ANATOMICAL ELABORATION OF GAVINI SHARIR (ATHARVAVEDA) WITH SPECIAL REFERENCE TO ADHOGAMI MUTRAVAHI DHAMANI

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ABSTRACT:
The Ayurvedic Literature on Adhogami Dhamanis is compiled and studied. The exact division of Dhamani and detail study of Adhogat Dhamanis which are present in Abdomen is done. Out of them the two Mutravahi Dhamanis are described with all references. Then the Gavini Sharir is elaborated with its main reference from Atharvaveda and all commentaries compiled together to elaborate Gavini. All the opinions regarding their meaning, grammar in the paribhasha of Shloka to get the exact meaning are discussed. To go practically for the Anatomy cadaveric dissections were done and the observations were noted, these observations are suggestive about the mixed up use of Dhamani word everywhere and the word is used for particular structure regarding the present topic. And the same is used at another place with a different meaning. Sometimes it was considered as artery, vein, lymphatic and sometimes even for the vessels attached to the viscera. To study the above points in depth, the histological study was also done and it also revealed that similarities are more than the differences in artery and Ureter.
The Sharir told in Atharvaveda has been elaborated by Sushruta by his own practical approach. But the Gavini Sharir in Atharvaveda is not explained further by Sushruta. He had written about Adhogami Mutravahi Dhamani but didn’t use the word Gavini. There are still many confusions and dilemma about many things. This diversity should be united to make a certain conclusion. This study is to compile and analyze Gavini and Adhogami Mutravahi Dhamanis to evaluate these two are different or one and the same.

Key words: Gavini sharir, Atharvaveda, Adhogami mutravahi dhamani

INTRODUCTION: Knowledge of human body is the very first step in the world of medical science. "Sharir" means human body and "Rachana" means structure. So Sharir Rachana is the branch of Ayurveda which states a detailed description of the structures in human body. Acharya Sushruta made evolution in this science by conducting practical cadaveric dissections and had detail study of Sharir Rachana in that ancient time without any high definition instruments. The Sharir told in Atharvaveda has been elaborated by Sushruta by his own practical approach. But the Gavini Sharir in Atharvaveda is not explained further by Sushruta. He had written about Adhogami Mutravahi Dhamani but didn’t used word Gavini. The
vessels which make urine to flow and get collected into urinary bladder are told by Bruhatatrayee, but not by the name Gavini. There is confusion and dilemma about the concept of Gavini. This diversity should be united to make certain conclusion. This confusion and dilemma inspired for the exploration of Gavini Sharir. To elaborate Gavini Sharir compilation and analysis of Gavini and Adhogami Mutravahi Dhamanis done to evaluate these two are different or one and the same.

AIM AND OBJECTIVES

**Aim:** Detail anatomical study of Gavini Sharir with special reference to Adhogami Mutravahi Dhamani.

**Objectives:**
1) Detail study of Dhamani Sharir through Ayurvedic literature.
2) Collection of literature or reference of Gavini in Atharvaveda, Bruhatatrayee, Laghutratriyee with all commentaries, Modern science texts, so as to explore Gavini Sharir.
3) Comparative study of Mutravahi Dhamani and Gavini.

**REVIEW OF Ayurvedic Literature**

**Dhamani Sharir**

**Dhamani Vyutpati**

- **Dhaman** - Blowing.
- **Dhamani** - A reed pipe.\(^1\)
- **Shira (Stri.) Dhamanyam**
- Kaviraj Gangadhar Roy said ‘Dhaman’ is ‘hollowness’, ‘sravana’, the Passage of flow and ‘sarana’ the movement.

**Dhamani Pravibhaag, Sankhya**

All Acharyas noted branching of Dhamanis and their Pravibhaag with counts of them. Here are the references collected to show and understand these Vibhag and counts.

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Samhita</th>
<th>Total Dhamani Sankhya</th>
<th>Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Atharvaveda(^2)</td>
<td>1000</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Charaka(^3)</td>
<td>10</td>
<td>200 – 29956</td>
</tr>
<tr>
<td>3</td>
<td>Sharangdhar(^8)</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sushruta(^6)</td>
<td>24</td>
<td>Urdhva Adhah Tiryak 4 4 2</td>
</tr>
<tr>
<td>5</td>
<td>Ashtanga Hridaya(^7)</td>
<td>24</td>
<td>Urdhva Adhah Tiryak 10 10 4</td>
</tr>
<tr>
<td>6</td>
<td>Bhel(^4)</td>
<td>10</td>
<td>Urdhva Adhah Tiryak 10 10 4</td>
</tr>
<tr>
<td>7</td>
<td>Kashyapa(^5)</td>
<td>10</td>
<td>Urdhva Adhah Tiryak 4 4 2</td>
</tr>
</tbody>
</table>

**Chart to show the Total Dhamani Sankhya described in Ayurvedic literature:**

**GAVINI VICHAR**

**Vyutpati:** It is the word meaning or given to the Kikad named animal which lives in burrow. It is also pronounced as Javina\(^9\).

**Gavini Sharir** : The main and first of all references about Gavini comes from Atharvaveda Pratham Kanda - Pratham Anuvak-Trutiya Sukta- Shashthi as follows\(^1\)

This reference is regarding Niruddha Mutra (Retention of Urine) Chikitsa. It says because of the disease the Mutra got collected in abdominal Nadi/ vessels, Mutra filled in Gavinis and the Mutra
filled up in Mutrabasti, that your whole Mutra should come out making Baal sound. Sayanacharya commented on Atharvaveda Sukta as, inside the aantra in Udara which Mutra is collected in dis-eased condition comes out at time… Retention of Mutra in Gavinis. Absorbed from Aantra the Mutra’s vector or medium to come in Mutrashaya is two laterally situated Nadis/ vessels and are called as Gavini. Here Gavinis are Mutravahi Strotas which makes flow of urine produced in Vrukka doubtlessly. [1]

Dalhan explored the complete digestion process in between Aamashaya and Pakvashaya, the Toya (Jaliyansha) in Aaharasaya Annabhaava i.e. Saar bhaaga absorbed in Pakvaashaya is future Mutra’s Kaaran produced after digestion of food and separated from it, that Dravamaya (liquid) Udaka is conveyed by or flowed by two Naadis. That Udaka after coming into Basti known as Mutra, that Mutra is poured by the naadis which are adjoined or connected to Mutrabasti. Haaranchandra commented as there are two channels doing Mutravahan coming from Vrukka. [6]

Gavinyau- Ureters: Gananath Sen in his Pratyaksha Sharir Preface commented on Mutrabasti coming two Mutravahi Dhamanis are clearly Indicating Gavinis. Though here Mutravahi are Gavinis, Shishnastha (Penile) Mutramarga is Mutrapraseka [9].

OBSERVATIONS

Gavinis= Ureters And Mutra nirmit in Vrukka is poured in Gavinis, this Mutrasya channels to come in Mutrashaya are Gavinis. Mutravahi are Strota/ Marga coming from Vrukka, these two Strota are called as Gavinis [9].


METHODS: The Study was conducted at CSMSS Ayurved Mahavidyalaya, Kanchanwadi, Aurangabad, Maharashtra.

1. DISSECTION OF HUMAN CADAVER PERFORMED IN DISSECTION HALL
2. COLLECTION OF SAMPLE FOR HISTOLOGICAL STUDY

1. Piece of Ureter cut from the cadaver and collected in a sterile bulb containing Formalin.
2. Piece of Gonadal artery taken in another bulb containing Formalin.
3. The collected samples then brought to the Histopathology laboratory for their Transverse Sectional study for similarities and differences microscopically.
(For comparison Gonadal artery considered as it lies side by side to the Ureter).

**Similarities in an Artery and Ureter.**[^10][^11][^12][^13][^14]

<table>
<thead>
<tr>
<th></th>
<th>Gonadal Artery</th>
<th>Ureter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shape</strong></td>
<td>Long Tubular</td>
<td>Long Tubular</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Pinkish white</td>
<td>Pinkish white</td>
</tr>
<tr>
<td><strong>Texture</strong></td>
<td>Vascular</td>
<td>Vascular</td>
</tr>
<tr>
<td><strong>Position/Course</strong></td>
<td>In between Aamashaya(stomach) and Pakvashaya (sigmoid colon)</td>
<td>In between Aamashaya(stomach) and Pakvashaya (sigmoid colon)</td>
</tr>
<tr>
<td><strong>Histology</strong></td>
<td>Lumen round when filled</td>
<td>Lumen round when filled</td>
</tr>
<tr>
<td></td>
<td>3 layers</td>
<td>3 layers</td>
</tr>
<tr>
<td></td>
<td>Inner longitudinal and</td>
<td>Inner longitudinal and</td>
</tr>
<tr>
<td></td>
<td>Outer circular fibres of middle muscular layer</td>
<td>Outer circular fibres of middle muscular layer</td>
</tr>
<tr>
<td><strong>Physiology</strong></td>
<td>Peristaltic movement</td>
<td>Peristaltic movement</td>
</tr>
<tr>
<td><strong>Nerve supply</strong></td>
<td>Sympathetic trunk T₁₀</td>
<td>Sympathetic trunk T₁₀ – L₁</td>
</tr>
<tr>
<td></td>
<td>Filaments of Spermatic Plexus derived from Renal plexus</td>
<td>Parasympathetic trunk S₂ – S₄</td>
</tr>
<tr>
<td><strong>Embryological development</strong></td>
<td>Mesodermal in origin</td>
<td>Mesodermal in origin</td>
</tr>
</tbody>
</table>

**Differences in an Artery and Ureter**[^10][^11][^12][^13][^14]

<table>
<thead>
<tr>
<th></th>
<th>Gonadal Artery</th>
<th>Ureter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>Carries Blood</td>
<td>Carries Urine</td>
</tr>
<tr>
<td><strong>Branching</strong></td>
<td>Further branching is there</td>
<td>No further branching</td>
</tr>
<tr>
<td><strong>Histology</strong></td>
<td>Lumen is flat/ oval when empty</td>
<td>Lumen is star shaped when empty</td>
</tr>
<tr>
<td></td>
<td>Innermost endothelial lining</td>
<td>Innermost transitional epithelial lining</td>
</tr>
</tbody>
</table>

At the time of dissection of cadaver the observations are noted as follows:[^10][^11][^12][^13][^14]

- From the renal pelvis, the Ureters come out and travel downwards behind the peritoneum. When traced down they enter the Urinary bladder.
- Along with the ureters there are different vessels coming down such as, Abdominal aorta, Superior mesentric artery z, Inferior mesentric artery, Gonadal arteries, Internal and external iliac arteries etc.
- But only two, the Ureters gets inserted into posterior inferior aspect of Urinary bladder obliquely.
- Pelvis of Ureter starts just below the greater curvature of Stomach in a Transverse plane antero-posterioly. And they enter the urinary bladder inferiory sigmoid colon and infront of rectum.
- The colour of ureters seems just similar to the arteries present just side by side to them.
- Texture of ureter and arteries are same while felt between two fingers.
- The Ureters look like a medium sized atryer.

**CONCLUSION:** The Gavinis told in Atharvaveda are the two Ureters which flows urine to the Urinary bladder. The Adhogami Mutravahi two Dhamanis told
by Sushruta are the Two Ureters only. The Gavinis and Adhogami Mutrawahi Dhamanis are one and the same i.e. Ureters. The Mutrawaha word should be considered as Gavini (Ureters) to understand Ayurvedic Sharir Rachana Siddhant, Physiology, Vyadhi Samprapti and Chikitsa paddhati. These conclusions hopefully will be helpful to understand Ayurvediya Mutrotpatti Siddhant and the Disease Samprapti of Mutrawaha Strotas to decide the perfect treatment in the same for the Clinicians and Ayurveda Scholars.

REFERENCES:
8. Sharangdhara Samhita, Vd. Bramhanad Tripathi, Reprint 2004, Chaukambha Surabharati prakashan, Varanasi. Pg. no. 31
9. Pratyaksha Shariram, Shri Gananath Sen Sharma, Reprint 1985, Krishnadadas Academy, Varanasi. Pg. no. 66, 74, 75

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