CRITICAL STUDY FOR ANATOMICAL DETERMINATION OF **GUDA MARMA**

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**ABSTRACT**

The terminal part of large intestine and *Moola* of *Pureeshavastrotas* is known as *Guda*. It is one of the *Bahirmukhstrotas* and also considered as one of the *Karmendriyan*. Charak has mentioned that *Guda* is one of the *Koshtangas*. *Guda* is defined as the passage through which excretion of faeces takes place and is located in the pelvic region and Charaka recognized two parts in it i.e., *Uttara guda* and *Adhara Guda*. It is one among nine *Bahirmukhstrotas* located in pelvic region. Embryologically it is derived from *Matrijabhava*. Total length of *Guda* is \( \frac{3}{2} \) *angula*. There are 3 sphincter situated inside the *Guda* placed one above the other at a distance of \( \frac{1}{2} \) *angula* from each other and are named as *Pravahini*, *Visarjini* and *Samvarni*. *Pureeshdhara Kala* is related to *Guda* and it is *Moola* of *Pureeshvahasrotas* and also is *Sadhyopranhara Marma*. The diseases related to *Guda* are *Arsha*, *Bhagandara*, *Gudavidradhi*, *Sannirudh Guda*, *Gudabhransha*.

Objective of the study are comprehensive literary review of *Guda Sharira* with correlation of anatomical features described in Ayurveda to contemporary science. Data related to *Guda Sharira* and diseases were collected from various classics and specimen of rectum and anal canal from cadaveric study.

**KEYWORDS:** *Guda*, *Sadhyopranhara Marma*, Rectum, Anal canal.

**INTRODUCTION**

Ayurveda “the ancient medicine” cherished by the sages, protected and diversified by the modern Ayurvedic scholars has proved to be a boon for the society and for people around the globe. It is the science of life. The basic aim of Ayurveda is to cure *Atura* and to maintain *Svasthya* of the *Svastha*.

In *Sharira* there are some important special *Sthana* called as the "*Sthanaveshesha"*. The precaution of such *Sthana* must be taken by Chiktisaka during surgery and such *Sthana* are called as *Marma*. The study of *Marma Sharira* is an important part of Ayurvedic Sharir Rachna. The vital part of the body is called *Marma*. *Marma* is defined as the *Sthana* where *Mansa*, *Sira*, *Snayu*, *Asthi*, *Sandhi* meet together and according to Acharya Sushrut at the points of *Marma* “*Dvadasha Prana*” are situated that is why these points are called vital points.

Out of 107 *Marma Sadyopranhara, Marma* are of great importance because trauma to these *Marma* causes immediate death of the person. Knowledge of *Marma* allows the practitioners to influence the flow of *Prana* through both the gross and subtle bodies for the purpose of restoring health and peace of mind. *Guda Marma* is *Sadhyopranhara Marma* according to Rachana Sharir. Its main role is defecation.
Definition

Guda is defined as the passage through which excretion of faeces and flatus takes place. The distal part of large intestine (Antra) which is four and half fingers in length is called as Guda.[1] Shravana i.e., two ears, Nayana i.e., two eyes, Vadana i.e., mouth, Ghrana i.e., two nostrils, Guda and Mendra i.e., Urethera they are considered as Bahyasrotas which a opens on the surface of our body.[2]

From above explanation we can consider Guda as a tubular structure which opens on the surface of body i.e., on the perineal region. It is formed to carry a specific function so for that reason it is also considered one among the Karmendriya. [3] Visarga i.e., evacuation or excretion of Purisha is considered as its specific function.

Formation of Guda

It is formed by the best (Prasad Bhag) of blood and Kapha, after being digested by Pitta with the help of Vayu. [4]

Acharya Charak has mentioned about two parts of Guda:[5]

1. Uttar Guda
2. Adhara Guda

So it is clear that in Samhita Granthas there is limited information about Guda Marma and its Rachna Sharira that Guda is divided into Uttara Guda and Adhara Guda but does not classify the exact position of Guda Marma. It is explained according to physiological activity.

Synonym of Guda:

1) Apanam
2) Payu
3) Guhyam
4) Guvdartma

The lower end of the large intestines, which passes into the flexures of rectum and measures four and half fingers in length is called as Guda. Embryologically Guda is derived from Matruja Bhava.[6] Guda gets forming along with other body parts early as in the fourth month and fully formed by seventh month of gestation. Anatomical description of Guda includes that it is consider one among 15 Koshtangas.[7] In Koshtha it is situated in the Shroni Pradesha. Guda is situated along with the Basti and Muskha in Shroni Pradesha. They are interrelated with each other.

Acharya Vagbhata has also included Guda in Dashpranayatana. Guda is Sadopanrara marma, Mansa marma and Dhammi marma.[8][9] It is a part of Purishvaha srotas and is a Moolsthan of Purishvaha srotas.[10]

Chakrapani says that Uttar Guda is an organ in which Purisha is collected while Adhara Guda is meant for exertion of Purisha. According to Acharya Sushruta it is attached to Sthoolantra and is one of the organ that comes in relation with Basti.

Internal Structure of Guda

Sushrut described that interior of Guda contains three Valis. There are Pravahini, Visarjini and Samvarni. [11] They are situated one above the other at an interval of ½ angula. They are arranged spirally (Sankhavatantibha) and resembles the colour of palate of an elephant (Gajatalu).[12]

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Guda Valis</th>
<th>Situation</th>
<th>Approximate modern term</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pravahin</td>
<td>Proximal</td>
<td>Middle Houston’s valve</td>
</tr>
<tr>
<td>2</td>
<td>Visarjini</td>
<td>Middle</td>
<td>Inferior Houston’s valve</td>
</tr>
<tr>
<td>3</td>
<td>Samvarni</td>
<td>Distal</td>
<td>Sphincter</td>
</tr>
</tbody>
</table>

According to Acharya Vagbhata has classified further the position of these Valis. He named proximal one as Pravahini and distal one as Samvarni and middle one as Visarjini. Gudostha (anal margin) is situated 1 Angula away or distal to Samvarn. Pravahini is situated most internally ½ angula to Visarjini and Visarjini is situated ½ angula above Samvarni. Each Vali is 1 finger in length and the distance as said between 2 Valis is ½ finger. Hence the length of Guda including Gudostha is ¼ finger. [13] The length of Gudostha is ½ finger.

According to Acharya Sushrut Guda is formed by 3 Pesies. [14] There are 60 Snayu in pelvic region and 10 in groin. [15] The pelvic region has 5 bones, Out of these 4 are found in anal region, pubic region and hip, one in sacral region. [16] Out of total 24 Dhamanies 10 spread downwards and go to rectum, pelvis, anus, bladder, penis etc. [17] Out of 700 Shiras 34 Vata carrying Shiras are in Koshtha, out of them 8 Shira are in the anus, pelvis and penis. The rest of the Shiras Carrying Pitta, Kapha and Rakta are distributed Similarly. [18] The Shiras present are called Malvaha Siras and Vatvaha Shiras. [19] Guda is made of Sushir Snayu and Samudga Sandhi. [20] The Dhamnis taking a downward course carry Apanavayu, Mutra, Purish, Shukra and Artava to the respective organs such as Pakvashaya (intestines), Kati, Guda, Basti and Mendra. These organs are situated below the level of Nabhi. The two Dhamnis attached to Sthoolantra performs excretion of the Purish.

Physiological concept of Guda

Guda is described as one of the Panchkarmendriya and its function is to excrete the mala from the body. Acharya charak also regards the Guda and Pakvashaya are seats of Apanvayu. The
Apanvayu helps in expulsion of Vata, Mutra, Purish, Shukra and Garbha. In case this Vayu is vitiated the disease of Basti and Guda are said to occur.

In Ayurveda the excretory mechanism is described in lucid manner. The proximal Vali. Epravahini helps in compression and pushing the stool downwards, Visarjini, the second Vali relaxes during this process and allows stool to pass down. The distal most Vali samvarni which expels the stool out and constricts immediately so that the continuity of stool cuts down and falls down. Thus the 3 Valis and Apanvayu are solely responsible for the mechanism of defection.[23] Guda is related to Purishdarakala, where Saarakittavibhajana takes place.

According to Ashtanga Sangrah Guda is considered as Mahamarma.

**Dimension of Guda Marma**

Its dimension is equal to palm of the particular person. According to Acharya Sushrut it is Mushthi Praman.[22] Some terms are related to Guda like:-

1. **Gudopastha Pradesha** – Meaning Perineum region related to manifestation of pain in Tuni, Pratituni.
2. **Guda Parshava Kshetra**– Meaning ischio rectal fossa where Bhagandara pidikas occur.
3. **Guda Mandala** – circular area of anus.
4. **Gudashraya Roga** – Disease which takes origin or manifest in Guda like Arsha, Bhagandara.
5. **Gudankura** – Bud like structure in Guda (Arsha)
6. **Guda Alaya** –Alaya means seat and Guda in the seat of Apana Vayu.
7. **Gudosta** – Anal verge.

In the Nidana Sthana of Sushruta, it has been told that Basti, Bastisira, Paureesha, Granthi, Vrishana and Guda are related to one another and are present in Gudasthivivara. [23]

While explaining importance of Guda Charaka tells, the given Taila through Guda pervades through Shira, Dhamni and reaches to the different parts of Srotasas. Just like water poured at the Moola of tree, by this concept it is explained that Guda is Moola of Sharira whatever Dravya is given through the Guda it reaches to all over the body. [24]

**Material and Method**

References and data about Gudamarma is collected from various Ayurvedic text and modern text. From Brihatrayis and Laghutrayis and other classical books including journal and articles, scientific papers and the previous work done in related topic along with details of modern science on the subject was reviewed and relevant information was collected. They were analysed scientifically and discussed emphatically.

Books from our library and from the Uttaranchal Ayurvedic College were used in collection of data. Relevant information from related websites was collected. Rectum and anal canal of two cadavers were dissected and various parts were observed.

**Cadaveric study**

For the cadaveric study the dead body was taken and dissected in the college of Himaliyiya Ayurvedic College and Hospital. It was a female cadaver. In the Samhitas the length of the Guda is four and half Angul i.e., approximately 9cm. According to modern anatomy the total length of the rectum is 12 cm and the length of the anal canal is 3 cm. So the total length of the rectum and anal canal is 15 cm in cadaveric study the following structures were found the upper two third of the rectum is related to the recto uterine pouch and the lower one third of the rectum is related to the lower part of vagina. The anal canal starts from the ano-rectal junction and ends at the anus, it is a vertical slit between two buttocks. It is situated 4cm below and infront of the tip of coccyx. The rectum begins as the continuation of sigmoid colon and ends by becoming continuous with the anal canal at the anorectal junction. In the rectum there were transverse folds of the rectum (Houston valves), Functionally rectum consists of two parts one above the middle fold and one below the middle fold. Upper part contains faces and lower part is empty. The rectal ampulla was also seen.

**Literary study**

In the literary review it is found that though anatomically the length of rectum and anal canal is 15cms according to modern view but according to Ayurvedic view the length of Guda is 4½ Angula which is roughly 9cms so only lower 6cms of rectum and 3cms of anal canal is considered as Guda. As far as definition of Marma is concerned which says that Marma are the points which are vulnerable to injuries and may lead to complication, severe pain and even death due to trauma at these points. We can see that all the diseases which occur in the Guda region causes severe pain which is prominent symptoms of all the diseases mentioned. They can even cause death due to massive blood flow it not treated promptly as in anorectal cancers. Massive blood flow can cause vasovagal shock and death due to injury in Gudamarma.

**DISCUSSION**

Guda is derived from Matraja Bhava, and Matrajabhava or Ayavas are Jaliya hence highly vascular. According to Chakrapani Uttar Guda is an organ where Pureesha is collected and Adhara Guda is meant for excretion of faeces. This shows rectum
and anal canal are clearly brought about in the reference of Uttara Guda and Adhara guda.

The terminal part of Sthulantra and Moola of Pureesvahasrotas is known as Guda. Acharya Charak mentioned Moola of Pureesvahasrotas are Sthalaguda and Pakvaashaya, but Acharya Sushrut stated Guda and Pakvaashaya are the Moola of Pureesvahasrotas. Guda indicates the whole length of rectum and anal canal and Pakvaashaya may be considered as whole length of large intestines except rectum and anal canal.

Sushruta and Vagbhata have mentioned the length of Guda as four and half Angula. The measurement of one Angula is approximately 2 cm and on the basis of this total length of Guda is approximately 9 cm. It is known that average length of anal canal is 3 cm. Then the extent of Guda includes that of the anal canal plus lower 6 cm of rectum. Sushrut has described that the interior of the Guda contains three Valis which can be correlated to the modern anatomical parts. They can be related to horizontal folds in the rectum (houstans valve) namely middle and the lower folds. The distance between each fold is about 2.5 cm which is approximately one and half Angula.

According to Gadnathsenpravahini can be considered as lower houstan valve, Visarjini to coloum of Morgagni and Samvarni to ano rectal ring. According to G.D Singhal Valis are correlated to sphincter. In my view upper part of the rectum is considered as Pureeshdhara/Pakwashaya/Sthoolantra and not considered as Guda. The lower part of rectum is 6 cm i.e., where the desire of defection occurs, this is the area of Pravahini. In the middle rectal valve there is no peritoneum, no mucous membrane but rich in stretch sensitive nerve endings. Process of defection is stimulated here and hence can be correlated to Pravahinivali. On the basic of measurements given in Ayurvedic Classics Samvarini lies 2cm above the anal verge interiorly. This is the area of anorectal ring, external sphincter hence Samvarini can be correlated to external and internal sphincters which maintains the content. Visarjini can be related to inferior rectal valve.

Physiologically the three types of Valis have three different function. During defection the rectal muscle contracts along with chest muscle, diaphragm abdominal wall muscle, and pelvic diaphragm and exerts pressure on the digestive tract this function can be correlated to the Pravahana karma of Pravahinivali. After the parasympathetic stimulation opens the internal sphincter and voluntary relaxation opens the external sphincter, thereby faeces expelled through anus. This function can be correlated to the Visarjan karma of Visarjinnivali. And at last the passage of face the sphincters come to normal position that is they constrict. This can be correlated to Aakshepana Karma of Samvarinivali.

According to Acharya Charaka, the Guda is divided into 2 parts, one upper part where Pureesha is collected known as Uttara Guda, other lower part where Pureesha is expelled out is known as Adhara Guda. The rectum has two functional parts, the upper part related to peritoneum develops from hind gut and lies above the middle fold of rectum and it acts as the reservoir of the fecal matter. The lower part devoid of peritoneum develops from the cloaca and lies below the middle fold. It is usually empty in normal individuals. Being sensitive its distension causes desire to defecate. Hence Uttarguda can be related to the part of rectum above the middle fold and Adhara guda to remaining part of rectum and whole anal canal where faeces is expelled out.

Gudamarma is Saadyoprahara marma. We can relate it to modern anatomy in the following ways. We know the importance of structures above and below the pectinate line postal venous system lies above the pectinate line and systemic venous system below the pectinate line. So trauma to this places can cause:-

Vasovagal shock, hypovolemic shock due to trauma at pectinate line and due to profuse bleeding hypovolemic shock occurs causes death, anal incontinence can cause anal stricture which can cause death of the person. During Bastikarma if Bastinetra is sharp it can injure Guda leading to vasovagal shock. If ano-rectal region gets traumatized may lead to peritonitis, internal haemorrhage, septicemia, toxemia.

Acharya Sushrut has considered Guda as Mansa marma and Acharya Vagbhata has considered it, under Dhamni marma. The work of both Acharyas in my view is correct because if we see according to modern anatomy the very important portocaval anastomosis and systemic venous system is found in this particular place. Rectal artery, inferior rectal vein, middle rectal vein, haemorrhoidal arteries and veins, and communication between external and internal venous plexus is found here any trauma may lead to massive blood loss, which can cause death. So Acharya Vagbhata view can be justified.

In the review of Mansa Dhatu Acharya Charaka explained Arshavyadhi, which is Mansapradoshajyadhi and its Adhishthan is Gudavali. In the review of Guda in Bhagandaravyadhi Sushrut explained that due to apathy Sewan in the area around anal region red colored Pidika are formed due to Rakta and Mansadushht which is called Bhagandara. He also mentioned Mansankur like structure called Arsha to develop in Guda pradesha.
Both the diseases are *Mansapradoshaj*. We also see that the fibers of the longitudinal muscle passes both inwards through the internal sphincter and also outwards between portion of external sphincter muscles, most probably accounts for the roots by which infection extends directly from the anal canal into the perianorectal tissues to form an abscess or fistula-in-ano.

The abscess takes the line of least resistance along a facial plane or other anatomical pathway may track from ischiorectal space along the fibers of the longitudinal muscle in between fasciculate of both the external and internal sphincter muscle to burst into the anal canal. It is not uncommon to find an abscess or fistula extending upwards between the external and internal sphincter muscle. This extension must occur along the main portion of the longitudinal muscle. Such an abscess displaces the external sphincter group outwards away from the internal sphincter and may enter the anal canal at any level by extending through the internal sphincter along a fasciculus of longitudinal muscle. The multiple extension of the longitudinal muscle through the external sphincter may also explain the not uncommon occurrence of more than one internal opening. Thus we see that the diseases of *anal canal* are occurring mainly in musculature so by this point, view of Acharya Sushruts explanation of *Guda* being a *Mansa marma* can be justified

**CONCLUSION**

- *Guda* may be correlated to Rectum and anal canal.
- *Uttara Guda* may be correlated to upper part of rectum and *Adhar Guda* to the lower part of Rectum and anal canal.
- 3 types of *Valis* may be correlated to the horizontal folds of the rectum and anal sphincter.
- The length of the *Guda* includes lower 6cms of *rectum* including middle and inferior rectal folds (valve) and 3cms of anal canal.
- *Gudaushta* may be correlated to Anus.
- The total length of *Guda* is 41/2 *angula* which includes 3 cm of anal canal and 6 cm of rectum.
- *Gudamarma* is both *Dhamni* and *Mans marma*.
- *Guda* is a *Sadyopranhara marma*.
- Physiologically *Samvarni* and *Visarjini* can be correlated to external and internal sphincter.
- *Guda* is one among 15 *Koshtangas*.
- *Guda* is an important seat of *Prana* therefore included in *Dashpranayatanas*.

**REFERENCES**


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