Scientific Interpretation of
Mritsanrakshan Paddhati as Per Sushruta Samhita

Dr. Jyoti Gangwal¹, Dr. Sanjay Kholiya², Dr. Vikash Bhatnagar³, Dr. Sandeep M. Lahange⁴

¹,²PG Scholar, ³Associate Professor, ⁴Assistant Professor
¹,²,³Department of Sharir Rachana, ²Department of RSBK,
¹,²,³National Institute of Ayurveda, Jaipur, Rajasthan, India

ABSTRACT
For whole knowledge of body we have to study anatomy subject theoretically also practically. By the dissection of human cadaver. There are several methods of dead body preservation in modern science. In Ayurveda, a special method for dead body preservation is given by Acharya Sushruta. This method is called "Jalnimajjan Paddhati" of Mritsanrakshan. According to Ayurvedic texts Acharya Sushruta is best in Sharir Sthan. He is described many anatomical structures of human body and useful information of every segment of body. He also told about 7 skin layers and their thickness and 7 types of Kalas with their order. This was possible because of complete dissection.

KEYWORDS: Dissection, Human cadaver, Jalnimajjan Paddhati, Mritsanrakshan, Kalas

INTRODUCTION
No one can become good in anatomy subject without knowing it properly. Because it is the most important branch of medical science. In Ayurveda According to Acharya Sushruta who knows the anatomy properly by dissecting dead body he will definitely good in surgery, because he knows the vital parts of body like arteries (Dhamani), veins (Sira), nerves (Nadi), Marma points etc. to escape from injury during surgical process.¹ Acharya Sushruta has told about many points of references in his text for selection and preservation of the human dead body. These are points are like, human dead body (cadaver), having all its parts of a person who has not died by either poison or chronic disease or attaining hundred years of age etc. According to Sushruta dissection is prime for medical student to gain practical command on anatomy subject, that’s why he mentioned about preservation method and dissection technique of cadaver.

AIM AND OBJECTIVES
1. To learning the procedure of cadaveric preservation mentioned by Sushruta in his text.
2. To interpretate the terms of procedures he used in his text according to modern science.

MATERIAL AND METHODS
Ayurvedic texts like Sushruta Samhita, Dr. Bhaskar Govind Ghanekar commentry on Sushruta Samhita etc. and few published articles references.

INTERPRETATION OF CADAVERIC PRESERVATION PROCEDURE ACCORDING TO MODERN SCIENCE-
Acharya Sushruta used many references in his text for preservation-
“तत्समात् समस्तगामविषोपपत्तिदीर्घवायृचरितमवर्तकमः
निष्कृताद्यपुष्पमवहन्तथामागायोऽविविधम् पंजरस्य
मुजवक्तकुशशिषादिनामामयसंविद्धवग्रामकरस् देशे
कोपयेत्, समयम् प्रकृतिः चोदधृष्ट्व तत् देहं
सत्तप्रादशिरामालेनारुकुलकृतवर्तमानमः
शानि: 
शानि: वध्वर्ष्यंस्वगामी: सर्वान्न: वाहयायनमतर्यमच्छलस्तु
यथाक्ततानलहस्तक्षुष्टु॥” (सु.श.5/61)²
In this caution there are some point of references are explained like-

1. **समातस्तागत्राम (Samastagatram):**
   - According to Sushruta human dead body (cadaver), having all its parts in natural condition not extra or less in number.\(^3\)

2. **अविश्वासपत्तम (Avishopahatam):**
   - According to Sushruta person whom body going to be preserved has not died by poison. Because due to poison body parts are effected and body not remain in its natural state.\(^4\)

3. **अदीर्घ्यवायधिपीदितम (Adeerghvyadhipeeditam):**
   - According to Sushruta person whom body going to be preserved has not died by Chronic diseases because these kind of diseases damage the body parts like –In leprosy skin is damaged, In syphils nasal bone and other bones are damaged, In gonorrhrea penis is damaged etc. These kind of diseases give us wrong information about the study of body parts. There is not any kind of damage in starting stage of acute diseases so if dead body suffered from acute disease previously it should be taken for dissection purpose.\(^5\)

4. **अवर्षसतिकम (Avarshashatikam):**
   - Sushruta refuses to take old person's body as well as children's body. Because old person's body parts are get degenerated like, Changes in skin, fall down of teeth, bones become weak, muscles get shrink, ligaments get flaccid and in old female body uterus get shrinks. On other hand in children body parts are not properly developed so we cannot find the natural state of body parts. Like total teeth not present, bones not formed well etc. That time the maximum age limit is 100 years so above this age the person considered old, Hence Sushruta told the term Avarshashatikam which means not above the 100 years. But in present era average age level diminished so we can take body having age of 50 to 55 years.\(^6\)

5. **निःसुष्टन्नपुरीण (Nisrushtantrapureesham):**
   - According to Sushruta intestine along with faeces should be removed because many bacteria present here and they fastly decomposed the dead body. There are two kinds of benefit here for removal of intestine with faeces that body not decomposed by bacteria and intestine available for specimen purpose.\(^7\)

6. **अवहल्ल्यमणागायो (Avaghntyamaagayam):**
   - According to Sushruta dead body should be well tied and kept in river which has slow running stream so that dead body keep contact continue with water and skin get soft and moist and body prevent from bed odour.\(^8\)

7. **निबध्म (Nibadham):**
   - Here Nibandham word meaning is kept tied as previously told. So that body should not flow or drown and remain under water.\(^9\)

8. **पंजरस्थ (Panjarastham):**
   - Sushruta told that Dead body should be placed inside a cage to protect from water animals.\(^10\)

9. **मुन्तवल्ककुशशणानमन्यतमेनावेष्टितांग्रपत्यांगम (Munjavalkalkushshanadinam Anyatamen Aveshita Angrpayangan):**
   - Dead Body should be wrapped either with Munja, Valkala (inner barks of trees), Kusha (grass part of Panch Trinamoola), Shana (hemp) or any such material. The reason behind this wrapping should be protect body from small water animals like fish etc.\(^11\)

   - Because fish may be the reason behind the postmortem injury so that the organisms may imagine in the body and decomposed it. And dead body skin get soften for dissection purpose.\(^12\)

   - Some specific details about these wrapping materials are as follows:

<table>
<thead>
<tr>
<th>Plant name</th>
<th>Botanical name</th>
<th>Family</th>
<th>Properties</th>
<th>Specific content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Munja</td>
<td>Saccharum munja Roxb</td>
<td>Gramineae</td>
<td>Source of natural fibre(^14)</td>
<td>-</td>
</tr>
<tr>
<td>2. Valkala</td>
<td>5 Plants are considered in Valkala – 1. Nyagrodha (Ficus bengalensis Linn.), 2. Udumbara (Ficus glomerata Roxb.), 3. Ashvatha (Ficus religiosa Linn.), 4. Pareesha (Thespesia populnea Soland.) and 5. Plaksha (Ficus lacor Buch.Ham.)</td>
<td>Nyagrodha, Udumbara, Ashvatha, Plaksha-Moraceae family and Pareesha-Malvaceae family</td>
<td>Antiseptic, Anti-inflammatory, Antioxidant, Antibacterial, Antimicrobial</td>
<td>All these 5 plants contain tannins(^16)</td>
</tr>
<tr>
<td>3. Kusha</td>
<td>Desmostachya bipinnata Stapf</td>
<td>Gramineae</td>
<td>Antibacterial effect against gram negative and gram positive organism(^17), Astringent, Antiseptic and toning properties(^19)</td>
<td>Tannin(^18)</td>
</tr>
<tr>
<td>4. Shana</td>
<td>Crotalaria juncea Linn.</td>
<td>Leguminoaceae</td>
<td>Source of natural fibre(^20), Astringent(^21), Antimicrobial activity(^22)</td>
<td></td>
</tr>
</tbody>
</table>
10. **Aparakash Desh Kohayet:**

- According to Sushruta dead Body should be kept in hidden dark place and allowed to undergo decomposition. The meaning of Aparakashdeshe (dark area) is the place where people don’t go or hardly go. Or the other reason is the water of that dark place not seen by people or not used by people so that infection through water cannot spread to the people. And another reason is for taking dark place for keeping the body is that normal people cannot see the dead body. So that body should be easily kept there. "

11. **Sanyuk Prakuthitam Ch Udruthya Tato Deham Saptaratrat:**

- After seven days knowing that dead body has become slowly putrefied, it should be taken out and wrapping removed.

12. **Antar Granthasamsa Panchavalkala:**

- The reason behind slow scrubbing of dead body is to see the minute structures of body parts and different skin layers mentioned by Acharya Sushruta.

**CONCLUSION**

Therefore, we can say that Mritisanshodhan Paddhati (preservation method of dead body (cadaver)) according to Acharya Sushruta has a scientific base at each and every step of preservation like keeping body in water or choosing the plants for wrapping the body, which have the properties of antiseptic, anti-inflammatory, antioxidant, antibacterial, antimicrobial, wound purifying and healing and astringent, which helps to preserve the body. Now a days in other texts the reference about the Mritisanshodhana Paddhati (Preservation of dead body) and the type of dissection method mentioned, which is the unique contribution from Susruta Samhita.

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