

BHAGANDARA IN AYURVEDIC LITERATURE -A REVIEW ARTICLE

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ABSTRACT

Bhagandara is one of the troublesome disease occurs in anorectal area. Bhagandara (Fistula inano) explained as one of the various eight major dreadful ailment in ayurvedic texts. In ancient Ayurvedic literature, the description of Bhagandara is observed in respective Sthana in different Samhitas in scattered form so In this overview an attempts has been made to spotlight the concept of Bhagandara in historic time according to different acharyas of Ayurveda collectively in distinctive heading given, historical evaluation, etymology and definition, aetiology (Nidana) of Bhagandara, pathogenesis (Samprapti) Purvarupa, Rupa, types and treatment of Bhagandara.

KEYWORDS: Bhagandara, Nidaan, Samprapti, Purvarupa, Rupa.

INTRODUCTION

Sushruta Samhita one of the prime treatise which contributes whole part of surgical intervention in various diseases specially in Bhagandara. Bhagandara is known arduous surgical disease in all the ancient and modern medical science of the world. It is not fatal but quite embarrassing and annoying to the patient and declining the quality of life of patient. Hippocrates (460BCE), was believed to be first person who preferred to treat fistula - in-ano by the application of thread which he called 'apolinose' but after reviewing Sushruta Samhita (2000BCE) the claim fell and failed as sushruta has enumerated this disease under astamahagada which is indicative that he was well aware about the challenging nature of treatment of the disease and its much prevalent incidence in the population at that time even.

Sushruta has given a detailed explanation like etiology, pathology, clinical features and surgical management involving excision of Bhagandara but also felt the necessity of a para -surgical approach since he was not satisfied with surgical excision.^[1] Today Bhagandara can be correlated with Fistula in ano. Bhagandara is one of the most common anorectal diseases in field of surgery. It is very difficult to manage even with modern surgical technique due to its multifold variation of presentation, high recurrence rate and sometimes serious post-operative complications like feacal incontinence, recurrent, sepsis etc.^[2]

Aim- To study the ayurvedic concept of Bhagandara.

Objective- To understand the Ayurvedic concept of Bhagandara.

Material and Method- All textual references of Bhagandara are collected from Ayurvedic classics in the library of Govt. Ayurved College, Raipur C.G.

Historical Review of BhagandaraCharaka Samhita

It is one of the oldest and famous among all literature available in Samhita Kala. In Charak Samhita a brief explanation found in Chapter 12 of chikitsa sthan i.e. shwayathu Chikitsadhyay in which Acharya Charaka stated about nidana, sthan, paribhasha and Patan, tail dagdha ksharsutra karma as chikitsa of Bhagandara.^[3]

Shushruta Samhita: In Sushruta Samhita many surgical training, instruments and procedures are mentioned which is still pursued by modern science of surgery. Acharya Sushrut has mentioned detailed explanation of Bhagandara In sutrasthan, Nidana sthan and Chikitsa sthana.^[4]

Ashtang Samgraha

In Ashtang Samgraha the details about Bhagandara is available in Uttartantra chapter 33 as its Nidana, Paribhasha, Bhagandara pidika lakshan, Sadhya-Asadhyata, Pathya-apathya.^[5]

Ashtang Hridaya

In Ashtang Hridaya Bhagandara is included in Maharoga. Acharya Vagbhatta has given detailed information as nidana chikitsa, use of kshara with the help of Bhagandara Yantra.^[6]

Harita Samhita

In Harita Samhita there is brief description found and included it in Ashtamahagada. arishta

lakshana of Bhagandara along with other diseases described in Dwitiya sthan.^[7]

Madhava Nidana

Acharya Madhavkara has explained the Sthana Nidana Purvaroop Lakshana and Sadhyaasadhyata of Bhagandara precisely.^[8]

Gadanigrah

Acharya Shodhal has mentioned detailed description about Bhagandara.^[9]

Vangsen Samhita

In Vangsensamhita detailed description found along with Kshara prayog in the treatment of Bhagandara.^[10]

Bhava Prakash: Acharya Bhavmishra has explained purvaroop, roop, nirukti, lakshana, sadhyaasadhyatva chikitsa and shastra karma in madhyam khanda Chaturtha bhaga.^[11]

Rasratna Samuchchaya: In this treatise Bhagandara has been explained with its nirukti, cardinal symptoms and treatment.^[12]

Sharangadhara Samhita

Types and treatment of Bhagandara mentioned in this Samhita.^[13]

Adhunik Kala (After 1600 AD)

Yogaratanakara: In its uttarardh part nidana, purvaroop, chikitsa and pathyaapathya in Bhagandara are mentioned.^[14]

Raskamdheni: Only sthan and prakara of Bhagandara are mentioned in its Uttarardha part.^[15]

Bhaishajya Ratnavali: In chapter 51 Bhagandara rogadhikara Lepa, Varti, Pralepa, kwatha, taila and Pathya-Apathya are mentioned.^[16]

Siddha Bhaishajya Manimala: In Chaturtha Guchchha, Bhagandarachikitsa chapter has various formulations for Bhagandara are explained by Acharya.^[17]

Etymological Derivation Of Guda

VYUTPATI- “ गुद्. क. गुद् इगुपद्येति । गोदते खेलति चलतीत्यर्थः ।। ”

(Vachasptyam 4th part pg-2611)^[18]

The word Bhagandara is the combination of two terms "Bhaga" and "Darana" which are derived from the roots "Bhag" and "Dri" respectively.

Bhaga' is a word, means all the structures around the Guda (ano-rectal region) including (urinary bladder). (Shabda-Kalpadrūm).^[19]

Darana– derived from 'dri' dhatu The word Darana means "sense of tear of surface associated with pain".

Definition Sushruta has defined in nidana sthana Bhagandara is a condition which causes darana of bhaga, guda, vasti.^[20]

Bhagandara pidika- charaka has told that a painful and suppurated pidika in the region of guda, on bursting, leads to bhagandara.^[21]

According to Sushruta, a deep rooted pidika is seen around guda within two angula circumference producing tear and pain. it is bhagandara pidika. He also describe another pidika on guda which does not leads to bhagandara and it is having mild symptoms. su. ni. 4/12.^[22]

Vagbhata has described that vrana in the size of pidika forms at an angula or two from the anus or inside the anus. a. h. u. 28/12-14.^[23]

Madhavkara has told that painful boil appears within two angula of anal opening. M. N. 46/1.^[24]

Nidana Panchaka of Bhagandara

In various treatise description of nidana of Bhagandra can be summerised under three headings

1. Aharaja Nidana 2. Viharaja nidana 3. Agantuja Nidana

1. Aharaja Nidana -According to acharya Sushruta ahara which vitiate vaat, pitta, kapha can be included the aharaj nidana.^[25]

Acharya madhavkar has described only Kasaya rasa, ruksha guna, and different vata prakopaka aahara as aharaj nidana.^[26]

2. Viharaj Nidana-Acharya Charaka included Ativyavaya, Pravahana, Utkatasana,

Ashvagamana as viharaj nidana.

3. Agantuja Nidana -Acharya Charaka and acharya Madhavkara told Krimi, Asthi shalya, Foreign body ingestion.^[27] and acharya vagbhatta included Sadhusajjanagarhana. Hasti-ashva pristhagaman, Kathin aasana, Utkatasana, and all nidana of Arsha i.e Mandagni, Abrasion from vasti netra, Ativyavaya, Anista karmapaka, Adrista karmapaka,^[28] whereas Bhav prakash mentioned Sthaulya in this heading.^[29]

Purva Roopa of Bhagandara

The Poorva Roopa of Bhagandara is pain in Kati Kapala (pelvic bone), itching, burning sensation and swelling in Guda. Acharya Sushruta had further mentioned that it starts with itching, pain, burning sensation and swelling in the Guda during riding and defecation.^[30]

Roopa of Bhagandara

The roopa of different types are defined distinctly by acharya Sushruta are as follows.^[31]

Symptomology	Specific name	Type of Pidaka	Type of Pain	Ex. Opening	Secretion	Discharge after complication
Vaataja	Satponaka	Arunavarna	Toda, Chedana, Nishtudana, Bheda, Avadeerrna	Multiple	Frothy, clear, copious	Vaat, Mutra, Purisha, Shukra
Pittaj	Ushtragreeva	Ustragriva khara	Chosha, Dahayuktalike agni or ksharapplication		Malodorous, Hot	Vaat, Mutra, Purisha, Shukra
Shleshmaja	Parisravi	Shuklavarna	Kandu	Shuklavbhas, Sthira, Kanduyukta	Thick, Sticky, Kanduyukta	Vaat, Mutra, Purisha, Shukra
Sannipataj	Sambukavart	Big toesize	Toda, Daha, Kandu	Like Purna nadi or spiral of conch shell	Multicoloured	
Agantuja	Unmargi	Guda kshata	-	Kshatakotha nimitta	Pus, Blood, Krimi	Vaat, Mutra, Purisha, Shukra

According to Acharya Vagbhatta

DOSHA	SPECIFIC NAME	DUSHYA	TYPE OF PIDIKA	TYPE OF PAIN	SECRETION	OTHER SYMPTOMS
Vaataja	Satponaka	Rakta, mamsa	Shyav, arun varna	Pricking, breaking, twitching	Thin, frothy, abundant	Multiple opening
Pittaj	Ushtragreeva		Thin, small, warm and raised swelling, Rajani varna	Not mentioned	Not mentioned	Fever, raised like camelneck

Shleshmaja	Parisravi	Not mentioned	Not mentioned	Sthira, pandu, snigdha, Mahanut	kandu	-
Sannipataj	Sambukavart	Rakta, mamsa	Padangushtha	Different types of pain	Not mentioned	-
Vaat pittaja	Pariksepi	Not mentioned	Tamra varna	pain & burning sensation	Not mentioned	track resembles with 'Trench around fortress'
Vaat kaphaja	Riju	Not mentioned	Not mentioned	Not mentioned	Later suppurates	straight track
Kapha pittaja	Arso Bhagandara	Not mentioned	At the root of Arsha	itching and burning	mixed kind of discharges	Bhagandara associated with bahyaArsha.

According to Madhavakara^[33]

Dosha	Specific name	Type of pidika	Type of pain	secretion	Other features
Vaataj	Shatponaka	Pidika paak pashchat anek vranayukta	Daruna ruja	Arun, phenayukta	Mutra, mala, shukra srava
Pittaja	Ushtragreeva	Rakta, ashupaka	Not mentioned	Ahima(hot), puti srava	Ushtrashirodharaka
Kaphaja	Parisravi	Kathina, shwetabhasa vrana	Manda vedana, kandu	Ghanasravi (thick)	-
Sannipataj	Shambookavarta	multi coloured,	Different Type of pain	Various kind of discharge	Like Spiral of snail shell
Agantuja	unmargi	Not mentioned	Not mentioned	Not mentioned	Krimiyukta big external opening

Acharya bhavaprakasha mentioned same as madhavakara.

Upshaya Of Bhagandara

Chakrapani has defined 18 kinds of upashaya with their examples in line with disorder as a diagnostic method for the ailment which occur with uncertain symptoms. He has cited ushna dravya upanaha and vidahi ahara support suppuration due to the pitta dosha. So, the ushna dravya upanaha and vidahi ahara causes fast suppuration in unsuppurated pidika and the symptoms of Bhagandara might be clear.^[34]

Samprapti

We can make a Saamaanya Samprapti after assessment of the description of the Bhagandara in Sushruta Samhitaa, Ashtaanga Hridaya and Maadhava Nidaana as follows

Nidaana Sevana reasons Vaata Prakopa which takes the Pitta and Kapha to the Guda and gets localized there and vitiates the Rakta and Maamsa within the Guda. This forms a Pidakaa In

preliminary state. The Pidaka, if no longer handled or the man or woman continues Nidaana Sevana, it will become a Pakva Pidaka. The Pooya of the Pakva Pidaka reasons Daarana within the Bhaga Pradesha and as a consequence Bhagandara is advanced.

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According to dosha classification of bhagandara in ayurvedic classics are mentioned above in context of roopa. or classification of bhagandara Sharangdhara acharya has followed acharya vagbhatta and acharya siddhinandan Mishra has followed acharya Sushruta.

According to Opening -Acharya Sushruta additionally categorised each kind of Bhagandara by its opening whether it present externally or internally. He used term Parachina (bahirmukham) and Arvachina (antermukham).^[35] (Su Chi 8/4), (Dalhan-Su Chi8/4).

Acharya Vagbhatta also categorized Bhagandara as Arvachina and Parachina as blind internal and blind external respectively.^[36] (A.H.U.28/24).

Sadhya-Asadhyata of Bhagandara

All the fistulae are very hard to treat out of them the fistulas produced by means of a combination of three dosas e.g. Sambukavirta and unmargi are incurable. All Ayurvedic authors have stated the same. Also, any Bhagandara which discharges flatus, feaces, urine, semen and Krimi is taken into consideration incurable. We can infer from this that once anal fistula communicates better with rectum, urethra and bladder or prostate it turns into incurable. Tract of Bhagandara, which crosses Pravaahani Vali and Samvarni Valli, is also considered incurable.^[37]

The Management Of Bhagandara Can Be Divided Into TheFollowing Groups

I. Preventive measures

1. Nidana parivarjana
2. Prevention of suppuration of piḍika (Boil)

II. Curative measures

1. Surgical methods
2. Para surgical methods
3. Medical treatment

I. Preventive measures:

1. Nidana parivarjana:

The etiological factors of Bhagandara must be avoided.

2. Prevention of suppuration of piḍaka (Boil): Vagbhata advised the measures like dehashodhana, raktamokṣana and pariśheka during the stage of piḍika to avoid suppuration. Sushruta has mentioned eleven measures of ṣaṣṭiupakramas in vraṇa cikitsa for the treatment of Bhagandara.^[38] They are Apatarpana, Abhyanga, Swedana, Pachana, Visravaṇa, Snehana, Virechan alepa, Parisheka, Vimlapana, Upanaha.

II. Curative measures

Surgical treatment-1. Purvakarma: It includes Preparation of the patient: First of all written informed consent was taken mentioned that is mentioned by Sushruta in ashmari chikitsa. Before Shastrakarma, the patient was prepared with Snehana, Svedana (Avagahana), Langhana and Anulomana (Mṛidu Virechana).

2. Pradhana karma: Chedana, General surgical procedure in Bhagandara: It is described by acharya Sushruta after suppuration get started in bhagandara pidika. After determining the direction of sinuses, probing, excision and appropriate cauterization have been advised as the surgical treatment. This is the general management for all types of fistulae.^[39] The modern procedure of fistulectomy can be compared to it. The use of Kṣara Sutra in the management of Bhagandara is mentioned in Sushruta Samhita in chapter Visarpa Nadi Stanaroga chikitsita. Charaka also mentioned use of Kṣharasutra in Bhagandara in kshawthu chikitsa.

3. Pashchat karma (Post operative) After shastra karma, Bhagandara has to be treated according to vraṇa chikitsa i.e Use of vraṇashodhana and ropana drugs for better healing of the wound. Svedana with warm water or decoction of herbal drugs relieves pain, cleaning of the wound. Application of anu taila to relieve pain after surgery.^[40]

Specific surgical procedure for different type of Bhagandara

a. Shatponak: Shatponaka has been advised to be operated in stages to avoid anal incontinence with a T shaped (Langlak), L or inverted Lshaped (Ardhalanglaka), circular (Sarvatobhadra) or semicircular incision (Gotirthaka) followed by fire cautery and appropriate post-operative care. Both Sushruta and Vagbhata have described different types of incisions, which can be applied according to the situation of track, relation with the anal sphincters etc.

b. Uṣhtragriva Bhagandara

Incision and application of caustics had been cautioned for ustragriva fistula together with

other suitable measures for controlling pitta; fire cauterization has been contraindicated.

c. Parisravi

After a few initial tactics to lessen the pain and discharge, incisions of diverse shapes e.g. semilunar (Ardhachandrakara), round (Chandramandalatulya), branched like a palm leaf (kharjurpatraka), Suchimukha, Avangamukha than anu taila sinchana and gomutra khsaryukta upnaah after kshar or dahan karma mentioned for the treatment of parisravi fistula.^[41]

d. Moderate methods had been indicated for children.^[42]

e. **Unmargi**: Unmargi type i.e. damaging fistulae because of foreign bodies have been advised to be treated on similar lines after giving due caution about their poor prognosis. The range due to all of the dosas blended collectively have been to be discarded from treatment. Various medicinal recipes to be used regionally or to be taken internally have been described.^[43]

6. **Parikṣepi Bhagandara**: Vagbhata has suggested that it has to be treated on the lines of treatment of Nadivraṇa with ksharasutra.

7. **Riju Bhagandara**: No specific treatment is described for this Bhagandara. Therefore, it can be treated as the other simple types of Bhagandara.

8. **Arso Bhagandara**: It is the coexistence of arsas along with Bhagandara. So, arsas should be treated first before treating Bhagandara.^[44]

3. Para surgical measures

Raktamokshana – To prevent suppuration acharya Vagbhata advised for raktamokshana in uttatantra bhagandara chikitsa. (A.H.U 28/22)

AGNIKARMA- Pratisarniya types of agnikarma mentioned in Gadanigraha and Ashtang sangraha (G.N.7/13) and (A.S.U. 28/33-34)

Ksharkarma- Pratisarniya kshara karma advised by Acharya Sushruta (su.su.11/7)

Ksharsutra –First time Chakradatta mentioned preparation of kshar sutra indicated in arsha and bhagandara.^[45] Acharya sushruta mentioned its use in nadivraṇa and mentioned it's use in bhagandara situated in marma sthana in sutrasthan Nadivraṇa chikitsa. Also in Rastarngini in its 24 tarang, in Vangsen Samhita Arshadhikar and in Ras kamdhenu Bhagandara chikitsa description found about preparation and use of kharsutra In Bhaishjya ratnavali ksharsutra specially indicated in person who has krish, durbala and bhiru.

Varti- It is mentioned by acharya Sushruta and Chakrapani.

Medical Treatment; In different treatise medicated taila and lepa are enumerated i.e.

Jatipatradi lepa, Tiladi lepa in Bhavprakash Rasanjanadi lepa, Bhunagadi lepa, kushthadi lepa, saptavinshati guggulu, Nishadya taila in Chakradatta, vishyandana taila in Sushruta Samhita, Saindhavadya taila in bhaishajya ratnavali ect. Along with herbal medicines above for internal use Khadiradi kwath, rasaushadhi e.g. Narayana ras, chitravibhandak rasa, Bhagandara hara rasa also described.

Sadhyaasadhyata

All the fistulae are very difficult to treat, out of them the fistulae which have tridoshik involvement i.e. shambukavarta and unmargi are incurable. All ayurvedacharya stated same. Any fistulous tract allow passing of flatus, feaces, urine, semen or crosses Pravahini and samvarini Vali and appears krimi are incurable in nature.^[46]

Arishta lakshana Acharya Sushruta has stated any person with fistula in ano has fistulous tract passing of flatus, feaces, urine, semen or worms should be refuse for treatment.^[47]

Pathya Apathya

Pathya- In Bhaishajya ratnavali Shaali Dhaan, Mudga, Patola, Tila, Vilepi, Jangal Mansa Rasa, Shigru, Vetaagra, Dhattura Baala. Mulaka, Sarshapa Taila, Tikta Varga, Ghrita, Madhu are mentioned as pathya ahara in Bhagandara.^[48]

Apathya- Sushruta has advised that even after the healing of fistulous wound the patient should avoid heavy exercises, sexual intercourse, riding on animal backs and heavy food for a year. These are the activities which directly or indirectly have effect on anal region and therefore can lead to reoccurrence. An area which is often ignored in contemporary science.^[49]

CONCLUSION

There are more or less descriptions of Bhagandara found in different literatures but Sushruta has given comprehensive information, under the disease of bhagandara, ranging from simple fistula-in-ano to complex Susruta's description of conservative management of bhagandarapidika, controlled suppuration, and description of various types of incision according to the presentation is a subject of further research and evaluation. Ksharsutra application in bhagandara mentioned by different acharyas remains more effective and acceptable scientific treatment. Sushruta also mentioned restricted aahara and vihara during and after Bhagandara treatment can be play important role to avoid recurrence tendency of disease which shows obstinancy of this disease since ancient era. In this article, we tried to

compile all the scattered description about Bhagandara mentioned in various Ayurvedic texts. Hope this article will uplift the approach of knowledge of Bhagandara in literature and will be useful to research scholar of Ayurved specially working in the field of Fistula management.

REFERENCES

1. Shastri Dr. Ambika dutta, Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Varanasi, 2006 Edition, Vol-1 Chikitsasthana-08, verse no-01-53, page no-45-48.
2. Verma Dr. Santosh Kumar Et Al: Concept Of Bhagandara In Ayurveda- A Literature Review) www.iamj.in IAMJ: Volume 4; Issue 09; September-2016.
3. Tripathi Dr. Bramhananda, Charaka Samhita, edited with Charak Chandrika Tika, Chaukhambha surbharati prakashana Varanasi, Vol.2 chikitsa sthan, 2005; 12: 96: 465.
4. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Varanasi, Edition, Vol-1 Chikitsasthana, 2006; 08: 45.
5. Murthy K.R. Shrikantha Aṣṭāṅg Sangraha, Chaukhambha Orientalia Edition, Varanasi, Uttar Tantra, 2000; 33: 294-300.
6. Gupta Atrideva, Aṣṭāṅg Hṛdaya, edited with Vidhyotini Tika Chaukhambha Prakasan 2008 Edition, Varanasi, Uttar Tantra, 28: 24- 25: 753.
7. Shrikrishnadas kshemraj, Haritasamhita Shri venkteshwar mudranalaya first edition, 1984; 4/39: 45.
8. Murthy K.R. Srikanta, Madhavanidanam (Roga-Viniscaya) chaukhambha orientalia Varanasi Edition, Vol-2 chapter-46 bhagandara nidanam, 2004; 1-9: 152,153.
9. Pandey Ganga Sahaya, Gadanigraha by Shri Vaidya Shodhal Gadanigraha, tritiya khanda, Chaukhamba Sanskrit Sansthan Varanasi third edition, ch.7 Bhagandaradhikara, 1999; 333-344.
10. Shri Shaligram Vaishya Vangsen Samhita by Vidya Shankaralal Khemraj Shrikrishnadas Prakashan Bombay, 1996; 602-607.
11. Bhav Mishra Bhavprakash commentary by Dr. Bulusu Sitaram chaukhamabha Orientalia Varanasi first edition Bhagandaradhikara, 2010; 50: 511-516.
12. Shastri Dr.Ambikadatta Rasratna samuchchaya by Vagbhatta, Chaukhamba Amar Bharati Prakashan Varanasi 10 th edition, 2015; 24/106-124: 554-557.
13. Srivastava Dr. Smt Shailaja, Sharandhara Samhita by Acharya Sharangdhara, Chaukhamba Orientalia Varanasi reprint edition, 2013; 7: 79-81.
14. Yogratnakar Vidyotini hindi tika by Vaidya Lakshmiapati Shastri Chaukhambha

- Prakashana Varanasi Reprint edition Bhagandara nidanam, 2015; 195-199.
15. Vaidya Chudamani Mishra Raskamdheni by Santosh kumar sharma chaukhamabha Orientalia Varanasi first edition Bhagandaradhikara, 2010; 49: 329-332.
 16. Shastri Ambikadatta Bhaishajya Ratnavali by Govind das Sena Chaukhambha Sanskrita Sansthana Varanasi, Bhagandara chikitsa, 1976; 51: 607-610.
 17. Bhatta Sri R. Kaladhara Siddhabhaishajya manimala by Shri Krishna Ram Bhatta Chaukhamba Krishna das Academy Varanasi 4th edition, 2008; 4: 281-282.
 18. Tarakavachaspati Taraknath Vachaspatyam, Chaukhamba Sanskrit Series Varanasi. 1962; 4: 2611.
 19. Bahaduren Raja Radhakantadeva, Shabdakalpadruma Tritiya Bhaga Chaukhamba Sanskrita Series Varanasi, 1961; 466.
 20. Shastri Dr. Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 Nidansthana, 2010; 4: 7: 317.
 21. Shastri Kashinath and Gorakhnath Chaturvedi, Charaka Samhita, edited with Vidyotini Tika, Chaukhambha Bharti publication, Edition, Varanasi, Vol-2 chikitisasthana, 2005; 12: 16: 354.
 22. Sastri Dr. Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 Nidansthana, 2010; 4: 12: 317.
 23. Gupta Atrideva, Aṣṭāṅg Hṛdaya, edited with Vidhyotini Tika Chaukhambha Prakasan Edition, Varanasi, Uttar Tantra-28, 2008; 12: 14: 750.
 24. Murthy K.R. Srikanta, Madhavanidanam (Roga-Viniscaya) chaukhambha orientalia Varanasi Edition Vol-2 chapter-46 bhagandara nidanam, 2004; 1: 152.
 25. Shastri Dr. Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 Nidansthana, 2010; 4: 317.
 26. Murthy K.R. Srikanta, Madhavanidanam (Roga-Viniscaya) chaukhambha orientalia Varanasi Edition, Vol-2 chapter-46 bhagandara nidanam, 2004; 2,3: 152.
 27. Tripathi Dr. Bramhananda, Madhavanidanam (Roga-Vinischaya) with Madhukosha by Vijayaraksita and Śrī kanthadatta edited with “Vimalā” madhudhara hindi commentary Chaukhambha surbharati prakashan Varanasi chikitsa sthan, 2001; 12(96): 465-466.
 28. Gupta Atrideva, Aṣṭāṅg Hṛdaya, edited with Vidhyotini Tika Chaukhambha Prakasan Edition, Varanasi, Uttar Tantra, 2008; 28: 3-4: 750.
 29. Sitaram Dr. Bulusu, Bhavprakash by Bhav Mishra chaukhamabha Orientalia Varanasi first edition Bhagandaradhikara, 2010; 50: 511.
 30. Shastri Dr. Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika

- Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 Nidansthana, 2010; 4: 4: 317.
31. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi, 2010; 1(4): 5-9: 317.
32. Gupta Atrideva, Aṣṭāṅg Hṛdaya, edited with Vidhyotini Tika Chaukhambha Prakasan Edition, Varanasi, Uttar Tantra-28, 1975; 7-19: 550-551.
33. Murthy K.R. Srikantha, Madhavanidanam (Roga-Vinischaya) chaukhambha orientalia Varanasi Edition Vol-2 chapter-46 bhagandara nidanam, 2004; 2,3: 152,153.
34. Yadav ji Trikamji Charaka Samhita, edited with Ayurveda dipika by Chakrapani datta, Satyabhamapanduranga Mumbai, Nidana sthan, 1941; 1(10): 195.
35. Yadav ji Trikamji Sushruta Samhita, edited with Nibandha Sangraha by Shri Dalhanacharya, Chaukhamba Sanskrita Sansthan, Varanasi Chikitsa sthan ch.8 verse 4, 2009; 439.
36. Gupta Atrideva, Aṣṭāṅg Hṛdaya, edited with Vidhyotini Tika Chaukhambha Prakasan Edition, Varanasi, Uttar Tantra-28, 1975; 23-25: 553.
37. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 Chikitsa sthan- 8, 2010; 31: 317.
38. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 chikitsa sthana, 2006; 8: 45.
39. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan Edition Varanasi Vol-1 chikitsa sthana, 2006; 8: 45.
40. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan Edition Varanasi Vol-1 chikitsa sthana- 8, 2006; 34: 47.
41. Murthy K.R. Srikantha, Sushruta Samhita chaukhambha orientalia Varanasi Edition, Vol-2 chapter-08 bhagandara chikitsa, 2012; 5-37: 95-100.
42. Murthy K.R. Srikantha, Sushruta Samhita chaukhambha orientalia Varanasi Edition Vol-2 chapter-08 bhagandara chikitsa, 2012; 29: 99.
43. Murthy K.R. Srikantha, Sushruta Samhita chaukhambha orientalia Varanasi Edition Vol-2 chapter-08 bhagandara chikitsa, 2012; 31-32: 99.
44. Tripathi Dr. Bramhanand Ashtang Hridaya, chaukhamba Sanskrita Pratishthan, Delhi Edition, 2011; 28: 13-15: 1094.
45. Rao GP, Chakradutta Chikitsa sangrah, chaukhamba orientalia, Varanasi first edition, 2014; 46(8): 437.
46. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan, Edition Varanasi Vol-1 chikitsa sthana- 8, 2006; 33: 47.

47. Shastri Dr.Ambika dutta Sushruta Samhita, edited with Ayurved tatva sandipika Chaukhambha Sanskrit Sansthan Edition Varanasi Vol-1 Sutrasthana, 2006; 33: 11: 127.
48. Govind Das, Bhaishajya Ratnaavali, Commentary by Ambikadutta Shastri, Bhagandara Chikitsa 45, 18th edition, Chaukhambha Prakashana, Varanasi, 2007; 872.
49. Shastri. Dr. Ambikadutta Sushruta Samhita Ayurveda Tattva Sandipika Hindi commentary; Chaukhambha Sanskrit Sansthan, Varanasi; second edition Vol- 1 Chikitsa Sthana Bhagandarachikitsa, 2006; 8: 54: 48.