narayan Reddy 33rd edition, 7th chapter- page no 164
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