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Research Article

KSHARASUTA (MEDICATED SETON) TREATMENT IN PILONIDAL SINUS

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ABSTRACT

Pilonidal sinus is a disease which causes great suffering and pain to the patient. Persistence of Pilonidal sinus has given a challenge to most indigenous surgeons. This disease manifest itself as a blind track leading down to the tissues ending blind internally and discharging sero-purulent material associated with severe pain. In modern medicines, the treatment of pilonidal sinus includes excision and primary closure of excision with reconstructed flap. The risk of recurrence or of developing an infection of the wound after the operation is high. *Kshara sutra* is an age old treatment modality practiced since times of Sushruta. A total of 10 patients were selected with complaints of Pain, Discharge, tenderness and induration. The patients with multiple sinuses, previous treatment and co-morbid conditions were excluded. The study factor was of *Kshar sutra* threading of Pilonidal Sinus done under local infiltration of anaesthesia around the tract and changed every week during entire treatment period. In this study all patients were males within age of 21-30 years and median presentation duration of 10 months were recruited. The median of initial length of track was 2.4cm and median average unit cutting time revealed 6.3days/cm. There was no post-operative complication and recurrence after three months of follow up. The study revealed highly significant results in terms of Pain, Discharge, tenderness and induration. *Apamarga Ksharasutra* as a modality could be a minimal invasive procedure done under local anaesthesia as outpatient or day care procedure, cost effectiveness, patient can carry out his day today works, without any side effects and complications with good wound healing potential in selected group of patients. *Ksharasutra* being laced with antibiotics and anti-inflammatory properties also minimizes the uses of antibiotics and analgesics.

KEYWORDS: Sushruta, Pilonidal sinus, *Apamarga Ksharasutra,* Analgesics, Antibiotics.

INTRODUCTION

Hodges In 1880 invented the term "pilonidal sinus" to describe the chronic sinus containing hair found between the buttocks (Piles, "hair", nidus nest). It primarily affects teenagers and young adults. The male are affected more than female with the ratio of 3:1. Whether it is an acquired or congenital disease is still debatable.

Congenital Origin Theory

The congenital theory for pilonidal sinus was more popular after understanding of the embryological study. It was thought that cystic remnants of the medullary canal persist in the sacro-coccygeal region, this faulty development of the median raphe in this region leads to dermal inclusion which becomes pilonidal cyst. According to this theory, these cysts should be lined by cuboidal, and not, squamous epithelium as seen in all cases. Weale (1954) is of opinion that the pilonidal sinus is a sequestrated dermoids different from implantation dermoid occurring in other sites of the body.

Acquired origin theory

Patey and Scarf in 1946, suggested the acquired implantation dermoid theory. The three etiological pre requisites are:

- The presence of a pit or groove.
- The presence of pressure or suction in the area and
- The presence of hair.
- This acquired theory is supported by finding the condition occurring in the other parts of the body e.g. between the fingers in barbers, in the axilla, perineum and on a mid thigh amputation stump and even in the Umbilicus. In World war-II, this condition was known as "JEEP DISEASE" and was felt to be from sitting for a long period of times in vehicles. This pre disposes hair ends to be pushed into neighboring hair follicles and to initiate a "Foreign body" reaction. The resulting abscess would rupture having a painful draining sinus. Loose hair, leading with the root end, collect in the natal cleft. Friction forces the hair to insert at the depth of the cleft, not at the sides, with the insertion

of one hair, other can more easily follow provoking the foreign body reaction and infection of pilonidal disease. It is felt that the primary sinus is the portal of entry of the hair and the secondary sinus are the portal of the hair exit.[1]

Combined origin theory

Haworth and Zachary (1995) have found congenital dermal sinuses in the pilonidal region are 1.4 percent of 500 children examined. Until puberty, these do not cause symptoms and are not noticed. From the age of puberty the hair grows from the skin lined tract, sebaceous glands become active, the buttocks enlarge and finally the orifices block resulting in secondary infection. It is more likely that shed hairs from the head, back or perineum become implanted into the pits, where they subsequently drill cranially. Some cases of pilonidal sinuses occur in 13 or 14 years old female who may have very little hair in the region. [2]

Ayurveda - the science of life is the natural healing system of medicine. Out of eight branches of Ashtang Ayurveda, Shalya tantra is considered to be superior most because of its being radical in removing the *Shalya* (foreign body) which are denied to other branches. The disease clinically simulate with *Shalyaj nadi vrana* described by Sushruta samhita. Acharya Sushruta has mentioned a minimally invasive parasurgical procedure for *Nadi vrana.*[3] Acharya Sushruta, the father of surgery has given a detailed description in detail regarding the *Nadi* or sinus in the chapter of "*Visarpa nadi stanaroga nidana*" 10 chapter of Sushruta samhita nidana sthana. [4] He recommended that if inflammatory swelling is ignored even during the stage of suppuration then it may result in chronic granulating tract & is termed as *Nadi* which is like a test tube, the exudates remain in movement therein. Moreover, if such suppurative swellings is neglected and not managed properly by *Shalya karma* in good time it will be responsible for the persistence of chronic *Nadi* (sinus). In addition Acharya Sushruta has advocated that any retained or hidden foreign body in such chronic granulating tract of discharging nature will also be responsible for persistence of (sinus) *Nadi*. *Nadi vrana* is broadly of two types viz., *Doshaj* (acquired) and *Agantuja* (traumatic).

Surgical methods generally emphasized as excision of the sinus tracks followed by healing of wound by primary intention. The risk of recurrence or of developing an infection of the wound after the operation is high. Taking this into consideration *Kshar sutra* ligation in pilonidal sinus was studied clinically and statistical analysis of the result was done. The entire study is conducted in one group of 30 patients suffering from sacrococcygeal pilonidal sinus. All the patients were subjected to *Kshara sutra* ligation.

AIMS AND OBJECTIVES

To check the efficacy of *Apamarga Kshara Sutra* in the management of sacrococcygeal Pilonidal sinus.

MATERIAL AND METHODS

Material: Standardized *Apamarga Kshara sutra* was used for ligation.

1. Drugs used for *Ksara sutra* preparation are 1. *Apamarga Kshara* (*Achyranthus aspera*), 2. *Haridra churna* (*Curcuma longa*), 3. *Snuhi ksheer* (*Euphorbia nerifolia*).
2. Surgical linen thread no 20.
3. *Kshara sutra* hanger
4. *Kshara sutra* drying chamber

For the preparation of *Kshara sutra*, surgical linen thread gauze no. 20 was manually coated eleven times with latex of *Snuhi ksheer* followed by seven coatings of latex and alkaline powder of *Achyranthus aspera* alternatively and dried. In the final phase, three coatings of latex and powder of *Curcuma longa* were given alternatively. The thread was sterilized by UV radiation and packed in glass tube.

Clinical Study

Source of data: Patients fulfilling criteria for selection were registered from OPD of PG department of Shalya tantra JIAR and Hospital, Jammu, irrespective of gender, occupation, religion and caste.

Sample size= 10

Inclusion Criteria

- Patients having Pilonidal sinus in Sacrococcygeal region with straight tract.
- Patients of age groups in between 15 to 60 years, irrespective of sex.
- Patients unwilling for modern surgical procedure.

Exclusion Criteria

- Patients having Diabetes mellitus.
- Patients having Neoplastic sinus.
- Tubercular sinus and the sinus having multiple openings.

Assessment Parameters

The results were evaluated by subjective and objective parameters mainly based on clinical observation by grading method before and after treatment..

1. **Unit Cutting Time**=$\frac{\text{Total no. of days taken for cut through}}{\text{Initial length of track in cm}}$
2. **Pain on Visual Analogue Scale**

   G0: Absence of Pain /no Pain

   G1: 1-3 mark: Mild pain can be ignored easily.

   G2: 4-6 mark: Moderate pain that cannot be ignored and needs treatment.

   G3: 7-10 mark: Severe pain which needs constant attention.

3. Discharge

G0: No discharge

G1: Mild: If discharge wets one pad of 4X4cm gauze.

G2:Moderate: If discharge wets two pads of 4X4cm gauze.

G3: Profuse: If discharge wets more than two pads of 4X4cm gauze.

4. Tenderness

G0: No Tenderness

G1: Mild: Tenderness on firm pressure.

G2: Moderate: Tenderness on gentle pressure.

G3: Severe: Patient denies touching.

5. Induration

G0: No inflammatory reaction.

G1:Mild: Inflammatory reaction with tissue oedma and cellular response.

G2:Moderate: G1 reaction with involvement of reticular layer of dermis.

G3:Severe: G2 reaction with involvement of subcutaneous tissue.

PROCEDURE

Pre- operative- The written consent was taken before the procedure. Patient was kept nil orally for six hours before surgery. The part was prepared and soap water enema was given 10 pm at night and 8am in the morning. Inj T.T 0.5ml I/M and Inj. Xylocaine 2% I/D for sensitivity test insured before surgery.

Operative- Injection Promethazine HCL is given half an before the procedure to calm down the patient i.e., sedation without depression. The procedure is done in prone position with the sacrococcygeal region elevated by pillow or angulation of the table. It is known as the Jack knife position. The procedure was done under local anesthesia (by infiltration of anesthesia around the sinus in different planes deep up to the natal cleft). Probing was done first, then the probe was partially made to move out from the secondary opening. The external opening was widened with the half of the artery forceps in the direction of the probe. Widening was done enough so that one can visualize well into the sinus. Visualized hairs were removed and unhealthy granulation tissue along with impacted hairs was curetted well with a volkmann's spoon. A suitable length of *Ksharasutra* is taken and threaded in to the eye of the probe, then the probe was pulled through the secondary opening to leave the thread behind the track. The two ends of the *Ksharasutra* was then tie snugly outside the track for the action of *Ksharasutra*.

Post operative – Gauze impregnated with *Yashtimadhu Ghrita* was kept over the ligation and bandage was applied. Appropriate antibiotics and analgesics were given for initial three days and sitz bath with warm water & tankan was advised three times a day. Successive changing of thread was advised at one week interval.

Duration of treatment: Complete healing of wound.

Follow up: Three months.

OBSERVATIONS AND RESULTS

The present study revealed that the incidence of Pilonidal sinus was more in the age group of 31-40 years i.e. 70%. All patients were males i.e. 100%. 70% of the patients were Hindus. Incidences of occupation revealed that maximum no of patients were drivers' i.e. 40%. Socio- economic status revealed that maximum no of patients belonged to middle class i.e. 60% followed by lower class i.e. 30%. 6 patients i.e. 60 % belonged to rural class. 90% of the patients were married. 80% of the patients were having mixed diet. 5 patients i.e. 50% of the patients were having *Pitta- kaphaj prakurti*. No patient was presented with history of recurrence and previous surgery. 9 patients i.e. 90% were having their initial length of track in the range of 2.4cm. The analysis of total average cutting time revealed that average U.C.T was 6.3days / cm. It was observed that all the patients felt pain at the time of changing *Ksharasutra* but the pain was reduced to about 100% after the track has been cut through. No case was reported with inflammation during the course of changing and no case was reported with fever during the treatment. No case was reported with recurrence in three months follow-up. The present study showed highly significant results. The mean score of Pain (Table no.1) before the procedure was 2.3 which are reduced to 0 with 100% of relief which is highly significant. The mean score of discharge (Table no.-2) before the treatment was 1.8 which is reduced to 0 with 100% of relief, which is highly significant. The mean score of Tenderness (Table no.3) before the procedure was 2.2 which are reduced to 0 with 100% of relief which is highly significant. The mean score of Induration (Table no.4) before the treatment was 2.3 which is reduced to 0 with 100% of relief, which is highly significant.

Table 1: Showing the overall effect of therapy on Pain

Symptom	N	Mean score		%Relief	SD	SE	P
Pain	10	BT	AT	100%	0.675	0.213	<0.001
		2.3	0				

Table 2: Showing overall effect of therapy on Discharge

Symptom	N	Mean score		%Relief	SD	SE	P
Discharge	10	BT	AT	100%	0.789	0.249	<0.001
		1.8	0				

Table 3: Showing the overall effect of therapy on Tenderness

Symptom	N	Mean score		%Relief	SD	SE	P
Tenderness	10	BT	AT	100%	0.422	0.13	<0.001
		2.2	0				

Table 4: Showing the overall effect of therapy on Induration

Symptom	N	Mean score		%Relief	SD	SE	P
Induration	10	BT	AT	100%	0.675	0.213	<0.001
		2.3	0				

DISCUSSION

The incidence of disease is more common in young patients, It can be said that hormonal changes at puberty is closely linked to an increased incidence of infected pilo sebaceous glands. More male patients might be because of males are more hairy. The higher percentage of cases recorded only reflects the higher percentage of Hindus. Socio- economic status indicates that people of lower and middle socio- economis status were more susceptible to pilonidal sinus because high socio-economic class is more educated, they are more health conscious and avail more medical facilities. The disease was encountered more in people of rural area because the people of rural areas are less educated and unaware of disease. The disease was more encountered among drivers because it is a sedentary type of work with more exertion to the post anal region and maintaining the poor hygiene of the anal region. The main stay of this rest the presence of hairs within the sinus because of the continuous irritation or self trauma, the hair then penetrate the normal skin and cause the pilonidal sinus. The disease was more encountered in people of *Pitta khapha prakruti.* The possible resumption for this is that *Pitta* and *Khapha dosha* are potent causes for Pilonidal sinus one after the other. Statistically highly significant results were obtained in relief of Pain, Discharge, Tenderness and Induration.

Probabale Mode of Action of *Apamarga ksharasutra*

An application of *Apamarga kshara sutra* does cutting (by tying) layer by layer and there is continuous drainage of track, which helps in healing. The combination of medicines (*Apamarga kshara, Snuhi ksheer, Haridra*) used to prepare the thread helps in the debridement and lysis of tissues, exerts antifungal, anti bacterial and anti inflammatory action. *Kshara sutra* in situ encourage healing by promoting new granulation tissue formation from the base. Due to the anti microbial action and as seton it -allows the proper drainage of of pus from the sinus that to a proper healing. The cutting effect of threads incises the skin gradually without a surgical incision. It is having the action of excision, scrapping, draining, penetrating, debridement, sclerosing and healing effect. It is bactericidal and bacteriostatic. Another mechanism proposed for the *Kshara sutra* is that it destroys the residual glands in the epithelium. It minimizes rate of complications and recurrence.

CONCLUSION

Pilonidal sinus more commonly found in drivers and sedentary workers because of the continuous sitting and exertion etc. post anal region of pits puts the hair inside the body and causes the sinus. *Apamarga Ksharasutra* as a modality could be a minimal invasive procedure done under local anaesthesia as outpatient or day care procedure, cost effectiveness, patient can carry out his day today works, without any side effects and complications with good wound healing potential in selected group of patients. *Ksharasutra* being laced with antibiotics and anti-inflammatory properties also minimizes the uses of antibiotics and analgesics.

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