



MANAGEMENT OF PILONIDAL SINUS WITH *KSHARASUTRA*: A CASE STUDY

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ABSTRACT

Pilonidal sinus is a disease of natal cleft that presents with chronic sinus with tuft of hair projecting from its mouth. This condition in Ayurveda is described under *shalyaja nadivrana*. This condition is more common in men. The incidence of pilonidal disease is about 26 per 100,000 population in the US. The management of pilonidal sinus in modern science is not very effective. *Acharya* Sushruta has advocated a minimally invasive surgery i.e. the *ksharasutra* (KS) procedure in the management of pilonidal sinus. Hence the KS procedure was used in this case report. KS is a procedure that minimizes complications and recurrence and it is with less discomfort and reduced cost and also enables quicker recovery of the patient.

INTRODUCTION

Pilonidal sinus is a small hole or tunnel in the cleft between the buttocks.^[1] This is an acquired condition and is most commonly seen in adult males. The sinus extends to subcutaneous tissue from the surface of skin but does not reach the bone. The lining of tract is usually granulation tissue. The contents of the sinus are hairs, granulation tissue, epithelial scales and debris. The incidence of pilonidal disease is about 26 per 100,000 population in the US.^[2] The disease is often seen in Jeep drivers and so it is often said to be 'Jeep disease'.^[3] It has been hypothesized that hair penetrates into subcutaneous tissue through dilated hair follicles.^[4] The disease usually presents in male at his 30s. The most common feature is the presence of chronic sinus about at the level of the first coccyx bone. A tuft of hair projects from its mouth. Due to recurrent infections, pain and tenderness are the common features.^[5] In modern science excision of the pilonidal sinus tract is the treatment of choice. However, the recurrence after the surgery is very common. Therefore, there is a need to assess the efficacy of other alternative treatment.

Acharya Sushruta describes a condition called *Shalyaja nadivrana*, which is similar to Pilonidal sinus. The *Acharya* has suggested very unique, minimally invasive surgery, the *Kshara sutra* application for *Shalyaja nadivrana*. *Kshara sutra* is a medicated thread which is prepared from alkaline ayurvedic drugs with the use of a linen thread. The *kshara sutra* cures the sinus and fistula by its *chhedan* (excision), *bhedan* (incision), *lekhana* (scrapping), *tridoshaghna* (pacifies all three doshas).

MATERIALS AND METHODS

For preparation of *Kshara sutra* the following drugs were taken

1. Latex of *Snuhi* (*Euphorbia nerifolia*)
2. Alkaline powder of *Apamarga* (*Achyranthes aspera*)
3. Dry powder of *Haridra* (*Curcuma longa*)

Preparation of *Apamarga kshara*^[6]

The dried whole part of *Apamarga* 10 kg was taken which was incinerated and made into ashes and cooled. The whole ash (1kg) was collected and mixed with six times of water and stirred well and allowed to settle down the whole night. The mixture is then filtered for twenty one times with double folded sterilized muslin cloth and the residue was discarded. Then the filtrate was heated until all its water content got evaporated and stored in a container.

Preparation of *Kshara sutra*

The linen thread number 20 was taken and manually coated eleven times with the latex of *snuhi*, followed by seven times coatings of *apamarga* ash. In each times of coatings the thread was dried. Finally, three coatings of *haridra* was applied and dried. The thread thus prepared was made sterilized by ultraviolet radiation and placed in glass tube.

Patient details

A 26 year male patient complained of pain and foul smelling discharge for 2 year at the natal cleft. Initially the patient complained of recurrent episodes of abscess at the natal cleft for 2 year. He was subjected to 3 times Incision and Drainage for this. Then he consulted us for

consultation in Chand Ayurveda. He also complained of two opening at the natal cleft for two months. He denied any discharge from anal canal. There is no past history of Diabetes mellitus, Hypertension, TB, Fistula-in-ano, Coronary artery disease.

On examination – well built, moderately nourished, Pallor – Absent, edema – Absent, Icterus- absent, Cyanosis – absent, lymph nodes – normal, Respiratory system – normal, no added sound, Cardiovascular system – S1 & S2 heard, no added sound, Gastrointestinal system – P/A – soft, non-tender, normal bowel sound, per rectal examination-normal. BP-120/80 mmHg, Pulse-regular, 80 bpm RR-16/min, Weight-78 Kg

Examination of sinus

Inspection- Three openings at the natal cleft in the midline was seen. The first opening was present at 5 cm

above the anal verge. The second opening was 5 cm apart from the first and the third opening was present at 1 cm apart from the second. Pus discharge was present at all the three openings. Tuft of hairs was seen at the first sinus opening.

Palpation-Tenderness was present at the sinus tract. On squeezing the sinus, yellowish pus discharge was observed.

Probe examination- On probe examination the first sinus opening was found to be connected with the second and the second with the third. On probing the third opening, a sinus tract about 6 cm was found ending above the third sinus opening. On removing the probe blood mixed pus with 8 strands of hair was seen at the probe.



INVESTIGATION

Total count-10900/cmm
Neutrophil-75 %
Lymphocytes-23 %
Eosinophils-2 %
Monocytes-0 %
Basophils-0 %
Haemoglobin-13.1 %
ESR-10 mm/hr
Platelets-181000 /cmm
BT-1 min 30 sec

CT-7 min 30 sec
Glucose R-102 mg %
B. Urea-20 mg %
S. Creatinine-0.9 mg%
Sodium-139 mEq/L
Potassium-4 mEq/L
HBsAg-Negative
HIV-I & II Ab-Negative
HCV Antibody-Negative
VDRL-Non-reactive

PRE-OPERATIVE PROCEDURES

1. Inj. T.T 0.5 mL IM single dose given
2. Inj. Xylocaine 0.1 mL ID given as test dose and no allergic reactions were observed
3. Part preparation of the natal area was done

OPERATIVE PROCEDURES

1. Painting and draping of the natal area was done
2. Inj. Lidocaine 2 % with adrenaline about 15 ml was infiltrated at the sinus tracts
3. A Copper probe was inserted inside the first sinus tract and was found to be connected with the second opening of sinus at the natal cleft. The probe was

- then removed and 7-8 hairs entangled in the tract was remove using hemostatic forceps.
4. After that the sinus the first two connect openings of the sinus tract were subjected to *kshara sootra* ligation.
5. Then probing was done from the second opening to check connections between the second and the third openings and connections were found
6. Then after that probing was done from the third opening and the tract was found ending 5 cm away from the third opening.
7. Then the *kshara sootra* ligation was done for the tract by making artificial opening with blade no. 11.

8. Hemostasis was achieved
9. Dressing done with 5 % Povidone iodine solution.
10. Patient was found stable with BP-124/80 mmHg, PR-76, RR-16/min and patient was found talking coherently.

POST-OPERATIVE ADVICE

1. Wound cleaning with *Triphala kwath* and dressing with *Jatyadi taila*
2. *Triphala guggulu* 1 tab TID
3. *Kaishor guggulu* 1 tab TID with *Khadirarishta* 20 mL BID
4. *Arogyavardhini vati* 1 tab BID
5. *Kshara sootra* change weekly once

Assessment during treatment

Date of thread change	Pain scale(VAS)	Discharge	Tenderness
25-09-2020	5	Purulent	++++
03-10-2020	3	Serous	++++
10-10-2020	2	Serous	+++
17-10-2020	2	Serous	++
24-10-2020	1	Serous	Absent
01-11-2020	1	Absent	Absent
08-11-2020	1	absent	Absent



RESULTS

The complete excision of the tract with healed wound for primary tract was achieved in 5 week and the same for secondary tract was achieved in 8 week.



DISCUSSION

Pilonidal sinus is a very distressing condition. The prepared Kshara sutra is composed of *apamargakshara*, *snuhi latex* and *haridra* powder. Apamarga kshara has *chhedan*, *bhedan*, *lekhana*, *tridoshaghna* properties.^[7] *Haridra* powder has the properties such as *Rakta Shodhaka* (bloodpurifier), *Shothahara* (anti-inflammatory), *Vatahara* and *Vishaghna* (antimicrobial) and it is useful in *Vrana Ropana* (wound healing).^[8]

Antibacterial effect was found in the ethanol and chloroform extract of *Euphorbia neriifolia* when was tested against the organisms and it was believed to be due to the presence of tannins and flavonoids which have been shown to possess antibacterial properties.^[9]

The wound healing property of *E. neriifolia* can be attributed to the presence of tannins (Kozioc and Marcia, 1998). Elmarrie and Johan (2001) have reported tannin to have antibacterial activity.^[10] The kshara-sutra application acts by its cutting and healing actions at the same time. *Triphala* extract as an antibacterial has been proved especially against *Staphylococcus* & *Methicillin resistant Staphylococcus aureus*.^[11]

Most of the ingredients used in *Jatyadi taila* are *shothahara*, *vedanasthapaka*, *ropaka*. The ingredients of *Jatyadi taila-Haridra* (*Curcuma longa*), *Karanja* (*Pongamia pinnata*) are *kushthaghna* and *kandughna* and so can be used against wound infection. *Daruharidra* (*Berberis aristata*) and *Neem* (*Azadirachta indica*) of *Jatyadi taila* are established drug to check bacterial growth and promotes wound healing.^[12] *Triphala guggulu* promotes post-operative wound healing.^[13]

Kaishor guggulu was used for *pittashamana* effect because it contains *guduchi* and cow-ghee as chief ingredients. When it is given with *Khadira kwath* it is useful for *vrana* and *kushtha*.^[14] So *kaishor guggulu* with *khadirarishta* was used. *Arogyavardhini gutika* has the properties of *deepana*, *pachana*, *malashodhana*, *kushthaghna*, *sarvaroganashaka*.^[15]

CONCLUSION

Pilonidal sinus can be treated successfully with *Ksharasutra* application.

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