

## CADAVERIC STUDY

# Cadaveric Study of 'Guda' to Certitude *Sushrutokta* "Gudavalitraye"

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## ABSTRACT

The lowest part of the gastrointestinal tract is formed by the rectum and anal canal. Useful components of the food are absorbed and waste material is expelled from the anus; which is the external opening of the anal canal seen in the perineum. Anal canal is heavily guarded by the sphincters and is subjected to many maladies. Balanced food at proper timing decreases these maladies. The knowledge of anatomy and physiology is essential for the benefit of the body as this knowledge gives insight for the maintenance of healthy body and its treatment and hence expert highly recommends the anatomical and physiological understanding of the body. In the literary review, it is found that though anatomically the length of rectum and anal canal is 16cms according to modern view but according to *Ayurvedic* view the length of *Guda* is 4 ½ *Angula* which is roughly 9 cm so only lower 6 cm of rectum and 3 cm of anal canal is considered as *Guda*.

**Keywords:** *Guda, Gudavalitraye, Pravahini, Visarjini Samvarani,*

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## INTRODUCTION

*Maharsi Sushruta* is best known for his dome of surgical wisdom, practices and tools. It is evident that considerable thoughts were given by him to anatomical structure and functions. His text *Sushruta Samhita* includes a systematic method for dissection of human cadaver which proves that he was a proponent of human dissection. *Rachana Sharir* is a segment of *Ayurveda* which exclusively deals with the study of human body through dissection, which forms the subtle essential basics and sets a story base for further medical knowledge.

This topic is concerned with "Cadaveric study of 'Guda' to certitude *Sushrutokta* "Gudavalitraye". The anorectal region is considered as *Guda*. *Guda* is the organ that evacuates *Apana Vayu* and *feces (mala)*. Constipation, indigestion, improper diet, stress, reduce *Agni (Mandagni)*, lack of exercise, faulty lifestyle, improper toilet training,

spicy food, intake of excess meat etc; due to these causative factors different type of anorectal disorders are produced like *Arsha* (Hemorrhoids), *Parikartika* (Fissure in ano), *Bhagandra* (Fistula in ano), *Gudabransha* (Rectal Prolapsed) etc.

The three rings of the *Guda* named *Pravahini, Visarjini* and *Samvarani* has been described by almost all the ancient seers and their disciples in very brief but exact location and Anatomy of three rings are yet to be elaborately described. The description of anatomical structure of *Guda* and *Gudavalis* available by now is far from a universal acceptance. Keeping this view in mind the present study has been done to confirm and correlate *Guda Sharir* and *Gudavalis* described by *Sushrutacharya* with modern science. Keeping in the view of our ancient *Acharyas*, it becomes very important to understand the complete anatomy of *Guda Sharir*.

## DISCUSSION

Ano-rectal region in *Ayurveda* has been described under the name of *Guda*. *Acharya Sushruta* described the surgical anatomy of *Guda* and emphasized its importance in the management of surgical pathologies of different Ano-rectal disorders. The concepts of *Acharya Sushruta* about the Ano-rectal anatomy and the interpretations of physiological functions of various organs of pelvis are described with special emphasis on Anal Canal.

Vyutpatti - (*Gu + Da*)

**Gu** = *Mala*

**Da** = to give

The overall meaning is the organ that gives faeces/stool.

## Derivation

The term *Guda* is derived from the root 'Godatey'. The word *Guda* is formed by 'Guda Igupagheti' which means 'Maltyag dwar' or 'Apana Vayu Nihsaar Dwar'. *Guda* is defined as the passage through which excretion of faeces and flatus takes place.

**Parashar Samhita** - "Guyate Aneniti gudam - Tu Purishotsarge "

Here the term *Malotsarge* or *Purishotsarge* is more important as far as the anorectal diseases are concerned. Thus, the organ which facilitates the excretion of the *Apana Vayu* and *Mala* is called *Guda*.

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**Ayurvedic Sabdakosa** - The word *Guda* means-  
“*Gudatey Bhedatey Chaltva Aapan Vayu Aneniti gudem*”

The organ which evacuates the *Apana Vayu* is called *Guda*. This definition is more suitable as far as the physiology of ano-rectum is concerned.

### Synonyms

- Apana
- Braddhana
- Mahat-Srotas
- Payu
- Vit-Marga
- Bughna
- Braghna
- Gudvartm

### Relations and Parts of Guda<sup>1</sup>

All three *Pravahani*, *Visarjani*, and *Samvarni* are four *angula* in diameter. All of them project obliquely for one *angula*. They are also spiral like a conch and are situated one above the other. They have also been described as *Gajatalu Sanibham* (colour of the palate of an elephant). The anal lips have been described to be like one and a half ‘*Yava*’ (barley) from the end of the hair-line. Thus, the first sphincter is one finger above the anal lips. *Acharya Vagbhata* supported the view of *Acharya Sushruta*.

### Parts of Guda<sup>2</sup>

*Chakrapani* commented that *Uttar Guda* is the portion where the fecal material are stored and the *Adhara Guda* the passage through, which it is expelled out.

### Gudatrivalays<sup>3</sup>

Now, the portion just distal to the large bowel for four and a half fingers is known as the anus. There are three sphincters at intervals of one and a half fingers each, known as *Pravahani*, *Visarjani*, *Samvarani* and are four fingers in diameter.

### Functions of Guda valis

*Pravahani* propels, *Visarjani* eliminates the feces and flatus and the *Samvarani* is that which close (sphincter).<sup>4</sup> *Acharya Arundatta*<sup>5</sup> has emphasized the importance of *Apana Vayu* in regulating the excretory functions of faeces. Based on the descriptions of *Gudavalis* in the classics, *Arundatta* in *Sarwangsundar* (commentary of *Astang Hridaya*), has elaborated the process of expulsion of faeces. *Pravahani* is responsible for *Mala Pravahan* (the downward pressure on the faeces by compression), *Visarjani* is responsible for *Bahirvisarjana* (the downward movement of fecal matter by the process of relaxation) and *Samvarani* helps to evacuate the fecal matter.

### Sthana (Location)

The bladder, as also the bladder neck, the penis, both testis and rectum are all related to each other and are situated in the space in front of the bone of the rectum (Sacrum).<sup>6</sup> *Basti* situated in the middle of rectum, scrotum raphe, vas deferens and ureters is receptacle of urine and stabilizer of all the fluid- carrying channels like sea of rivers.<sup>7</sup>

During describing the method of extraction of urinary calculi, *Sushruta* advocated about that lubricated index and middle fingers, whose nails have been pared, should then be introduced in to the rectum and brought below the perineal raphe, thereafter, with manipulation and force (the stones) should be brought between the rectum and the penis. Keeping the bladder tense and distended so as to obliterate the folds, the stones should be pressed hard by fingers so that they become prominent like a tumour.<sup>8</sup>

### Utpatti

With other body parts *Guda* is also formed as early as in the fourth month and fully formed by seventh month of gestation.<sup>9,10</sup> The intestines, anus and bladder of the fetus are formed from the best parts of the *Ashrika* and *Kapha* after being digested by *Pitta* along with *Vayu*.<sup>11</sup> All soft parts like muscles, blood, fat, bone marrow, heart, umbilicus, liver, spleen, intestines and anus etc. are maternal in origin.<sup>12</sup>

In this context *Acharya Charak*<sup>13</sup> opinion is as under, the entities which are particularly maternal and are produced from mother are- skin, blood, flesh, fat, navel, heart, *Kloma*, liver, spleen, kidneys, urinary bladder, colon, stomach, intestine, rectum, anus, small intestines, large intestines, omentum and mesentery. Soft part of the body organs are derived from *Matrij bhav* is also appreciated by *Vagbhata*. From *Jala Mahabhuta* are (produced) the tongue (organ of taste perception), taste, fluids, and moisture are produced. From *Prithavi Mahabhuta*, the smell and the bones are produced. Soft parts such as blood, muscle, the rectum etc. are produced derived from *Matrij bhav*.<sup>14</sup>

### Guda as a Marma

#### Categories under Sadya Pranhara Marma

*Guda* is also considered as *Sadyo Pranhara* type of *marma's* with other eighteen structures of body.<sup>15</sup> There is a *Marma* known as *Guda Marma* is attached to the large intestine which expels faeces and air. Injury to these results in instantaneous death.<sup>16</sup> Due to injury over these *marma* including *Guda* death occurs within a week.<sup>17</sup>

The *Sadya Pranhara* type of *Marma* possesses properties of *Agni*. Injury to these *marmas* *Agni* escapes and proves

fatal instantly.<sup>18</sup> *Guda* is one among the *Sadya-pranahara marmas*. During *Basti karma* if the *Basti Netra* is sharp, it can injure and leading to wound and some time can lead to vasovagal shock. If ano-rectal region get traumatized they may lead to peritonitis, internal hemorrhage, septicemia, toxemia, shock etc. hence called *Sadya Pranahara marma*.

#### According to structural classification

Out of them *Talahrdya*, *Indrabasti*, *Stanarohit* and anus are the vulnerable area of the muscles.<sup>19</sup> *Guda* considered as *Dhamani marma* by *Vagvata* which is different from opinion to *Sushruta*.<sup>20</sup> Heart, urinary bladder, *Kurch*, anus and umbilicus measure four fingers (breadth) each, five *Marmas* of the head (*Sringataka* and *Simantas*) measure two fingers breadth and the ten *Marmas* of the neck (two *Nilas*, two *Manyas* and eight *Matrikas*) are equal (in measure) to the pit of one's own palm. All the remaining *Marmas* half a finger (breadth) only.<sup>21</sup> The remaining fifty six are each half angula.<sup>22</sup>

#### Vascular and Musculo-skeletal aspect of Guda

##### *Sira*<sup>23</sup>

The trunk specially has thirty-four *Vata* carrying *Sira*, out of these there are eight *Sira* in the anus, penis and pelvis.

##### *Asthi*

According to *Acharya Sushruta* there are five bones in *Shroni* (pelvis), out of these, four are found in *Guda*, *Bhaga* and *Nitamba* and one in *Trika*.<sup>24</sup> According to *Acharya Charak* there are two *Shroniphalak* and one *Bhagnasthi* in pelvis.<sup>25</sup> *Kapalasthi* (flat bones) are present in *Nitamba* (buttock).<sup>26</sup>

##### *Sandhi*<sup>27</sup>

The *Samudga* joints are found in the scapula, anal regions, pelvis and buttocks.

##### *Snayu*

According to *Acharya Sushruta* total number of *Snayu* are 900 and types of *Snayu* are found in the body 4, these are *Pratanvt* (branched), *Vritta* (circular), *Prithu* (flat) and *Sushira* (porous).<sup>28</sup>

There are ten *Snayu* in *Vakshan* (groin) and sixty *Snayu* in *Katti* (waist). At the end of *Aamashya* (stomach) and *Pakvashaya* (intestine) i.e. *Guda* region and in urinary bladder, *Sushhir* (porous) *Snayu* are present.<sup>29</sup>

##### *Peshi*

There are 500 *Peshi* are present in our body, out of that three *Peshi* are situated in the *Guda* region. For them the name *Vali* is given. These are three *Peshi* consider as three *Vali* of *Guda*.<sup>30, 31</sup>

#### *Guda as a Kostha*<sup>32</sup>

Fifteen are the visceral organs such as- navel, heart, *Kloma*, liver, spleen, kidneys, urinary bladder, caecum, stomach, jejunum, rectum, anus, small intestines, large intestines and omentum.

#### *Guda as a Srotas*

##### *Antahmukh srotas*

There are two faeces carrying *Srotas*. Their roots are the colon and rectum. Their injury leads to distension of the abdomen, foul smell and matting of intestines.<sup>33</sup>

*Purishavaha Srotas* (channels carrying faeces) have their root in *Pakvasaya* and *Sthulaguda* (rectum). Symptoms of their morbidity are these- such as passing faeces with difficulty, in small quantity with sound and pain, two liquid, too scabulous and in large quantity indicate morbidity of the *Purishavaha Srotas*.<sup>34</sup>

##### *Bahirmukh srotas*

*Guda* is described as a part of *Maha Srotas*.<sup>35</sup> *Guda* is one, among the nine *Bahirmukh Srotas* and located in pelvic region.<sup>36</sup>

##### *Guda as Kala*<sup>37</sup>

Out of seven *Kalas*, fifth *Kala* is *Purishdhara Kala* that which resides in *Kostha* with the *Aashraya* of *Pakvashaya* and does the work *Vibhajana* of *Mala*.

##### *Guda as Pranayatan*

Ten seats of *Pranayatan* are – *Murdha*, *Kantha*, *Hridaya*, *Nabhi*, *Guda*, *Basti*, *Oja*, *Shukra*, *Shonita* and *Mamsa* the first six are known as *Marmas* (vital organs).<sup>38</sup> There is only ten *Pranayatan* where *Prana* is located such as two *Shankha*, three vital organs (*Hridaya*, *Basti* and *Shira*), *Kantha*, *Shukra*, *Shonita*, *Oja* and *Guda*.<sup>39</sup>

##### *Guda in Tantra Sharira*

From *Tantra Sharira* 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.

##### *Physiology of Guda*

*Pancha Karmendriya* five in number are *Hasta*, *Pada*, *Vaak*, *Upastha*, *Guda*. The *Pada* are responsible for movement from one place to another; *Guda* and *Upastha* are meant for discharging, *Hasta* for receiving and holding. *Vaak* represents the organs of speech. The true speech is light while the false speech is darkness.<sup>40</sup>

*Apana Vayu* - That which is situated in the lower bowels is the *Apana Vayu* and by this *Vayu* faeces, urine, semen, fetus and menstrual fluid are brought down (and expelled) at appropriate times. On being vitiated

**Table 1:** Different references of rectum and anal canal measurements

S.N.	Books	Rectum (cm)	Anal canal (cm)
1.	Last's Anatomy	12	2–3
2.	Clinical anatomy Snell	13	3.5–4
3.	New style of anatomy by Lord Zuckerman	15	2.5
4.	Sahana's human anatomy by Dr.Sahana	12	3.8
5.	Gray's anatomy	15	2.5–5
6.	B. D. Chaurasia's Human Anatomy	12	3.8

it produces serious diseases located in the bladder and rectum.<sup>41</sup> Testicles, urinary bladder and penis, navel, thighs, groins, anus- these are the seats of *Apana Vayu*. It releases semen, urine, faeces, menses and fetus while situated in intestines.<sup>42</sup>

### Importance of Guda

As a tree irrigated in its root attains blue branches with beautiful tender leaves, flowers and fruits in time and big stature so becomes the man with *Anuvasan Vasti*.<sup>43</sup> *Acharya Parashar* has also given the importance of *Guda* as a root cause in maintaining the integrity of the body and to keep it nutritionally adequate. *Taila* given through anus pervades all over body through *Sira*, *Dhamani*, just like water poured at the *Mula* of tree. Similarly *Guda* is the *Mula* of *Sharir*, whatever *Dravya* given through the *Guda*; it reaches all over the body.<sup>44</sup>

### Gudagata Roga

Diseases which take origin or manifest in *Guda* are *Arshas*, *Bhagandara*, *Ahiputana*, *badhguda*, *Gudabransh*.<sup>45</sup> According to *Madhav Nidan Arsha* (Piles / Hemorrhoids) which appear in the three folds of Rectum, is of six types, viz., *Vataj*, *Pittaj*, *Kaphaja*, *Tridoshaj*, *Raktaj* and *Sahaj* (congenital / hereditary).<sup>46</sup>

The ano-rectal canal is a long tubular structure about 17 centimeters in length extending from the recto sigmoid junction to the anal verge. This is attached to the distal part of the sigmoid colon and forms the terminal portion of the gut through which the feces and flatus are disposed off the body. It comprises of the two main portions, (I) the rectum, and (ii) the anal canal, which are anatomically and histological two different structures but functionally act together during the process of excretion. Out of the total length of 17 centimeters, the anal canal occupies 2.5 to 4 centimeters approximately while the remaining portion is attributed to the long axis of the rectum. The



**Figure 1:** Length according to modern aspect-16 cm (Dissected part of Ano-rectum)



**Figure 2:** Length according to Ayurvedic aspect- 9 cm (Dissected part of Ano-rectum)

diseases of anal canal and of rectum are different in nature and clinically the lower portion i.e. the anal canal is much more important since it is exposed to the exterior and is easily approachable for all kinds of surgical and medical interventions.

### Mucosal Folds

The mucous membrane of an empty rectum shows two types of folds-longitudinal and transverse.

- The longitudinal folds are transitory. They are present in the lower part of an empty rectum, and are obliterated by distension.
- The transverse or horizontal folds or Houston's valves or plicae transversals are permanent and most marked when the rectum is distended.
- Superior fold: The first transverse fold lies near the upper end of the rectum, and projects from the left wall situated 7.5 cm above anus. Sometimes, it may encircle and partially constrict the lumen.
- Middle fold: The second transverse fold, the largest and constant, lies at the upper end of the rectal ampulla, and projects from the anterior and right walls.
- Inferior fold: The third transverse fold which is inconstant lies 2.5 cm below the third fold, and projects from the left wall.

Sometimes a fourth fold is found on the left a little above the middle fold.

### CONCLUSION

According to modern anatomy the total length of the rectum was 12 cm and the length of the anal canal was 3.8 cm. anatomically the length of rectum and anal canal was 16 cm according to modern view but according to *Sushruta* and *Vagbhata* 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 calculated approximately 9 cm (Figures 1 and 2). It is known that average length of anal canal is 3.8 cm (Table 1). Thus the extent of *Guda* includes anal canal and lower 6 cm of rectum. *Sushruta* 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 (Houston's valve) namely middle and the lower folds. The third *Vali* seems to be at the level of dentate line. The distance between each fold is about 2.5 cm which is approximately one and half *Angula*.

## REFERENCES

- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Nidan Sthana 2/6-8
- Agnivesha Charaka Samhita with Ayurveda Deepika Commentary of Chakrapanidatta. Edited by Vaidya jadavji Trikamji Acharya, Varanasi Chaukhambha Sanskrit Sansthan, Sharir Sthana 7/10
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Nidan Sthana 2/5
- Sushruta. Sushruta Samhita with Nibanda Sangraha Commentary of Dalhana Acharya. Edited by Viadya Jadavji Trikamji Acharya, Varanasi Chaukhamba Orientalia, Su. Ni. 2/6
- Vagbhata. Astangahrudayam with Sarvanga Sundari Commentary of Arunadatta and Ayurveda rasayana of Hemadri. Varanasi Chaukhambha orientalia, Nidan Sthana 7/4-5
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Nidan Sthana 3/19-20
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sidhi sthana 9/4
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Chikitsa Sthana 7/30
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 3/15
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 3/28
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 4/26
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 3/33
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sharir Sthana 3/6
- Dr. Tripathi Bhramanand in Astanghridyam, nirmala Hindi commentary, chaukhambha Sanskrit sansthan Delhi, Sharir Sthana 3/4
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/9
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/26
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/24
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/17
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/9
- Dr. Tripathi Bhramanand in Astanghridyam, nirmala Hindi commentary, chaukhambha Sanskrit sansthan Delhi, Sharir Sthana 4/42
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 6/30
- Dr. Tripathi Bhramanand in Astanghridyam, nirmala Hindi commentary, chaukhambha Sanskrit sansthan Delhi, Sharir Sthana 4/62
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, 2005. Sharir Sthana 7/9
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/20
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sharir Sthana 7/6
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/20
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/27
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/30
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/32
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/45
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/47
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sharir sthana 7/10
- Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 9/12
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Viman sthana 5/7
- Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey,

- Chaukhambha Surbharti Prakashan , Sharir Sthana 7/12
36. Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 5/10
37. Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Sharir Sthana 4/16-17
38. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sharir Sthana 7/9
39. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sutra Sthana 29/3
40. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sharir Sthana 1/26
41. Shastri Ambikadatta, Sushruta Samhita with Ayurveda Tatva Sandipika Vyakhya, Chaukhamba Sanskrit Sansthan, Varanasi, Nidan Sthana 1/19-20
42. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Chikitsa Sthana 28/10
43. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sidhi Sthana 1/31
44. Charak Samhita with Charak chandrika hindi commentary by Dr. Tripathi Bramhanand and Dr. Ganga Sahay Pandey, Chaukhambha Surbharti Prakashan , Sidhi Sthana 1/31
45. Prof. K.R. Srikanta Murthy, Madhava nidanam( Roga Vinischaya) of Madhvakara Treatise on Ayurveda, translated into English. Nidan 5/1, Chaukhamba orientalia, Varanasi, VIth edition, 2004
46. Prof. K.R. Srikanta Murthy, Madhava nidanam( Roga Vinischaya) of Madhvakara Treatise on Ayurveda, translated into English. Nidan 5/1, Chaukhamba orientalia, Varanasi, VIth edition, 2004