



**ANATOMICAL ELABORATION OF GAVINI SHARIR
(ATHARVAVEDA) WITH SPECIAL REFERENCE TO ADHOGAMI
MUTRAVAHIDHAMANI**

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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 use word *Gavini*. The

vessels which make urine to flow and get collected into urinary bladder are told by *Bruhattrayee*, 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*, *Bruhattrayee*,

Sr. no.	Samhita	Total Dhamani Sankhya	Divisions
1	<i>Atharvaveda</i> ^[2]	1000	-
2	<i>Charaka</i> ^[3]	10	200 → 29956
3	<i>Sharangdhar</i> ^[8]	24	-
4	<i>Sushruta</i> ^[6]	24	<i>Urdhva Adhah Tiryak</i> 10 10 4
5	<i>Ashtanga Hridaya</i> ^[7]	24	<i>Urdhva Adhah Tiryak</i> 10 10 4
6	<i>Bhel</i> ^[4]	10	<i>Urdhva Adhah Tiryak</i> 4 4 2
7	<i>Kashyapa</i> ^[5]	10	<i>Urdhva Adhah Tiryak</i> 4 4 2

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

GAVINI VICHAR

Vyutapatti: 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*

Laghuttrayee 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 Vyutpatti

- *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 *Pravibhag* with counts of them. Here are the references collected to show and understand these *Vibhag* and counts.

Anuvaak- 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 *Nadis/ 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 diseased 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*s doubtlessly.^[1]

Dalhan explored the complete digestion process in between *Aamashaya* and *Pakvashaya*, the *Toya (Jaliyansha)* in *Aaaharasya 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*s.^[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



T.S. of Gonadal artery

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 *Gavini*^[9].

MATERIALS: *Bruhattrayee*, *Laghutrayee*, *Ayurvedic samhitas*, Reference Books, Journals, Texts, Available Modern Science books of Anatomy. Models, charts, diagrams, atlas, O.H.P. slides, pubmed, Previous researches, published documents.

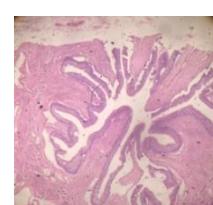
Human Cadaver for dissection. Instruments for Dissection.

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.



T.S. of Ureter

(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]}

	Gonadal Artery	Ureter
Shape	Long Tubular	Long Tubular
Colour	Pinkish white	Pinkish white
Texture	Vascular	Vascular
Position/ Course	In between Aamashaya(stomach) and Pakvashaya (sigmoid colon)	In between Aamashaya(stomach) and Pakvashaya (sigmoid colon)
Histology	Lumen round when filled	Lumen round when filled
	3 layers	3 layers
	Inner longitudinal and Outer circular fibres of middle muscular layer	Inner longitudinal and Outer circular fibres of middle muscular layer
Physiology	Peristaltic movement	Peristaltic movement
Nerve supply	Sympathetic trunk T ₁₀ Filaments of Spermatic Plexus derived from Renal plexus	Sympathetic trunk T ₁₀ – L ₁ Parasympathetic trunk S ₂ – S ₄
Embryological development	Mesodermal in origin	Mesodermal in origin

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

	Gonadal Artery	Ureter
Content	Carries Blood	Carries Urine
Branching	Further branching is there	No further branching
Histology	Lumen is flat/ oval when empty	Lumen is star shaped when empty
	Innermost endothelial lining	Innermost transitional epithelial lining

At the time of dissection of cadaver the observations are noted as follows:

- From the renal pelvis, the Ureters come out and travel downwards behind the peritoneum. When traced down they enter the Urinary bladder. Transverse plane antero-posteriorly. And they enter the urinary bladder inferiorly sigmoid colon and in front of rectum.
- Along with the ureters there are different vessels coming down such as, Abdominal aorta, Superior mesenteric artery z, Inferior mesenteric artery, Gonadal arteries, Internal and external iliac arteries etc. The colour of ureters seems just similar to the arteries present just side by side to them.
- 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
- Texture of ureter and arteries are same while felt between two fingers.
- The Ureters look like a medium sized artery.

CONCLUSION: The *Gavini* 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 *Gavini*s and *Adhogami Mutravahi Dhamanis* are one and the same i.e. Ureters. The *Mutravaha* 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 *Mutrotppatti Siddhant* and the Disease *Samprapti* of *Mutravaha Strotas* to decide the perfect treatment in the same for the Clinicians and Ayurveda Scholars.

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Declared