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# Management of Pilonidal Sinus with *Chitraka Kshara Sutra* - A Case Study

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## ABSTRACT

Pilonidal sinus means nest of hairs also called Jeep-bottom because it was very common in jeep drivers. It is an acquired condition commonly found in hairy males. Different surgical methods have been described for this disease such as excision and primary closure and excision with reconstructive flap, etc. However, the recurrence after surgery is very high. There is similarity between Pilonidal sinus and *Shalyaja Nadi Vrana* described in *Sushruta Samhita*. *Acharya Sushruta* has described minimally invasive Para surgical procedure viz. *Kshara Sutra* for *Nadi Vrana* (Pilonidal sinus). This treatment not only minimizing the complications and recurrence but also enables the patient to resume work quickly with less discomfort. The patient attended Shalya Tantra OPD of Sri Kalabyraveshwara Ayurvedic College was treated with the *Chitraka Kshara Sutra*. The patient recovered well with complete excision of the tract within span of seven weeks.

**Key words:** Pilonidal sinus, Nadi Vrana, Chitraka Kshara Sutra

## INTRODUCTION

Pilonidal sinus is a common condition that has controversies regarding its aetiology 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 Riders Disease". During the world war, over 80000 soldiers in the United States army were hospitalised with this condition. Because a large number of soldiers who were being hospitalised for

pilonidal sinus rode in jeeps, it was termed as jeep riders' disease. Pilonidal sinus is an acquired disease. Formerly, the theory of congenital origin was very popular but now a day it has greatly declined. It is epithelium lined tract, situated short distance behind the anus, containing hairs and unhealthy diseased granulation tissue. It develops due to penetration of hairs through the skin into subcutaneous tissue. It forms unhealthy granulation tissue in the deeper plane. The most important predisposing factor for the development of Pilonidal sinus are the existence of deep natal cleft and the presence of hair within the cleft. A deep natal cleft is a favourable atmosphere for maceration, sweating, bacterial contamination and penetration of hairs. Thus, for treatment and prevention, these causative factors must be eliminated.

Pilonidal sinus has three common representations. Nearly all patients have an episode of acute abscess formation. When this abscess resolves, either spontaneously or with medical assistance, many patients will develop chronic disease or recurrent disease after treatment. On examination typically

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reveals one or more small (1-2mm) dermal pits at the base of intergluteal cleft.

Tracking from the pits (usually in cranial and lateral direction) will appear as an area of induration. With an associated abscess, the diseased area may be tender and erythematous, and draining pus may be evident. The more extensive the disease, the more prominent the findings. Commonly performed operations are complete excision with primary suture, complete excision without skin suture, laying open of the tract with marsupialization of wound etc. Different forms of surgical techniques for pilonidal sinus have been advocated, but none of them provide good results, as the post-operative recurrences are very common.

**Nadivrana**

Improper management or negligence of management will lead the *Vrana* into chronic stages, that condition is known as *Nadi Vrana*. Improper incision and drainage of a ripened abscess and at the same time indulging in unsuitable foods by the patient, the pus retained inside ulcer and entering into the deeper tissues produces a tubular pathway of pus/channels inside them resulting in *Nadi Vrana*. In Sushruta Samhita, Nidana sthana, the physician who neglects a *Pakva Sopha* or neglects a *Vrana* full of pus and continues unhealthy food and activities, then the pus goes deep inside and destroying the tissues. Because of its moving inside greatly it is known as *Gati* and since the spread is through a tube it is called as *Nadi* (sinus).<sup>[3]</sup>

**Treatments in Ayurveda**

- *Chedana* (Incision)
- *Shalya Nirharana* (Removal of foreign body- hairs, pus, etc.)
- *Margashodhana* (Cleaning the tract)
- *Ropana* (Wound healing)

**Preparation of Chitraka Kshara Sutra**

Chitraka Kshara Sutra	Coatings
Arka Ksheera	11

Arka Ksheera + Chitraka Kshara	07
Arka Ksheera + Haridra Churna	03
Total	21

**Assessment Criteria**

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

$$\text{Unit Cutting Time} = \frac{\text{Total No. of days taken to cut through the track}}{\text{Initial length of the Kshara Sutra in cm.}}$$

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

Grading of Pain	Explanation
0	No Complain of pain
+ (+1)	Negligible or tolerable pain. No need of any medicine
++ (+2)	Localized tolerable pain, completely relieved by warm fomentation
+++ (+3)	Intolerable pain, not relieved by fomentation, relieved by oral analgesic. No disturbance in sleep
++++ (+4)	Continuous and intolerable pain with sleep disturbance. Patient seek medical help as early as possible

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

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

## CASE STUDY

A female patient of 24 years visited *Shalya Tantra* OPD of Sri Kalabyraveshwara Swamy Ayurvedic Medical College and Hospital and Research Center with the OPD number of K12578

With the complaints of pain, swelling, discharge from natal cleft from 3 months. Patient had a history of same complaints 1 year ago so she visited a nearby hospital and there she was diagnosed with pilonidal sinus took treatment and had undergone laser surgery. Gradually after 9 months a small opening felt by patient near gluteal cleft with pain and discharge. Patient had no history of bleeding per rectum or painful defecation or mucus or any kind of discharge through anus. There is no history of Diabetes mellitus, Hypertension, Tuberculosis, etc. Patient had good appetite, bowel habit, sleep, not any kind of addiction. Blood pressure, pulse rate, respiratory rate was in normal limits.

### Local Examination

Local examination was done in prone position of patient, the findings were: patient was hairy and had a small opening at mid gluteal cleft with good amount of hair nearby. During palpation, a cord like indurated structure was felt at the opening of sinus. Mild tenderness and watery discharge were present while palpation of local site. There was no any other opening

or any lump near or in gluteal cleft. Probing was done from the opening to accessed branching and extension of the tract. About 5 cm tract was found during probing in mid gluteal cleft. By complete thorough examination the diagnosis was confirmed as pilonidal sinus. All routine blood investigations were ruled out. All situations about disease and its management were explained to the patient and finally were planned for *Kshara Sutra* therapy under local anesthesia as day care procedure.

### Essential Steps for *Kshara Sutra* Application

After taking all aseptic precautions, patient was taken in prone position to perform the application of *Kshara Sutra*. *Kshara Sutra* procedure was performed under local anesthesia. 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 artificial opening at the other end of Pilonidal sinus. Then *Kshara Sutra* 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 *Kshara Sutra*. 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 terminuses of the *Kshara Sutra* were ligated outside. Then operated area was washed with normal saline and bandaged with cotton pad. There was no complication during the procedure. Vitals of patient were within normal limits.

### Post-Operative Care

Patient was advised to mobilize immediately after surgery. Patient was instructed to do warm fomentation twice a day and to keep the operated area clean and dry, and the *Kshara Sutra* was changed weekly by rail road technique and length were measured and recorded. The thread was changed weekly because the thread act 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.



**OBSERVATIONS 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
Pain	+2	+2	+1	+1	0	0	0	0
Discharge	+2	+3	+1	+1	0	0	0	0
Length of a track	5c m	4c m	3c m	2c m	1c m	Cut through	0	0
Size of the wound	0	0	0	0	0	+1	0	0

**Unit Cutting Time (UCT) = 35/5 = 7days/cm**

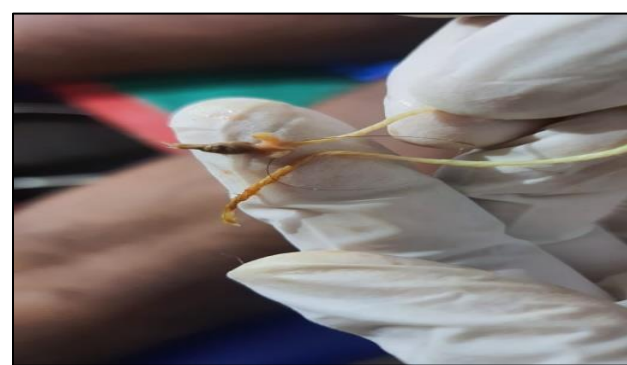
The patient had followed instructions strictly. From 14<sup>th</sup> day onwards there was remarkable relief in pain, but the discharge of pus was slightly increased in 2<sup>nd</sup> week there was profuse serous discharge and it got diminished after the progression of cutting of the tract by *Chitraka Kshara Sutra*. After 35<sup>th</sup> day there was no discharge of pus. Initial tract length was 5 cm and cut through of the tract was occurred on 35<sup>th</sup> day. After 'cut through' there was a small wound and it was completely healed within 42<sup>nd</sup> day. 100% relief from all symptoms was achieved within 2 months.



Primary threading



During treatment



Hairs after thread change



After cut through of track



Probing of the track



After healing

## DISCUSSION

*Acharya Sushruta* has described *Baala* as one of the *Shalya* and it is the main reason for the Pilonidal sinus disease. In this case, Patient is obese with deep natal cleft and she is having the habit of riding the bike regularly. Because of overweight, there is a chance of friction of hairs between gluteal regions. Improper cleaning of anal region after defaecation and excessive sweating of this particular area may be contributing factor for this condition.

There are so many modalities are available in the management of Pilonidal sinus. Nowadays *Kshara Sutra* is becoming more potential to treat Pilonidal sinus. 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*), *Krimihara* properties of *Chitraka*, *Haridra* and *Arka*.

*Chitraka Kshara Sutra* has analgesic property, this is probably due to *Vata Shamaka* and *Shoolapaharaka Karmas*, *Chitraka* effectively pacifies *Kapha* and *Pitta Dosh*a and chemical constituents like Flavonoids,

Essential oils, tannins, glycosoids and Curcumin of *Haridra* possesses Anti-bacterial action. Hence it alleviates the pus discharge, inflammation and which aids wound healing.

## CONCLUSION

The modern surgical treatment of Pilonidal sinus is often unsatisfactory. In majority of cases, recurrences are common after surgery. *Kshara Sutra* is safe, cost effective and minimally invasive procedure, promotes healthy healing with negligible recurrence rate. Management of pilonidal sinus with *Chitraka 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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