International Journal on Science and Technology (IJSAT)
E-ISSN: 2229-7677 ● Website: www.ijsat.org ● Email: editor@ijsat.org

Interception of Fistulous Track with Application of Ksharsutra (Iftak) Therapy- A Glimpse of New Hope in the Management of Complex Fistula-in-Ano- A Case Study

Manoj Kumar Chaurasiya[1], Neerja Jain[2], Shiv Ji Gupta[3], Ashish Verma[4]

[1, 2]Ph. D. Scholar, [3]Professor, [4]Professor

[1, 2, 3]Department of Shalya Tantra, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

[4]Professor, Department of Radiodiagnosis & Imaging, Faculty of Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

Abstract

Aim of fistula surgery is to eliminate the fistula, prevent recurrence and preserve sphincter function. Many techniques have been put forward by the surgeons worldwide from time to time with high claims of success, but none of them could provide a solution to the two major problems of fistula management, recurrence and incontinence. The main emphasis of IFTAK therapy is laid upon the accurate identification and eradication of the primary site of infection i.e. the infected anal crypt by application of Ksharsutra. Simultaneously, primary track or its branches are allowed to heal by cutting them off from this primary source of infection at the site of interception. Even multiple tracks or branches can be dealt effectively through a single, small, cosmetic incision without the need of laying open or curetting them. It reduces the duration of therapy up to 70% in comparison to conventional Ksharasutra therapy. Being a sound manner of treatment, more and more working hands are needed to blow out the knowledge and profit the Medical science. So it is high stint to undertake such therapy which can scientifically demonstrate the principle of fistula management. This may lead to new fangled magnitudes for understanding of fistula treatment.

Keywords: IFTAK Therapy, Fistula-in-ano, *Ksharsutra*

Introduction

Fistula in ano is classified on the basis of pathogenesis of the disease and the normal muscular anatomy of the pelvic floor. In *Ayurveda* classics, according to similar clinical features the disease *Bhagandara* can be correlated with fistula in ano. Acharya Sushruta counted *Bhagandara* among the eight diseases which are difficult to cure [1]. At first it presents as *Pidika* around the *Guda* and when it bursts out, it is called *Bhagandara* [2]. There are various classifications for fistula in ano but none of them has gained a universal acceptance. Parks et. al. (1976) classified fistula in ano, which takes into account pathogenesis and the course of anal fistula [3]. It emphasized specially upon the relationship of fistulous track to the external sphincter and is still used in practice to describe the fistula-1. Intersphincteric- most commonly

noted (45%) 2. Transsphincteric 3. Supra sphincteric 4. Extra sphincteric. As we know, MRI is now considered as one of the most and accurate tool in diagnosis and describing fistula in ano. Hence, another important classification (St. James's University Hospital MR Imaging Classification of Perianal Fistulae) is widely practiced nowadays by the Radiologist [4].

The aim of surgery for anal fistula is to cure the patient with minimal or no sequela. If the surgeon is too conservative, the fistula may persist or recur after a short period of "healing" but the patient's continence is preserved. On the other hand, if the surgeon is too aggressive, a false passage may be created, or the fistula may heal with varying degrees of disturbance of continence. So to follow the dictum of "primum non nocere," it takes an accurate assessment of the fistula and an experienced surgeon who deals with fistulas on a daily basis to perform the appropriate operation and prevent postsurgical incontinence [5].

During the last century, number of surgical procedures have been developed to minimize the recurrence and to prevent damage to the anal sphincter muscles in high anal fistulae. Fistulotomy, Fistulectomy, Cutting Setons, loose Setons, endorectal advancement flaps and dermal advancement flaps, have all been used as an alternative to fistulotomy with variable success rates [6]. Each of these procedures carries significant risk of pain, healing complications and incontinence. This has led surgeons to switch to alternative methods of treatment like fibrin glue, anal fistula plug which do not carry any risk of sphincter function impairment and allow the patients an early return to activities. However, despite the development of these new techniques, management of fistula in ano is still a complex surgical problem [7]. Several methods have been proposed time to time for the better management of Fistula in ano with variable recurrence rates and Incontinence rates-

S. No.	Procedures	Recurrence Rate	Incontinence Rate	Comments
1.	Loose seton alone (Williamson JG et.al.1991)	25%	8%	54.8 weeks (very long duration)
2.	Loose seton with staged Fistulotomy (Garcia et.al.1998)	09%	66%	Problem in healing, repair failure
3.	Cutting seton (pressure necrosis) (Williamson JG et.al.1991)	0 to 29%	0 to 64%	Pain is main problem, pressure necrosis
4.	Fistulotomy (Garcia et.al. 2000)	61%	24%	Wound contamination and healing problem
5.	Fistulotomy with sphincter construction (Rovig et.al. 2010)	11%	21%	Prolonged and delayed healing 80% cases

6.	Fistulectomy (Toyanga et.al 2007)	6%	17%	Healing time more
7.	Fibrin glue (Sntovitch SM et.al. 2003)	40-60%	Nil	Repeated injections needed, cost is high and less availability
8.	Synthetic plug (Venkatesh KS)	40%	Nil	Complex operative procedure
9.	Endo-rectal advancement flap (Mitalas et.al 2009)	41%	Nil	Needs experienced surgeons
10.	Ano-cutaneous dermal flap with V-Y plasty (Jun SH et.al. 1999)	15%	Nil	Wound contamination chances are more
11.	LIFT (Wallin UG et. al. 20120	60%	5%	Success rates decreased in complex cases
12.	VAAFT (Munero et.al. 2011)	23.9%	Nil	Lengthy procedure and needs costly setup
13.	Chemical seton Guggulu Ksharsutra (Srivastav P, Sahu M et.al. 2010)	3.3%	Nil	Comparatively very less recurrence than above modalities.
14.	IFTAK (Sahu M et. al. 2007)	3-7% (two year follow up)	Nil	Site of interception get narrowed periodically.

Successful treatment of Complex fistula in ano still poses a big challenge to the surgical community. Many techniques have been put forward by the surgeons worldwide from time to time with high claims of success but none of them could provide a solution to the two major problems of fistula management, recurrence and incontinence. However, IFTAK can provide an answer to these [8].

Principle

This technique of treatment is based on the Park's concept of cryptoglandular origin of fistula in ano. The basic idea of IFTAK technique is emerged while observing and treating patients of horse shoe type fistula in ano. It was observed that though there are external openings on either side of anal orifice in horse shoe type fistula, there is a common internal opening and cryptoglandular infection. The ksharsutra applied in one arm of the track, eradicated the infected crypt and causes spontaneous healing

of other arm too. With this observation, it appears that there is no need to core out the whole fistulous track. The basis of the procedure is to intercept the fistulous track at external sphincter level so that the distal track get separated from the primary source of infection and to eradicate the infected anal crypts at the level of pectinate line using a ksharsutra (medicated seton) without laying open of the distal part of fistulous track up to the site of interception which gradually heals. Identification of the anal crypts is the most crucial step in IFTAK technique, and if failed to identify, recurrence occurs invariably.

The important steps are-

1. Identification of the infected anal crypt.

2. Interception of fistulous track at the level of external sphincter.

3. Application of ksharsutra from the site of interception into the proximal track to eradicate infected anal crypt.

Indications of IFTAK Therapy- IFTAK therapy may be applied in high trans-sphincteric fistula-in-ano, Complex fistula with extension of track up to scrotum, gluteus, thigh, abdomen, anterior or posterior horse shoe shape fistula, fistula with supralevator extension, blind internal fistula with post anal space abscess, circumferential fistula which covers more than 2/3rd part around anus, Intersphincteric fistula with extension in periprostatic area etc. IFTAK technique is not suitable for the treatment of extrasphincteric and non-cryptoglandular fistula in ano.

Surgical steps of IFTAK technique-

IFTAK should be performed in lithotomy position.

1. Identification of infected anal crypt and internal opening with Digital Rectal Examination (DRE) - Following features may help to identify the internal opening and the infected anal crypt such as- Internal opening usually present in the midline, mostly posteriorly, pus discharge after application of pressure over the fistulous track, presence of puckering or scar, induration on bidigital palpation and commonly the most tender point with scarring or dimpling at the dentate line.

2. Infiltration of Local Anaesthesia- IFTAK procedure usually done under regional or local anaesthesia using 0.5 % Lignocaine with adrenaline using long needle such as 1.5 inches or more in length with fine bore (24 to 26 G) to block the deeper tissues in and around anal canal, sphincter muscles along with local area. Index finger can be kept inside the anal canal to exert gentle counter pressure for effective infiltration at required site.

3. Assessment of Fistulous track and its branching with the help of malleable probe- Assessment of Fistulous track is done by passing malleable silver or copper probe through external opening. Probing also delineate track in case of multiple external openings. It must be done with extreme care otherwise it may cause undue pain and may create false track. After probing, 2 to 2.5 cm anterior or posterior linear vertical incision made.

4. Dissection of the Fistulous track- Two ways.

(a) Sphincter Sparing method- This method is adopted when fistulous track travels anterior to the sphincter complex. In this method, splitting of sphincter muscle is not required and only the fistulous track is intercepted.

(b) Sphincter Splitting method- When the fistulous track travels under the sphincter muscle, then dissection is done by splitting the sphincter. If fistulous track is associated with an abscess cavity, then splitting of sphincter muscle helps in adequate drainage of the abscess cavity and drainage.

5. Interception of Fistulous track- After dissection of the Fistulous track, interception of the fistulous track is done at the level of external sphincter.

6. Opening of the Abscess cavity (if any) by fine dissection in Intersphincteric space- Fistula extending at a higher level into the intersphincteric plane, supralevator or periprostatic area, deep post anal or high transsphincteric fistula with gluteal or perineal extension are otherwise difficult to treat and can be effectively managed by this technique. IFTAK technique is equally effective in blind track extending to all above areas. In these cases, the fistulous track or the abscess cavity is approached by making an incision at intersphincteric level and track is intercepted. The intercepted track is widened further so that abscess cavity can be drained effectively. Ksharsutra is placed through the intercepted track into the internal opening to eradicate the source of infection i.e. the infected anal gland. It also helps in continuous drainage of abscess cavity which is further facilitated by regular dressing for a few days. Persistent effective drainage, removal of slough tissue and eradication of infected anal crypt due to application of ksharsutra progressively reduce the size of abscess cavity, control the local infection and convert a complex fistula to a simple one.

7. Probing through intercepted track to the infected anal crypt- After interception of the fistulous track, probe passed through the intercepted track upto the internal opening.

8. Application of Linen thread followed by Ksharsutra- After probing through the intercepted track upto the internal opening, surgical linen thread number 20 is applied. After 1 week, surgical linen thread is subsequently replaced by Ksharsutra [9, 10 &11] weekly till the complete lay open of the intercepted track. Dressing of the wound with gauze piece shoaked in antiseptic preparation like priyngwadi taila or Jatyadi taila [12] must be done for 4 to 5 days for pus drainage and to make the window patent.

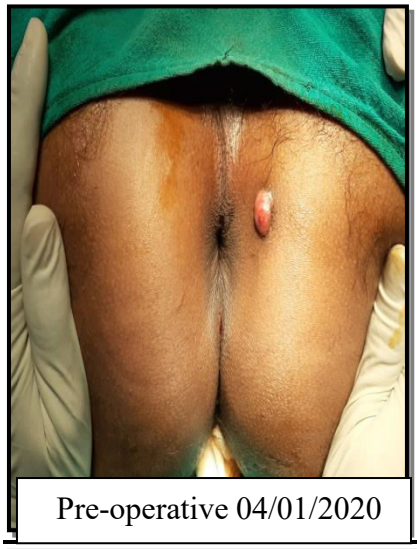
Advantages of the IFTAK technique-

1. It is a simple, safe effective and minimal invasive technique for complex fistula in ano with success rate (nearly 96 %).
2. It does not require laying open of the entire track, hence scar formation is minimal.
3. It is an ambulatory day care procedure.
4. It reduces the duration of therapy upto 70 percent in comparison to conventional ksharsutra therapy.
5. There is minimal damage to the anal sphincter complex, hence there is negligible chances of complications like incontinence or stricture.
6. The recurrence rate after two years follow up is only 3 to 7 percent [13].
7. Pain and discomfort are much less as the size of wound is small.
8. It does not require any costly sophisticated equipment.

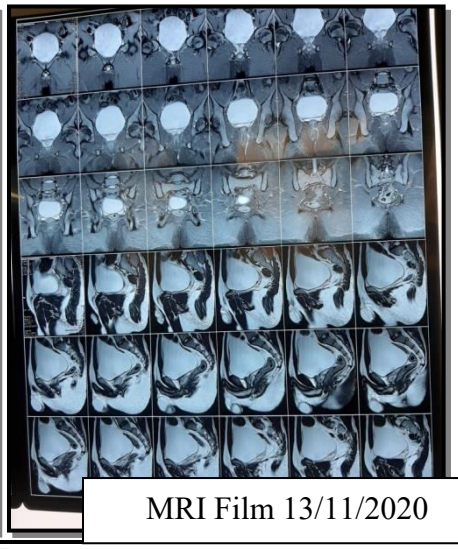
9. The cost of treatment is less in comparison to conventional ksharsutra therapy and other surgical procedure.

Disadvantages of IFTAK technique- The site of interception (window) of the fistulous track get narrowed periodically due to healing causing inadequate drainage. Hence, periodical widening of the intercepted site is required to facilitate proper drainage.

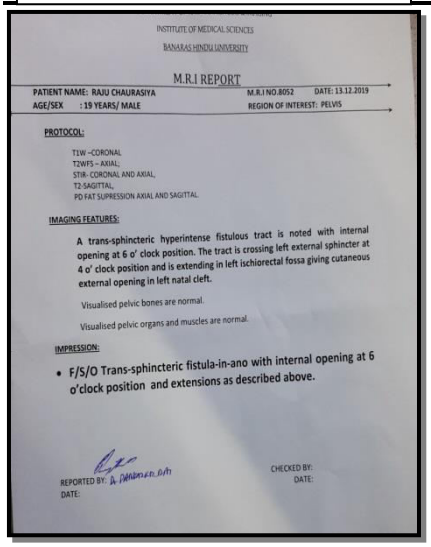
Discussion of A case of Complex Fistula in Ano - A 19 year old patient complaining of pus discharge through perianal region and from 6 month. After Proper Digital Rectal Examination, routine investigations and Magnetic Resonance Imaging of Pelvis for Fistula in Ano, Posterior IFTAK was performed on 04 January 2020. Proper dressing with Jatyadi tail was done to make the window patent so that the pus subsequently comes out via window. Ksharsutra was changed weekly till complete laying open of the fistulous track with proper cleaning and dressing. A post operative MRI Pelvis was also performed when patient was completely free from any sign and symptoms of Fistula in Ano. Patient was followed up since 6 months after complete lay opening of the fistulous track i.e. self cut through.



Pre-operative 04/01/2020



MRI Film 13/11/2020



INSTITUTE OF MEDICAL SCIENCES
BANARAS HINDU UNIVERSITY

M.R.I REPORT

PATIENT NAME: RAJU CHAURASIYA M.R.I NO.8052 DATE: 13.12.2019
AGE/SEX : 19 YEARS/ MALE REGION OF INTEREST: PELVIS

PROTOCOL:

T1W –CORONAL
T2WFS – AXIAL,
STIR- CORONAL AND AXIAL,
T2-SAGITTAL,
PD FAT SUPRESSION AXIAL AND SAGITTAL

IMAGING FEATURES:

A trans-sphincteric hyperintense fistulous tract is noted with internal opening at 6 o' clock position. The tract is crossing left external sphincter at 4 o' clock position and is extending in left ischiorectal fossa giving cutaneous external opening in left natal cleft.

Visualised pelvic bones are normal.

Visualised pelvic organs and muscles are normal.

IMPRESSION:

- F/S/O Trans-sphincteric fistula-in-ano with internal opening at 6 o'clock position and extensions as described above.

REPORTED BY: DR. DHARMENDRA
DATE:

CHECKED BY:
DATE:

MRI Report 13/11/2020

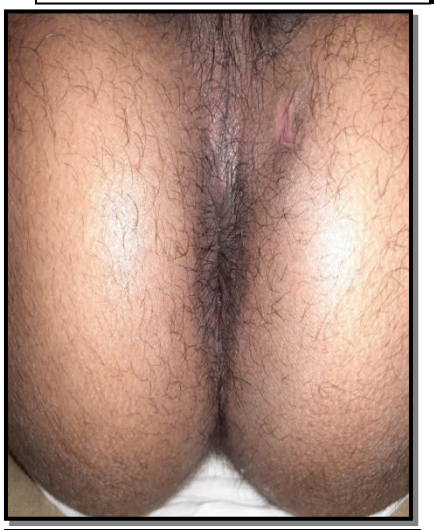
IFTAK- 04/01/2020

15/01/2020

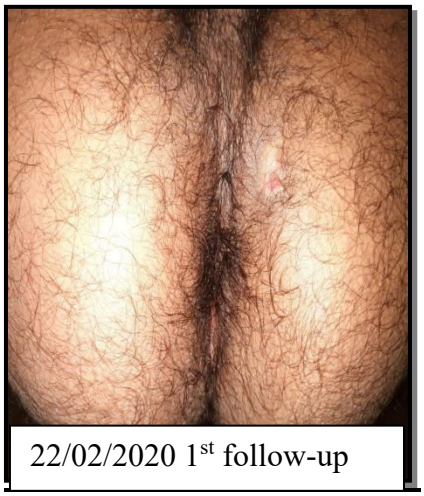
22/01/2020

29/01/2020

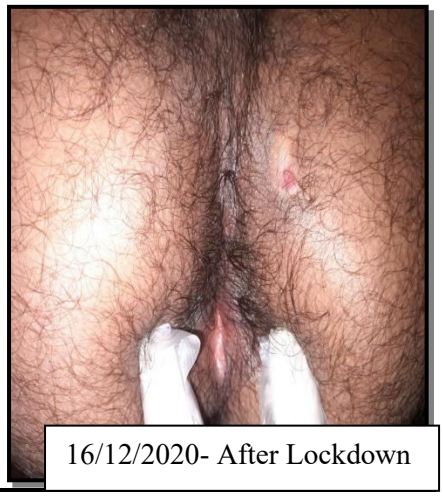
05/02/2020



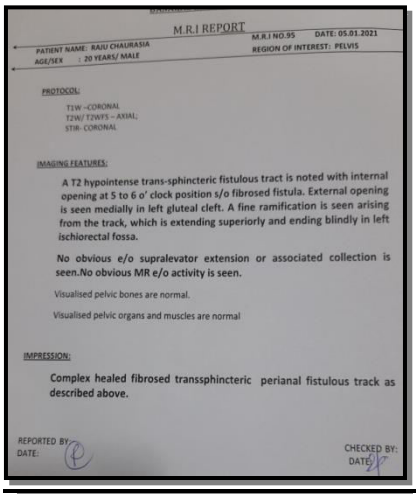
Self Cut through 15/02/2020



22/02/2020 1st follow-up



16/12/2020- After Lockdown



M.R.I REPORT

PATIENT NAME: RAJU CHAURASIA
AGE/SEX : 20 YEARS/ MALE
M.R.I NO.95 DATE: 05.01.2021
REGION OF INTEREST: PELVIS

PROTOCOL:
T1W –CORONAL
T2W/ T2WFS – AXIAL;
STIR- CORONAL

IMAGING FEATURES:

A T2 hypointense trans-sphincteric fistulous tract is noted with internal opening at 5 to 6 o' clock position s/o fibrosed fistula. External opening is seen medially in left gluteal cleft. A fine ramification is seen arising from the track, which is extending superiorly and ending blindly in left ischiorectal fossa.

No obvious e/o supralevator extension or associated collection is seen.No obvious MR e/o activity is seen.

Visualised pelvic bones are normal.

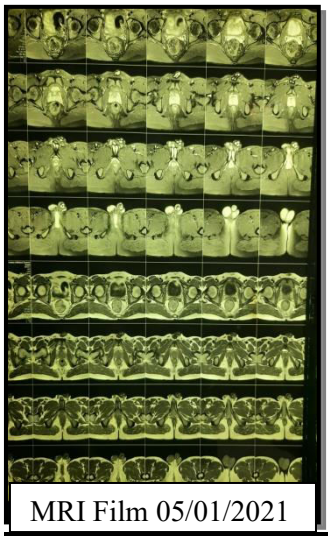
Visualised pelvic organs and muscles are normal

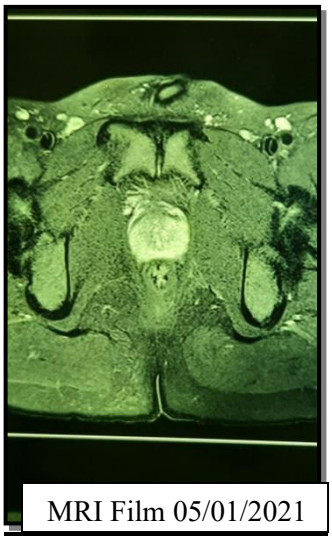
IMPRESSION:

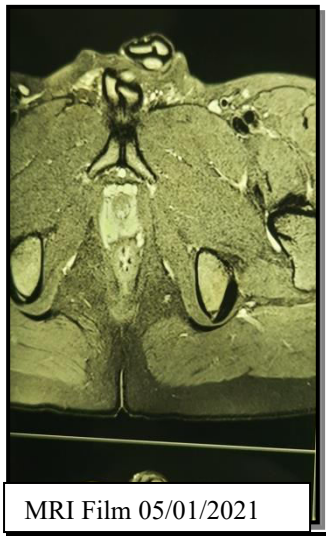
Complex healed fibrosed transsphincteric perianal fistulous track as described above.

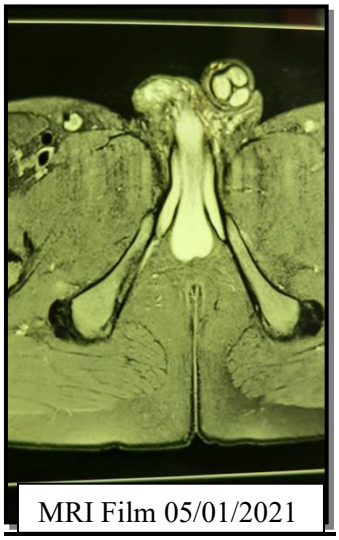
REPORTED BY:
DATE:
CHECKED BY:
DATE:

MRI Report 05/01/2021


MRI Film 05/01/2021


MRI Film 05/01/2021


MRI Film 05/01/2021


MRI Film 05/01/2021

Discussion-

Conventional ksharsutra therapy is the most successful treatment modality in the management of Fistula in Ano. It has high success rate [14] and least recurrence rate (3.33%) [15]. Ksharsutra therapy is very easy day care and cost effective procedure with minimum complications as compared to other conventional treatment modalities of fistula in ano management which requires longer hospital stay, general or regional anaesthesia, and regular post-operative care. These surgical treatment are associated with a significant risk of recurrence (0.7 – 26.5%) and high risk of incontinence (5-40%) [16]. Though the Ksharsutra therapy is choice of treatment for fistula in ano with number of benefits but it has few disadvantages such as discomfort, post-operative pain, number of hospital visits, longer duration of treatment, large post-operative scar, time taking and costly which lead to low compliance and low acceptability by many patients [17]. IFTAK (Interception of Fistulous Track with Application of Ksharsutra) therapy seems to overcome the limitations and consequences of conventional method.

The main problems in the management of complex fistula-in-ano are-

1. Eradication of infection of complex fistula-in-ano will done enthusiastically, damage of anal sphincter may occurs leads to incontinence.

2. During any surgical procedures in the management of complex fistula-in-ano, if it is tried to protect the sphincter complex, residual infection/track may persist which leads to recurrence of the disease.

IFTAK is a novel, minimal invasive technique where the main emphasis is laid upon the accurate identification and eradication of the primary site of infection i.e. the infected anal crypt by the application of Ksharsutra. Simultaneously, the primary track or its branches are allowed to heal by cutting them off from this primary source of infection at the site of interception. Even multiple tracks or branches can be dealt effectively through a single, small, cosmetic incision without the need of laying open or curetting them. This technique converts complexity of fistulas into simplicity by making a window and interception of fistulous track by sphincter sparing and sphincter splitting techniques. It reduces the duration of therapy up to 70% in comparison to conventional Ksharasutra therapy [18].

Conclusion-

Successful treatment of complex fistula in ano still poses a big challenge to the surgical community. With high rate of success (96%), relatively low recurrence (3-7%) [19] in two year follow-up and practically negligible chances of complications like incontinence, IFTAK can be opted as treatment of choice for the management of complex and recurrent fistula in ano. It can be concluded that IFTAK is a safe, minimal invasive, effective and advanced technique which minimizes the post-operative time duration along with betterment in mild post procedural pain with minimal or no scar marks. The correct identification of the site of cryptoglandular infection and its prompt eradication rather than dealing with the track or the branches is the main principle behind the IFTAK therapy.

References-

[1] Sushruta, Sushruta Samhita. In; Shastri A, editor, Sutra sthan, Avaraniyaadhayay, 33/4. 12th ed. Varanasi, Chaukhambha Sanskrita Sansthana; 2009. P. 163.

[2] Sushruta, Sushruta Samhita. In; Shastri A, editor, Nidana sthan, Bhagandar Nidan, 4/8. 12th ed. Varanasi, Chaukhambha Sanskrita Sansthana; 2009. P. 319.

[3] A classification of fistula-in-ano; Parks AG, Gordon PH and Hardcastle JD, The British journal of surgery 1976; 63: 1 – 12.

[4] MR Imaging classification of perianal fistulas and its implications for patient management; John Morris, John A, Spencer, N. Simon Ambrose. RG, Vol. 20, No. 3, May-June 2000, 623-635.

[5] Principles and management of Anal Fistula, Springer, 2014.

[6] Limura E, Giordano P, Modern management of anal fistula, World J Gastro-enterol 2015; 21(1): 12-20 https://doi.org/10.3748/wjg.v21.11.12.

[7] Sahu M, A Manual on Fistula in ano and Ksharsutra therapy- 1st ed. NRC Department of Shalya Tantra IMS BHU; 2015.

[8] Sahu M, A Manual on Fistula in ano and Ksharsutra therapy- 1st ed. NRC Department of Shalya Tantra IMS BHU; 2015.

[9] Pankaj S, Sahu M, Efficacy of ksharsutra (medicated seton) therapy in the management of fistula-in-ano. World J colorectal surgery 2010; 2(2) (Art-6; 01-10).

[10] Deshpandey PJ, Sharma KR, Treatment of fistula in anorectal region, review and follow up of 200 cases. Am J Protocol1973; 24: 49-60.

[11] Diwan S, Kumar P, Gupta SJ. IFTAK- An advanced technique of kshara sutra therapy in the management of complex fistula-in-ano- A case study, J Ayurveda Integrated Med Sci 2019; 3(6). 181-4 (ISSN 2456-3110).

[12] ShailajanS1, Menon S, Pednekar S, Singh A. A Wound Healing efficacy of Jatyadi Tail: in vivo evaluation in rat using excision wound model. J Ethnopharmacol 2011; 138(1); 99-104. https://doi.org/10.1016/j.jep.2011.08.050. Epub 2011Aug 30.

[13] Sahu M, A Manual on Fistula in ano and Ksharsutra therapy- 1st ed. NRC Department of Shalya Tantra IMS BHU; 2015.

[14] Pankaj S, Sahu M, Efficacy of ksharsutra (medicated seton) therapy in the management of fistula-in-ano. World J colorectal surgery 2010; 2(2) (Art-6; 01-10).

[15] Panigrahi HK, Rani R, Padhi MM, Lavekar GS. Clinical evaluation of ksharsutra therapy in the management of Bhagandara (Fistula-in-ano) – a prospective study. Anc Sci Life 2009; 28(3); 29-35. [PMC free article] [PubMed].

[16] Dutta G, Bain J, Ray AK, Dey S, Das N, Das B. Comparing ksharsutra (Ayurvedic Seton) and open fistulotomy in the management of fistula-in-ano. J Nat Sci Biol Med 2015; 6(2): 406-10. https://doi.org/10.4103/0976-9668.160022. PMID; 26283840; PMCID:PMC4518420.

[17] Sherkhane R, Meena P, Hanifa N, Mahanta VD, Gupta SK. IFTAK Technique; An advanced ksharsutra technique for management of fistula in ano, J Ayurveda Integr Med, https://doi.org/10.1016/j.jaim.2020.06.005.

[18] Sahu M, A Manual on Fistula in ano and Ksharsutra therapy- 1st ed. NRC Department of Shalya Tantra IMS BHU; 2015.

[19] Sahu M, A Manual on Fistula in ano and Ksharsutra therapy- 1st ed. NRC Department of Shalya Tantra IMS BHU; 2015.