



Management of Pilonidal sinus by partial sinus excision along with *Ksharsutra* ligation

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ABSTRACT

Pilonidal sinus is a disease of a midline pit situated in mid gluteal cleft at post anal region associated with hairs. Continued sitting, obesity, hairy part, family history which increases the risk of diseases. The prevalence rate in males is more (Male & Female ration 3:1) and incidence is about 26 per 100,000 population.

The treatment of pilonidal sinus includes excision and primary closure, excision with reconstructed flap technique etc. In Ayurveda pilonidal sinus is correlated with *Nadivrana* and it can be considered under *shalyaj Nadivrana* and Shushruta has explained *Shastrakarma* with intervention of *ksharsutra* as one of the treatment of *Nadivrana* (sinus) excision. In this case study, a case of pilonidal sinus, 21yr / Male patient diagnosed and treated successfully with integrated approach i.e. partial sinus excision adjuvant to *Ksharsutra* therapy.

Partial sinus excision followed by *Ksharsutra* ligation in the remaining intact tract was performed under local anaesthesia, Patient was asked to attend surgical OPD for dressing on alternate days, and Seitz bath with lukewarm water

was advocated before dressing. The *Ksharsutra* was changed weekly for 3 sitting. To reduce pain, inflammation and control infection, Analgesic, anti-inflammatory and oral antibiotic drug were also prescribed for 5 days. Observation revealed that sinus- track cut through and healed by 4 weeks. Patient was under observation for period of one year to check for recurrence.

This innovative partial sinus excision along with *Ksharsutra* ligation under local anesthesia, proved an effective ,time conserving and non-recurrent, minimal invasive treatment alternative for pilonidal management.

Keyword- *Pilonidal Sinus, Sushrutsamhita, Nadivrana Chikitsa , Ksharsutra*

Introduction

Pilonidal sinus is subacute to chronic infection in subcutaneous fatty tissue. It is nest of hair, derived from the Latin words for hair (Pilus) and nest (Nidus), ⁽¹⁾ sinus track which commonly contain hair. It occur under the skin between the buttocks (natal cleft) at short distance above the

anus. The incidence of pilonidal sinus is approximately 26/100,000^[2] Patey and scrff in 1946 suggested that it is primarily an infective lesion and with secondary entrance of hair and debris, or the results of penetration of the skin by hair which may also introduce both infection and epithelium.

The congenital theory for pilonidal sinus was thought that cystic remnants of the medullary canal persist in sacro-coccygeal region, this faulty development of median raphe in this region leads to dermal inclusion which become pilonidal cyst, and later become pilonidal sinus.

The Acquired theory is supported by finding the condition occurring in the other parts of the body such as between the fingers in barbers, in the axilla. In world war II, this condition known as 'Jeep Disease' and was felt to be from sitting for a long periods of times in vehicles. This predisposes hair ends to be pushed into neighboring hair follicles and to initiate a foreign body reaction. The resulting abscess wound rupture having painful draining sinus. Obesity, local irritation and sedentary life style are usually associated with pilonidal sinus^[3]. The most commonly used treatment includes meticulous shaving ,incision and drainage, cryosurgery ,excision with primary closure, and healing by secondary intention. However, post operatives recurrence following surgery is high, leading to frequent and time-consuming wound care^[4] hence, there is a need to evaluate the role of the other innovative techniques for the management of this disease so as to minimise recurrence, make it cost effective, with improved acceptability & minimum hospitalization. *Acharya Sushruta* , the father of surgery has given detailed description regarding

the *Nadi* or Sinus in the chapter *visarpa nadi stanaroga nidana*- 10th chapter of *sushruta Samhita*, *nidna* sthan. He recommended that if inflammatory swelling is ignored even during the stages of suppuration then it may results in chronic granulating tract and is termed as *Nadi* which is like test tube, the exudates remain in movement therein. If such suppurative swelling is neglected and not to be treated by *shalya karma*, then it will be responsible for the persistence of chronic *Nadi* (sinus).^[5]

According to Sushruta sinus track should excised with the help of medicated thread which is coated with caustic (alkali) material, commonly known as *Ksharsutra* , specially occurring in the emaciated, the weak and the timid and those (sinuses) which occur at vulnerable areas.^[6]

Surgical methods generally emphasized as excision of the sinus track 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, in this present case study, patient having pilonidal sinus was treated by modified *Ksharsutra* therapy successfully. The treatment proved ambulatory, time conserving, efficacious and cost effective in management of pilonidal sinus.

Material and Method^[7]

Material – *Apamarga Ksharsutra* standardized by ICMR was used for ligation.

Drug used for *Ksharsutra* preparation-

The common materials used for preparation of conventional *Apamarg Ksharasutra* :

1. Barbour surgical linen thread no. 20 (Purchase from surgical store)
2. Specially prepared Alkaline Ash (*Kshar*)of *Apamarg (Achyranthes aspera)*

3. Dried *Haridra* powder (*Curcuma longa*)

4. Fresh latex of *Snuhi* (*Euphorbia nerifolia*)

Preparation Apamarg Ksharasutra:

The thread tied on specially designed hangers was smeared with latex of *Snuhi* for 11 times, followed by 7 coatings of wet *Snuhi-Ksheer* mixed with *Apamarga Kshar* and 3 coatings of *Snuhi Ksheer* and fine powder of *Haridra*. Thus, total 21 coatings were performed in specific order. For drying purpose, after smearing the threads, every time the hanger was placed in the specially designed 'Ksharsutra-cabinet' provided with UV radiation for

sterilization. The pH was maintained between 8.5 to 9. The thread was kept 12 inch long & sealed in air tight glass tube. with aseptic precautions. [8]

Ksharsutra Application Method: Patient was placed in prone position after standard pre-operative conduct. After excision and broadening of sinus track, and removal of embedded hair follicles and debris inside, *Ksharasutra* was ligated into the intact sinus-tract under local anaesthesia, with the help of a specially designed malleable metal probe following all aseptic precautions. [9]

Assessment criteria and observation-

	Gradation			
Symptoms	+++	++	+	0
Pain on visual Analogue scale	Severe pain (7-10)	Moderate pain (4-7)	Mild (1-3)	No pain
Discharge	Profuse- If discharge wets more than two pads	Moderate- If discharge wets two pads of gauze	Mild- If discharge wets one pad of gauze	No discharge
Tenderness	Severe- Patient denies touching	Moderate- Tenderness on gentle pressure	Mild- Tenderness on firm pressure	No tenderness
Induration	Severe – Reaction with involvement of subcutaneous tissue.	Moderate- Reaction with involvement of reticular layer of dermis.	Mild- Inflammatory reaction with tissue oedema and cellular response	No inflammatory reaction

Case study -

Source of data:-

This is single case study. A 27 year old male patient, came to the surgery O.P.D at Dr D.Y.Patil Ayurvedic Hospital, Navi Mumbai, India. Proper counselling, written informed consent was recorded

after explanation of proposed line of treatment, following International Council for Harmonised Tripartite Guideline.

Chief complaint-

1. Small 2 external opening at scroccoccygel region since 2 month
2. Pus discharge through it

3. Mild pain and itching over sinus (boil), and discomfort after prolonged sitting .

H/O present illness-

In this study 27 –year old male patient, who had apparently been normal 2 month back ,gradually noticed pain around sacro-coccygeal region with 2 external opening and pus discharge through it. He also complained of mild pain and itching over boil, and discomfort after prolonged sitting. For the above symptoms, patient took analgesics, but didn't got any relief, therefore for further treatment, he came in Shalyatantra OPD at D.Y Patil Ayurvedic Hospital, Navi Mumbai,

Family history- No relevant family history-no hereditary link noted.

Personal history-

- Diet-Vegetarian, preferred spicy food,
- Time and frequency of intake-Irregular
- Loss of Appetite
- Sleep Disturbed,
- Addiction- tobacco chewing,
- Micturition-4-5 times per day,
- Bowel-Irregular ,occasional constipation

General examination

Pallor-Absent, Icterus-Absent, Clubbing-Absent, Cyanosis-Absent, Oedema-Absent, Lymphadenopathy-Absent
Vitals-

Pulse-70/min, Respiratory rate-18/min,B.P-110/70mm of hg

Local examination-

Position-In prone position of patient

- **Inspection**-the findings were patient was hairy and having small 2 sinus opening near sacro-coccygeal region with sero-purulent pus discharge through

opening swelling (mild)tenderness++, foul smell and hair projecting from the opening.

- **Palpation**- cord like indurated structure was felt external opening to gluteal cleft.
- **Probing test**-external opening to accessed branching and extension of track.

About 4 cm tract was found during probing at mid-gluteal natal cleft.

Secondary examination was done in Lithotomy position, to access any anal pathology or any anal connection. It is necessary to do anorectal examination to evaluate for concomitant fistulous disease, crohns disease, or other anorectal pathology.

Diagnosis- After detailed assessment-history taking, physical examination, the patient was diagnosed with case of *Nadivrana* i.e. pilonidal sinus.

Investigations- All routine pre-operative tests were performed such as CBC ,Blood sugar, Serum creatinine, CT-BT, ECG, which were within normal limit and HbsAG ,HIV were found nonreactive. All situations about disease and its management were explained to patient and finally, after his informed written consent, patient was planned for partial sinus excision along with *Ksharsutra* ligation under local anaesthesia as per day care procedure.

Procedure:

Pre -operative- The written consent was taken before the procedure. Patient was kept nil orally for two hours before surgery. The part was prepared and Pre-operative medications –Inj. T.T 0.5ml I/M and Inj. Xylocaine 2% I/D for sensitivity test insured before surgery.

Operative- Patient was taken in prone position. Inflammatory and oral antibiotic drugs and draping were also prescribed for first 5 days after main procedure.

unhealthy granulation tissue was removed through the opening on skin. Probing done through opening and tract traced till its blind end and another opening was made over the skin up to the tip of probe, probe removed through another opening after feeding of *Ksharsutra* and then two ends of *Ksharsutra* ligated approximately. Haemostasis achieved and tight bandaging was done.

Post-operative:

Patient was asked to attend surgical OPD for dressing on alternate days. Seitz bath (Hip) with lukewarm water was advocated before dressing. The *Ksharsutra* was changed weekly for 3 sitting to achieve simultaneous cutting and healing. To reduce post-operative pain and inflammation, analgesics, anti-

Ayurvedic Internal medication-

- Triphala Guggul -250mg -2 tablet three times day
- Gandhak Rasayan Vati -200mg -2 tablet three times day (Continued for 30 days)

Adjuvant, Tab. Cefixime 200mg twice a day (Antibiotic) and Analgesic drug- Tab Diclofenac 50 mg (twice day after meals) were prescribed for first 5 days, only after main procedure (not during follow up course).

Observation

Symptoms	Day-1	Day-7	Day -14	Day 21	Day-30
Pain at sacro-coccygel region	++++	+++	++	+	0
Discharge	++++	+++	++	+	0
Tenderness	++++	+++	++	+	0
Induration	++++	+++	++	+	0
Length of tract	Initial length of sinus 5 cm	Length of intact sinus time of first change 4.5	Length of intact sinus at second change 3.5cm	Length of intact tract on? third change 2.5cm	No intact track/complete cut through of sinus. 1.2cm

Result

The patient had followed instructions regarding follow-up management, diet and medicines strictly. There was remarkable relief in pain. At the time *Ksharsutra*

application there was no pus discharge. Discharge started after 2 days of procedure. In first week there was profuse sanguineous discharge and after that with the progression of cutting of tract, pus

discharge also diminished. After cut through, there was non-infected wound and which completely healed within 30 day. Follow up was done for 1 year to assess recurrence, if any.



Image 1: Before procedure



Image 2: Post operative Day 1



Image 3: Post operative Day 7



Image 4: Post operative Day 21



Image 5: Post operative Day 30

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 disease was more encountered among drivers because of more friction, exertion to the post anal region and maintaining the poor hygiene of the anal region the main stay of this. Further, the presence of hairs within the sinus is due to 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, Kapha Prakruti*. The

possible resumption for this is that *Pitta* and *Kapha Dosha* are potent causes for pilonidal sinus. According to Ayurveda the action of *Ksharsutra* is thought to be due to its healing and cleansing effects in the area where it is applied. The *Ksharsutra* have alkaline pH so it possess de sloughing property. Collectively, *Ksharsutra* acts as simultaneous cutting and healing procedure. The combination of medicines (*Apamarga Kshar*, *Snuhi Ksheer*, *Haridra*) used to prepare the thread helps in the debridement and lysis of tissue, exerts antifungal, antibacterial and anti-inflammatory action. *Ksharsutra* in situ encourage healing by promoting new granulation tissue formation from the base due to antimicrobial action and as cutting and healing seton. It allows the proper drainage of pus from the sinus that to proper healing. It is having the action of excision, scrapping, draining, penetrating debridement, sclerosing and healing effect. The unique property of *Ksharsutra* is that it destroys the residual glands in the epithelium, minimizes the rate of complications and recurrence.

In this present pilonidal sinus case study, this modified *Ksharsutra* technique i.e. partial sinus excision along with *Ksharsutra* ligation under local anesthesia, proved an effective, time conserving and non-recurrent, minimal invasive treatment alternative for pilonidal management.

Conclusion-

This innovative and integrated surgical approach i.e. partial excision of sinus along with *Ksharsutra* ligation technique proved to be a minimal invasive procedure (day care management, under local Anaesthesia) with cost effectiveness, patient could carry out his day today work, without hospitalization and untoward

effects with early wound healing potential. It is true to say that, more number of cases should be done to validate and establish this innovative integrated procedure for effective management of pilonidal sinus.

Reference-

1. Gray s Anatomy Williams P.L 38th Ed. ELBS, 1995.
2. Prince ML Griffiths WAD. Normal body hair: a review Clin Exp Dermatol, 1985; 10:87-97.
3. P Sivalingam, Topics in colorectal surgery, Jaypee brothers, medical publishers (p) limited 2010, first edition, chapter-12, PP. -329, Pg-102.
4. Das S:A Concise text book of Surgery, Publisher Dr. Das S 5th Edition reprinted -2009, Chapter 54, PP-1343, pg -1099.
5. Vaidya Yadav ji Trikam ji Acharya, editor sushruta Samhita of Sushruta with the Nibandh sangarh commentary of Shree Dalhanacharya, Varanasi: publisher Chaukhambha subharti prakashan; 2003, Nidanasthana chapter 10 PP 307-308
6. Kaviraja Ambikadutta Shastri, Sushruta Samhita of Maharshi Sushruta Edited with Ayurveda Tattva Sandipika Nidana Sthana, Visarpa-Nadi-Sthnarooga Nidna, Chapter /9, Chukhmbha Sanskrit Sansthan, Varanasi, Reprint, 2007; 81
7. Vaidya Yadavji Trikamji Acharya. Sushruta Samhita (Sutrasthana). Varanasi; Chowkambha krishnadass Academy ;2008.p 45
8. Amar P. Dwivedi, Management of pilonidal sinus by *Kshar Sutra*, a

minimally invasive treatment, Int J Ayurveda Res. 2010 Apr-Jun; 1(2): 122–123

9. Dwivedi Amarprakash P., ADR-Ksharsutra Kit- A breakthrough in

the standardization of Ksharsutra, Int.J.Res.Ayurveda Pharm, 2013, 4(2), 304:306.

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