



Research Article

www.ijrap.net



KSHARASUTRA THERAPY - A MINIMAL INVASIVE PARASURGICAL METHOD IN THE TREATMENT OF SACROCOCCYGEAL PILONIDAL SINUS (NADI VRANA): RESULT OF A PILOT STUDY

Panigrahi Hemanta^{1*}, Rana Rakesh Kumar², Rao M.M.³

¹Scientist-2, Ayurveda Central Research Institute, CCRAS (Ministry of H and F.W. Govt. of India) New Delhi, India

²Statistical Officer, CCRAS (Ministry of H and F.W. Govt. of India), Janakpuri, New Delhi, India

³Director (Institute), Ayurveda Central Research Institute (Ministry of H and F.W. Govt. of, of India), New Delhi, India

Received on: 06/06/12 Revised on: 12/07/12 Accepted on: 01/09/12

*Corresponding author

Dr. Hemanta Kumar panigrahi, M.D (Ay.), Ph.D, Scientist-2, Consultant Physician, Supreme court of India, CCRAS, Dept. of AYUSH, Ministry of Health and Family Welfare, Govt. Of India, New Delhi, India Email: drhemanta@sify.com

DOI: 10.7897/2277-4343.03518

Published by Moksha Publishing House. Website www.mokshaph.com

All rights reserved.

ABSTRACT

Many treatment methods have been applied in the treatment of Sacrococcygeal Pilonidal Sinus (Nadi vrana) disease (PSD). Our observations demonstrated Efficacy of Ksharasutra therapy –A minimal invasive Para surgical method in Sacrococcygeal Pilonidal Sinus (Nadi vrana) Disease (Nadi vrana). 20 patients were treated (3 women, 17 men) with PSD by Ksharasutra therapy. All patients were treated on an outpatient basis in the minor Ksharasutra operation theater in ACRI, New Delhi. The mean age was 27 years (18–60). The median length of symptoms was seven months. In the 1 year of mean follow-up period, the disease recurred in 2 patients. This treatment procedure was well-tolerated by all the patients. Time off work was on average one day with an MSD 1.75 and SD 0.766485. No patient had skin necrosis or any other complications during the therapy. Recurrence of the disease in two patients was found. Mean Time required for wound healing in week was 10.8 with SD 2.501999. 1(5%) patient had wound infection. It is possible to treat patients in a shorter time with a considerably smaller loss of working time, since the destruction of peripilonidal adipose tissue and skin is less and reoccurrence of the disease is also less, therefore, the use of Ksharasutra therapy in Sacrococcygeal Pilonidal Sinus (Nadi vrana) is an option to be considered in the treatment of PSD.

Keywords: Sacrococcygeal Pilonidal Sinus, Shalya Tantra, Shalyaja Nadi Vrana chikitsa, Kshar Sutra.

INTRODUCTION

Sacrococcygeal Pilonidal Sinus (Nadi vrana) disease (PSD) is a common problem especially in young hirsute men. Herbert Mayo is reported to have published the first case of PSD in 1833¹ and many surgical techniques have been described and performed since the 1880s as treatment for chronic PSD.² Surgical methods generally emphasized on excision of the sinus tracts followed by primary midline and off-midline closure or leaving the wound open to heal by secondary intention.³ After the onset of puberty, sex hormones affect the pilosebaceous glands, and subsequently, the hair follicle becomes distended with keratin. As a result, a folliculitis develops that produces edema and follicle occlusion. The infection tracks away from the surface in the trajectory of the occluded follicle. This usually places the tracking follicle approximately 5-8 cm from the anus. The laterally communicating sinus overlying the sacrum is created as the Pilonidal abscess spontaneously drains to the skin surface. The original sinus tract from the natal cleft becomes an epithelialized tube. The laterally draining tract becomes a granulating sinus tract opening. This disease clinically simulate with Shalyaj Nadi Vrana described by Sushruta in Sushruta Samhita. Sushruta has mentioned a minimally invasive Para-surgical treatment, viz., Kshar Sutra procedure, for nadi vrana⁴.

Sushruta in Chikitsasthan chapter 17, verse 29 to 33 described about the indication of Ksharasutra in Nadivrana. The objective of this study was to establish the

effectiveness of Ksharasutra therapy in the management of Sacrococcygeal Pilonidal disease (Nadivrana).

PATIENTS AND METHODS

Study Design: Pilot study

Study Type: Interventional

Intervention Model: Single Group Assignment

Masking: Open Label

Study Duration: Six months

Sampling Technique: Non-probable

Purposive/Judgmental sampling

Inclusion criteria

- Pilonidal sinus disease of the intergluteal region
- Primary disease.
- Ages between 18 and 60, both gender.
- No evidence of Malignancy

Exclusion Criteria

- Recurrent Sacrococcygeal Pilonidal Sinus (Nadi vrana) disease
- Denial to sign informed consent.
- Associated with Malignancy.

Data Collection Procedure

All the data like age, sex, operative time, hospital stay, time of wound healing and recurrence were recorded on proforma. Results were recorded with regards to operating time, hospital stay, time of wound healing, time off work and recurrence. The average unit cutting time was calculated in the following manner.

$$\text{Unit cutting time (UCT)} = \frac{\text{Total number of days of Ksharasutra Treatment}}{\text{Initial length of the tract (Ksharasutra)}}$$

Procure of Drugs and Kshara sutra

It is prepared by 11 coats of Snuhi Latex (Latex of *Euphorbia nerifolia*), 7coats of Apamarga Kshara (Caustic obtained from *Achiranthus aspara*), 3 coats of Guggulu (*Commiphora mukul*) and Haridra (*Curcuma longa*) at ACRI, New Delhi. Panchbalkal Kashaya, Shigru guggulu and Jatyadi tail was procured from Indian Medicines Pharmaceutical Corporation Ltd., India.

Preoperative preparation

Patients were usually taken up as day care on the day of surgery. Natal cleft skin was shaved and disinfected with full-strength povidone-iodine solution 10 minute before the Para surgical procedure. Routine Hematological examination like TLC, DLC, Hb, ESR, Blood sugar, Hbs Ag, HIV1, and HIV2 were done prior to Para surgical procedure.

Operation

Procedure was performed by the first author under local infiltration of 10ml of 2% Xylocaine. Proctoscopy was performed in search of an abnormality of the anal canal like pus coming out of the internal opening or hypertrophied anal papilla. The external opening was

probed gently and the 2nd opening was recognized by probing the sinus tract. And at the same time its handle is pushed upwards in order to make the tip of probe to protrude outside the sinus tract in sacrococcygeal region. The probe is pulled downward and the handle is pushed upwards till the tip of the probe protrudes out. Then the eye of the probe was threaded with Kshara sutra. The probe is now gently withdrawn so that the entire tract of the Sinus is threaded by Kshara sutra. Then two ends of the thread are now snugly tied outside. Then local dressing with Betadine solution followed by instillation of Jatyadi Tail was done and the patient surgical portion was bandaged with cotton pad.

Postoperative management

All the patients were given Shigru Guggulu in a dose of 500mg twice in a day with warm water. Washing with Panchbalkal kasaya daily followed by Jatyadi Tail local application was advised. Patients were allowed to go home just after Para surgical procedure. Ksharasutra was changed weekly by rail road technique and length was measured and recorded.

Table 1: Statistical Analysis

| Paired Samples t test | | Mean | N | Std. Deviation | t | df | p-value | Significant |
|-------------------------------|----|-------|----|----------------|--------|----|---------|-------------|
| Purulent Discharge | BT | 10.30 | 20 | 2.430 | 16.268 | 19 | .000 | Significant |
| | AT | 0.75 | 20 | 0.716 | | | | |
| Pain in Sacrococcygeal region | BT | 7.70 | 20 | 1.031 | 24.327 | 19 | .000 | Significant |
| | AT | 0.45 | 20 | 0.605 | | | | |
| Inflammation | BT | 6.15 | 20 | 0.875 | 21.708 | 19 | .000 | Significant |
| | AT | 0.45 | 20 | 0.605 | | | | |

Table 2: Outcome Result

| | | Mean ±SD | N | ±SD |
|--------------------------|----|----------|----|----------|
| Time taken to Heal | AT | 10.8 | 20 | 2.501999 |
| Time off work days | AT | 1.75 | 20 | 0.766485 |
| Operative Time in Minute | AT | 12.45 | 20 | 2.710627 |



Figure 1: Probing of the sinus tract



Figure 2: Ksharasutra Ligation



Figure 3: Healed tract after Treatment

RESULTS

A total of 20 patients were included in the study, out of which 17 (85%) were males and 3(15%) were females. Mean age of patients was 27 years (ranging 18-60 years). The operative time calculated from the start of skin incision to the application of dressing, which was shorter in treated group (15 min) with MSD 12.45 and SD 2.710627. No Hospital stay was required. Mean Time required for wound healing in week was 10.8 with SD 2.501999. Time off work was also shorter. On average it was one day with MSD 1.75 and SD 0.766485. During this study we also observed that there was very minimal wound complication like infection and abscess. Out of 20 patients 1 (5%) patient had wound infection. All the

patients were advised to follow up for 18 months. First visit at 6th week than 3, 6, 12 months. Two patients did not turn up for follow up and 1 (5%) patient had recurrence of the disease.

DISCUSSION

Pilonidal sinus is a surgical condition occurring in young adults having high postoperative reoccurrence rate. Ideal therapy for the Sacrococcygeal Pilonidal Sinus (Nadi vrana) should be associated with minimum complication and minimal disease recurrence but this is difficult to achieve. During this study a total of 20 cases were operated by Ksharasutra technique for Sacrococcygeal Pilonidal Sinus (Nadi vrana) disease. Regarding

demographic data of patients, 17 (85%) of the patients was male, which is similar to those reported by Tocchi and coworkers (72%)³. Vatakaphaja persons were more predilectation to the disease. It was also observed that the disease commonly found in hirsute, obese, and who wears tight clothes.

Mean age was 27 years and most of the patients were obese and hairy. These observations are in accordance with other studies⁶. We observed that the operative time for the patients was shorter (10-20 min) with minimal blood loss. In our study patients did not require hospital stay. Time of wound healing in days was little more. Mean time off work for patients was 1 day. Purulent discharge, pain in sacrococcygeal region, and Inflammation subsides significantly in almost all the patients. Ksharasutra contains latex of Euphorbia (Snuhi) which is proteolytic in nature, therefore dissolves the fibrous tissue of Sinus tract⁹. Apamarg Kshar is Alkali in nature, which debrides the sinus tract and liquidates the thick pus⁸. It keeps the tract clean and helps in drainage of pus. Turmeric powder is anti-allergic, anti septic and a wound healer and hence it exerts antiseptic action and causes wound healing⁷. Special linen thread holds the medicines with the help of latex for 3-4 days in the Sinus Tract and act as an ideal drug delivery media. Physical presence of Ksharasutra in the Sinus Tract keeps the passage patent and helps in the drainage of pus. Ksharasutra ligation exerts mechanical pressure along with chemical cauterization. Therefore, in the initial 3 days there is cutting of the tract. After cutting the sinus tract by Ksharasutra in initial days the follow-up of 3-4 days is the healing time for the wound. Therefore, cutting and healing of tract per week is achieved. As cutting and healing go side by side there is no gap or recess for accumulation of pus in the cavity. Sigru gugulu is anti inflammatory, analgesic, Panchvalk kasaya is also anti bacterial and antiseptic action. Jatyadi tail heals the wound. Regarding the recurrence of the sinus in our study we observed that patients who underwent Ksharasutra Therapy have minimal reoccurrence rate. No side effects or complications were noted during the study.

CONCLUSION AND RECOMMENDATIONS

Sacrococcygeal Pilonidal Sinus (Nadi vrana) is a complex problem requires multidisciplinary approach. Ksharasutra

therapy in Sacrococcygeal Pilonidal Sinus (Nadivrana) is a simple, safe, and sure treatment with very negligible reoccurrence rate. Ksharasutra causes chemical excision rather than surgical excision. Proper preoperative evaluation, light local anesthesia, gentle probing in all cases is a key to success.

REFERENCES

1. Maurice BA, Greenwood RK. A conservative treatment of Sacrococcygeal Pilonidal Sinus. Br Journal of Surgery 1964; 51:510-12. <http://dx.doi.org/10.1002/bjs.1800510711> PMID:14199061
2. Abu Galala KH, Salam IM, Abu Samaan KR, et al. Treatment of Sacrococcygeal Pilonidal Sinus by primary closure with a transposed rhomboid flap compared with deep suturing: A prospective randomized clinical trial. Eur J Surgery 1999; 165:468-72. <http://dx.doi.org/10.1080/110241599750006721> PMID:10391165
3. Tocchi A, Costa G, Lepre L, Liotta G, Mazzoni G, Agostini N, Miccini M, Bettelli E. Ambulatory closed surgery for the treatment of Sacrococcygeal Pilonidal Sinus. G Chir 2001;22(8-9):303-7.
4. McCallum I, King PM, Bruce J. Healing by primary versus secondary intention after surgical treatment for Sacrococcygeal Pilonidal Sinus. Cochrane Database Syst Rev 2007;17:CD006213.
5. Vaidya Jadavji Trijumji Acharya, editor. Sushruta Samhita of Sushruta with the Nibandh sangraha commentary of Shree Dalhanacharya. Varanasi: Publisher Chaukhambha Surbharti Prakashan; 2003. Nidan Sthan, Chapter 10, pp: 307-8 and Chikitsa Sthan Chapter 17, pp 468
6. Keshava A, Young CJ, Rickard MJFX, Sinclair G. Karydakias flap repair for Sacrococcygeal Pilonidal sinus disease: how important is technique? ANZ Journal of Surgery 2007; 77:181-3. <http://dx.doi.org/10.1111/j.1445-2197.2006.04003.x> PMID:17305997
7. Lee HC, Ho YH, Seow CF, Eu KW, Nyam D. Pilonidal disease in Singapore: clinical features and Management. Aust N Z Journal of Surgery 2000; 70(3):196-8. <http://dx.doi.org/10.1046/j.1440-1622.2000.01785.x>
8. Basu AP. Anti bacterial activity of *C. Longa* Indian Journal of Pharmacy 1971;33: 131
9. Vetrichelvan T and Jegadeesan M. Effect of alcohol extract of *Achyranthes aspera* Linn. on acute and sub-acute inflammation. Phytotherapy Research 2003; 17: 77-79. <http://dx.doi.org/10.1002/ptr.1070> PMID:12557252
10. Kumara swamy M, Neeraj Pokharen, Santosh Dahal and Anuradha M. Phytochemical and antimicrobial studies of leaf extract of *Euphorbia nerifolia*: Journal of Medicinal Plants Research 2011;5(24):5785-5788

Cite this article as:

Panigrahi Hemanta, Rana Rakesh Kumar, Rao MM. Ksharasutra therapy-a minimal invasive parasurgical method in the treatment of Sacrococcygeal pilonidal sinus (Nadi vrana): Result of a pilot study. Int. J. Res. Ayur. Pharm. 2012; 3(5):668-670