CONCEPT OF BHAGANDARA (FISTULA IN ANO) - A REVIEW

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Abstract

_Bhagandara_ is a common 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_. 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 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 a common disease occurring in the ano-rec-tal region. _Acharya Sushruta_, the father of surgery has included this disease as one among the _Ashtamahagada_. 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 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. 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%. A study conducted by Sainiop showed that the prevalence rate of Fistula-in-ano is 8.6 cases per
100,000 populations. The prevalence in men is 12.3 cases 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 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. 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 bhagandara. Ksharsutra is unique and an established procedure for bhagandara. Acharya Chakradutta has given the idea about the preparation of ksharasutra. 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 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 period of Vedas and Puranas. Puranas and Samhitas (Bruhatrayees and Laghutryees) do have abundant evidences regarding the existence and treatment of this disease.

**ETYMOLOGY OF BHAGANDARA:**
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.
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.

Nidana (Etiological Factors) of Bhagandara Ac-cording to Different Acharyas\(^9,10\)
(B)Viharaja factors- 5.Excessive sexual activity 6.Sitting in awkward position
7.Forceful defecation 8.Horse & elephant riding
(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.\(^1\)According to Sushrut there are five types of Bhagandar.\(^2\)-
1. Shatponaka - originating from vata dosha.2. Ushtragreeva - originating from pitta dosha. 3. Parishravi - originating from kapha dosha
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(Bahirnukham) -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 sensation 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 different type of bhagandar, according to doshaj involvement\(^{18}\).

**Samprapti (Pathogenesis) of Bhagandara:**
The development of Bhagandar can be described as follows according to Shatkiya kala\(^{19}\). The Dosha undergoes Chaya as a normal physiological response to various endo-genic and exogenic stimuli, when the person continues to use the specific etiological factor they undergoes vitiation of Dosha and Dushya. Then they get aggraged 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 Sthananshray. At this stage patients will have different Purvarupa 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.

**Sadyasadyata (Prognosis) of Bhagandara on The Basis of Different Parameters:**
According to Acharya Sushrut, all types of Bhagandar are curable with difficulty; except Tridoshaj and
traumatic, those are incurable\(^{20,21}\). According to Acharya Vagbhata, 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 incurable.

**Chikitsa (Management) Of Bhagandara:**
There are different lines of treatment in different stages (Awastha) of Bhagandar. It depends on two parameters viz\(^2^2\)-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 measures
C. Para-surgical 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\(^2^3\).

**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\(^2^4\).

**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 cauterization)
3. Agnikarma (Thermal cauterization).

*Ksharsutra* is a kind of *Kshara*-therapy, which is applied with the help of thread\(^2^5\). 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 treatment of Bhagandara without the aid of any operative procedure.
Excellence of *ksharsutra* therapy over surgical management

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.

**Adjuvant Measures:** *Swedan, parishek, avgahan, vranashodhan & vranaropan lepa, varti, taila, guggulu, shothahar drugs, Ghrita, Taila, Arishta and dipan, pachan, mridu rechak*

**Pathya**

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

**Apathya**

 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 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 ab-scess.

**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.

**Aetiology**

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

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Page 16
scess.(B) Specific-caused by different diseases and conditions e.g.- Tuberculosis, Crohn’s disease, Ulcerative colitis, Lymphogranuloma venerum, Actinomycosis, Carcinoma of rectum and anal canal, Previous rectal or Gynaecological operations, Other abdominal condition producing a pelvic abscess.

Pathology

Pathogenesis of fistula in ano has been described by Buie who divided into 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 directions following e.g.- Subcutaneous, 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 symptoms 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: 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 forthcoming, 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 manage. 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:
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 Assessment: 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. The site of the internal opening may be felt as a point of induration or seen as enlarged papilla.

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

Management of Fistula in Ano
(A) Medical Management:
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: 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 by seton, 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: 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: 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: 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 + plasminogen)
b) Thrombin solution (Thrombin + calcium chloride)

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

4. Surgisis anal fistula plug: The Surgisis AFP plug is conical device made from porcine collagen similar to human collagen, the plug, once implanted and incorporates naturally over time 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\(^4^3\): Safe and effective technique for treatment of complex cryptoglandular fistula in ano such as high level fistula high transphincteric, 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, anorectal, rectal or anocutaneous flap is done.

6. Lift procedure\(^4^4\): 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\(^4^5\) : 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 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 evidence suggests 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 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-sphinicter, Pelvirecta etc.

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.3. High rate of recurrence.4. Prolonged Hospitalization. So Ksharsutra therapy is still a gold standard technique for management of Bhagandar, employed by Ayurvedic surgeons.

Conclusion: The management of fistula in ano needs complete knowledge of perianal anatomy and pathophysiology. 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 different 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 skilful sur-geons. Ksharsutra therapy is still gold standard technique for management of bhagandar employed by ayurvedic sur-geons.

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