

LITERARY REVIEW OF *GUDA* W.S.R. TO ANATOMICAL & PHYSIOLOGICAL CONSIDERATION OF RECTUM & ANUS WITH ITS APPLIED ASPECTS

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ABSTRACT

Guda is defined as the passage through which excretion of faeces and flatus takes place. *Guda* is one among the fifteen *Koshtangas* described by *Charaka*. He recognizes two parts in it i.e. *Uttara Guda* and *Adhara Guda*. It is one among the nine *bahirmukha* srotas and is located in pelvic region. It is continuation of large intestine. Embryologically it is derived from *matrujabhava*. Total length of *Guda* is 4 ½ *angula*. *Uttara Guda* stores the faecal matter, the *adhara Guda* does the function of throwing it out. There are three *valis* situated inside the *Guda* placed one above the other at a distance of 1½ *angula* from each other and are named as (proximal to distal) *Pravahini*, *Visarjini* & *Samvarani*. Out of seven *Sushrutokta kalas*, *Pureeshadhara kala* is related to *Guda*. *Guda* is described as *moola* of *Purishvaha srotas* & it is related to *Annavaha srotas*, further it is described that its attachment is to be *Bruhadantra*. One of the vulnerable spot “*Guda Marma*” which is *Sadhyapranahara* in nature and measures four *angula*.

Keywords: *Guda*, *Guda vali*, *Pureeshavaha srotas*

INTRODUCTION

Discussion of anatomical details of any organ includes: Location, embryological development, structure, blood & nerve supply, anatomical relationship, functions & *doshic* relationship. All these details are scattered throughout the classical texts.

The term *Guda* is derived from the root ‘गोदते’. The word *Guda* is formed by ‘गुद् इगुपघेति’ which means ‘मलत्याग द्वार’ or ‘अपानवायु निःसार द्वार’.

Guda is defined as the passage through which excretion of faeces and flatus takes place. (*V.S.S* p.379). According to *Amarkosha*, *Guda* has synonyms like *Apanam* & *Payu*.⁸ and other

synonyms in vogue are गुद, गुह्यम्, गुदवर्त्म | (p.338). Embryologically *Guda* is derived from *matruja bhava* (maternal element). (*Sha*. ch.3 sl.33 p.164)

Guda gets forming along with other body parts as early as in the fourth month and fully formed by seventh month of gestation. (*Sha*. ch.3 sl.18 p.352). The minute essence of *Rakta* and *Kapha* is acted upon by *Pitta* followed by rushing of *Vayu*, thereby intestines (*aantra*), anus (*Guda*), and bladder (*basti*) are formed.

असृजः श्लेष्मणश्चापि यः प्रसादः परो मतः । तं पच्यमानं पित्तेन वायुश्चापि अनुधावति ॥

ततोऽस्यं आन्त्राणि जायन्ते गुदं बस्तिश्च देहिनः ॥
(*Sha*. ch.4 sl.26 p.155)

Anatomical descriptions of *Guda* includes, it is considered one among 15 *koshtangas*.

पन्चादश कोष्ठाङ्गानि उत्तरगुदं अधरगुदं च । (Sha. ch.7 sl.10 p.913)

The lower end of the large intestine, which passes into the flexure of rectum and measures four and a half fingers in length, is called the *Guda* .

तत्र स्थूलान्त्र प्रतिबद्धं अर्धपन्चाङ्गुलं गुदमाहुः । (Ni. ch.2 sl.5 p.272)

अर्ध पन्चाङ्गुलमिति अर्धपन्चमङ्गुलं यस्मिन् तत्तथा, एतेन सार्धचतुरङ्गुलप्रमाणं गुदमित्यर्थः ॥ (डल्हण)

गुदः स्थूलान्त्र संश्रयः। (Ni. ch.7 sl.3. p. 491)

The area 1 ½ *yava* from the hair end of anal verge is *Gudoshta* and it measures ½ *angula*.

रोमान्तेभ्यो यवाध्यर्धो गुदौष्ठः परिकीर्तितः । (Ni. ch.2. sl.6. p.272)

Anatomical relationship:

Bladder, Prostate, Scrotum and Anus are inter-related, found in pelvic cavity (*Guda stha vivara*). बस्ति बस्तिशिरो मेढ्र कटि वृषण पायवः । ऐकसंबन्धिनाः प्रोक्ता गुदास्थि विवराश्रयाः ॥ (Ni. ch.9 sl.1 p.498). Acharya Sushruta describes *Guda* is made up of three *peshi*. Shape of *Guda* internally resembles interior of conch and elephant's palate in clour.

.....तिस्रो गुदे, तास्तु वली संज्ञः। (Sha. ch.5 sl.55 p.71)

The 3 *peshis* in *Guda* are known as *Vali*(folds).

तस्मिन् वलयस्तिस्रोऽध्यर्द्धाङ्गुलान्तर संभूता प्रवाहणी विसर्जनी संवरणी चेति ।

चतुरङ्गुलायताः सर्वास्तिर्यगेकाङ्गुलोच्छ्रिताः।

The 3 folds are at the intervals of one and a half *angulas*, four *angulas* broad and all

risen obliquely up to one *angula*- they are named as *Pravahani*, *Visarjani* and *Samvarani*. (Ni. ch.2 sl.5 p.20)

वलयः प्रवाहणी तासामन्तर्मध्ये विसर्जनी । बाह्या संवरणी ॥ (Ni. ch.7 sl.4 p.491)

Of the three *valis*, *Pravahani* is the innermost one, in between lies *Visarjani* and the outermost is *Samvarani*.

शंखावर्त निभाश्चापि उपर्युपरि संस्थिताः । गजतालु निभाश्चापि वर्णतः संप्रकीर्तितः ॥ (Ni. ch.2 sl.6 p.20)

The *Guda* is supported by sixty Snayus in pelvic region.(Sha. ch.5 sl.29 p.367)

Vatavaha siras, particular in the trunk they are thirty four, of these eight are in pelvis situated in anus and penis. (Sha. ch.7 sl.7 p.201). The down coursing *Dhamanis* respectively form the channels, for the downward conveyance of flatus, urine, stool, semen, menstrual blood etc. The two *Dhamanis*, attached to the *Sthoolantra*,

serve as the channels of faecal matter. (Sha. ch.9 sl.7 p. 247). Five bones form the *Shroni*(pelvic cavity), of these four are found about the *Guda* (anus), *Bhaga*(pubis) and the *Nitamba*(hips) and the fifth one is *Trika* (sacrum). (Sha. ch.5 sl.19 p.192). *Samudga* type of *sandhi* is situated in *Guda* , *Bhaga* and *Nitamba* (Sha. ch.5 sl.27 p.367). *Guda* is considered one among *Sadhyapranahara marma* and is enumerated under *Mamsa marma*.It is considered one among *Dashapranayatanas* by *Charaka*, *Vagbhata*, *Bhela* and *Kashyapa*. (Sha. ch.6 sl.25 p. 373)*Guda* is one among nine *Bahirmukha srotas*.

(Sha. ch.5 sl.10 p. 364) . *Pureeshavaha srotas* have their roots in *Guda* .(Vi. Ch.5 sl.8 p.712)

(Sha. ch.9 sl.12 p. 386). *Guda* is the seat of *Apanavayu*. (Su. ch.9 sl.9 p.193)

Physiological aspects:

Guda is one of the Five *Karmendriyas* and its function is to excrete flatus and feces.

(Sha. ch.7 sl.10). *Acharya Charaka* has described that, *Guda* is subdivided into *UttaraGuda* and *AdharaGuda*. *Chakrapani* has commented as the part which holds *pureesha* is *UttaraGuda* and that which evacuates is *AdharaGuda*. (Sha. ch.1 sl.26 p.807) (Sha. ch.6 sl.25 p.373)

Also, the action of *Guda valis-*

.....प्रवाहयतीति प्रवाहणी, विसृजतीति विसर्जनी, संवृणोतीति संवरणी । (डल्हण) (Ni. ch.2 sl.5 p.272)

Pravahani propels, *Visarjani* eliminates the feces and flatus and the *Samvarani* is that which closes (sphincter).

DISCUSSION

Guda is derived from *matruja bhava* (maternal element) and *matruja avayavas* are *jaliya* (more predominant of water factor) hence highly vascular. According to *chakrapani* *uttara Guda* is an organ where *purisha* (faeces) 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*. While describing the operative procedure of *Ashmari* (Calculus in urinary bladder), *Acharya Sushruta* instructs

introduction of digits in the *Guda* and fixing the calculus to make it prominent in the perineal region. This description gives various details like close relation of urinary bladder and *Guda*, per rectal digital examination and manipulation in *Guda* etc. *Acharya Sushruta* mentions that *Garbhashaya* (Uterus) is interfaced between bladder and large intestine. Here he uses the term *Maladhaara* for large intestine, meaning to say rectum.

From *tantra shareera* point of view, it is said that *Muladhar Chakra* is situated between genitalia and anus, which is correlated with pelvic plexus of Autonomic nervous system.

Guda is related to *Purishadhara kala* (5th kala) where *saara kitta vibhajana* takes place. *Sushruta* and *Vaghbata* have mentioned the length of *Guda* as four and half *angula*. The measurement of one *angula* approximately is 2 cms and on the basis of this the total length of the *Guda* is 9 cms. It is well known that maximum length of the anal canal is 3 cms. Then the extent of *Guda* includes that of anal canal plus the lower 6cms of rectum which roughly relates with middle Houstans valve. *Sushruta* has described that the interior of the *Guda* contains three *valis* which can be enumerated and correlated to modern anatomical parts in the following table.

SI No	<i>Guda vali</i>	Situation	Modern terminology
1	<i>Pravahini</i>	Proximal	Middle Houstans valve
2	<i>Visarjini</i>	Middle	Inferior Houstans valve
3	<i>samvarini</i>	Distal	Dentate line

According to Gananath Sen *pravahini* can be correlated to lower Houstans valve, *visarjini* to columns of Morgagni and *Samvarini* to anorectal ring. According to G.D Singhal *valis* are correlated to Sphincters. The upper part of rectum is only the reservoir of faecal matter. The

lower part (*uttara Guda* in our terms) lies below the middle fold. It is empty and being sensitive, its distention causes the desire to defecate. Upper part of rectum is considered as *purisha dhara/ Pakwashaya/ sthulantra* and not considered as *Guda*. The lower part of rectum i.e 6 cms is

where the desire to defecate occurs .this is the area of pravahini (the area where the urge originates). In middle rectal valve there is no peritoneum, no mucous membrane but rich in stretch sensitive nerve endings. Process of defecation is stimulated here and hence can be correlated to *Pravahini vali*. On the basis of measurement given in *ayurvedic* classics *Samvarini* lies 2 cm above the anal verge interiorly. This is the area of anorectal ring , external spincter . Hence *samvarini* can be correlated to External and internal sphincters which maintains the contents.

Valis are both functional and structural entities of *Guda* . Moreover according to *Sushruta Arshas* disease originates from these valis. *Arshas* which originates from *samvarini*, *visarjini* are amicable to treatment but *arshas* which originate from *Pravahini vali* is difficult to treat and are incurable.The lining of the anal canal above the anal valves is insensitive except to stretching, such as by rapid injection of an internal haemorrhoid, whereas the anal canal skin and the true skin of anus are extremely sensitive to painful stimuli.The surgical anal canal is lined from above downwards by pink rectal mucosa (columnar epithelium) covering the haemorrhoidal pedicle at the anorectal ring; by dark red anal mucosa (cuboidal and transitional epithelium) covering the main haemorrhoidal mass; by smooth, parchment coloured anal canal skin (thin squamous epithelium) covering the pecten zone and, finally, by the true skin of the anus (squamous epithelium with hair follicles and sweat glands) covering the external haemorrhoid.

It has always been difficult to understand why infection so readily passes through such a relatively stout

muscle as the internal sphincter, or through or between the external sphincters. The fact that fibres of the longitudinal muscle pass both inwards through the internal sphincter and also outwards between portions of the external sphincter muscles most probably accounts for the routes by which infection extends directly from the anal canal into the perianorectal tissues to form an abscess or fistula in- ano. Conversely, it would explain how an abscess, which takes the line of least resistance along a fascial plane or other anatomical pathway, may track from the ischio-rectal space along the fibres of the longitudinal muscle in between the fasciculi of both the external and internal sphincter muscles to burst into the anal canal. It is not uncommon to find an abscess or a fistula extending upwards between the internal and external sphincter muscles. 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 the longitudinal muscle. The multiple extensions of the longitudinal muscle through the internal sphincter may also explain the not uncommon occurrence of more than one internal opening. Failure to appreciate this possibility and to identify a second internal opening, is one of the reasons for persistence of a fistula after surgical treatment. In an acute fissure, when only the anal canal skin is broken, radiating longitudinal fibres will be seen in the floor of the fissure; these unstriped muscle fibres are derived from the fibres of the conjoint longitudinal muscle which have

traversed the lower end of the internal sphincter. When a fissure has become chronic the longitudinal fibres disappear and now fine white circular fibres appear across the floor of the fissure.

Basti karma (medicated enema treatment) in *Pancha karma* holds a major place. Here *niruha kashaya* or medicated oil is pushed in to the anal canal & rectum. The lower segment of rectum is absorptive in nature. Hence *Guda* plays a major role in uptake of potency of medicines employed in *Basti* treatment. *Guda* is one among the *Sadhya pranahara marmas*. During *Basti karma* if the *Basti netra* is sharp, it can injure the *Guda* leading to wound and some time can lead to vasovagal shock. If ano – rectal region get traumatized may lead to peritonitis, internal hemorrhage, septicemia, toxemia, shock etc hence called *sadhya pranahara marma*. *Charaka acharya* included *Guda* in *Dasha Pranayatana* (important seats of *Prana*).

Some of the terms are related to *Guda* like
1) *Gudopasta pradesha* meaning Perineum region, related to manifestation of pain in *Tuni*, *Pratituni roga*.

2) *Guda parshva kshetra* meaning Ischio rectal fossa where *Bhagandara pidakas* occur.

3) *Guda mandala* – circular area of anus.

4) *Guda shraya roga* – diseases which take origin or manifest in *Guda* like *Arshas*, *Bhagandara*, *Ahiputana*, *Pratituni*, *Parikartika*.

5) *Guda ankura*- Bud like structure in *Guda* (*Arshas*)

6) *Guda laya*- *Alaya* means seat and *Guda* is the seat of *Apana vayu*.

7) *Gudosta* – Anal verge

CONCLUSION

Guda is one among the fifteen *Koshtangas* described by *Charaka*. It is a one among the nine *bahirmukha srotas* and is located in pelvic region¹⁰. Embryological it is derived from *matrujabhava*. Total length of *Guda* is 4 ½ *angula*. *uttaraGuda* stores the faecal matter, the *adhara Guda* does the function of throwing it out. There are three *valis* situated inside the *Guda* placed one above the other at a distance of 1½ *angula* from each other and are named as (proximal to distal) *Pravahini*, *Visarjini* & *Samvarani*. From *tantra shareera* point of view, it is said that *Muladhar Chakra* is situated between genitalia and anus, which is correlated with pelvic plexus of Autonomic nervous system. Vitiated *apana vata* in *Guda* is responsible for causation of disease like *Arshas* etc. Therefore a clear anatomy of *Guda* is a prerequisite for understanding disease pathology and further treatment.