



Bhagandara (Fistula-in-Ano): A Comprehensive Literature Review of Ayurvedic and Modern Surgical Approaches

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Abstract

Bhagandara, described in classical Ayurvedic surgical texts as one of the eight great and difficult-to-treat conditions (Ashtamahagada), corresponds closely to what contemporary medicine terms fistula-in-ano. Both systems of medicine converge on a shared clinical reality: a chronic, track-like communication between the anal canal or rectum and the perianal skin, most often arising from suppuration of a perianal abscess. Despite being described more than two millennia apart, Ayurvedic and modern surgical literature show striking parallels in their understanding of anatomical course, chronicity, and the challenge of achieving cure without compromising continence. This review draws together the classical Ayurvedic understanding of Bhagandara — its etymology, causation, staged pathogenesis, classification by dosha, and para-surgical management including Ksharasutra and Agnikarma — alongside the modern surgical understanding of fistula-in-ano, including anatomical classification systems, diagnostic modalities, and the expanding range of sphincter-preserving surgical techniques. The review highlights that while modern surgery has diversified considerably in the last two decades, recurrence and incontinence remain unresolved concerns, and that Ksharasutra therapy continues to be regarded by Ayurvedic surgeons as a dependable, minimally destructive alternative. An integrated understanding of both systems may better equip clinicians managing this persistently difficult condition.

Keywords: Bhagandara, Fistula-in-ano, Ksharasutra, Ayurveda, Anorectal fistula, Ashtamahagada

1. Introduction

Anorectal fistula is among the oldest surgically documented conditions in medical history, referenced independently in both the Ayurvedic surgical tradition and in Hippocratic and later Western surgical writing. In Ayurveda, Acharya Sushruta — regarded as the father of surgery — placed Bhagandara among the Ashtamahagada, a group of eight conditions considered severe, deeply seated, and resistant to easy cure. The disease was recognised even then to be recurrent, difficult to eradicate completely, and capable of significantly affecting quality of life through pain, discharge, and social discomfort.

In modern colorectal surgery, fistula-in-ano is understood as a chronic granulating track connecting the anal canal or rectum internally to the perianal skin externally, most commonly originating from infection of the anal glands situated in

the intersphincteric space (the cryptoglandular hypothesis). The reported incidence of a fistula developing after drainage of an anorectal abscess ranges widely, and despite decades of surgical innovation, no single operative technique has proven universally effective — outcomes continue to be governed by the trade-off between complete eradication of the track and preservation of sphincter function.

This review compiles the classical Ayurvedic description of Bhagandara as recorded in the Brihatrayi (Sushruta Samhita, Charaka Samhita, and Ashtanga Hridaya) alongside currently accepted modern surgical concepts, with the aim of presenting an integrated picture useful to both Ayurvedic and allopathic practitioners managing this condition.

2. The Ayurvedic Perspective on Bhagandara

2.1 Etymology and Definition

The term Bhagandara is a compound of two Sanskrit roots — ‘Bhaga’, referring to the perianal and perineal region, and ‘Darana’, meaning tearing or rupture. The word therefore literally conveys a rupturing or tearing pathology occurring in the perianal region. Classical texts describe the disease as beginning with a deep-seated boil (Pidika) located within roughly two finger-breadths of the anal verge; when this boil matures and ruptures, forming a persistent discharging track, the condition is termed Bhagandara.

2.2 Nidana (Etiological Factors)

Causative factors described across the classical texts can be grouped broadly into dietary and lifestyle factors that provoke Vata, along with mechanical and infective factors:

- Vata-aggravating diet and regimen, leading to derangement of Vata along with Pitta and Kapha localising in the anorectal region.
- Krimi (microorganisms) — conceptually paralleling the modern cryptoglandular infective theory.
- Excessive straining during defecation (Pravahana), comparable to the mechanical stress seen in chronic constipation or dysentery.
- Prolonged sitting in a squatting posture or on hard, uneven surfaces (Utkatasana), producing local ischaemia.
- Trauma, including prolonged horse or elephant riding, causing local injury and secondary infection.

Notably, different combinations of these factors are said to provoke different dosha patterns, which in turn determine the specific clinical variety of Bhagandara that develops.

2.3 Samprapti (Pathogenesis) — The Shatkriyakala Framework

Classical texts describe the development of Bhagandara through the six-stage model (Shatkriyakala) used generally for disease progression in Ayurveda:

- Chaya (Accumulation) — early, asymptomatic accumulation of vitiated dosha at its natural site.
- Prakopa (Aggravation) — the accumulated dosha becomes aggravated.
- Prasara (Spread) — the aggravated dosha migrates from its site of origin through the body.
- Sthanasanshraya (Localisation) — the vitiated dosha settles in the Guda (anorectal region), afflicting Rakta (blood) and Mamsa (muscle) tissue; this is accompanied by prodromal symptoms.
- Vyakti (Manifestation) — the boil (Pidika) suppurates fully and begins to discharge.
- Bheda (Rupture/Chronicity) — if neglected, the lesion ruptures through the tissue planes of the Basti, Guda and Bhaga, establishing a persistent discharging track — the fully formed Bhagandara.

A separate causative pathway is recognised for Agantuja (traumatic) Bhagandara, where physical injury precedes and initiates dosha vitiation, rather than the reverse.

2.4 Purvarupa and Rupa (Prodrome and Clinical Features)

Premonitory features include dull pain in the pelvic and lower back region, itching, burning sensation, and localised swelling near the anus, often triggered or worsened by riding or defecation. Once established, Bhagandara presents as a discharging wound within two finger-breadths of the anal verge, with a history of a boil that has repeatedly burst, partially healed, and recurred — a pattern regarded as pathognomonic in the classical description.

2.5 Classification

Acharya Sushruta classified Bhagandara into five types based on the predominant dosha or causative factor involved:

Type	Governing Factor	Classical Name
1	Vataja	Shataponaka
2	Pittaja	Ushtragreeva
3	Kaphaja	Parisravi
4	Tridoshaja (Sannipataja)	Shambukavarta
5	Traumatic (Agantuja)	Unmargi

Acharya Vagbhata added three further mixed-dosha varieties — Parikshepi (a horseshoe-shaped track from combined Vata-Pitta), Riju (a straight track from Vata-Kapha), and Arsho-Bhagandara (a piles-associated fistula from Pitta-Kapha) — bringing the total described varieties to eight. At the time of surgical planning, Sushruta additionally distinguished tracks by their anatomical course into Antarmukhi (blind internal, opening only into the anal canal) and Bahirmukhi (blind external, opening only onto the perianal skin) — a distinction that anticipates the modern separation of complete, incomplete-internal, and incomplete-external fistulae.

2.6 Sadhya-Asadhyata (Prognosis)

Sushruta regarded all varieties of Bhagandara as difficult to cure (Kricchrasadhyata), with the Tridoshaja and traumatic varieties considered incurable (Asadhyata). A track communicating with the rectum, urethra, bladder or prostate, or one crossing the Pravahani and Sevani ligamentous planes (broadly corresponding to the anorectal ring and important sphincter-supporting structures), was likewise regarded as incurable — an observation that mirrors the modern concern regarding high, complex, and supralelevator fistulae.

3. Ayurvedic Management of Bhagandara

3.1 Management of the Unripe Stage (Apakva Pidika)

Before suppuration, classical texts advocate the standard eleven-fold protocol used for inflammatory swellings (Vranashotha) in general — including Apatarpana (depletion therapy), Alepa (local application), Parisheka (medicated irrigation), Abhyanga (oleation), Swedana (fomentation), Upanaha (poultice application), and internal Snehana, Vamana and Virechana where indicated — aimed at either resolving the swelling or hastening its maturation.

3.2 Management of the Ripe Stage and Established Track

Once the boil has fully suppured or the track is established, three broad therapeutic modalities are described:

- Chhedana (surgical excision) — complete excision of the track, conceptually equivalent to modern fistulectomy.
- Ksharasutra (medicated seton) — a specially prepared thread coated with alkaline and herbal preparations (classically credited to Acharya Chakradatta), used particularly in patients unfit for excision, and now widely regarded as the signature Ayurvedic contribution to fistula management.
- Agnikarma (thermal cauterisation) — used in all varieties except the Pittaja type, primarily to control bleeding and cauterise the granulating lining of the track.

The surgical protocol for Chhedana follows three conventional phases:

- Purva Karma (preparatory phase) — Snehana, Swedana and mild Virechana administered the day prior to the procedure, along with dietary restriction (Langhana).
- Pradhana Karma (operative phase) — the patient is positioned as for haemorrhoidal surgery (broadly similar to lithotomy position); a specialised instrument (Bhagandara Yantra) lubricated with ghee is introduced, the track is explored with a probe (Eshani), and the tissue is divided, followed by cauterisation with either alkaline paste (Kshara) or heat (Agni).
- Paschat Karma (post-operative phase) — wound care with medicated oils, sitz baths, and dietary regulation to support granulation and healing.

Management is further individualised by type — for instance, multiple tracks in Shataponaka are treated one at a time rather than simultaneously; Agnikarma is withheld in the Pitta-dominant Ushtragriva variety; Shambukavarta is regarded as unsuitable for active intervention given its poor prognosis; and Arsho-Bhagandara requires initial management of the associated haemorrhoidal disease before the fistula itself is addressed.

3.3 Pathya-Apathya (Dietary and Lifestyle Regulation)

Supportive dietary measures (Pathya) recommended in classical texts include easily digestible grains such as aged rice, green gram, bottle gourd and similar light vegetables, meat soups of wild game, drumstick, radish, sesame, mustard oil, bitter-tasting foods, ghee and honey. Conversely, factors to be avoided (Apathya) include excessive physical exertion, excessive sexual activity, anger, physical conflict, prolonged travel on rough vehicles or animals, heavy and difficult-to-digest food, suppression of natural urges, indigestion, and forceful or sudden physical exertion — all recognised as capable of aggravating Vata and delaying wound healing.

4. The Modern Surgical Perspective on Fistula-in-Ano

4.1 Definition and Aetiology

A fistula-in-ano is a chronic, granulation-tissue-lined track connecting an internal opening, usually at the dentate line, to an external opening on the perianal skin. The cryptoglandular hypothesis remains the dominant explanation for most cases: infection arising in the anal glands situated within the intersphincteric space spreads to form a perianal or ischiorectal abscess, which either drains spontaneously or is surgically incised, leaving behind a persistent epithelialised or granulating track. A minority of fistulae are secondary to specific underlying disease, including Crohn's disease, ulcerative colitis, tuberculosis, actinomycosis, malignancy, radiation, or trauma, and these secondary fistulae often behave differently and require disease-specific management.

4.2 Clinical Features

The typical presentation is intermittent purulent or serosanguinous discharge from an opening near the anus, often with a preceding history of a drained or spontaneously ruptured abscess. Pain is usually mild between episodes but intensifies when drainage is obstructed and an abscess reforms, easing again once the abscess discharges. Pruritus and skin excoriation from chronic discharge are common associated complaints.

4.3 Classification Systems

Several classification systems have been proposed to guide surgical decision-making, most based on the relationship of the track to the anal sphincter complex:

System	Basis of Classification
Milligan & Morgan	Divides fistulae into low (opening at or below the dentate line — submucous, subcutaneous, low transsphincteric) and high varieties.
Parks Classification	The most widely used system; classifies tracks as intersphincteric, transsphincteric, suprasphincteric, or extrasphincteric based on their course relative to the sphincter muscles.
St James's University Hospital (MRI-based)	A five-grade system incorporating primary track, secondary extensions, and associated abscess, widely used for radiological reporting.

4.4 Diagnosis

Diagnosis relies on a combination of clinical examination and imaging. Inspection identifies the external opening as a nodule of granulation tissue; digital palpation may reveal an indurated cord representing the fibrosed track. Goodsall's rule remains a useful clinical guide: an external opening anterior to a transverse line through the anus and within roughly 4 cm of the anal verge tends to connect via a straight track to a corresponding internal opening, while a posterior or more distant external opening tends to curve towards a track opening at the posterior midline. Proctoscopy may reveal the internal opening directly, and instillation of dilute dye (such as methylene blue or hydrogen peroxide) through the external opening can confirm patency and completeness of the track. Cross-sectional imaging — endoanal ultrasonography, CT, and particularly MRI — has become central to preoperative planning for complex or recurrent fistulae, allowing identification of secondary extensions and abscess pockets not evident on examination alone.

5. Modern Surgical Management

Surgical management continues to balance two competing goals — eradication of the fistulous track and preservation of continence — and the choice of technique is guided by the anatomical complexity of the track, prior treatment history, and sphincter function.

5.1 Fistulotomy

The track is laid open along its length over a probe and allowed to heal by secondary intention. It remains highly effective for simple, low, intersphincteric or low transsphincteric fistulae, with reported success in the majority of such cases, and offers a relatively short operating time and recovery. Its use is limited in high or complex tracks, where division of a significant portion of sphincter muscle would risk incontinence.

5.2 Fistulectomy

This involves complete excision ('coring out') of the track rather than simply laying it open, allowing more precise pathological assessment of the tissue but at the cost of a larger wound, longer healing time, and a higher risk of a broad perianal defect.

5.3 Seton Techniques

A seton — a thread or elastic band passed through the track — may be used as a loose draining seton to control sepsis prior to definitive surgery, or as a slowly cutting seton that gradually divides the enclosed muscle over weeks, allowing fibrosis to stabilise the sphincter as it is divided. Setons are particularly useful for high or complex tracks, in patients with pre-existing sphincter weakness, and in Crohn's-associated fistulae, though cutting setons carry a recognised risk of some degree of incontinence.

5.4 Sphincter-Preserving Techniques

A range of techniques developed over the last two to three decades aim to close the internal opening or obliterate the track while avoiding division of sphincter muscle:

- Mucosal advancement flap — excision of the track with closure of the internal opening using a flap of rectal mucosa, avoiding further sphincter injury.
- LIFT procedure (Ligation of Intersphincteric Fistula Track) — the track is accessed and divided within the intersphincteric plane, allowing secure closure without cutting the sphincter.
- Fistula plug — a bioprosthetic (commonly porcine-derived) plug used to occlude the internal opening; less invasive but associated with variable long-term success.
- Fibrin glue injection — a non-surgical option in which tissue adhesive is instilled into the track; generally less durable than surgical options for simple fistulae but avoids any sphincter division.
- VAAFT (Video-Assisted Anal Fistula Treatment) — endoscopic visualisation of the track using a fistuloscope, with fulguration of the track lining and closure of the internal opening under direct vision.
- PERFECT procedure — a staged technique involving cauterisation around the internal opening, curettage of the track, and regular emptying of the track to promote healing by secondary intention; particularly suited to complex, horseshoe, or recurrent fistulae.
- Over-the-Scope Clip (OTSC) closure — a superelastic clip applied to secure closure of the internal opening, generally following a period of seton drainage.
- Endoscopic ablation and laser closure of the track — newer, minimally invasive options with an acceptable safety profile, though long-term efficacy data remain limited.

5.5 Outcomes and Limitations

Across techniques, recurrence and incontinence remain the two dominant concerns governing choice of procedure. Fistulotomy carries a relatively low recurrence rate for appropriately selected simple fistulae but is unsuitable for complex tracks. Cutting setons, while effective at controlling sepsis and completing division, are associated with a comparatively higher long-term risk of some degree of continence disturbance. Sphincter-preserving techniques generally trade a degree of certainty in cure for a lower risk to continence, and several — particularly plugs and fibrin glue — show considerable variability in reported success across studies. Delayed complications common to most techniques include prolonged wound healing, anal stenosis from scarring, and the possibility of recurrence requiring repeat intervention.

6. Discussion: Points of Convergence Between the Two Systems

Placed side by side, the Ayurvedic and modern descriptions of Bhagandara/fistula-in-ano show more conceptual overlap than might be expected given the centuries separating them. Both systems identify a preceding suppurative lesion (Pidika/abscess) as the precursor to the fistula proper. Both recognise that anatomical course relative to the surrounding musculature — the Pravahani and Sevani planes in Ayurveda, the sphincter complex in modern anatomy — determines both prognosis and the feasibility of curative treatment without functional compromise. Both traditions independently arrived at the understanding that certain complex tracks (Tridoshaja/Sannipataja in Ayurveda; high, supralelevator, or Crohn's-associated fistulae in modern practice) carry a substantially worse prognosis and may not be suitable for straightforward excision.

Where the two systems most notably differ is in their approach to achieving closure without sacrificing sphincter integrity. Ksharasutra therapy achieves a slow, chemically-assisted division of the track with simultaneous cauterisation and fibrosis of the cut edges, a mechanism that Ayurvedic surgeons argue produces comparable cure rates to fistulotomy with a lower incidence of incontinence and recurrence, largely because the gradual cutting action allows the divided muscle ends to fibrose and stabilise as they separate — a principle mechanistically related to the modern cutting seton, though achieved through a different chemical and procedural route developed independently and considerably earlier. This convergence

has prompted a growing body of comparative clinical research examining Ksharasutra alongside modern fistulotomy and seton techniques, generally reporting favourable continence outcomes for the Ayurvedic approach, though methodological heterogeneity across these studies limits firm comparative conclusions.

A pragmatic, integrative view would suggest that the two systems are complementary rather than competing: modern imaging (MRI, endoanal ultrasound) and classification systems (Parks, St James) offer more precise anatomical mapping than was available to classical Ayurvedic surgeons, while Ksharasutra offers a low-cost, minimally destructive therapeutic option that remains particularly valuable in resource-limited settings and in patients where sphincter preservation is a priority.

7. Conclusion

Bhagandara and fistula-in-ano represent the same underlying clinical entity described through two distinct medical traditions, both of which recognise it as a chronic, recurrence-prone condition requiring individualised management rather than a single universal technique. Modern surgery has diversified considerably, offering an expanding menu of sphincter-preserving options, yet recurrence and continence disturbance remain unresolved challenges across nearly all available techniques. Ksharasutra therapy, refined over centuries of Ayurvedic surgical practice, continues to be regarded by its practitioners as a dependable, minimally invasive alternative with a favourable continence profile, and merits continued rigorous comparative evaluation alongside contemporary surgical techniques. A combined understanding of both systems offers the most complete picture available for managing this persistently difficult disease.

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