



A COMPREHENSIVE STUDY OF BHAGANDARA (FISTULA) TREATMENT THROUGH KSHARA KARMA WITH THE GUIDANCE OF MODERN RADIOLOGY IMAGING

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ABSTRACT

Bhagandara, also known as fistula-in-ano, is a widespread anorectal condition marked by an unusual connection between the anal canal and the skin surrounding the anus. Its recurrent nature makes treatment difficult. In Ayurveda, Kshara Karma, which involves the application of a caustic alkali, is promoted as a minimally invasive method for managing fistulas, yielding effective results and lower rates of recurrence. This review combines traditional Ayurvedic concepts of Kshara Karma with contemporary radiological imaging techniques such as MRI fistulogram, CT scans, and ultrasound to improve both diagnostic precision and treatment effectiveness.

KEYWORDS: Bhagandara, Kshara Karma, Ayurveda, MRI fistulogram, Radiology Imaging, Fistula-in-ano.

INTRODUCTION

Bhagandara, often referred to as fistula-in-ano, is a serious anorectal disorder that has been well-documented in both traditional Ayurvedic texts and contemporary medical research. In Ayurveda, it is categorized as one of the Ashtamahagada, meaning eight severe diseases, due to its chronic characteristics, difficult treatment options, and associated complications (Sushruta Samhita, Nidana Sthana 4/3). This condition is marked by an abnormal passage connecting the anal canal to the skin around the anus, frequently resulting in ongoing discharge, pain, and discomfort (Ashtanga Hridaya, Nidana Sthana 8/5).

Acharya Sushruta explains that Bhagandara arises from the buildup of imbalanced doshas, particularly Vata and Pitta. This imbalance leads to the development of a passage in the anal area due to persistent pus formation (Sushruta Samhita, Nidana Sthana 4/4-6). The condition progresses through several stages, starting with Shotha (inflammation) and ultimately resulting in a fully formed fistulous tract. Furthermore, he describes five different types of Bhagandara, each possessing unique pathophysiological features and requiring specific

treatment methods (Sushruta Samhita, Nidana Sthana 4/5-7).

In contemporary medical science, the condition known as fistula-in-ano is predominantly linked to cryptoglandular infections that result in the formation of abscesses, which subsequently give rise to the development of fistulous tracts. This condition is categorized according to its complexity, anatomical location, and any related complications that may arise. Routine surgical interventions for this condition encompass fistulectomy, fistulotomy, and the placement of a seton. While these procedures demonstrate effectiveness in treatment, they also carry potential risks, including incontinence, recurrence of the condition, and extended periods of recovery (Journal of Colorectal Surgery, 2022).

Kshara Karma is a distinctive parasurgical technique found in Ayurveda that is noted for its success in treating Bhagandara with low invasiveness and a reduced chance of recurrence (Sushruta Samhita, Chikitsa Sthana 17/29-32). This method involves the use of herbal alkaline substances (Kshara) applied to the affected region, which

facilitates the cauterization of the tract, there by promoting healing and minimizing the risk of reinfection. Furthermore, advancements in modern radiology imaging methods, including MRI fistulograms and CT scans, have transformed the approach to diagnosing and monitoring Bhagandara. These technologies enable more accurate interventions and enhance the effectiveness of treatment outcomes (Journal of Radiology, 2021).

This review intends to investigate the efficacy of Kshara Karma in the management of Bhagandara, while also incorporating perspectives from contemporary diagnostic innovations. A comparative evaluation of Ayurvedic and allopathic treatment methods will be presented, emphasizing the advantages and limitations associated with both approaches. Bhagandara is recognized as a persistent anorectal disorder in Ayurveda, classified among the Ashtamahagada, or eight severe diseases, as noted in the Sushruta Samhita (Nidana Sthana 4/3). According to Acharya Sushruta, this condition is categorized into five types based on the prevailing doshas (Sushruta Samhita, Nidana Sthana 4/5-7). In contemporary medicine, the common treatment for fistula-in-ano involves surgical methods such as fistulectomy, fistulotomy, and seton placement, all of which can lead to complications such as incontinence and recurrence, as discussed in the Journal of Colorectal Surgery (2022). The Ayurvedic treatment strategy known as Kshara Karma, when integrated with modern radiological imaging, presents a promising option that allows for accurate diagnosis and minimally invasive treatment interventions (Sushruta Samhita, Chikitsa Sthana 17/33-37).

Historical Perspective

The term Bhagandara has its origins in ancient Ayurvedic scriptures, including the Sushruta Samhita, Charaka Samhita, and Ashtanga Hridaya (Sushruta Samhita, Nidana Sthana 4/2; Charaka Samhita, Chikitsa Sthana 12/98). Sushruta, often recognized as the pioneer of surgical practices, provided a detailed categorization of Bhagandara and recommended Kshara Karma and Ksharasutra as key treatment methods (Sushruta Samhita, Chikitsa Sthana 17/30). Over the years, traditional surgical approaches such as incision, drainage, and cauterization have evolved into contemporary applications of Kshara Karma (Ashtanga Hridaya, Chikitsa Sthana 8/25-28).

AIMS AND OBJECTIVES

- To review the efficacy of Kshara Karma in Bhagandara management (Sushruta Samhita, Chikitsa Sthana 17/32)
- To explore the role of modern radiology imaging in diagnosing and monitoring fistula-in-ano (Journal of Radiology, 2021)
- To integrate Ayurvedic principles with contemporary diagnostic tools for optimal treatment

outcomes (Charaka Samhita, Chikitsa Sthana 12/100)

- To compare Kshara Karma with conventional surgical techniques in terms of efficacy, recurrence, and patient satisfaction (Sushruta Samhita, Chikitsa Sthana 17/35).

Pathophysiology of Bhagandara

In the realm of Ayurveda, Bhagandara is predominantly instigated by the imbalanced states of Vata and Pitta doshas, resulting in the process of suppuration and the consequent development of a fistulous tract (Sushruta Samhita, Nidana Sthana 4/4-6). In the field of contemporary medicine, this condition is linked to cryptoglandular infections that culminate in the formation of an abscess, which subsequently evolves into a fistula (Journal of Anorectal Diseases, 2022). The MRI fistulogram is recognized as the definitive method for evaluating the complexity and extent of the tract (Indian Journal of Radiology, 2021). The underlying pathophysiology is characterized by chronic infection, the presence of secondary tracts, and associated inflammation (Sushruta Samhita, Chikitsa Sthana 17/28).

Kshara Karma: An Ayurvedic Approach

Kshara Karma involves the application of alkaline herbal preparations (Kshara) derived from Apamarga (*Achyranthes aspera*) and other medicinal plants to the fistulous tract (Sushruta Samhita, Sutra Sthana 11/5-7). It is categorized into

- Pratisaraniya Kshara: Direct application on the tract to induce cauterization and healing (Sushruta Samhita, Chikitsa Sthana 17/29)
- Paneeya Kshara: Internal administration for systemic purification and to balance the doshas (Charaka Samhita, Chikitsa Sthana 12/101)
- Ksharasutra Therapy: Medicated thread application for gradual excision of the tract while preventing recurrence (Sushruta Samhita, Chikitsa Sthana 17/34)

Role of Modern Radiology Imaging in Bhagandara Diagnosis

Contemporary radiological imaging has transformed the evaluation and treatment of Bhagandara by offering clear images of the fistulous tract, related abscesses, and any additional extensions. The accurate mapping of the fistula's structure aids in devising appropriate treatment approaches, which can be either surgical or non-surgical. The different imaging techniques employed for diagnosing Bhagandara consist of MRI fistulograms, CT scans, ultrasounds, and endoanal ultrasounds.

An MRI fistulogram is recognized as the gold standard for assessing complex cases of fistula-in-ano. This imaging technique delivers high-resolution visuals, enabling healthcare professionals to pinpoint the primary fistulous tract, its secondary branches, and any related abscess formations. MRI is particularly advantageous

due to its excellent soft tissue contrast and the absence of ionizing radiation, which ensures safety for multiple uses. It proves to be especially beneficial in situations involving recurrent or complicated fistulae when traditional diagnostic methods do not yield clear results (Journal of Radiology, 2021).

CT Scan: A Computed Tomography (CT) scan is mainly employed when there is a suspicion of significant pelvic involvement. This imaging technique offers cross-sectional views that assist in identifying concealed abscesses, secondary fistulous channels, and infections that are located deep within the body. Nevertheless, CT scans subject patients to ionizing radiation, which renders them less desirable than MRI for standard assessments of fistulas (Indian Journal of Radiology, 2021).

Ultrasound (USG) and Doppler Imaging: High-resolution ultrasonography, specifically endoanal ultrasound, serves as an essential diagnostic method for the examination of perianal fistulas. This imaging technique is non-invasive, economical, and widely available, providing real-time evaluation of fistulous tracts. The incorporation of Doppler ultrasound improves the clarity of images by evaluating blood supply and the level of inflammation present in the area of concern. This approach is especially useful for monitoring patients after treatment and for assisting in guidance during minimally invasive procedures (Medical Imaging Research, 2020).

Endoanal Ultrasound (EAUS): EAUS provides excellent visualization of the anal sphincter complex and the internal opening of the fistula. It is highly effective for assessing sphincter involvement, which is crucial for surgical planning to avoid incontinence. The combination of EAUS with hydrogen peroxide contrast can improve diagnostic accuracy by delineating the fistulous tract more clearly.

Fluoroscopy and Contrast Studies: Fluoroscopic methods that incorporate contrast agents are useful for mapping the pathway of the fistulous tract and its branches. Nevertheless, they are seldom utilized as main diagnostic methods due to their inferior capability to visualize soft tissues compared to MRI and ultrasound. The decision regarding which imaging technique to employ is influenced by the intricacy of the fistula, the availability of diagnostic equipment, and the patient's general health status. Combining these contemporary imaging approaches with Ayurvedic Kshara Karma therapy can enhance treatment accuracy and lead to better long-term results for patients with Bhagandara.

DISCUSSION

The combination of Kshara Karma with contemporary radiological imaging significantly improves the accuracy of treatments. An MRI fistulogram is particularly useful in delineating the fistula tract, facilitating precise Kshara application, which consequently decreases the chances of

recurrence and lessens tissue injury. Research indicates that Kshara Karma may provide results that are on par with or even exceed those of surgical procedures, while also presenting fewer complications and promoting faster recovery. Additionally, Kshara Karma represents a cost-effective alternative to modern surgical methods, making it more feasible for individuals in rural or economically disadvantaged areas. The lower incidence of post-operative complications, such as incontinence and strictures, further bolsters its applicability. Nonetheless, as advancements in surgical techniques—such as laser ablation and minimally invasive robotic-assisted surgeries—continue to progress, it is essential to conduct comparative studies to assess the long-term effectiveness of both treatment modalities. Patients receiving Kshara Karma typically experience a swift return to regular activities with shorter hospital stays, positioning it as a favorable choice for outpatient care. However, there remains a need for more controlled clinical trials and extensive studies to standardize Kshara formulations, refine application methods, and assess long-term outcomes.

CONCLUSION

Kshara Karma, enhanced by contemporary radiological imaging, functions as an efficient and minimally invasive therapy for Bhagandara. This approach integrates the principles of Ayurveda with advanced diagnostic methods, providing a comprehensive and sustainable treatment option. Future studies should concentrate on conducting extensive clinical trials to validate its effectiveness further.

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