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FISTULA IN ANO-A REVIEW

[1]Kumar Uttam [2]B.B.Khuntia
[1]Ph.D.Scholar,P.G.Dept. of Shalya tantra, G.A.M.,Puri (odisha)
[2]Professor and HOD, Dept. Of Kriya shareer,G.A.M.,Puri (odisha)

ABSTRACT :

Fistula in ano is one of the common and notorious disease among all anorectal disorder.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.*Bhagandar* resembles with the description of fistula in ano as described in modern medical science.*Bhagandar* is described in all major classical text books of Ayurveda.Acharya sushruta ,the father of surgery has included *Bhagandar* as one among *Ashtamahagada*.In this present review article article describes pathophysiology,investigate modalities and treatment option for fistula in ano in Ayurveda and modern medical science.

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

INTRODUCTION:*Bhagandara* is a common disease occurring in the ano-rectal 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 described in modern 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 incidence of a Fistula-in-ano developing from an anal abscess ranges from 26-38%.[3]One study conducted by Sainio p.[4]showed that the prevalence rate of Fistula-in-ano is 8.6 cases per 100,000 populations. Theprevalence in men is 12.3 cases per 100,000 populations and in women is 5.6 cases per 100,000population. 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 reported that Fistula-in-ano constitutes about 15-16 % of all anorectal disorders. It is being managed by specialized Proctologists 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 challenge before the surgeon's community.At present most common surgical procedure adopted in the treatment of fistula in ano is fistulectomy and fistulotomy. Newer modalities like fibrin glue,fibrin plug,LIFT procedure and stem cell treatment are being 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 medical treatment for *bhagandar*. *Ksharsutra* is unique and an established procedure for *bhagandar*.*Acharya chakradutta* has given the idea about the preparation of *ksharsutra*[6]. Revival of such ancient technique in the management of fistula in ano is proved as a boon for humanity.

AYURVEDIC VIEW: Most of the *Ayurvedic* classics the description of the

disease is available but *AcharyaSushrut*,the father of Indian surgery has described all the detail of *Bhagandar*. *Bhagandar* is a disease that exists among human beings since the period of *Vedas* and *Puranas*. *Puranas* and *Samhitas* do have abundant evidences regarding the existence and treatment of this disease.

ETYMOLOGY OF BHAGANDAR: The word *Bhagandar* made up by the combination 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: The *Darana of Bhaga Guda and vasti* with surrounding skin surface called *Bhagandar*.Further he has described that a deep rooted *apakva pidika* within two *angula* circumference of *Guda Pradesh* associated with pain and fever is called *Bhagandar pidika.* When it suppurates and burst open, is called *Bhagandar*[8].

Etiological Factors of Bhagandar According 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 *Bhagandar:*

Acharyas have classified the *Bhagandar* on the basis of *doshik* involvement and clinical consideration of its pathogenesis.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 internally[14,15]-(1)*Parachina*(*Bahirmukham*) - having external opening.(2)*Arvachina*(*Antarmukham*)- having internal opening

Purva Rupa(Prodromal Symptoms): The *purvarupa* of *Bhagandar* includes pain in *kati-kapala* region, itching, burning sensation and swelling in *Guda*.These features become more aggravated during riding and defaecation[16,17].

Rupa (Signs & Symptoms) Of Bhagandar: The most typical sign and symptoms of *Bhagandar* are a discharging *Vrana* within two-finger periphery of perianal 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 of Bhagandar: The development of *Bhagandar* can be described as follows according to *Shatkriya kala*[19].The

Dosha undergoes *Chaya* as a normal physiological response to various endogenic and exogenic stimuli, when the person continues to use the specific etiological factor they undergoes vitiation of *Dosha* and *Dushya*.Then they get aggravated at their normal site. It is known as *Prakopawastha*. This progress to subsequent stage and the *Dosha* migrate through the body.It is known as *Prasarawastha*. Ultimately it gets lodged in *Guda* after vitiating *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 sensation 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 neglected, 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* accomplished with *Pitta* and *Kapha*.The second type of *Samprapti* is due to *Agantuja* reasons 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.

Prognosis of Bhagandar 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 *BhagandarApana vayu*, *Mutra*, *Purisha*, *Krimi* and *Shukra* are expelled, the *Bhagandar* should be considered as incurable.

Management Of Bhagandar: 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 *Bhagandar* can be divided in 4 major types:A Preventive measures B.Surgical measuresC.Para-surgical measures D.Adjuvant measures

Preventive measures-It includes-1.Avoidance of causative factor 2.*Bhagandar* 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 *AcharyaSushrut*, 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 (Ambulatory Treatment): Para surgical measures have been employed in the management of *Bhagandar* 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 cauterization)3.*Agnikarma* (Thermal cautery).*Ksharsutra* is a kind of *Kshara*-therapy, 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 *Bhagandar*, but the *Ksharsutra* owes the credit of standing as a complete treatment

of *Bhagandar* without the aid of any operative 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 occurred in fistulectomy.3.Anaesthesia is seldom required.4.The patient is fully ambulatory.5.minimal hospital stay.6.no incontinence.7.Therapy is costing less.8.Very narrow and fine scar.9.No anal stricture if properly treated.10.the recurrence 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,Bala mulaka,Tikta varga,Tila taila,Sarshap taila,Vilepi,Jangala mamsa and madhu etc.*

***Apathya*[29]*-Vyayama,Gurvahara,Maithuna, Sahasakarma,Krodha,Asatmya,Aswaprishtha yaan,Vegavarodh,Ajirna,Madya*.**These are avoided upto 1 year.

MODERN VIEW: 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 inadequately.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 abscess[30].

Definition: Fistula-in-ano is an inflammatory track, which has an external opening (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 tissue and fibrous tissue[31].

Aetiology*[32]*: It is divided into (A)Non specific-caused by cryptoglandular infection and previous anorectal abscess.(B)Specific-caused by diffirent diseases 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 infection 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-Burrowing 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 internal

opening 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 sphincter 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 internal sphincter but below the puborectalis and exit on to the peritoneal site.Extra sphincteric fistula are rare and do not involve 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 necessary to gain information about sphincter strength and to exclude associated conditions.Goodsall's rule used to indicate the likely position of the internal opening according 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 papilla.

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 recommended 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 decide 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

1. Fistulotomy[39]**:** It includes incision of track laying open, followed by curettage of

underlying tissue. Recurrence occurs due to remnants of abscess cavity, necrotic or fibrosed tissue.At low anal fistula, the internal sphincter and subcutaneous external sphincter can be divided at right angle to underlying fibers without affecting continence.

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 recurrence. 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. Commercial fibrin glue is mixture of 2 components.

a) Fibrinogen solution (fibrinogen, aprotonin + fibronectin + plasminogan)
b) Thrombin solution (Thrombin + calcium chloride)

Partial Fistulectomy with fibrin avoids risk of incontinence and gives encouraging results.

4.Surgisis anal fistula plug[42]**:**The Surgisis AFP plug is conical device made from porcine collagen similar to human collagen, the plug, once implanted and incorporates naturally 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 for treatment of complex cryptoglandular fistula in ano such as high level fistula high transphinecteric, suprasphincteric and extrasphincteric fistula.In this technique Total fistulectomy with removal of primary 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 endoscope, i.e Fistuloscope

Complication of surgery

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

Delayed Post-Operative : Recurrence, incontinence, persistent sinus, stenosis, rectovaginal fistula, delayed wound healing

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 evidences suggest that infection of the anal glands is probably the most common cause of fistula development. Initially due to in-

fection of anal glands there is development of abscess. In chronic form patient presents 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 involvement 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 recurrence.4.Prolonged Hospitalization.

So Ksharsutra therapy is still agold standard technique for management of *Bhagandar,* employed by *Ayurvedic* surgeons.

CONCLUSION: The management of fistula in ano needs complete knowledge of perianal anatomy and pathophysiololgy.Almost all the surgeons starting from Acharya susruta to hippocrates 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 surgeons.Ksharsutra therapy is still gold standard technique for management of *bhagandar* employed by ayurvedic surgeons.

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Corresponding Author: Dr.Uttam Kumar,Lecturer,P.G.Dept of Shalya Tantra,Govt.Ayurvedcollege,Raipur(C.G.)
Email: druk01508@gmail.com

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