



Review Article

Volume 12 Issue 4

July-August 2023

AN AYURVEDIC REVIEW OF ANAL CANAL IN TERMS OF SURGICAL ANATOMY

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Abstract

Ayurveda is a vast repository of knowledge, akin to an ocean. To gain valuable insights from it, we must equip ourselves with a "diving suit of curiosity" and delve deep into its depths. In this exploration, we focus on the intriguing aspect of the human body known as Guda, which corresponds to the ano-rectum in modern anatomy. The Guda is identified as the terminal part of the large intestine and the Moola of Pureeshavastrotas in Ayurvedic texts. Functionally, it serves as the passage through which excretion of feces takes place. Within the pelvic region, there are two parts of Guda: Uttara Guda and Adhara Guda. It is categorized as one of the Bahirmukhstrotas and considered as one of the Karmendriyan (organs of action). Charak also recognizes Guda as one of the Koshtangas. Guda is a continuation of the large intestines and is embryologically derived from Matrujabhava. It measures a total length of 4½ angula. Interestingly, Guda contains three sphincters - Pravahini, Visarjini, and Samvarni - positioned one above the other at a distance of 1½ angula from each other. To better understand the anatomy, the functions of Uttara Guda (distal rectum) and Adhara Guda (anal canal) are compared with specific parts of the ano-rectum. This comparison aids in simplifying the comprehension of these anatomical regions in relation to Guda in Ayurveda.

Key-words: Guda Pradesh, Shalyatantreeya Sharir, Uttara Guda, Adhara Guda, Ano-rectum.

Introduction

Ayurveda, "the ancient medicine" cherished by the sages and protected and diversified by modern Ayurvedic scholars, has proven to be a boon to society and people worldwide. It is the study of life. Ayurveda's primary goal is to cure Atura and maintain Svasthya of the Svastha. In Sharira, there are some important special Sthana known as "Sthanaveshesha." Such Sthana must be taken into account by Chikitsaka during surgery, and such Sthana are known as Marma. Marma's research Sharira is an essential component of Ayurvedic Sharir Rachna. Marma is the name given to the vital part of the body. Marma is defined as the Sthana where Mansa, Sira, Snayu, Asthi, and Sandhi meet, and according to Acharya Sushrut, "Dvadasha Prana" is located at the points of Marma, which is why these points are called vital points. Marma are of great importance among the 107 Marma Sadyopranhara because trauma to these Marma results in the person's death. Marma knowledge enables practitioners to influence the flow of Prana through both the gross and subtle bodies in order to restore health and peace of mind. According to Rachana Sharir, Guda Marma is Sadhyopranhara Marma. Its primary function is defecation. Anatomical details of organs are discussed, including location, blood and nerve supply, anatomical relationship, function, and Doshic relationship. All of these details can be found throughout the classical text. Keeping in mind the ancient Acharyas, it becomes necessary to comprehend the entire Anatomy of the Guda, which can be interpreted to produce higher and more scientific knowledge that will be very beneficial and practically useful to our medical fraternity in the modern era. As a result, the study of Guda Marma in conjunction with diseases has been undertaken in order to highlight the comprehensive or to obtain sound knowledge of the cardinal components. The intended work may be beneficial to clinical faculty and academicians. Because the detailed description of Guda is not clearly mentioned in Ayurvedic texts, the study's main goals and objectives would be to correlate Guda Marma with modern science, conduct a critical study of Gudasharira, and conduct a comprehensive and correlative study of Guda and anal canal disease.

Guda is defined as the passage through which feces and flatus are excreted. Guda is the distal part of the large intestine (Antra) that is four and a half fingers long. Shravana (two ears),

Nayana (two eyes), Vadana (mouth), Ghrana (two nostrils), Guda, and Mendra (Urethra) are all considered Bahyasrotas that open on the surface of our body. Based on the above explanation, we can think of Guda as a tubular structure that opens on the body's surface, specifically the perineal region. Because it is designed to perform a specific function, it is also considered a Karmendriya. Visarga, or Purisha evacuation or excretion, is considered its specific function.

Formation of Guda

It is composed of the best (Prasad Bhag) of blood and Kapha, which has been digested by Pitta with the assistance of Vayu. Acharya Charak mentioned two aspects of Guda: Uttar Pradesh and Adhara Guda. As a result, it is clear that 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 in Samhita Granthas. It is explained in terms of physiological activity.

Synonym of Guda

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

The lower part of the large intestines, known as Guda, extends into the flexures of the rectum and measures about four and a half fingers in length. Guda is derived from Matruja Bhava during embryological development. It begins to form around the fourth month and is fully developed by the seventh month of gestation. In anatomical terms, Guda is considered one of the 15 Koshtangas and is situated in the Shroni Pradesha, along with the Basti and Muskha. These organs are interconnected with each other and are also included in the Dashpranayatana by Acharya Vagbhata. Guda is identified as Sadyopranhara marma, Mansa marma, and Dhamni marma.

Guda plays a crucial role as a part of the Purishvaha srotas, serving as the Moolsthan (origin) of the Purishvaha srotas. According to Chakrapani, the Uttar Guda is responsible for collecting stool, while the Adhara Guda is involved in the elimination of stool. Additionally, Guda is attached to the Sthoolantra and is associated with the Basti.

The internal structure of Guda

As described by Sushruta, comprises three Valis: Pravahini, Visarjini, and Samvarni. These Valis are arranged spirally with an interval of $1\frac{1}{2}$ angula (a unit of measurement). They are colored similar to the palate of an elephant, resembling Gajatalu. Acharya Vagbhata further classifies the position of these Valis, naming the proximal one as Pravahini, the distal one as Samvarni, and the middle one as Visarjini. The Gudostha, or anal margin, is located 1 Angula away from the Samvarni. Pravahini is situated most internally, $1\frac{1}{2}$ angula from Visarjini, and Visarjini is positioned $1\frac{1}{2}$ angula above Samvarni. Each Vali is 1 finger in length, and the distance between two Valis is $\frac{1}{2}$ finger, resulting in the total length of Guda, including Gudoshtha, being $4\frac{1}{2}$ fingers. Gudoshtha, specifically, measures $\frac{1}{2}$ finger in length. According to Acharya Sushruta, Guda is formed by three Peshies.

The pelvic region contains 60 Snayu (ligaments) in the pelvic region and 10 in the groin. It comprises five bones, with four found in the anal region, pubic region, and hip, and one in the sacral region. There are 24 Dhamanias, with 10 spreading downwards to reach the rectum, pelvis, anus, bladder, and penis, among other organs.

Furthermore, Guda consists of 8 Shira (veins) carrying Vata in the anus, pelvis, and penis, while the remaining Shiras carry Pitta, Kapha, and Rakta distributed similarly. The Shiras present are known as Malvaha Shiras and Vatvaha Shiras. Guda is composed of Sushir Snayu (tendons) and Samudga Sandhi (synovial joints). The Dhamnis (arteries) taking a downward course carry Apanvayu, Mutra, Purish, Shukra, and Artava to their respective organs, such as Pakvashaya (intestines), Kati, Guda, Basti, and Mendra.

These organs are located below the level of Nabhi. The two Dhamnis that are connected to Sthoolantra are responsible for the elimination of waste products (Purish). In the physiological context, Guda is described as one of the Panchkarmendriya and its primary function is to excrete waste (mala) from the body. Acharaya Charak also considers Guda and Pakvashaya as seats of Apanvayu, which aids in the elimination of Vata, Mutra, Purish, Shukra, and Garbha. If this Vayu is imbalanced, it can lead to diseases related to Basti and Guda.

In Ayurveda, the process of excretion is described clearly. The proximal Vali (Epravahini) aids in compressing and pushing the stool downwards, while the second Vali (Visarjini)

relaxes during this process to allow the stool to pass down. The distal Vali (Samvarni) expels the stool and immediately constricts to cut off the continuity of stool passage. Thus, these three Valis and Apanvayu are solely responsible for the mechanism of defecation. Guda is related to Purishdharakala, where Saarakittavibhajana (breaking down of food residues) occurs. According to Ashtang Sangrah, Guda is considered as Mahamarma. Its dimension is equal to the size of a palm of a particular person, as described by Acharya Sushrut.

Some terms are related to Guda like:-

1. Gudopastha Pradesha refers to the perineum region where pain is manifested in Tuni and Pratituni.
2. Guda Parshava Kshetra is the ischio-rectal fossa, where Bhagandara pidikas (fistulas) occur.
3. Guda Mandala is the circular area around the anus.
4. Gudashraya Roga is a disease that originates or manifests in the anal region, such as Arsha (piles) and Bhagandara (fistula).
5. Gudankura is a bud-like structure found in the anal region, specifically in cases of Arsha (piles).
6. Guda Alaya refers to the seat of Apana Vayu (a vital force related to the excretory functions), which is located in the rectum.
7. Gudosta indicates the anal verge. According to Sushruta's Nidana Sthana, Basti, Bastisira, Pauresha, Granthi, Vrishana, and Guda are interconnected and present in the Gudasthivivara. Charaka emphasizes the significance of Guda by explaining that oils or medicines administered through the rectum pervade through the Shira (vessels), Dhamni (arteries), and reach different parts of the body, akin to water spreading from the root of a tree to all its branches. This illustrates that the Guda is considered the root or foundation of the entire body.

Discussion

The anus and rectum, collectively known as Guda in Ayurvedic terminology, are situated in the thoraco-abdominal cavity. Classical literature mentions two divisions of Guda: Uttara Guda (distal rectum) and Adhara Guda (anal canal). Uttara Guda serves as a reservoir for storing feces, while Adhara Guda is involved in the process of eliminating fecal material.

As per Ayurvedic teachings, Guda is identified as one of the nine external channels, or srotas, present in the human body. Its main function is to eliminate feces and gas from the body, and it is governed by the Apana Vayu. Ayurvedic Acharyas have specifically considered Guda as the root of the Purishavaha srotas. Moreover, Guda is also referred to as Sadyapranahara Marma and is categorized under the heading of Pranayatana. After consolidating the scattered anatomical details of Gudapradesha, it can be summarized that Guda measures approximately 4½ Angula in length and exhibits a color similar to the palate of an elephant, which can be white or blackish pink. Guda is further divided into two parts, Uttarguda and Adharguda, and includes the Gudaustha.

The underlying structures of Guda can be classified into three Gudavalis with a measurement of 1½ Angula each. The most internal vali is known as Pravahini, responsible for pushing the mala (waste material) downwards. The middle vali is referred to as Visarjanivali, which expands Guda and facilitates the expulsion of waste. Lastly, the Samvaraṇi vali is situated one Angula above the terminal part of Guda, known as Gudaustha, which is half an Angula in width.

In modern science, the rectum acts as a reservoir and can accommodate fecal material and gas. During distention, the longitudinal folds in the lower part of the rectum disappear. Defecation does not occur until a conscious decision is made to evacuate the stool. When the rectum is full of stool, it distends until it reaches the uppermost margin of the external anal sphincter, without encroaching the region where the external anal sphincter lies.

The process of defecation involves various factors, including the relaxation of the external anal sphincter and puborectalis muscle, as well as contraction of the conjoint longitudinal muscle. The anorectal ring, composed of the upper margin or fiber of the external anal sphincter, internal anal sphincter, and puborectalis muscle, plays a significant role in maintaining continence.

The study suggests that Guda represents the anatomical structure located at the end of the large colon (Sthula Antra). However, the terms Uttara Guda and Adhara Guda denote specific parts of Guda that have physiological differences. Uttara Guda functions under involuntary control (autonomic control), while Adhara Guda is under voluntary control (somatic nerve). Overall, Guda is a term encompassing the anus and rectum, while Uttara Guda and Adhara Guda refer to distinct anatomical and physiological regions within Guda. These divisions seem to have been listed by Acharya Charaka based on their functional variations.

Conclusion

The preceding discussion concludes that the anatomy of the anus and rectum has been extensively described in ancient Ayurvedic texts, such as Charaka, Sushruta, and Vagbhata, in a scientific manner. This knowledge provides valuable insights into the pathology of diseases in this region and offers guidance on surgical and para-surgical interventions. As the anal canal is considered a vital point or "marma," any surgical or para-surgical procedures must be undertaken with utmost care to avoid potential fatal outcomes. It has been observed that even minor bleeding in this area, following procedures, can become life-threatening for patients, especially after the application of anesthesia, making it challenging to pinpoint the exact source of bleeding. The wisdom of our acharyas (ancient scholars) concerning the origin of pile masses in successive generations is genuine and points to possible genetic factors influencing this condition. The occurrence of piles within the same family underscores the genetic aspect of this disease. To ensure successful treatment, it is crucial to have a comprehensive understanding of the practical aspects of the anatomy of the Guda (anus). Adhering to necessary instructions during and after procedures can help prevent complications. Furthermore, there is a need to bridge the concepts of Ayurveda with modern anatomy of the Guda, which could lead to the development of new and effective treatment approaches.

Reference

- 1) Agnivesha Charaka Samhita with Ayurveda Deepika Commentary of Chakrapanidatta. Edited by Vaidya jadvai Trikamji Acharya, 5th edition 2001 Varanasi Chaukhambha Sanskrit Sansthana, Page no 309.

- 2) Agnivesha Charaka Samhita with Ayurveda Deepika Commentary of Chakrapanidatta. Edited by Vaidya jadavji Trikamji Acharya, 5th edition 2001 Varanasi Chaukhambha Sanskrit Sansthana Page no 338.
- 3) Vagbhata. Astangahrudayam with Sarvanga Sundari Commentary of Arunadatta and Ayurveda rasayana of Hemadri. Edited by Bhisagacharya Hari Shastri Paradakara Vaidya, 8th edition 1998. Varanasi Chaukhambha orientalia, Page no. 193.
- 4) Agnivesha Charaka Samhita with Ayurveda Deepika Commentary of Chakrapanidatta. Edited by Vaidya jadavji Trikamji Acharya, 5th edition 2001 Varanasi Chaukhambha Sanskrit Sansthana, Page no 338.
- 5) Vagbhata, Ashtanga Sangraha, in the commentary by Kaviraj Atrideva Sharma, Part I. Krishnadasa Ayurvedic series 39. Krishnadas Academy, Chaukhambha Press, Varanasi, 2050 (Vibha Samvatsara) 1993 Page no. 314.
- 6) Vagbhata, Astanga Hrudayam with Sarvanga Sundari Commentary of Arunadatta and Ayurveda rasayana of Hemadri. Edited by Bhisagacharya Hari Shastri Paradakara Vaidya, 8th edition 1998. Varanasi Chaukhambha orientalia, Page no.413.
- 7) Sushruta. Sushruta Samhita with Nibanda Sangraha Commentary of Dalhana Acharya. Edited by Vaidya Jadavji Trikamji Acharya 7th edition 2002. Varanasi Chaukhambha orientalia, Page no. 386.
- 8) Sushrut. Sushrut Samhita with Ayurveda Tatva Sandipika Hindi commentary edited by kaviraj Ambika Dutt Shastri Edition 2009. Chaukhambha Sanskrit Sansthan Varanasi Nidansthan 2/5 Page no 307.
- 9) Dalhana, Sushruta Samhita Sharirasthana, chapter 5, verse 10, Chaukhamba Sanskrit Pratisthan, 2012
- 10) Dalhana, Sushruta Samhita Sharirasthana, chapter 3, verse 31, Chaukhamba Sanskrit Pratisthan, 2012.
- 11) Dalhana, Sushruta Samhita Sharirasthana, chapter 4, verse 26, Chaukhamba Sanskrit Pratisthan, 2012.
- 12) Kashinath Pandey, Gorakhnath Chaturvedi, editor Charak Samhita Vidyotini Tika Part-1 SharirSthan 7/10 Hindi Commentary, Chaukhambha Bharati Academy Varanasi; Reprint 2009. Page 913.
- 13) Ambikadutta Shastri, editor Sushrut Samhita Ayurveda TatvaSandipika Vol.1, NidanaSthan 2/7, Hindi Commentary, Chaukhambha Sanskrit Sansthan Varanasi; Reprint 2013. Page 307
- 14) AtridevGupt, editor AshtanghridayamVidyotini, NidanaSthan 7/4-5, Hindi Commentary ChaukhambhaPrakashan Varanasi; Reprint 2012. Page 331
- 15) The ASCRS Textbook of Colon and Rectal Surgery Editors- David E. Beck, Patricia L. Roberts, Theodore J. Saclarides, Anthony J. Senagore, Michael J. Stamos, Steven D. Wexner, Second Edition, 2011, Page 175