



World Journal of Pharmaceutical Science & Technology

Journal homepage: www.wjpst.com

Review Article

"EXAMINATION AND DIAGNOSIS OF BHAGANDAR (FISTULA-IN-ANO): A CLASSICAL AYURVEDIC AND CONTEMPORARY CLINICAL REVIEW"

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Received: 15-01-2023, Revised: 22-02-2023, Accepted: 25-02-2023

ABSTRACT

Bhagandar (fistula-in-ano) is a common anorectal disorder characterised by an abnormal communication between the anal canal or rectum and the perianal skin. Although it is not a life-threatening condition, its diagnosis and management are challenging owing to complex regional anatomy and the frequent occurrence of multiple ramifying tracks. Ayurvedic classical literature, particularly the surgical treatise of Acharya Sushruta (circa 1000 BCE), provides an elaborate description of Bhagandara, encompassing its aetiopathogenesis, clinical typology, and diagnostic methodology—closely paralleling modern understanding of fistula-in-ano. Sushruta advocated the use of specialised instruments such as the *ashenaya* (probe) and *arsho yantra* for systematic examination. The present review integrates the classical Ayurvedic diagnostic approach with contemporary clinical investigations—inspection, palpation, digital rectal examination, probing, proctoscopy, fistulography, trans-rectal ultrasonography, and magnetic resonance imaging (MRI)—to present a comprehensive framework for the diagnosis of Bhagandara/fistula-in-ano.

Keywords: *Bhagandar; Bhagandara; Fistula-in-ano; Sushruta; Anorectal diagnosis; Arsho yantra; Ayurveda; Shalya Tantra*

1. INTRODUCTION

Fistula-in-ano is an anorectal condition characterised by an abnormal epithelialised track connecting the anal canal or rectum to the perianal skin. Its prevalence ranges from 8.6 to 10 per 100,000 population, with a male preponderance [1]. The condition imposes a significant burden on the patient owing to persistent discharge, pain, and the risk of recurrence after surgical intervention.

The complexity of the regional anatomy—comprising the internal and external sphincter muscles, puborectalis, levator ani, and the multiple potential spaces of the anorectum—renders the disease diagnostically and surgically challenging. A thorough understanding of anatomical and physiological aspects is therefore indispensable, not only for establishing an accurate diagnosis but also for planning appropriate operative intervention.

Ayurveda, the ancient Indian system of medicine, recognised this condition millennia ago under the designation *Bhagandara*. Acharya Sushruta (circa 1000 BCE), revered as the father of surgery, provided a comprehensive account of this disease in the *Sushruta Samhita*, including its aetiology (*nidana*), clinical

features (*lakshana*), and a systematic approach to examination utilising the *ashenaya* (probe) and *arsho yantra*. The clinical description in classical texts corresponds closely to the modern understanding of complex anal fistulae [2].

The present review aims to integrate the Ayurvedic classical diagnostic paradigm for Bhagandara with contemporary clinical examination and radiological investigations, providing a unified reference for clinicians practising Shalya Tantra.

2. CLINICAL EXAMINATION OF BHAGANDAR/FISTULA-IN-ANO

A systematic clinical examination of fistula-in-ano comprises five sequential components: inspection, palpation, digital rectal examination (DRE), instrumentation, and radiological evaluation. Colonoscopy and histopathological examination are indicated selectively as per clinical suspicion.

2.1 Inspection

The patient is positioned in the lithotomy position. The perianal region is carefully inspected for the following parameters:

- Colour changes and discolouration of the perianal skin
- Presence of oedema, induration, or inflammatory swelling
- Number, location (clockwise position), and nature of external openings of discharging sinuses
- Character of discharge (serous, purulent, faecal, or blood-stained)
- Evidence of previous surgical scars or healed tracks
- Skin tags or associated anorectal pathology

The Goodsall rule aids in predicting the course of the fistulous track based on the position of the external opening relative to the transverse anal line.

2.2 Palpation

Bidigital palpation of the perianal region provides essential information regarding:

- Local rise of temperature (indicating active sepsis)
- Tenderness and its extent
- Induration along the fistulous track
- Fluctuation (suggesting an abscess component)
- Consistency and extent of indurated tissue
- Approximate direction of the primary track

2.3 Digital Rectal Examination (DRE)

Digital rectal examination is an essential step in the evaluation of fistula-in-ano. The examining finger assesses:

- Presence of associated anorectal pathology: fissure-in-ano, thrombotic haemorrhoids, or malignancy
- Internal opening—detected as an indurated dimple on the mucosal surface
- Sphincter tone (to assess pre-existing incontinence risk, critical for surgical planning)
- Intersphincteric, suprasphincteric, or supralelevator extensions
- Presence of a cavity or secondary track
- Prostate assessment in male patients

2.4 Instrumentation

2.4.1 Probing

Probing, analogous to the use of the *ashenaya* described by Sushruta, remains a cornerstone of fistula-in-ano examination. A soft, malleable, appropriately curved probe is gently introduced through the external opening, with one finger positioned in the rectum to guide its advancement. Patient cooperation is essential; forceful probing must be avoided to prevent the creation of false tracks.

Probing provides definitive information regarding:

- Completeness of the track (complete versus incomplete/blind)
- Length and extent of the primary track
- Direction of the track and its course through the sphincter complex
- Location of the internal opening and its relation to the anorectal ring
- Relationship of the track to the sphincter musculature (determining fistula classification)
- Relationship to the levator ani muscle (supralelevator vs. infralevator)
- Presence of secondary tracks or branching

- Extension across the midline (horseshoe configuration)

2.4.2 Proctoscopy

Proctoscopy (*arsho yantra* in the Ayurvedic tradition) is performed to directly visualise the internal opening. Diagnostic indicators include:

- Direct visualisation of the internal opening, confirmed by the expression of a bead of pus upon gentle pressure; a fine probe with its terminal 1 cm bent to a right angle may be introduced to confirm the opening
- Presence of reddish, oedematous, or unhealthy granulation tissue at the site of the internal opening
- Associated mucosal pathology (proctitis, polyp, or carcinoma)

2.5 Radiological Investigations

2.5.1 Fistulography (Contrast Radiography)

Fistulography involves injection of a radio-opaque contrast agent (sodium diatrizoate or meglumine diatrizoate; historically lipiodol) into the external opening, followed by plain radiography. Its advantages include:

- Complete delineation of the primary track and its level of communication with the anal canal
- Identification of blind secondary tracks in the contralateral ischiorectal fossa (particularly valuable in horseshoe fistulae where one limb is externally blind)
- Demonstration of supralelevator extensions that may otherwise give the clinical impression of a simple low-level fistula

The technique is particularly useful when clinical examination alone fails to demonstrate the full extent of the fistulous anatomy.

2.5.2 Plain Radiograph of the Pelvis

A plain pelvic radiograph is a mandatory baseline investigation to exclude osseous pathology as a primary cause of the fistula. Diseases such as tuberculosis or osteomyelitis of the pelvic bones may present with secondary fistula-in-ano and require treatment of the primary disease before any fistula surgery is undertaken [3].

2.5.3 Trans-rectal Ultrasonography (TRUS)

Anal and rectal ultrasonography offers a real-time, non-invasive assessment of the anorectal region. It is particularly useful in:

- Delineating the course of the internal opening and the primary track
- Detecting occult sepsis in the intersphincteric plane and deep post-anal space
- Identifying sphincter defects relevant to surgical planning

Hydrogen peroxide-enhanced TRUS has been reported to improve the accuracy of internal opening detection.

2.5.4 Magnetic Resonance Imaging (MRI)

MRI is currently regarded as the gold standard imaging modality for the evaluation of complex anorectal sepsis and fistulae. Lunniss et al. (1992, 1994) reported an accuracy of 100% in demonstrating fistula presence and extension, with 85% accuracy in defining the anatomy of the primary track [4]. MRI reliably identifies:

- Sepsis without an associated fistula
- Scar tissue from previously treated fistulae
- Blind tracks with no demonstrable internal opening
- Horseshoe configurations and supralelevator extensions

MRI is indispensable in cases of recurrent fistula, Crohn's disease-related fistulae, and prior to repeat sphincter-preserving procedures.

2.6 Colonoscopy

Colonoscopy is indicated when secondary fistula-in-ano due to bowel pathology—particularly Crohn's disease, ulcerative colitis, or colorectal malignancy—is clinically suspected. In such cases, accurate diagnosis and treatment of the primary bowel disease take precedence over fistula surgery. Colonoscopy enables direct mucosal visualisation, tissue biopsy, and therapeutic intervention as required.

2.7 Histopathological Examination

Histopathological examination of the fistulous wall or excised track material is mandatory prior to initiating definitive treatment. The primary objective is to exclude:

- Malignant transformation within a chronic fistulous track (Marjolin's ulcer)

- Tuberculosis (granulomatous inflammation with caseation)
- Crohn's disease (non-caseating granulomata)

This investigation is of particular importance in patients with atypical clinical presentations or a history of chronic, non-healing fistulae.

3. AYURVEDIC PERSPECTIVE ON BHAGANDARA

The *Sushruta Samhita* classifies Bhagandara into five types based on the vitiated *dosha*: *Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja*, and *Agantuja* (traumatic). Each type is characterised by distinct clinical features, colour, and nature of discharge, forming the basis for a *dosha*-specific treatment approach [1].

The Ayurvedic definition of Bhagandara—*bhagam darayati iti bhagandara*—literally translates as 'that which tears the perineal region,' underscoring the severity of local tissue destruction. Sushruta's description of the tract's anatomy, its communication with the intestinal lumen, and the requirement for precise instrumental examination aligns remarkably with contemporary surgical understanding.

The *ashenaya* (probe) and *arsho yantra* employed by Sushruta for Bhagandara examination correspond functionally to the fistula probe and proctoscope of modern surgery, demonstrating the enduring relevance of Ayurvedic surgical diagnostics.

4. DISCUSSION

A systematic, stepwise diagnostic approach is indispensable for the accurate assessment of fistula-in-ano. Clinical examination—encompassing inspection, palpation, DRE, probing, and proctoscopy—forms the cornerstone of diagnosis and should precede any radiological investigation. The choice of imaging modality should be guided by clinical complexity: fistulography and TRUS suffice for uncomplicated primary fistulae, whereas MRI is the investigation of choice for recurrent, complex, or supralelevator disease.

The Ayurvedic approach to Bhagandara, as codified in the *Sushruta Samhita*, demonstrates a sophisticated understanding of anorectal anatomy and fistula pathology. Integration of classical Ayurvedic diagnostic tools with contemporary imaging and endoscopic techniques offers a holistic and comprehensive framework for the evaluation of this condition. Future research should focus on validating Ayurvedic diagnostic criteria against modern imaging modalities to establish an evidence-based integrative protocol.

5. CONCLUSION

Bhagandar/fistula-in-ano demands a methodical diagnostic approach integrating clinical examination and appropriate investigative tools. Acharya Sushruta's classical description, including the use of the *ashenaya* and *arsho yantra*, represents an early and systematic surgical diagnostic paradigm. Contemporary diagnosis relies on a combination of clinical assessment, fistulography, trans-rectal ultrasonography, and MRI—with the last being the gold standard for complex disease. Histopathological examination and colonoscopy should be employed selectively to exclude malignancy, tuberculosis, and inflammatory bowel disease. A unified Ayurvedic–contemporary diagnostic framework enhances clinical accuracy and surgical outcomes.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

SOURCE OF FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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