



## ANORECTAL ANATOMY IN AYURVEDA AND ITS APPLIED ASPECT.

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### ABSTRACT:

The Anatomy of the Anorectal region was mentioned scattered in Ayurveda. The most common terminology in this regard is *Guda*. *Guda* is the organ which helps driving away of flatus and stool. It can be correlated with both rectum and anal canal. Acharya Charak divided the *Guda* into two parts i.e. *Uttaraguda* and *Adharaguda*. According to Chakrapani *Uttaraguda* is the place where *pureesha* is retained for some time. *Adharaguda* is the place which helps in excretes stools or the *pureesha* out of body. Functionally rectum retains faecal matter for certain time hence it is called as *Uttara Guda*. And excretion of faecal matter is function of anal canal so called as *Adhara Guda*. Susruta however highlights anatomy of anal region most distinctly and vividly. Here he describes 3 *valis* as *pravahini*, *visarjini* and *samvarani* which exhibit sphincter of anal region irrespectively of internal and external. They are placed one after another i.e. Conch shell like and 1 Angula in circumference diameter. Embryological developed was mentioned from *Sarabhaga* i.e. nutrient part of *Rakta* and *Kapha*. Functional aspects are understood with *Pureesha dharakala*. While abnormality occurs in this region include *pureesha vaha srota vikar* as well as vitiation of *mamsa*. Importance of *guda* can be known from followings - *Dasa-pranayatana*, *Sadya prana hara marma*, *Mamsa marma*, 4 and ½ *angulam paramana*, *moola of purisha vaha srota* and it is one among *bahirmukha srotas*. The applied aspects of anal region are mainly highlighted in disorders *Arsha*, *Bhagandara*, etc.

**Keywords:** *Guda*, Rectum, Anus, Anatomy, Ayurveda.

## INTRODUCTION:

The Anatomy of the Anorectal region was mentioned scattered in different Ayurvedic classics. Most common terminology in regard to anorectal anatomy is *Guda*. *Guda* is defined as the passage through which excretion of faeces and flatus takes place.

The study is about the Anorectal anatomy in Ayurveda along with its applied aspects. Knowledge of Anorectal region is essential to understand the clinical subjects. Detailed applied study only can find out the inner meaning of Ayurvedic literature.

Discussion of Anorectal anatomy includes: Location, embryological development, structure, blood & nerve supply, anatomical relationship, functions & doshic relationship. All these details are scattered throughout the Samhitas.

## OBJECTIVES:

1. Review of Ayurvedic classics including commentaries and relevant data from modern books are also studied.
2. Analysis of the Anorectal region in applied aspect.

## MATERIAL AND METHOD:

Literary and analytical study done from all Samhitas along with histology and modern correlation.

## REVIEW OF LITERATURE:

**Synonyms of *Guda*:** According to Amarkosha 1. *Apanam* & 2. *Payu*.

## Terminologies related to *Guda*:

- *Guda pastapradesha* which means Perineum region, mentioned in related to manifestation of pain in *Tuni*, *Pratituni roga*.
- *Guda parshva kshetra* which means Ischioanal fossa where *Bhagandara pidakas* occur.
- *Guda mandala* – It means the circular area of *anus*.
- *Gudashraya roga* – Diseases which take origin or manifest in *Guda* like *Arshas Bhagandara* etc.
- *Guda ankura* – Bud like structure in *Guda (Arshas)*
- *Gudosta* – Anal verge. 1 angula [1]
- *Guda antra* [2]
- *Guda mukha (Krimiroga, Chakradatta)*

## Embryology of *Guda*:

- It is derived from *matruja bhava* (maternal element) [3].
- Time: *Guda* gets form on 4th month and fully formed by 7th month of gestation [3]
- The minute essence of *Rakta* and *Kapha* is acted upon by *Pitta* and *Vayu*, thus there by *Aantra* (intestines), *Guda (anus)*, and *Basti (bladder)* are formed [4].

**Anatomical consideration of *Guda*:** It is considered as one among 15 *koshtangas* [5]. 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* [6]. *Guda* remain

continuation with large intestine. The area  $1\frac{1}{2}$  *yava* from the hair end of anal verge is *Gudoshta* and it measures  $\frac{1}{2}$  *angula*[7].

#### **Anatomical relationship:**

- Bladder, Prostate, Scrotum and Anus are inter-related, found in *Gudasthi vivara* (Pelvic cavity) [8].
- *Guda* is made up of three *peshi*. Shape of *Guda* internally resembles interior of conch and colour look like the elephant's palate [9].
- The 3 *peshis* in *Guda* are known as *Vali* (folds). The 3 folds are at the intervals of 1 and  $\frac{1}{2}$  *angulas*, 4 *angulas* broad and all remain obliquely up to 1 *angula*. They are named as *Pravahani*, *Visarjani* and *Samvarani*[10,].
- From inside to out, they are named as from inside *Pravahani*, *antamadhya-Visarjani* and *bahya-Samvarani*[11].

**Snayu around Guda:** Total numbers of *snayu* i.e. 60 *Snayus* present in pelvic region [12].

**Sira around Guda:** *Vatavaha sira*s, particular in the trunk they are 34, of their 8 are in pelvis situated in anus and penis [13].

**Dhamanis around Guda:** The down coursing respectively for the conveyance of flatus, urine, stool, semen, menstrual blood etc. The 2 *Dhamanis*, attached to the *Sthoolantra*, serve as the channels of faecal matter [14].

**Gudaasthi:** 5 bones form the *Shroni* (pelvic cavity), of these 4 are found about the *Guda*

(*anus*), *Bhaga* (*pubis*) and the *Nitamba* (*hips*) and the 5th one is *Trika* (*sacrum*) [15].

**Sandhi:** *Samudga* type of *sandhi* is situated in *Guda*, *Bhaga* and *Nitamba*

**Marma:** *Guda* is considered one among *Sadhya pranahara marma* and is *Mamsa marma*[16].

**Pranayatanas:** It is considered one among *Dasha pranayatanas* by *Charaka*, *Vagbhata*, *Bhela* and *Kashyapa*.

#### **Srotas:**

- *Guda* is one among nine *Bahirmukha srotas*[17].
- *Pureeshavaha srotas* have their roots in *Guda* [18,19].

**Place of vayu:** *Guda* is the seat of *Apanavayu* [20,2,22].

**Chakra:** 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

**Extent of Guda:** *Guda* is an organ which refers to terminal part of intestine. According to *Acharya Sushruta* and *Acharya Vagbhata*, the entire length of *Guda* is four and a half fingers. The measurement of one *angula* is approximately 2 cm. On the basis of this the total length of *Guda* is 9 cm. The maximum length of the anal canal is in between 3 to 4 cm and the total length of ano-rectal canal from recto-sigmoid junction to anal verge is 16.5 cm. Thus *Guda* includes anal canal plus distal 5 to 6 cm. of rectal segment that means up to middle

houstan valve. Acharya Vagbhata has also told measurement of *Guda marma* as *atmapanitala*[21]. There is one term *sthulaguda* which indicate rectum clearly [23].

**Physiological aspects:** *Guda* is one of the five *karmendriyas* and its function is to excrete flatus and faeces[24]. *Guda* is subdivided into *Uttara Guda* and *Adhara Guda*. *Chakrapani* has commented as the part which holds *pureeshais Uttara Guda* and that which evacuates is *Adhara Guda* [25]. The action of *Guda valis*- *Pravahani* - *provaharati* (propels) , *Visarjani*-*bisrijoti* (eliminates) the faeces and flatus and the *Samvarani* -*Sambrinoti* (closes sphincter). [31] 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 distension causes the desire to defecate. Upper part of rectum is considered as *purishadhara/ Pakwashaya/ sthulantra* and not considered as *Guda*

**Three *Guda valies*:** Acharya *Susruta* has described the position of three circular ridges like structures called *Guda valies* in the wall of *Guda*. The colour of *Valies* resemble with the palate of elephant. These three *Valies* are arranged in a spiral manner like the ridges of conch shell and placed at an interval of one and half *Angula Guda* *sthaor* anal margin is at the distance of *Yavaardha* (1/2 Finger) from where hair growth ends. Lower most *Vali* (*Samvarani*) is at a distance of one finger from anal verge. Above described *Gudavalies* are termed *Pravahini*, *Visarjini* and

*Samvarani* respectively from proximal to distal part [26].

Acharya *Sushruta* has described that the interior of the *Guda* contains three *valis* which can be correlated to modern anatomical area surrounding as following. (Table 1)

**Table 1. *Guda Vali* and their location**

| Sl. No. | <i>Guda vali</i> | Situation       | Area around                    |
|---------|------------------|-----------------|--------------------------------|
| 1       | <i>Pravahini</i> | <i>Proximal</i> | <i>Middle Houstans valve</i>   |
| 2       | <i>Visarjini</i> | <i>Middle</i>   | <i>Inferior Houstans valve</i> |
| 3       | <i>Samvarini</i> | <i>Distal</i>   | <i>Dentate line.</i>           |

#### DISCUSSION:

- The lower part of rectum i.e. 6 cms is where the desire to defecate occurs .this is the area of *Pravahini vali* (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 *visarjini*.
- 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 sphincter. Hence *samvarini* can be

correlated to External and an internal sphincter which maintains the contents.

**Importance of Valis:** *Valis* are both functional and structural entities of *Guda*. According to Acharya 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.

**Importance of Kala in Guda:** The first *kala* is known as *Mamsadhara kala* and fifth one is *Pureeshadhara kala*, which is of importance in *Guda gatavikar*.

*Mamsadhara kala:* *Arsha* is mainly disorder of *Mamsavaha Srotas* and caused due to vitiation of *Mamsa*. *Pureeshadhara Kala* is situated in *Pakvashaya* segregating the *Mala*. *Maladhara Kala* is near *Yakrit* and is situated in the *Koshtha* as well as in the intestines, segregating the *Mala* in *Unduka* (caecum). This *Pureeshadhara Kala* can be understood as mucous membrane of Large intestine. *Pureeshavaha srotas* have their roots in *Guda* [27,28]. Causes of *Pureeshavaha Srotas* dusti (Vitiation): *Mala vegadharan* (Suppression of natural urge), Excessive intake of food, Indigestion, Loss of appetite, Weakness. Symptoms of *Pureeshavaha Srotas* Vitiation: Painful, straining defecation, less quantity of stools, Excessive watery motions, Constipation. Disorders of *Pureeshavaha Srotas* Vitiation are due to *Malavashtambha*.

**Guda - Rogas:**

- *Arsha*, *Guda Bhramsha*, *Ahiputana*, *Parikartika Roga*, *Pachradruja* ,

*Sannirudha Guda*, *Bhagandar* etc. The description about “*Guda roga*” (Anorectal diseases) in relation to *kumarbhritya* are also found in details in various Ayurvedic Samhitas.

**A. Arsha:** Acharya Vagbhata has told that when muscle like fleshy projections kills a person like an enemy and creates obstructions in *gudamarga* is called *Arsha* [29]. Acharya Charak explained that *Arsha* is an abnormal fleshy growth in *guda* (Ano-rectal), where as other sites. It is called *asadhimamsa* e.g. *Nasa*, *Karna*, *Akshi*, *Medra*, *Apatyapatha* and *Galatalumukha* etc [30] *Arsha* is mainly disorder of *Mamsavaha Srotas* and caused due to vitiation of *Mamsa*.

**(B) Guda Bhramsha:** In case of weak muscular person due to excessive straining during defecation and *atisar* the *guda* or rectum come out from its normal position and that is called *guda bhramsha*. It is can be correlated with prolapsed of rectum and proclidentia. [31]

It is two types: a. *Purna* (Proclidentia) – In this condition the complete rectum comes out and it is mostly seen in children.

b. *Apurna* (prolapse) – Only the *slesma* layer of the rectum comes out and it is seen in case of adult.

**(C) Ahiputana:** Synonyms – *Pristaru*, *gudakutta*, *Anamakroga*, *matrika dosha*. The disease mainly found in children due to vitiation of *kapha* and *rakta*. Itching occurs in *guda*, initially leading to many oozing blisters, later they joint to form a big *vraha*. The features are similar to those of “diaper rash” or sore buttocks.

Aetiology: Absence of proper cleaning after defecation and urination. Negligence of both after over sweating [32,33]

**(D) Parikartika Roga:** Synonyms – *Gudavihar, Gudachir, Kshataguda*

According to all Acharyas the *Parikartika* is an *upadrava* of *atisar* or *virechan* or *vastichikitsa*.

**Aetiology:** *Atyadhikshoucha, Vibandha, Krimijannya.*

*Tivrashula* after passing the stool blood strips are seen *Kartanavatpada* and *daha* in *guda, nabhi, medra* and *vastishirpravesha*, retention of *apanvayu, adhma*n due to *vayu* and *aruchi* correlated with anal fissure.

**E) Sannirudha Guda:** Synonym-*Ruddraguda*

Vitiated *vayu* due to retention of the urges of *mala-mutra* and *apanvayu* goes to the *mahasrota* and obstruct the *gudamarga* and narrowing it. Due to narrowing of the *gudamarga* passing of stool is very difficult. Therefore these types of roga are called the *sanniruddhaguda*. It can be correlated with the stricture of the rectum. Sometimes due to *garbhadosha* *gudamarga* remains closed which is called imperforated anus is also include this category. Mainly this disease occurs due to *vrana* in *guda* for that a contraction happened in that place [34].

**Applied Aspect:**

- *Vasti* is the best *chikitsa* (treatment) of *vata* which is administered through the *guda*. It is part a of *Panchakarma chikitsa*. [35] So measurement of *guda*,

knowledge of *snayu, sira, dhamanis* are important.

- *Ksharakarma chikitsa* (caustic alkali treatment) is applied in *Shalya tantra* department to cure various *gudarogas* e.g. *Arsha, Bhagandara*. Here knowledge of measurement, *snayu, avedyasira, dhamanis, marma* points are important to avoid complication during *shalya karma*.
- *Matra vasti* is applied through *guda* in various disorders of female in *Prasuti tanta* and *Stree roga*. According to Acharya Bhela, for augmentation of labour *anuvāsana vasti* with *tikshna taila* (pungent oil) should be given. [36]

**CONCLUSION:**

*Guda* includes anal canal plus distal 6 to 7 cm. of rectal segment that means up to middle houston valve. This part is of endodermal origin. The area 1 ½ *yava* from the hair end of anal verge is *Gudoshta* and it measures ½ *angula*. We know it's the portion of ectodermal origin. *Pravahini* is situated Proximally and around the Middle Houstans valve, *Visarjini* is situated at Middle and around Inferior Houstans valve and *Samvarini* is situated Distally and around the Dentate line and all valis includes irrespectively internal and external sphincter. Diseases occur here are due to vitiation of *mamsa* or *pureeshadhara kala* (mucous membrane of rectum) mainly. In ayurveda anorectal anatomy (*guda*) is having great importance in applied

aspect specially in *Shalya tanta, Panchakarma* and *Prasuti tantra* evum *Stree roga*.

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