

Synergistic Role of IFTAK Technique and Aragwadhadhi Varti in Management of Fistula - in - Ano

Piyush Ranjan Parhi ¹, Uttam kumar Nirmalkar², Vandana Sahu³, Nilima Pandey⁴, Sarita Thakrey⁵, Satodiya Akshar Vitthalbhai ⁶

¹ Corresponding Author- PG scholar, Dept. Of Shalyatantra, Shri Narayan Prasad Awasthi, Govt. Ayurveda College, Raipur, Chhattisgarh

² Reader, Dept. Of Shalyatantra, Shri Narayan Prasad Awasthi, Govt. Ayurveda College, Raipur, Chhattisgarh

^{3, 4, 5, 6} PG scholar, Dept. Of Shalyatantra, Shri Narayan Prasad Awasthi, Govt. Ayurveda College, Raipur, Chhattisgarh

ABSTRACT :

Fistula is a condition where two epithelial surfaces connect in an abnormal way. A condition known as fistula-in-ano occurs when there is a communication formed between the anal canal and the perineal region. The path is usually bordered by unattractive granulation tissues. The main reason for this condition is inadequately managed crypto glandular infection. As time has progressed, the *Ksharasutra* remains the top option among treatment methods for Fistula-in-ano due to reduced complications such as recurrence and incontinence. In spite of all these benefits, there are still some disadvantages including discomfort, prolonged anxiety, more frequent hospital visits, longer treatment times, and considerable post-surgical scarring. IFTAK (Interception of Fistulous tract with application of *Ksharasutra*) is a new, enhanced *Ksharasutra* approach, allowing greater convenience for patients while eliminating the limitations of traditional methods. Additionally, the use of *Aragwadhadhi varti* in conjunction with the previously mentioned technique resulted in improved healing of the remaining section of the track. In this instance, IFTAK is performed under Spinal anaesthesia. *Ksharasutra* was changed weekly for 3 weeks, and *Aragwadhadhi varti* was applied on every third day for 12 times. The fistula fully healed within 45 days. This research demonstrated an initial total remission of the fistulous tracts using the IFTAK method and *Aragwadhadhi varti*, in contrast to the traditional *Ksharasutra* approach. Based on the duration, the traditional approach requires 15-20 weeks, while this research took significantly less time. And throughout the follow-up, no recurrence was observed. Consequently, the IFTAK method used alongside *Aragwadhadhi varti* was considered very effective because of its ability to save time and minimize scarring and fibrosis.

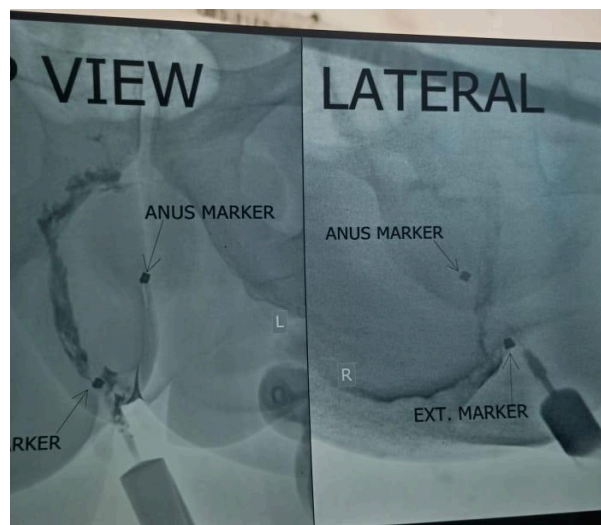
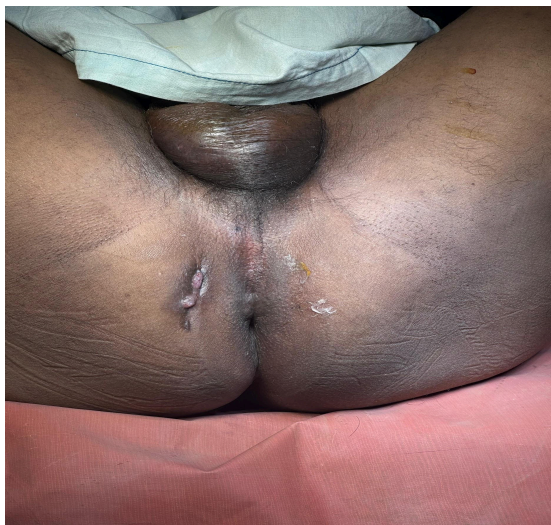
INTRODUCTION :

The most prevalent reason for fistula in ano or *Bhagandara* is an untreated or inadequately treated cryptoglandular infection.[1] This case study involved the application of the IFTAK (Interception of Fistulous track with application of *Ksharasutra*) technique, combined with *Aragwadhadhi Varti*, to successfully treat a complex intersphincteric fistula in Ano. Even though the illness is not highly life-threatening, it causes significant disruption in daily life due to pus discharge and pain. Considering the severity and long-lasting nature of the condition, the Father of Surgery, *Acharya*

Sushruta, classified *Bhagandara* among the *Asta Mahagada*. [2] Many treatment options exist for managing fistula in ano. Contemporary surgical techniques encompass fistulotomy, fistulectomy, Seton placement, ligation of intersphincteric fistula tract (LIFT), fibrin adhesives, advancement flaps, and expanded adipose-derived stem cells (ASCs). [3] *Acharya Sushruta* has outlined various therapeutic approaches for treating *Bhagandara*, including different oral medications, topical treatments, surgical techniques, and para-surgical methods. *Acharya Charaka* has noted it in the *Swayathu chikitsa adhyaya*, and *Kshara sutra* ligation is cited as its remedy. [4] Currently, *Ksharasutra* therapy is regarded as the most appealing and effective treatment option among para-surgical procedures for fistula-in-ano. Throughout the passage of time, the *Ksharasutra* remains the preferred option among treatment methods for Fistula-in-ano due to fewer complications such as recurrence and incontinence. However, despite these advantages, practitioners experience certain drawbacks when administering *Ksharasutra* therapy to patients, including discomfort, prolonged anxiety period, number of hospital visits, longer duration of treatment, big post-operative scar etc. IFTAK (Interception of Fistulous tract with application of *Ksharasutra*) is a groundbreaking *Ksharasutra* approach based on this principle, thus improving patient comfort and circumventing the drawbacks of conventional techniques. There are various options in *Ksharasutra*, such as those based on *Apamarga*, *papaya*, *Guggulu*, or *Palasha*. In this instance, we must utilize *Apamarga Ksharasutra* due to its excellent outcomes in severing and healing the fistulous tract. Therefore, instances of fistula addressed using this technique can yield favorable outcomes. Furthermore, employing *Aragwadhadi varti* in conjunction with the previously mentioned method may improve the healing of the remaining section of the tract and lower the chances of future sinus recurrences. This is important as the hardened section of the fistulous tract requires adequate healing, alongside the region close to the anal verge. *Aragwadhadi varti*, as noted by *Acharya Sushruta* in the *Bhagandara roga adhikara*, might provide better results in decreasing fibrosis of the fistulous tract and promote faster healing relative to the conventional treatment.

Presenting Complaints and Medical History :

A 52 year old male patient came to Shalya OPD of Shri Narayan Prasad Awasthi Govt Ayurveda College, Raipur having Complaints of recurrent perianal Fistula in ano since last 3 years . Other than this , Complaints of Intermittent fever and pain in the perianal region were there . The patient was not having any comorbidities. The patient got operated with Fistulotomy , around 1 year prior . X-Ray fistulogram reports are attached.



Clinical findings:

On examination perianal skin was normal. An external opening was present at 8 O'clock approximately 5 cm away from anal verge. On digital rectal examination, sphincter tone was normal, tender dimpling or buttonhole-like opening noted at 6 O'clock at a distance of 1.5 cm inner to OS. On probing it was found that the probe goes straight towards anal verge in a curvilinear manner for about 4 c.m and then traverses downward in intersphincteric space and opens into 6 O' Clock in anal canal. A single complete fistulous tract of about 8 cm in length was found. Rest of the examinations were found to be normal and laboratory investigations were also found within normal limits.

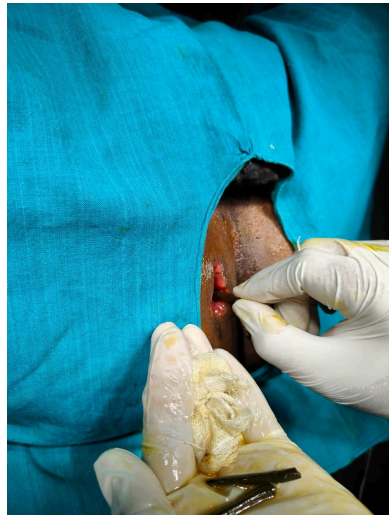
Treatment :

After obtaining written consent and completing necessary preoperative procedures, the patient was placed in a lithotomy position. After painting and draping, probing was done to ascertain the finding. After confirming the diagnosis, a small vertical incision was made at the 7 O'clock position at the level of intersphincteric space and Interception of fistulous tract was done. Then a metallic probe was introduced through the window and taken out from the internal opening and *Kshara sutra* ligation was done in the proximal tract. The *Kshara sutra* was ligated loosely on initial days in order to facilitate proper drainage of pus. After achieving haemostasis dressing and packing done with *Jatyadi taila* and patient then shifted to male surgical ward. The patient was advised for regular hot sitz bath from post operative day 2. The patient was prescribed with Triphala guggulu 2 tab BD after food, Symp. *Abhayarista* 15 ml BD with equal amount of water after food, *Triphala churna* 5 gm HS with lukewarm water after food.

On dressing from post operative day 2, *Aragwadhadhi varti* inserted in distal residual tract on every alternate day till the signs of *Shuddha vrana* appeared.



OT DAY



POD-2



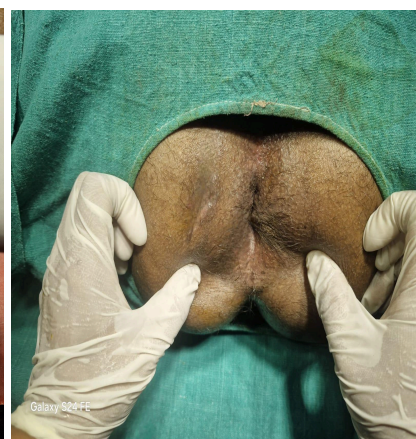
POD-10



POD-20



POD-30



POD-45

Aragwadhadi Varti

In *Sushruta Samhita*, *Aragwadhadi varti* is described in Treatment of *Bhagandara*. [7] *Aragwadhadi varti* has properties of *Shodhana* i.e., Cleanses the tissue by scraping out unhealthy tissue and *Ropana* i.e., Accelerates healing process by clearing debris tissue. [8] Powdered *Haridra* (*Curcuma longa*) and *Tagara* (*Valeriana wallichii*) taken in equal quantities and mixed in a well-balanced manner, followed by addition of *Aragwadha* (*Cassia fistula*) *Majja*, *Ghrita*, and honey, all in equal quantities (Fig.3). The wicks were then prepared by hand, measuring 2 to 3 inches in length, and dried in the sun (Fig.4). Once the wicks dried and hardened, they were sterilized in UV chambers and then placed in air-tight containers. *Aragwadhadi varti* was prepared in the Department of *Rasa Shastra and Bhaishajya kalpana* of Shri N.P.A. Govt. Ayurveda College Raipur (C.G) according to classical reference. The ingredients of formulation *Aragwadhadi varti* were collected from local fields and purchased from the market (Fig.1 & 2) and were authenticated by help of the Department of Dravyaguna, Govt. Ayurveda college Raipur (C.G). Moreover, further authentication was done from the Central research facility, KLE Academy of higher Education and Research, Karnataka. *Aragwadhadi varti* was sent to the Drug Testing Laboratory and Research Centre, Raipur (C.G) / NABL accredited lab for analysis of phytochemical and physiochemical constituents removed from distal tract and antiseptic dressing done with *Jatyadi Taila* and *Aragwadhadi varti* inserted in distal tract on every alternate days till the signs of *Shuddha vrana* appeared.

Aragwadhadi Varti

In *Sushruta Samhita*, *Aragwadhadi varti* is described in Treatment of *Bhagandara*. [7] *Aragwadhadi varti* has properties of *Shodhana* i.e., Cleanses the tissue by scraping out unhealthy tissue and *Ropana* i.e., Accelerates healing process by clearing debris tissue. [8] Powdered *Haridra* (*Curcuma longa*) and *Tagara* (*Valeriana wallichii*) taken in equal quantities and mixed in a well-balanced manner, followed by addition of *Aragwadha* (*Cassia fistula*) *Majja*, *Ghrita*, and honey, all in equal quantities.. The wicks were then prepared by hand, measuring 2 to 3 inches in length, and dried in the sun. Once the wicks dried and hardened, they were sterilized in UV chambers and then placed in air-tight containers.

Followup and Outcomes

Weekly follow up advised for *Ksharasutra* changing. *Ksharasutra* was changed three times after the first *Ksharasutra* was placed. The pus discharge was fluent in the first week from the artificially made window, gradually reduced and completely disappeared after two weeks . Pain was also moderate in the first week and later on gradually relieved. The discharge from the external opening was also

reduced gradually in 6-7 days and totally dried up in three weeks. Then the *Ksharasutra* was ligated tightly and Cut through was done when discharge completely diminished from the artificial made window i.e., after three weeks of first *Ksharasutra* placed and complete healing was achieved in 15 days after cut through of proximal tract. The patient was advised to apply Jatyadi taila. The fistulous tract healed completely by 6th week with minimal scar and without any fibrosis. There was no complication seen during and after treatment and the patient got free from all the symptoms. After 12 months of follow up, no recurrence is noted, the patient was cured completely.

Probable Mode of Action of Aragwadhadi Varti

Traditional treatments for wound healing include honey, *Curcuma longa*, *Valerian wallichii*, and *Cassia fistula*. *Cassia fistula*'s anti-inflammatory, antibacterial, antifungal, and antioxidant qualities aid in wound closure, tissue regeneration, and enhanced healing. [9] *Curcuma longa* contains antibacterial, antioxidant, and anti-inflammatory qualities [10], while *Valerian wallichii* possesses analgesic and anti-inflammatory qualities. [11] As a natural antimicrobial, honey promotes quicker healing and reduced scarring by lowering inflammation, encouraging tissue development, and aiding autolytic debridement. [12] *Ghrita* is a traditional Ayurvedic medication that decreases inflammation and speeds up wound contraction. Also it has been found that *Aragwadhadi varti* has a pH of 4.62, which is slightly acidic. Because it encourages quicker re-epithelialization, collagen deposition, and wound closure, a slightly acidic environment is optimal for wound healing. [13] It also prevents the formation of dangerous microorganisms. Acidification promotes the migration of epithelial cells, increases oxygen release, and activates fibroblasts. By preventing the development of fibroblasts into myofibroblasts, which are in charge of collagen deposition and scarring, it may be able to lessen fibrosis. [14] Collagen synthesis and fibrosis development can be inhibited by lowering pH levels in cell culture conditions. [15]

DISCUSSION

Ksharasutra therapy is the most successful treatment modality for fistula in ano. *Ksharasutra* therapy has a high success rate [16] and least recurrence rate (3.33%) [17]. It is a highly simple day care option and an affordable treatment with a lower complication rate compared to traditional treatment methods that involve hospitalization, regional or general anesthesia, and frequent post-operative care. These surgical procedures carry a notable risk of recurrence (0.7–26.5%) and a considerable risk of reduced continence (5–40%). [18] While *Ksharasutra* therapy is a preferred treatment for fistula in ano due to its various benefits it does come with certain drawbacks, including discomfort, pain after the procedure, multiple hospital visits, extended treatment duration, significant postoperative scarring, and post-treatment fibrosis, resulting in low compliance and reduced acceptability among many patients. IFTAK (Interception of Fistulous tract and application of *Ksharsutra*) technique seems to overcome the limitations and consequences of conventional methods. Duration of therapy was less by shortening the length of the track and taking care of crypto glandular infection where there was no need to treat residual curved track. Pain was significantly reduced because of less exposure of tissues after interception which is from internal opening where as in conventional method whole track was exposed along the axis during the *Ksharasutra* change which increases the pain and burning sensation because of more tissue exposure.

In this case study, the external opening was approximately 5 cm from the anal verge at the 8O'clock position, and interception occurred at the 7O' clock position about 1 cm from the anal verge, thus decreasing the length of the tract. Consequently, the IFTAK technique shortened the total healing time and significantly decreased pain while leaving minimal scarring. [19] *Aragwadhadi varti* purified the leftover tract and the sinus tract due to its *Shodhana* and *Ropana* properties. The patient was fully healed within two months, and no recurrence was observed during the three-month follow-up. Tablet

Triphala Guggulu were used to counter inflammation, pain and to prevent infection. *Triphala Guggulu* tablets were utilized to alleviate inflammation, relieve pain, and guard against infection. *Triphala*

guggulu has demonstrated antimicrobial properties. [20] Thus, it may be useful in prevention of infection and promote wound healing also. *Triphala* has antibacterial action against a variety of Gram-positive and Gram-negative bacteria and immunomodulatory effect.[21] And as per *Ayurveda*, *Triphala* exhibits *Anulomana* properties, which helps balance *Apana Vata* and promotes smooth bowel movements. The local use of *Jatyadi Taila* is said to notably enhance the levels of protein, hydroxyproline, and hexosamine in granulation tissue, facilitating quicker healing. [22] So, IFTAK is a sophisticated and efficient method in the area of fistula that features significant innovation and numerous advantages. Additionally, *Aragwadhadi varti* functions like the cherry atop a cake when it comes to cleaning the fistulous tract, enhancing wound healing, and preventing fibrosis following complete recovery.

CONCLUSION

Therefore, the research concluded that IFTAK, in conjunction with the use of *Aragwadhadi Varti*, is a secure, efficient, and progressive method that reduces post-operative duration while improving mild postprocedural pain and minimizing scar marks.

REFERENCES

1. Kumar A, Bilyan A. IFTAK an innovative technique in fistula in ano-A case study. Ayur pub 2018; 2:771e5.
2. Sushruta Samhita, Part-I, Ayurveda Tatwa Sandeepika Hindi Commentary, Edited by Kaviraj Ambika Dutta Shastri, Sutrastana- Avarniya Adhyaya 33/4, Chaukhamba Sanskrit Sansthan, Varanasi, Edition-13, 2002, Page no. 126.
3. Limura E, Giordano P. Modern management of anal fistula. World J Gastroenterol 2015;21(1):12e20. <https://doi.org/10.3748/wjg.v21.i1.12>.
4. Charaka Samhita, part 2, uttarardha, Vidyotini Teeka Hindi commentary, edited by Kashinath pandey shastri, chikitsa sthana – swayathu chikitsa 12/97, Chaukhamba Sanskrit sansthan, Varanasi, Edition 13, 2021, Page no – 342.
5. Diwan S, Kumar P, Gupta SJ. IFTAK-An advanced technique of Kshara Sutrathrapy in management of complex Fistula-In-Ano-A Case Study. J Ayurveda Integrated Med Sci 2019;3(6):181e4
6. Kumar A. Current trends in the usage of ksharakarma (alkaline therapy) and ksharasutra (alkaline seton) for managing bhagandhara (fistula -in ano). J. res. tradit. med 2018;4(2):70e7.
7. Sushruta, Sushruta Samhita, Part-I, Ayurveda Tatwa Sandeepika Hindi Commentary, Edited by Kaviraj Ambika Dutta Shastri, chikitsa sthana Bhagandara chikitsa Adhyaya 8/30, Chaukhamba Sanskrit Sansthan, Varanasi, Edition-13, 2002, Page no. 60.
8. Sushruta, Sushruta Samhita, Part-I, Ayurveda Tatwa Sandeepika Hindi Commentary, Edited by Kaviraj Ambika Dutta Shastri, chikitsa sthana Bhagandara chikitsa Adhyaya 8/30, Chaukhamba Sanskrit Sansthan, Varanasi, Edition-13, 2002, Page no. 60.
9. Senthil Kumar M, Sripriya R, Vijaya Raghavan H, Sehgal PK. Wound healing potential of Cassia fistula on infected albino rat model. J Surg Res. 2006 Apr; 131(2):283-9. doi: 10.1016/j.jss.2005.08.025. Epub 2005 Oct 20. PMID: 16242721.
10. Tejada S, Manayi A, Daglia M, Nabavi SF, Sureda A, Hajheydari Z, Gortzi O, Pazoki-Toroudi H, Nabavi SM. Wound Healing Effects of Curcumin: A Short Review. Curr Pharm Biotechnol. 2016;17(11):1002-7. doi: 10.2174/1389201017666160721123109. PMID: 27640646.

11. Li J, Li X, Wang C, Zhang M, Ye M, Wang Q. The potential of Valeriana as a traditional Chinese medicine: traditional clinical applications, bioactivities, and phytochemistry. *Front Pharmacol.* 2022 Sep 21;13:973138. doi: 10.3389/fphar.2022.973138. PMID: 36210806; PMCID: PMC9534556.
12. Ahmad Oryan, Esmat Alemzadeh, Ali Moshiri, Biological properties and therapeutic activities of honey in wound healing: A narrative review and meta-analysis, *Journal of Tissue Viability*, Volume 25, Issue 2, 2016, Pages 98-118, <https://doi.org/10.1016/j.jtv.2015.12.002>. (<https://www.sciencedirect.com/science/article/pii/S0965206X15000972>)
13. Sim P, Strudwick XL, Song Y, Cowin AJ, Garg S. Influence of Acidic pH on Wound Healing In Vivo: A Novel Perspective for Wound Treatment. *Int J Mol Sci.* 2022 Nov 7;23(21):13655. doi: 10.3390/ijms232113655. PMID: 36362441; PMCID: PMC9658872.
14. Sim P, Song Y, Yang GN, Cowin AJ, Garg S. In Vitro Wound Healing Properties of Novel Acidic Treatment Regimen in Enhancing Metabolic Activity and Migration of Skin Cells. *Int J Mol Sci.* 2022 Jun 28;23(13):7188. doi: 10.3390/ijms23137188. PMID: 35806191; PMCID: PMC9266998.
15. Sim P, Song Y, Yang GN, Cowin AJ, Garg S. In Vitro Wound Healing Properties of Novel Acidic Treatment Regimen in Enhancing Metabolic Activity and Migration of Skin Cells. *Int J Mol Sci.* 2022 Jun 28;23(13):7188. doi: 10.3390/ijms23137188. PMID: 35806191; PMCID: PMC9266998.
16. Pankaj S, Manoranjan S. Efficacy of Ksharsutra (medicated seton), therapy in the management of fistula-in-ano. *World J Colorectal Surg* 2010;2(2)(Art. 6:01e10).
17. Panigrahi HK, Rani R, Padhi MM, Lavekar GS. Clinical evaluation of Ksharasutra therapy in the management of Bhagandara (fistula-in-ano) da prospective study. *Anc Sci Life* 2009;28(3):29e35 [PMC free article] [PubMed].
18. Dutta G, Bain J, Ray AK, Dey S, Das N, Das B. Comparing Ksharasutra (Ayurvedic Seton) and open fistulotomy in the management of fistula-in-ano. *J NaSci Biol Med* 2015;6(2):406e10. <https://doi.org/10.4103/0976-9668.160022>. PMID: 26283840; PMCID: PMC4518420.
19. Sahu M. published by. In: A manual on fistula in ano and kshara sutra therapy. 1st ed. NRC, Deptt. Of Shalya Tantra, IMS, BHU; 2015.
20. Mhaiskar Bhushan D, Bharat Chouragad Bari Management of non-healing infected wound by external application of and Haridradya Taila Triphala Guggulu. *Joinsysmed* 2017;5(2):130e4.
21. Tarasiuk A, Mosinska P, Fichna J. Triphala: current applications and new perspectives on the treatment of functional gastrointestinal disorders. *Chin Med* 2018;13:39. <https://doi.org/10.1186/s13020-018-0197-6>. PMID: 30034512; PMCID: PMC6052535.
22. Shailajan S1, Menon S, Pednekar S, Singh A. Wound healing efficacy of Jatyadi Taila: in vivo evaluation in rat using excision wound model. *J Ethnopharmacol* 2011;138(1):99e104. <https://doi.org/10.1016/j.jep.2011.08.050>. Epub 2011 Aug 30.