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Review Article

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Study of Ayurvediya *Guda Sharir* and *Guda Valis* in Comparison with Modern Anatomy

Yende Mohan¹, Tawalare Kalpana², Gohane Jayshree³, Thosar Sheetal⁴

¹Professor and Head, ²Asso. Professor, Rachana Sharir, Bhausaheb Mulak Ayurved College & R. H. Butibori Di. Nagpur, Rachana Sharir, Bhausaheb Mulak Ayurved College & R. H. Butibori Di. Nagpur. ³M.D.(Rachana Sharir), Shri Ayurved Mahavidyalaya, Nagpur. ⁴Asso. Professor, Shri K. R. Pandav Ayurveda College & Hospital, Bahadur, Nagpur.

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Address for Correspondence:

Dr. Mohan Yende. Professor and Head,
Rachana Sharir, Bhausaheb Mulak
Ayurved College & R. H. Butibori Di.
Nagpur,
Email: yrmohan1@gmail.com

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ABSTRACT

Ayurveda has a unique treatment modality in the form of *agnikarma* (cautery), *ksharkarma* (application of *kshar* on body parts) for anorectal diseases such as *arsha* (piles). In today's era, it is important to demonstrate ayurvedic knowledge, so that more and more health professionals can adopt Ayurveda with a holistic approach in the treatment of anorectal diseases. This study endeavors to understand the terms like *guda*, *gudavalis*, *adharguda*, *uttarguda*. Critical analysis of literature from classical texts, modern textbooks, and online search engines has been carried out. The *pravahini vali* measures about 1 & 1/2 *angula*. Its action is '*malasya adhah pidanta*', which means it propagates the faeces forwards which seems similar to Houston's semilunar valve. The internal anal sphincter propagates the faeces towards the anus. Thus, *visarjani vali* can be considered as the internal anal sphincter. The term *samvarani* itself means 'to hold or stop' which implies it is a voluntary muscle. Hence *samvarani* can be considered as the external anal sphincter. *Uttarguda* is the seat for fecal collection and *adharguda* for evacuation of the stool. It is feasible to correlate *guda* with the rectum part of the large intestine. *Pravahini* can be considered as the largest Houston's valve, *visarjani* as the internal anal sphincter, and *Samvarani* as external anal sphincter. *Uttarguda* is the seat for fecal collection and *adharguda* for evacuation of the stools.

Keywords: *Guda*, *Gudavalis*, *Uttarguda*, *Adharguda* Anorectal disease, *ksharkarma*.

INTRODUCTION

Ayurveda, the ancient science, not only encompasses & lays the firm foundation on which the current medical science stands but also retains its nature of being a self-evident & axiomatic body of knowledge. There has several

attempts to explain the profound hypothesis mentioned in *samhitas*. There are various concepts mentioned by different *acharyas*. Sushrut & Vagbhat describe *guda* as *marmā* (vital point) while Charak derives *guda* as a *koshthag* of the body having two parts *uttarguda* & *adharguda*.^[1] If we could interpret the exact meaning of

texts mentioned by acharyas it would be of much help to propagate the Ayurvedic view worldwide & might help to achieve Ayurveda's aim towards providing better treatment to diseased person.

Guda & *gudavalis* are the structures that have been explained by *Acharya* Sushruta highlighting their structural & clinical significance. The description of *guda* is dispersed throughout the texts but isn't concise as a whole which presents a unique opportunity of assimilating this knowledge for literary research. The anatomical consideration of anal sphincters with *gudavalis* is quite important as these muscles provide continence, which itself is the mainstay of *ksharsutra*, as opposed to modern surgical procedure, which almost entirely lacks to provide continence. Moreover, it will help in understanding the pathophysiology involved in fistulous disease, fissure & piles in which *gudavalis* themselves are involved.

AIM - To study Ayurveda *gudasharir* & *gudavalis* in relation to modern anatomy.

OBJECTIVE- To study anatomical view of *gudasharir* in comparison with the rectum and anal canal.

METHODOLOGY

Classical text of Ayurveda as *Sushruta Samhita*, *Charak Samhita*, *Asthang sangrah*, *Asthang hrudaya*, *Bhavaprakash*, and *Sharangdhara Samhita* were consulted for the study of Ayurvedic review. Reviewing of the modern textbook, journals, articles, internet material, and previous researches related to these topics were also studied. Anatomy described by ancient medical scientists and modern anatomists was critically analyzed.

Guda Sharir according to Ayurveda-

Synonyms- *Apan*, *payu* are the synonyms of *guda*.

Origin- *Antra*, *guda* & *basti* are formed by pure *sarabhaga* of *rakta*, *kapha*, *pitta* and *vata*^[2]. The pure *sarabhaga* of *rakta* and *kapha* is assimilated with *ushna guna* of *pitta* and *ashaya* is formed by *chal* and *laghu guna* of *vayu* and thus the organ *guda* is formed embryologically.

Dimensions- According to Sushrut and Charak the entire length of *guda* is four & a half *angula*^[3].

Location: While explaining the anatomical position of *basti*, Sushruta says that *basti* is located in between *nabhi*, *prishtha*, *kati*, *mushka*, *guda*, *vankshana*. *Bastishira*, *vrishana* & *guda* are all interconnected with each other. *Guda* is one of *koshthanga*^[4]. It is one of the *dasha*

pranayatan^[5] situated at the terminal part of the intestine described by Charak.

Asthi: There are five *asthis* in the pelvis, of which four are *guda*, *bhaga*, *nitamba* & one in *trika*.^[6]

Sandhi: *Samudga* type of *sandhi* is formed in *guda*.^[7]

Peshi: Three *peshi* are present in *guda*.^[8]

Sira: Sushrut has stated that, out of 34 *sira* found in *koshtha*; 8 supplied to the *guda* & *medhra*.^[9]

Dhamani: The *dhamani* taking a downward course carries *apan vata*, *mutra*, *purisha*, *shukra* & *artava* to the respective organs such as *pakwashaya*, *kati*, *guda*, *basti*, and *medhra*. All these organs are situated below the level of the umbilicus. The two *dhamanis* attached to the large intestine perform the excretion of the stools.^[10]

Strotas: *Guda* is one of the *bahirmukha strotas* & is also a *moola* of *purishvaha strotas*.

Guda Marma: According to Sushrut & Vagbhat part attached to the *sthulanatra* which enables the excretion for faeces is called *gudamarma*. It is *sadyah pranahara marma*.^[11] *Gudamarma* is mentioned in *udarmarma* in the regional classification of *marmas* and it is one of the 3 *marmas* of the *udar* region.^[12] *Gudamarma* is 4 *angula* in *praman* i.e., it represents the structures which present in 4 *angula* area of *gudamarma*. According to *rachana bheda* (structural classification), it is classified as *mamsa marma*.^[13] Exogenous or endogenous injury to the rectum causes sudden death due to hemorrhagic or vasovagal shock as explained in Ayurvedic texts.

Nerve Supply: The rectum is supplied with sensory and autonomic nerves. The sympathetic nerve supply to the rectum is derived from the lumbar splanchnic nerves and superior and inferior hypogastric plexuses. Parasympathetic nerve supply is from S₂₋₄ through pelvic splanchnic nerves and inferior hypogastric nerve plexuses.

DISCUSSION

The modern aspect of the rectum and the *guda sharir*:

The rectum has two functional parts. The upper part related to the peritoneum develops from the hindgut and lies above the middle fold of the rectum. It acts as a fecal reservoir that can freely distend anteriorly. The lower part devoid of peritoneum develops from the cloaca and lies below the middle fold. It is empty in a normal individual but may contain faeces in cases of chronic constipation that causes the desire to defecate. However, according to other authorities, the sigmoid colon is the fecal reservoir and the whole of the rectum is empty in a normal individual, being

sensitive to distension. Passage of faeces into the rectum, therefore, causes the desire to defecate.^[14]

According to Chakrapani, *guda* is divided into two parts *uttarguda* and *adharguda*. He explains that *uttarguda* is the seat of fecal collection & *adharguda* is for evacuation of stool.^[15] In modern science also 3rd fold of the rectum is utilized to divide the rectum into the upper & lower portion. The lower portion is just a duct as it is narrower & is a canal below. In normal conditions, it does not contain faeces except during the act of defecation.

The modern aspect of the anal canal, anus, and Ayurvedic view of *gudavalis*: The anal canal is the terminal portion of the intestinal tract. It begins at the anorectal junction, is 3.8 cm in length, and terminates at the anal verge. The anatomical anal canal extends from the anal verge to the dentate line but the surgical anal canal extends from the anal verge to the anorectal ring. It passes downwards and backward from the perineal flexure. It has the greatest surgical importance both because of its role in the mechanism of rectal continence and because it is prone to certain diseases. The anus is the surface opening of the anal canal. It is situated about 4 cm below and in front of the tip of the coccyx in the cleft between the two buttocks. The surrounding skin is pigmented and thrown into radiating folds and contains a ring of a large apocrine gland.

Acharyas must have considered *guda* not just confined to the anal canal but beyond it up to some extent of the rectum, maybe up to the level of the largest transverse folds of rectum more commonly known as Houston's semilunar valve. The *pravahini vali* measures about 1 & 1/2 *angula* and the *pravahini*'s action is described in ayurvedic texts as '*malasya adha pidanta*'^[16] which means that it propagates the faeces forwards which again seems quite similar to the functions of Houston's semilunar valve both functionally and anatomically as it propels the faeces towards *guda*.

The *visarjani vali* measures about 1 & 1/2 *angula* and is placed in between *pravahini* & *samvarani* and its function is to propagate the faeces further down the path, which may be considered as being under autonomous control.^[17] The internal anal sphincter too is under involuntary control as it derives its nerve supply from the autonomic inferior hypogastric plexus and measures roughly about 2.5- 4.0 cm. The internal anal sphincter propagates the faeces towards the anus. Thus, *visarjani vali* can be considered as an internal anal sphincter both functionally and anatomically.

The *samvarani vali* measures about 1 & 1/2 *angula* and is the distal part.^[18] The external anal sphincter contains three parts of skeletal muscle fibers namely subcutaneous, superficial and deep muscle fibers. The external anal sphincter is under voluntary control as it derives its nerve supply from the somatic sacral plexus and facilitates continence^[19]. It measures about 2.5-3.5 cm in length similar to that of *samvarani*. The term *samvarani* itself means 'to hold or stop' by voluntary muscle. Hence *samvarani* can be considered functionally and anatomically to the external anal sphincter. (Table-1, fig-1)

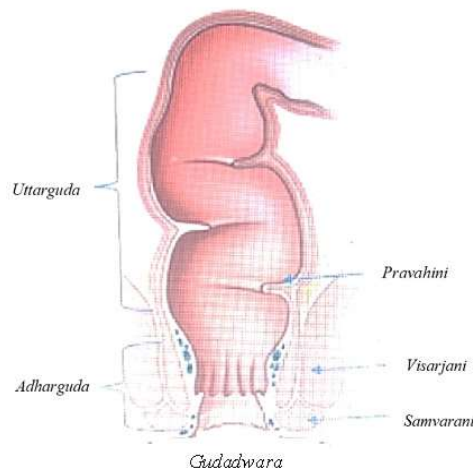


Figure – 1: *guda* and *gudavalis*

Table 1: Comparison of Ayurved and modern aspects of *guda sharir*

Ayurved Sharir of <i>guda valis</i>	Modern anatomy
<i>Pravahini</i>	Largest Houston's valve
<i>Visarjani</i>	Internal anal sphincter
<i>Samvarani</i>	External anal sphincter
<i>Uttarguda</i>	Seat for faecal collection
<i>Adharguda</i>	Seat for evacuation of the stools
<i>Guda</i>	Anal canal with some extent up to largest transverse fold

CONCLUSION

It can be inferred based on functionality and anatomical similarities found during the study that the following deductions are feasible to correlate *guda* with the rectum part of the large intestine. Three *gudavalis* can correlate with the three transverse folds of the rectum. *Pravahini* can be considered as the largest Houston valve. *Visarjani* can be considered as the internal anal sphincter. *Samvarani* can be considered as the external anal sphincter. *Uttarguda* is the seat for faecal collection and *adharguda* for evacuation of the stools.

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