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CONCEPT OF BHAGANDARA (FISTULA IN ANO) -A REVIEW

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Abstract

Bhagandara is acommon disease and notorious disease occurring in the ano-rec-tal region. *Acharya Sushruta*, the father of surgery has included this disease as one among the *Ashtamahagada*[1].At first it present as *pidika* around *guda* and when it bursts out, it is called as *Bhagandara* .It can be correlated with Fistula in ano as de-scribed in Western medical science. It is recurrent nature of the disease which makes it more and more difficult for treatment. It produces inconveniences in routine life. It causes discomfort and pain that creates problem in day to day activities. In this present review article article describes pathophysiology, investigate modalities and treatment option for fistula in ano in *Ayurveda* and Western medical science.

Keywords : Fistula in ano, *Bhagandara*, *Ashtamahagada*

INTRODUCTION:

Bhagandara is acommon disease occurring in the ano-rec-tal region. *Acharya Sushruta*, the father of surgery has included this disease as one among the *Ashtamahagada*[1].At first it present as *pidika* around *guda* and when it bursts out, it is called as *Bhagandara* .It can be correlated with Fistula in ano as de-scribed in Western medical science. Fistula in ano is a tract lined by granulation tissue which opens deeply in the anal canal or rectum and superficially on the skin around the anus[2]. The true prevalence of Fistula-in-ano is unknown. The inci-dence of a Fistula-in-ano developing from an anal abscess ranges from 26-38%.[3]A study conducted by Sainiop[4] showed that the prevalence rate of Fistula-in-ano is 8.6 cases per

100,000 populations. The prevalence in men is 12.3cases per 100,000 populations and in women is 5.6 cases per 100,000 population.The male-to-female ratio is 1.8:1. The mean age of patients is 38.3 years. A similar study conducted in India has re-ported that Fistula-in-ano constitutes about 15-16 % of all anorectal disorders.It is being managed by specialized Proctolo-gists and Surgeons. But in spite of all the possible efforts, the recurrence rate is very high i.e. 20 to 30 % which is a big chal-lenge before the surgeon's community. At present most common surgical procedure adopted in the treatment of fistula in ano is fistulectomy and fistulotomy. Newer mo-dalities like fibrin glue, fibrin plug, LIFT procedure and stem cell treatment are be-ing used as treatment modalities[5]. This surgical management carries several complications like frequent damage to the sphincter muscle resulting in incontinence of sphincter control, fecal soiling, rectal prolapse, anal stenosis, delayed wound healing and even after complete excision of the tract there are chances of subsequent recurrence.

Ancient *Acharyas* have also described surgical, parasurgical and medi-cal treatment for *bhagandara*. *Ksharsutra* is unique and an established procedure for *bhagandara.. Acharya Chakradutta* has given the idea about the preparation of *ksharasutra*[6]. Revival of such ancient tech-nique in the management of fistula in ano is proved as a boon for humanity.

AYURVEDIC VIEW:

Most of the *Ayurvedic* classics the description of thedisease is available but *Acharya Sushruta*, the father of Indian surgery has described all the detail of *Bhagandara. Bhagandara* is a disease that exists among human beings since the pe-riod of *Vedas* and *Puranas. Puranas* and *Samhitas (Bruhatrayees and Laghutryees)* do have abundant evidences re-garding the existence and treatment of this disease.

ETYMOLOGY OF BHAGANDARA:

The word *Bhagandar* made up by the combi-nation of two terms "*Bhaga*" and "*Darana*", which are derived from root "*Bhaga*" and "*dri*" respectively. The meaning of *Bhaga* is, all the structures around the *Guda* including *yoni and vasti*[7]

DEFINITION OF *BHAGANDARA*:

The *Darana of Bhaga Guda and vasti* with surrounding skin sur-face called *Bhagandar.*Further he has de-scribed that a deep rooted *apakva pidika* within two *angula* circumference of *Guda Pradesh* associated with pain and fever is called *Bhagandar pidika.* When it suppu-rates and burst open, is called *Bhagandara*[8].

Nidana (Etiological Factors) of *Bhagandara* Ac-cording to Different *Acharyas*[9,10]

(A*) Aharaja* factors-1. *Kashaya-rasa sevana* 2. *Ruksha sevana* 3. *Mithya-ahara(Apathya sevana)4. Asthi yukta ahara sevanaa*

(B)*Viharaja* factors- 5.Excessive sexual activity 6.Sitting in awkward position 7.Forceful defecation 8.Horse & elephant riding

(C*)Agantuja* factors- 9. Trauma by *krimi* 10. Trauma by *asthi* 11. Improper use of *vasti-netra 12.*As the cause of hemorrhoids

(D)*Manasika* factors-13*. Papakarma* 14. *sadhu sajjan ninda*

Classification of *Bhagandara:*

Acharyas have classified the *Bhagandar* on the basis of *doshik* involvement and clinical consideration of its pathogene-sis.According to *Charak Samhita,*There is no description about the types of *Bhagandar*[11].According to *Sushrut* there are five types of *Bhagandar*[12]*-1.Shatponaka - originating from vata dosha.2. Ushtragreeva* - originating from *pitta dosha*. 3. *Parishravi* - originating from *kapha dosh*a 4.*Shambukavarta* - originating from *Tridosha 5.Unmargi* - caused by *agantuja* factors.According *Aashtanga Sangraha and Hridyam*[13] , eight types of *Bhagandra* are described. Among these five types are same that of *Sushrut* and other three types are 6.*Parikshepi*- originating from *vata* and *pitta dosha 7.Riju*- originates from *vata& kapha dosha*.8.*Arsho-Bhadandra*-originates from *pitta* and *kapha dosha*..*Acharyas* again classified each type of *Bhagandar* according to its opening whether presents externally or inter-nally[14,15-]

(1)*Parachina*(*Bahirmukham*) -having external open-ing.

(2)*Arvachina*(*Antarmukham*)- having internal opening

Purva Rupa (Prodromal Symptoms) of *Bhagandara*:

The *purvarupa* of *Bhagandar* includes pain in *kati-kapala* region, itching, burning sensa-tion and swelling in *Guda*.These features become more aggravated during riding and defaecation[16,17].

Rupa (Signs & Symptoms) Of *Bhagandara*:

The most typical sign and symptoms of *Bhagandar* are a discharging *Vrana* within two-finger periphery of peri-anal region with a history of *Bhagandarpidika,* which bursts many times, heals and recurs repeatedly and is painful.Specific type of discharge,pain and characters shows in diffient type of bhagandar ,according to doshaj inovolvement[18].

Samprapti(Pathigenesis) of *Bhagandara*:

The develop-ment of *Bhagandar* can be described as follows according to *Shatkriya kala*[19].The *Dosha* undergoes *Chaya* as a normal physiological response to various endo-genic and exogenic stimuli, when the per-son continues to use the specific etiologi-cal factor they undergoes vitiation of *Dosha* and *Dushya*.Then they get aggra-vated at their normal site. It is known as *Prakopawastha*. This progress to subse-quent stage and the *Dosha* migrate through the body.It is known as *Prasarawastha*. Ultimately it gets lodged in *Guda* after vi-tiating *Rakta* and *Mamsa*.Here it is known as *Sthanasanshray*. At this stage patients will have different *Purvarup*a like pain in waist (*Katikapala*), itching, burning sen-sation and swelling at the anus along with formation of *Pidaka*. In the *Vyakta* stage *Pidika* suppurates and continuously passes different type of discharge through it with association of various kind of pain.If ne-glected, further it causes *Darana* of *Vasti, Guda* and *Bhaga* and discharge *Vata, Mutra*, *Pureesha* and *Retash* through it, which is termed as *Bhedavastha*.Here, *Vata* is the predominant *Dosha* accom-plished with *Pitta* and *Kapha*.The second type of *Samprapti* is due to *Agantuja* rea-sons where the wound occurs first and then the *Dosha* get sited producing further symptoms. When the wound is produced simultaneously there is vitiation of *Dosha* and there is pain and discharge.

Sadyasadyata (Prognosis) of *Bhagandara* on The Basis of Different Parameters:

According to *AcharyaSushrut*, all types of *Bhagandar* are curable with difficulty; except *Tridoshaj* and

traumatic, those are incurable[20,21].According to *AcharyaVagbhata*, the *Nadi* (track) of *Bhagandar,* which cross *Pravahini vali* and *Sevani*are incurable. If through *Bhagandar*Apana vayu, *Mutra, Purisha, Krimi* and *Shukra* are expelled, the*Bhagandar* should be considered as incur-able.

*Chikitsa (*Management*) Of Bhagandara:*

There are different lines of treatment in different stages (*Awastha*) of *Bhagandar*. It depends on two parameters viz[22]-1.*Bhagandarpidika chikitsa* (i.e. in *Apakvawastha*) & 2.*Bhagandar chikitsa* (in *Pakvawastha*)

The management of *Bhagandara* can be divided in 4 major types:

A Preventive measures B.Surgical measuresC.Para-sur-gical measures D.Adjuvant measures

A.Preventive measures- It includes-

1.Avoidance of causative factor

2.*Bhagandara* pidika *chikitsa- The Bhagandara pidika (Apakvawastha),* should be managed with eleven measures beginning with *aptarpana* and ending with *virechana.* They are *aptarpana, alepa, parisheka, abhyanga, swedana, vimlapana, upnaha, pachana, vishravana, snehana, vamana* and *virechana*[23].

Surgical Procedure:

According to *Acharya Sushruta,* excision(*Chhedan karma*) and incision(*Bhedan karma*) over the track should be different types, which is depends upon the type of the fistula[24].

Para Surgical Management (Ambula-tory Treatment):

Para surgical measures have been employed in the management of *Bhagandara* either alone or in combination as auxiliary to surgical procedure. The most common para surgical procedures adopted are –

1.*Raktamokshana* (Blood-letting)

2.*Kshara Karma* (Chemical cau-terization)

3.*Agnikarma* (Thermal cau-tery).

Ksharsutra is a kind of *Kshara*-ther-apy, which is applied with the help of thread[25]. It has been observed earlier that *Kshara* has always been used as an adjuvent to the surgical procedure in *Bhagandara*, but the *Ksharsutra* owes the credit of standing as a complete treatmentof *Bhagandara* without the aid of any oper-ative procedure.

Excellence of *ksharsutra* therapy over surgical management[27]

1.Minimal trauma and no tissue loss as compared to surgical excision.

2.No bleeding in ksharsutra application while owing to huge amount of bleeding oc-curred in fistulectomy.

3.Anaesthesia is seldom required.

4.The patient is fully am-bulatory.

5.Minimal hospital stay.

6.No in-continence.

7.Therapy is costing less.

8.Very narrow and fine scar.

9.No anal stricture if properly treated.

10.The recur-rence rate is practically nil.

Adjuvent Measures: *Swedan, parishek, avgahan,vranashodhan & vranaropan lepa,varti,taila, guggulu, shothahar drugs,Ghrita, Taila, Arishta and dipan, pachan , mridu rechak* drugs use as adjuvent measures for *bhagandar* in diffirent classics[27].

Pathya[28]:

Shalidhanya, Mudga, Patola, Shigru, Balamulaka,Tiktavarga, Tila taila, Sarshap taila, Vilepi, Jangala mamsa and madhu etc.

Apathya[29]-

Vyayama, Gurvahara, Maithuna, Sahasakarma, Krodha, Asatmya, Aswaprishthayaan, Vegavarodh, Ajirna, Madya.These are avoided.

Modern Review:

The Fistula-in-ano is an abnormal communication between the anal canal and the perianal skin. It usually results from an Ano-rectal abscess, which burst naturally or opened inade-quately.Etymologically, 'fistula' is a Latin word meaning a reed, a pipe or a flute. But in the medical literature the term fistula represents an abnormal tubular passage, which communicates between a hollow viscous (or cavity) or an abscess and free surface or another hollow viscous or ab-scess[30].

Definition:

Fistula-in-ano is an inflam-matory track, which has an external open-ing (secondary opening) in the perianal skin and an internal opening (primary opening) in the anal canal or rectum. This track is lined by unhealthy granulation tis-sue and fibrous tissue[31].

Aetiology[32]:-

Fistula in ano is divided into (A)Non spe-cific-caused by cryptoglandular infection and previous anorectal ab-

scess.(B)Specific-caused by diffirent dis-eases and conditions e.g.-Tuberculosis, Crohn's disease, Ulcerative colitis, Lymphogranuloma venerum, Actinomycosis, Carcinoma of rectum and anan canal,Previous rectal or Gynological operations,Other abdominal condition producing a pelvic abscess.

Pathology[33] -

Pathogenesis of fistula in ano has been described by Buie who divided in 4 stages

(I)**Stages of infection**-There is in-fection of anal crypts which become to be distended and form primary opening of fistula inside canal.later on,crypts become oedematous and infection spreads.

(II)**Stages of burrowing**-Burrow-ing fistulous track may precede in any one or more directionas following.e.g.-Subcutenous,submucous,through external or internal sphincter,between external and internal sphincters.Infection may go either or inferior to levator ani muscle.

(III)**Stages of abscess formation**-The abscess forms in this stage and clinical sympotoms begins in the form of anorectal abscess.

(IV)**Stages of formation of secondary opening**-In this stages,secondary opening forms.Either the abscess ruptures spontaneously or it drained out surgically,the opening may be either inside the rectum or on the external surface of the body.

Classification of Fistula in Ano [34]:

Milligan and Morgan classified the fistulas into high fistula-those in which the internalopening lies above the anorectal ring and low fistulas-those in which the internal opening lies below the anorectal ring.It was a simple classification but was abandoned as the tract information was not forth coming,leading to recurrences.

Park classified the fistulas into submucosal, intersphincteric, suprasphincteric and extrasphincteric. These terms are quite informative in relation to the sphinc-ter apparatus. The submucosal fistula is not involving any sphincter and is simplest to manange. Intersphincteric fistula traverses through the internal sphincter and are the largest category of the fistulas.Trans sphincteric fistula pass through both the internal and external sphincters and are further

subdivided into low and high depending on the part of the external sphincter muscle.The low fistulas involve only the outer part of external sphincter while high fistulas involve greater part of the external sphincter.Incontinence would be a complication of this group. Supra sphincteric fistula typically arise at the dentate line internally, cross above the in-ternal sphincter but below the puborectalis and exit on to the peritoneal site. Extra sphincteric fistula are rare and do not in-volve the sphincter complex and usually result from pelvic disease or trauma.

Clinical Features[35]:

Swelling, Pain and discharge are the most frequent presenting complaints. Swelling and pain are usually associated with abscess when the external opening is closed. The discharge from the external opening is mucous or pus mixed with stool. In majority of cases of fistula in ano there will be an antecedent history of previous abscess.

Clinical Assesment: A full medical history and proctological examination are neces-sary to gain information about sphincterstrength and to exclude associated condi-tions.Goodsall's rule used to indicate the likely position of the internal opening ac-cording to the position of the external openings ,is helpful but not infallible[36].The site of the internal opening may be felt as a point of induration or seen as enlarged pa-pilla.

Investigations in Fistua in Ano:

Digital rectal examination, Probing and proctoscopy examination should be done to identify internal opening. Fistulogram, Endoanal sonogaphy, MRI and CT scan are other diagnostic tools to investigate fistula in ano.

Management of Fistula in Ano

(A)Medical Management[37]

Medical management is often recom-mended in patients suffering from IBD,Even asymptomatic fistulas can be placed under observation after initial drainage of the suppuration and antibiotic treatment.

Seton[38]: It is particularly for treatment of extrasphincteric fistula and for the tracks traversing the sphincter muscle high in anal canal or even just above the ano rectal ring.It is indicated for anterior situated

fistulae or when occurring in women. A loop made by Seton, can be helpful to de-cide whether the internal opening marked byseton, lies above or below the ano rectal ring. It allows proper drainage.

Gabriel (1963) postulated, the use of seton, stimulate a fibrous reaction to fix the sphincter so that the ligature eventually cuts through, the cut ends are believed to be anchored by fibrous tissue and not able to retract. A strong braided silk, rubber band, a silk, prolene or nylon strand, stainless steel can be used as ligature.

(B)Surgical Treatment

Fistulotomy[39]**:** It includes incision of track laying open, followed by curettage ofunderlying tissue. Recurrence occurs due to remnants of abscess cavity, necrotic or fibrosed tissue.At low anal fistula, the in-ternal sphincter and subcutaneous external sphincter can be divided at right angle to underlying fibers without affecting conti-nence.

2. Fistulectomy[40]**:**It involves total excision of track with surrounded unhealthy tissue. It causes very wide wound. It heals from top causing a tunnel formation and recur-rence. Greater separation of ends of sphincter takes longer time to heal and there is greater chance of incontinence.

3.Fibrin glue[41]**:** Fistulous track is closed by injection of fibrin glue, which results in formation of a clot within the fistula, helps to promote healing of the track. Commer-cial fibrin glue is mixture of 2 compo-nents.

a) Fibrinogen solution (fibrinogen, aprotonin + fibronectin + plasminogan)
b) Thrombin solution (Thrombin + cal-cium chloride)

Partial Fistulectomy with fibrin avoids risk of incontinence and gives encour-aging results.

4.Surgisis anal fistula plug[42]**:**The Surgisis AFP plug is conical device made from por-cine collagen similar to human collagen, the plug, once implanted and incorporates natu-rally over lime into your own tissue.The plug is made up of porcine small intestine submucosa, fixing the plug from inside of anus with suture. At first the fistulous track is traced, probed and irrigated and APF plug is pulled into internal opening. Internal opening is closed by suturing the top tissue

layers of anal canal over the plug later plug at external opening is cut to size of track and sutured to edge of external opening. External opening is kept open for drainage.

5.Endorectal mucosal advancement flap[43]: Safe and effective technique fortreatment of complex cryptoglandular fis-tula in ano such as high level fistula high transphinecteric, suprasphincteric and extrasphincteric fistula.In this technique Total fistulectomy with removal of pri-mary and secondary track is done later on Closure of internal opening by an anal, anorcetal, rectal or anocutaneous flap is done.

6.Lift procedure[44]: It is a novel modified approach through the intersphincteric plane for the treatment of fistula-in-ano, known as LIFT (ligation of inter sphincteric fistula tract) procedure. LIFT procedure is based on secure closure of the internal opening and removal of infected crypto glandular tissues through the intersphincteric approach.

7.Vaaft[45] : VAAFT is Video Assisted Anal Fistula Treatment. It is a novel minimally invasive and sphincter-saving technique for treating complex fistulas. This technique involves use of an endo-scope, i.e Fistuloscope

Complication of surgery

Early Post-Operative : Urinary retention, bleeding, cellulitis, Fecal impaction, acute external thrombosed hemorrhoids.

Delayed Post-Operative : Recurrence, in-continence, persistent sinus, stenosis, rectovaginal fistula, delayed wound heal-ing

Discussion: Description of *Bhagandarpidika* clearly shows that the *Acharya* had an exact idea regarding the occurrence of a fistulous abscess and also knew that it could lead to the *Bhagandar*(Fistula in ano). *Acharya* also told that not all the abscesses in this region could lead to the formation of *Bhagandar*.eg. Furunculosis. Current evi-dences suggest that infection of the anal glands is probably the most common cause of fistula development. Initially due to infection of anal glands there is development of abscess. In chronic form patient pre-sents a fistula in ano. Whether modern classification is based on the extension of the track i.e. Subcutaneous, Sub mucous, Low Intersphincteric, Trans-sphincter,

Supra-sphincter,Pelvirectaletc.

Ayurveda has provided the classification on the basis of appearance of *Bhagandarpidika*, their different types of symptoms and involve-ment of *Doshas.* In spite of the best efforts even today, the main problems faced in the treatment of this disease are-1.Extensive damage of the anorectal and ischio-rectal area which is must for radical care.2.Loss of sphincter control.3High rate of recur-rence.4.Prolonged Hospitalization. *So Ksharsutra* therapy is still agold stand-ard technique for management of *Bhagandar,* employed by *Ayurvedic* sur-geons.

Conclusion: The management of fistula in ano needs complete knowledge of perianal anatomy and pathophysiololgy.Almost all the surgeons starting from Acharya susruta to hippoc-rates and also modern reputed surgeons of present time have realized the difficult course of this disease and have mentioned diffirent type of surgical,parasurgical and medical management for it.Inspite of many modifications in surgical procedures,fistula in ano still remain challenge even for a meticulous and skillful sur-geons.Ksharsutra therapy is still gold standard technique for management of *bhagandar* employed by ayurvedic sur-geons.

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