



## Case Study

### A CASE STUDY ON APPLICATION OF *KSHARASOOTRA* IN PILONIDAL SINUS

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#### ABSTRACT

Pilonidal means appertaining to a nest of hair. Pilonidal sinus extends into the subcutaneous planes as an infected track. This occurs predominantly in males at a ratio of 3- 4:1. Incidence of is about 26 per 100,000 population. Disease mainly seen in late teens to early twenties. Sedentary life style and obesity are the contributing factors. It can be correlated with *Salyaja nadivrana* in Ayurveda and treatment mentioned is *Ksharasootra* application. In case of surgical treatment main complications are recurrence and post operative infection and wide excision of skin which will take long time to heal. *Kshara karma* is one of the important parasurgical procedure and *Kshara sootra* is an effective treatment in case of pilonidal sinus. *Kshara sootra* helps for cutting, curetting and healing of the tract faster. *Kshara* is having antimicrobial action so chance of infection is very rare. A case report of pilonidal sinus treated at Central Research Institute, cheruthuruthy is discussed here. *Kshara sootra* (prepared with *Snuhiksheera*, *Apamarga kshara* and *Haridra*), application was done after preoperative procedures and weekly thread change was done till tract was cut open completely followed by dressing with *Jathyadi ghritham*. Internally *Chiruvilwadi kashaya*, *Triphala guggulu* and *Guggulupanchapala choornam* was given. Externally sitz bath with *Thriphala kashaya* daily three times and dressing with sterile pad. Symptoms like pain, discharge, size of wound, unit cutting time was assessed throughout the treatment. Pain and discharge was reduced around 2-3 weeks. Got complete cure around 2 months. *Ksharasootra* application was found to be effective in pilonidal sinus.

**KEYWORDS:** Pilonidal sinus, *Salyaja nadivrana*, *Ksharasootra*.

#### INTRODUCTION

Pilonidal sinus (jeep bottom disease) seen mainly in young hairy males of age 20-30. The condition was first described by Hodges in 1880 and is diagnosed by the finding of a characteristic epithelial track. Its meaning is "nest of hairs", that is tract contains tufts of hairs. While sitting the buttocks move and hairs broken off by friction and collect in the cleft. That loose hairs travel down the intergluteal furrow to penetrate the soft and moistened skin at that region or enter the open mouth of a sudoriferous gland. After the initial entry dermatitis and inflammation start around the loose hairs and once the sinus is formed, intermittent negative pressure of the area may suck other loose hairs into the pit. This type of sinus is lined by stratified squamous epithelium. The sinus extends into the subcutaneous tissue.

Typically the patient presents with a chronic sinus about the level of first piece of coccyx. A tuft of hairs projects from its mouth. Blood stained foul discharge from sinus. There may be secondary openings on either side of the middle or a little away from the main sinus. Pain and tenderness are often associated with recurrent infection.<sup>[1]</sup>

#### Incidence

The onset of PNS is rare both before puberty and after age of 40. Males are affected more frequently than females, probably due to their more hirsute nature. In a study of risk factors the following associations were found.

Obesity 37%

Sedentary occupation 44%

Local irritation or trauma prior to onset of symptoms 34%.<sup>[2]</sup>

#### *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 unsuitable foods by the patient, the pus retained inside the ulcer and entering into the muscles etc produces pathway of pus/channels (sinus) inside them for a long distances.<sup>[3]</sup>

In Susrutha samhitha, Nidana sthana it is mentioned as when a doctor opens a *Apakwa* swelling and ignores a *Pakwa vrana shopha* out of negligence or ignorance and if the patient continues unhealthy foods and activities, then the pus breaks down the unimpaired intact tissues, passes deeper and deeper destroying the *Vrana sthanas* 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>[4]</sup>

Any foreign body lost (remaining hidden) within the tissue mentioned earlier (skin, muscles) produces a sinus quickly; which exudes a warm liquid, frothy, churned up, clear and/or blood mixed, suddenly/always and accompanied with pain.<sup>[5]</sup>

#### Treatments in Ayurveda

- *Chedana* (Incision)
- *Salyanirharana* (Removal of foreign bodies)

- *Margasodhana* (Cleaning the tract)
- *Ropana* (wound healing).<sup>[6]</sup>

In *Salyaja nadi vrana* if the patient not willing to do surgery (I&D) he can do with help of probe penetrate the tract, after cleaning apply a thread soaked in solution of *Ksharasootra* inserted into it, repeated it to making the tract clear and wide.<sup>[7]</sup>

In persons who are emaciated, weak and frightful and if the ulcer is present in vital organs, the wise physician should cut open the sinus by using *Ksharasootra* and not using sharp instruments.<sup>[8]</sup>

#### Properties of *Kshara*<sup>[9]</sup>

*Kshana* means *Himsana* –*twak mamsadi himsana*. *Ksharana* means *Sodhana*. That is *Kshara* act as *Sodhana* both internally and externally.

It is called *Kshara* since it destroys (the vitiated tissues and makes them fall of) or since it torments the tissue)

Due to *Chedana, Bhedana, Lekhana & Tridoshagna* property *Kshara* is more important than *Sastra* and *Anusasthra*.

*Kshara* has *Pachana, Dahana, Vilayana, Sodhana, Ropana, Soshana, Sthambana & Medohara* property (That is cleansing, debridement, sclerosing, draining and wound healing).

#### Preparation of *Kshara Sootra*

Barbour's surgical linen thread no 20 is using for the *Ksharasootra* preparation. 11 coating of *Snuhi ksheera* (*Euphorbia nerifolia*), 7 coating of *Snuhi* and *Apamarga kshara* (*Achyranthus aspera*) and 3 coatings of *Snuhi apamarga* and *Haridra* (*Curcuma longa*). After every coating dry the *Sootra* in a *Ksharasootra* cabin.

#### Mode of Action of *Ksharasootra*

- Provide medicinal debridement by reducing slough or tissue debris.
- Helps cutting, curetting, draining and healing of the tract.
- Provide healthy base for healing
- Accelerates healing by inhibiting fibrotic process
- Produce significant pathophysiologic change
- Helps in progression of healing
- States harmony of physical properties of tissue
- It destroys and removes unhealthy tissue and promotes healing of the tract due to caustic action.
- Controls infection by the antimicrobial action
- Separation of debris and cleaning the wound facilitate in drainage of pus in tract and help in healing.
- Cutting through the tissue and lying the tract open

	Drugs	Properties
1.	<i>Snuhiksheera</i>	Anti oxidant, analgesic, anti inflammatory and anthelmintic in action
2.	<i>Apamargakshara</i>	Wound healing and anti oxidant activity Antibacterial activity
3.	<i>Haridra</i>	Anti inflammatory, anti oxidant, anti microbial and analgesic

#### Assessment Criteria

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

UCT =  $\frac{\text{Total no. of days taken to cut through the tract}}{\text{Initial length of the Kshara sutra}}$  = days/cm

= Time (in days) taken to cut one cm of the fistulous tract with simultaneous healing

#### 1. Pain

- Grade 0 : No Pain
- Grade 1 : Mild Pain, can be tolerated without any medication
- Grade 2 : Moderate Pain, requiring oral analgesics
- Grade 3 : Severe Pain, not reliving with oral analgesics
- Grade 4 : Unbearable, requiring injectable analgesics

#### 2. Discharge

- Grade 0 : No Discharge
- Grade 1 : Mild Discharge (wets 1 × 1 cm gauze piece)
- Grade 2 : Moderate Discharge (wets 2 × 2 cm gauze piece)
- Grade 3 : Profuse Discharge (wets more than 2 × 2 cm gauze piece)
- Grade 4 : Continuous and profuse Discharge

#### 3. Size of the wound

- Grade 0 : Healed
- Grade 1 : Wound within 0.5-1 cm
- Grade 2 : Wound within 1- 2cm
- Grade 3 : wound within 2 - 3 cm
- Grade 4 : Wound more than 3 cm

#### Case report

23 yr old female patient, housewife, was examined in the hospital OPD and took OPD level treatment for pilonidal sinus (*Nadivrana*). Complaints started 3 yrs before. She noticed a pustule in the right side of buttock region just lateral to the intergluteal cleft. And there was pain and profuse discharge of pus. Consulted allopathic doctor and done incision and drainage. The complaint got subsided. After that same symptoms restarted after 8 months. Then she took some medicine for subsiding the symptoms. Then the swelling and pain subsided. After 2 yrs she felt a throbbing type of pain in the intergluteal region sacrococcygeal part. For better treatment she came to hospital.

#### Family history

Her brother having similar complaints.

**Personal history**

While analyzing her personal history it is noted that the patient has good appetite, normal bowel micturition and sleep. Diet mainly non-veg.

Patient is obese.

No habit of taking food in regular time.

**Local Examination**

**Inspection**

1. There was two pits in the cleft at a distance of 3cm
2. No swelling and pus discharge
3. Hairs present in the cleft.

**Digital examination:**

Tenderness present over openings with slight induration.

**On probing**

There is connection of tracts and it extend little upward above upper pit.

**Blood report**

Hb-12.3 gm%

ESR- 55mm/hr

TC - 11500 cells/cmm

**Subjective Parameters**

Symptoms	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	Grade 2	Grade 2	Grade 1	Grade 1	Grade 1	Grade 1	Grade 0	Grade 0	Grade 0
Discharge	Grade 0	Grade 3	Grade 3	Grade 2	Grade 1	Grade 1	Grade 0	Grade 0	Grade 0
Length of Tract	5.3 cm	4 cm	3cm	2.1cm	1.2cm	Cut open			
Size of Wound	Nil	Nil	Nil	Nil	Nil	Grade 2	Grade 1	Grade 1	Grade 0

Length of tract assessed by probing the tract initially after that by measuring the *Ksharasootra* used for tying.

Unit cutting time (UCT) =35/5.3= 6.6 days/cm

**Observation and Result**

The patient had followed diet and medicines strictly. From 14<sup>th</sup> day onwards there was remarkable change in pain. And with discharge of pus pain starts reducing. At the time of *Ksharasootra* application there was no pus discharge. Discharge starts after 2 days. In first 2 weeks there was profuse sanguineous discharge and after that with the progression of cutting of tract pus discharge also diminished. With the discharge of pus small hairs also came from that tract. After 35<sup>th</sup> day no discharge of pus. Initially tract length was 5.3cm and tract cut open was occur on 35<sup>th</sup> day. After cut through there was a wound and it completely healed within 56<sup>th</sup> day. 100% relief from all symptoms in 2 months.

Follow up was done for 6 months.

Lab investigation was repeated and ESR become normal 18mm/hr.TC- 10000 cells/cmm

**DISCUSSION**

Main reasons for the disease is *Salya* that is hairs present in the cleft. Patient is obese also. She is having the habit of taking bath in shower and there is chance of some hairs to collect in the intergluteal region. Because of over-

HIV, HbsAg, VDRL - Negative

According to the Ayurvedic assessment, the patient is *Kapha pitta prakruthi*.

**Treatment Given**

**Internal medicines given**

For first 3 weeks

1. *Chiuvilwadi kashaya* 90ml bd
2. *Triphala guggulu* 2 bd
3. *Gugulu pancha pala choornam* 5g bd with honey after food.

4<sup>th</sup> week onwards *Varanadi kashaya* also was added with other medicines. After tract cut open for healing purpose *Valiya madhusnuhi rasayanam* also included.

**Externally**

**Procedure:** The area was properly shaved and cleansed with *Triphala kashaya*. *Ksharasootra* was applied and weekly thread change was done. 4 times thread was changed. After tract was cut open cleaning and dressing was done with *Jathyadi ghritham*. Sitz bath was advised with *Triphala kashaya* daily 3 times.

weight there is chance of friction of hairs between in gluteal region. Improper cleaning of anal region after defecation may be a contributing factor for this condition. Proper drainage of pus may not be done in *Pakwavastha* and intake of medicine for subsiding the condition aggravates the disease. *Vata* causes pain and *Kapha* and *Pitha* causes *Pooya vardhakam*. So *Thridosha* involvement is seen in *Nadivrana*. Diet like non-veg, curd, milk and reduced fibre diet increase the condition.

With *Ksharasootra* application cutting and healing of tract was happened faster. And there was proper drainage of pus with healthy healing of tract. Because of antimicrobial action of *Ksharasootra* chance of infection is rare.

**CONCLUSION**

Easy, cost effective and minimally invasive procedure. Promotes healthy healing and recurrence is almost nil. Management of pilonidal sinus with *Ksharasootra* is found to be very effective.

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**Study photographs**



**Before treatment**



**Ksharasootra done condition**



**After healing**