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## MANAGEMENT OF *NADIVRANA* (PILONIDAL SINUS) WITH PARA-SURGICAL PROCEDURE (*PALASHA KSHARA SUTRA*): A CASE REPORT

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### ABSTRACT

Pilus means hair and nidus means nest. A pilonidal sinus is an acquired condition. It is also termed as Jeep-bottom because it was very common in jeep drivers. Pilonidal sinus occurs in between the gluteal region (natal cleft) and can cause discomfort, serous discharge, pruritis and absence from work. It is more common in men (as they have more hair) than in women. When gluteal region moves and hair falls off by friction and local irritation to skin. Negative suction of hair follicles start entering inside the sinus causing pilonidal sinus and recurrent infection of it. The most commonly used surgical interventions for this disorder include excision followed by primary closure and excision with reconstructive flap. However, the risk of recurrence or of developing an infection of the wound after the operation is high. Also, the patient requires longer hospitalization, hence more financial burden. Pilonidal sinus can be correlated with *Nadi Vrana* as per Ayurveda. Management of *Nadi Vrana* is described by *Sushruta* along with *Chedana*(excision) of the *Nadi* i.e. whole tract (sinus) (Su.Chi-17/18). *Sushruta* has advocated a minimally invasive para-surgical treatment, viz., *Kshara Sutra* procedure, for *Nadi Vrana*.

Hence this therapy was tried in Pilonidal sinus, and is described in this case report. *Kshara Sutra* treatment not only minimizes complications and recurrence but also enables the patient to resume work quicker and with less discomfort, impact upon body image and self-esteem as well as reduced cost.

**Keywords:** Pilonidal sinus, *Shalya Tantra*, *Nadi Vrana Chikitsa*, *Kshara Sutra*

## INTRODUCTION

Pilonidal sinus is a common condition that has controversies regarding its etiology and treatment since its first description in the mid-19<sup>th</sup> century. The term is derived from a set of Latin words “pilus” meaning hair, and “nidus”, meaning nest. It is popularly known as “Jeep drivers Disease”. During the world war, over 80000 soldiers in the United States army were hospitalized with this condition [1]. Because a large number of soldiers who were being hospitalized for pilonidal sinus.

A Pilonidal sinus is a sinus track which commonly contains hair. It occurs under the skin between the gluteal region (the natal cleft) at a short distance above the anus. The sinus track goes in a vertical direction between the buttocks. Most cases occur in young male adults. The origin of Pilonidal disease is not fully understood, although hormonal imbalance, presence of hair, friction and infection are often implicated [2].

A tuft of hair with seropurulent foul discharge emerges through the opening. The entrance of the sinus tract is lined by modified cutaneous tissue. The tract enters into the cavity, which is entirely lined by granulation tissue and contains debris and

hairs. Thus deeper tract and cavity of the sinus are not lined by skin tissue [3].

The most commonly used therapy is surgery including wide excision and healing by secondary intention. However, post operative recurrence following surgery is high, leading to frequent and time-consuming wound care. Hence, there is a need to evaluate the role of the other alternative/ innovative techniques for the management of this challenging disease so as to minimize recurrence, make it cost effective, with improved acceptability & minimum hospitalization.

In *Ayurveda*, the science of life is the natural healing system of medicine. Out of eight branches of *Ashtanga 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 simulates with *Shaylaja Nadi Vrana* described by *Sushruta Samhita* [4].

‘*Shalyaja Nadi Vrana*’ is a track which is described to be due to presence of pus, fibrosed unhealthy tissue & hair etc. inside left unnoticed. *Sushruta* has advocated a very unique minimally invasive treatment

i.e. 'Kshara Sutra' procedure for management of *Nadi Vrana* [5].

#### **PATIENT INFORMATION**

A 33-year-old male patient attended the Shalya tantra OPD at Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan with complaints of serous discharge from mid gluteal cleft since two and half months. Occasionally, feels throbbing type of pain, itching and discomfort at natal cleft and low back region. He gave a history of fistula in ano and underwent for surgery (fistulectomy) for the same one and half year back. The patient was not willing for surgery again and requested Ayurvedic treatment. Hence, *Kshara Sutra* procedure was done.

#### **CLINICAL FINDINGS**

On inspection of sacrococcygeal region, the patient was hairy and had 2 boils with one small sinus opening near Sacro-coccygeal region with pus discharge through the opening, foul smell, swelling(mild), tenderness++, the cord-like indurated structure was felt at external opening to the natal cleft.

#### **DIAGNOSTIC ASSESSMENT**

Probing was done through external opening to access branching and extension of track (approximately 4 cm tract was found). Primary opening was seen around 6 cm away from anal verge and secondary opening around 4 cm away from anal verge.

Per rectal examination was done to evaluate any anorectal pathology. Scar mark was seen in perianal region at 5 o'clock position around the anal verge. Scar was extending posteriorly approximately 7 cm from the anal verge. On digital rectal examination there was no internal opening found. Proctoscopic examination was done to assess if abnormality and it was found to be normal.

Routine blood and urine examination were done and the reports were normal. There was no H/O any other systemic illness. Before planning treatment other etiology like tuberculosis, HIV, HBsAg, diabetes mellitus, foreign body or trauma were ruled out. The final clinical diagnosis made was *Shalyaja (BALA) Nadi Vrana* i.e. Pilonidal sinus.

#### **THERAPEUTIC INTERVENTION**

This is a single case study in which patient was treated with *Kshara Sutra*.

#### **Method of *Kshara Sutra* application**

After taking all aseptic precautions, patient was kept in prone position to perform the application of *Kshara Sutra*. The malleable probe was inserted gently into the tract and was assessed by means of probe. The probe was pushed inside the tract till the tip of the probe was felt by the finger and then tip of the probe was taken out through an secondary opening at the other end of Pilonidal sinus. Then plain barbour thread was threaded in the eye of the probe. The

probe was gently taken out in such a manner that the entire sinus tract was threaded by barbour thread. During this procedure, tuft of hair was seen to come out of the pilonidal sinus tract along with foul sero-purulent discharge. After that, the two terminals of the thread were ligated outside. Then operated area was washed with normal saline and bandaged with cotton pad. Next day it was changed to *Kshara Sutra*. There was no complication during the procedure. Vitals of patient were within normal limits.

### Post-operative Management

Patient was instructed to do sitz bath with warm water twice a day and to keep the probed area clean and dry, and the *Kshara Sutra* was changed weekly by rail road technique and length was measured and recorded. The thread was changed weekly because the thread acts as an ideal media for

drug delivery in the minute channel and further presence of thread in the tract keeps it patent for 7 days enabling the infected material to drain out, which is essentially required for healing of Pilonidal sinus. Weekly local part preparation was ensured.

### Assessment Criteria [6]

1. Unit cutting time (UCT)
2. Pain
3. Discharge
4. Size of the wound

**Unit Cutting Time = Total No. of days taken to cut through the track days/cm.**

**Initial length of the *Kshara Sutra* in cm.**

Time taken (in days) to cut one centimeter of the track with simultaneous healing is known as unit cutting time (UCT).

Table 1: Grading of Pain

Grading of Pain	Explanation
Grade 0	No pain
Grade 1	Mild pain(1-3 in NPRS)
Grade 2	Moderate (4-6 in NPRS)
Grade 3	Severe (7-10 in NPRS)

Table 2: Grading of Discharge

Grading of Discharge	Explanation
0	No sign of any discharge
+ (+1)	Occasional appearance of discharge and patient uses single cotton pad in 24 hrs.
++ (+2)	Frequent appearance of discharge and patient uses 3-4 cotton pads in 24 hrs.
+++ (+3)	Increased frequency of discharge and patient uses 5-6 cotton pads in 24 hrs.
++++ (+4)	Continuous discharge

Table 3: Grading of External wound size

Grading of external Wound size	Explanation
0	Healed
+ (+1)	Wound within 0.5-1 cm
++ (+2)	Wound within 1-2 cm
+++ (+3)	Wound within 2-3 cm
++++ (+4)	Wound more than 3 cm

## OBSERVATION AND RESULT

Table 4: Observation and results

Symptom	1 <sup>st</sup> day	7 <sup>th</sup> day	14 <sup>th</sup> day	21 <sup>st</sup> day	28 <sup>th</sup> day	35 <sup>th</sup> day	42 <sup>nd</sup> day	49 <sup>th</sup> day	56 <sup>th</sup> day
Pain	1	2	3	2	2	1	1	1	0
Discharge	+2	+2	+2	+2	+1	+1	0	0	0
Length of tract	4cm	3.5cm	2.8cm	2cm	1.4cm	0.4cm	Cut through	-	-
Size of wound	Nil	Nil	Nil	Nil	Nil	Nil	+1	Nil	Nil

Unit Cutting Time (UCT)=  $42/4=$   
10.5days/cm

## FOLLOW UP AND OUTCOME

The patient had followed instructions strictly. From 14<sup>th</sup> day onwards there was remarkable relief in pain, but the discharge of pus was slightly increased. In first two weeks there was profuse serous discharge and it got diminished after the progression

of cutting of the tract by *Palasha Kshara Sutra*. After 42<sup>nd</sup> day there was no discharge of pus. Initial tract length was 4 cm and cut through of the tract was occur on 42<sup>nd</sup> day. After 'cut through' there was a small wound and it was completely healed within 49<sup>th</sup> day. 100% relief from all symptoms was achieved in 2 months.

Figure 1: during probing 1<sup>st</sup> day

Figure 2: probing of the tract



Figure 3: Primary threading was done



Figure 4: Follow up 1- 7<sup>th</sup> day  
Kshara Sutra was applied



Figure 5: Tuft of hairs seen



Figure 6: Follow up 2- 14<sup>th</sup> day



Figure 7: Follow up 3- 21<sup>st</sup> day



Figure 8: Follow up 4- 28<sup>th</sup> day



## DISCUSSION

There are so many modalities are available in the treatment of Pilonidal sinus nowadays *Kshara Sutra* is becoming more potential to treat Pilonidal sinus. The mechanical and chemical action of *Kshara Sutra* and *Kshara* helps to prevent recurrence rate. Both procedures can be done on out patient basis. It is a minimally invasive procedure. It performs *Chedana*, *Bhedana* and *Lekhana* property among *Ashtavidha Shastra Karma*, but it is time taking process and had

to visit repeatedly in hospital for *Kshara Sutra* changing.

It minimizes rates of complication and recurrence and enables the patient to resume work and normal social activities as early as possible. According to Ayurveda the action of *Kshara Sutra* is thought to be due to its healing and cleansing effect in the area where it is applied. In this technique, scar formation is minimal and can be cosmetically supported technique.

The *Kshanana* and *Ksharana* properties of *Kshara Sutra* cuts pilonidal sinus tract from inside gradually and initiate simultaneous healing. This is because of the wound healing (*Ropaka*), Analgesic (*Vedanahara*), Anti-inflammatory (*Shothahara*) properties of *Palasha*, *Haridra* and *Snuhi*. *Palasha Kshara* is known for its *Krimigna*, *Vranahara*, *Gudarogajith* properties.

### CONCLUSION

The case study proved that Ayurvedic *Kshara Sutra* therapy is an acceptable treatment and there was a marked reduction of symptoms to pain, irritation, inflammation, burning sensation. In this case study, minimum tissue loss is seen in comparison to the other surgery. Minimal bleeding occurs & there is no need to put huge dressings. In majority of cases, recurrences are common but the use of *Kshara Sutra* has good potential in the management of Pilonidal sinus in terms of promoting healthy healing with minimal financial burden. Management of pilonidal sinus with *Palasha Kshara Sutra* is found to be very effective, and can be successfully used as a curative measure in cases of Pilonidal sinus.

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