

HOLISTIC APPROACH TO MANAGE PILONIDAL SINUS (PNS): A CASE STUDY

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ABSTRACT

In the present paper there is a lion view presentation of a clinical experience in reference to pilonidal sinus cum non-healing ulcer with Ayurvedic approach. In modern medical science numerous surgical procedures have been described, but rate of treatment failure is high and recurrence of disease is frequent all over the world. Sometime after these known modern surgical procedures pilonidal sinus converts into non-healing ulcer. This condition creates severe agony and thus resulting psychosomatic disturbance in patient including psychotic disturbance in family members.

INTRODUCTION

The term '*Pilonidal*' is derived from Latin word "*Pilus*" and "*Nidus*". "*Pilus*" means *hair* and "*Nidus*" means *nest*. Thus, pilonidal literally means **nest of hair**.^[1] Herbert Mayo is credited with the first description of this disease in 1833.^[2] and Hodges coined the term pilonidal in 1880^[3] It affects an estimated 26 per 100,000 persons.^[4] Pilonidal is epithelium lined tract, situated short distance behind the anus in natal cleft or intragluteal cleft at the top of the buttocks near the tail bone, containing hair and unhealthy diseased granulation tissue. It is due to penetration of hair through the skin into subcutaneous tissue. It is infective in origin. It is common in hair dresser, jeep driver etc. It is common in 20-30 year of age and hairy males

more affected. Known risk factors include family history, local trauma, sedentary occupation, and obesity.^[5]

Pilonidal sinus is characterized by discharge (either sero-sanguinous or purulent), pain (thrombing and persistent type), tender and swelling seen just above the coccyx in the mid line (primary sinus); and on either side of the midline (secondary sinus), tuft of hairs may be seen in the opening of the sinus etc.

There is similarity between *Shalyaj Nadi Vran* (described in *Sushruta Samhita*) and pilonidal sinus. *Sushruta* has advocated a minimally invasive para surgical treatment, viz., *Kshar Sutra* procedure, for *Nadi Varna*.

In modern science, different treatment modalities are available such as excision and skin grafting, excision with Z-plasty, Karydakis excision, excision with closure using Rhomboid-limberg flap, Bascom technique of excision etc.

Ayurveda provides high cure rate of this challenging disease as well as prevents recurrences of this disease.

Aetiology

The disease was initially thought to be congenital, due to the failure of fusion in the dorsal midline resulting in entrapment of hair follicles in the sacrococcygeal region; however, more recent research strongly favours an acquired aetiology.

The acquired theory is further supported by Bascom who notes that hair follicles in the gluteal cleft become infected with keratin resulting in local infection and abscess formation while local suction forces cause hairs to enter the infected pit and lodge in the abscess cavity.^[6]

Karydakis asserts that loose hairs “impale” into normal tissue and induce a foreign body reaction.^[7] His work in over 6000 patients led him to devise a pathogenic formula involving three primary variables: (1st) loose hair or “invader” (H), (2nd) force (F), which is influenced by secondary factors such as the depth, narrowness, and friction of the natal cleft to create an insertion process. (3rd) factor of vulnerability (V), refers to the local skin and tissues.

$$\text{Pilonidal Disease} = \text{Hair (H)} \times \text{Force(F)} \times \text{Vulnerability (V)}^2$$

CASE REPORT

In the below mentioned clinical discussion, successful and satisfactory effect of Ayurvedic

approach on the basis of principles of Ayurveda for the treatment of nonhealing ulcer due to recurrent pilonidal sinus has been presented for further guidance and experience sharing point of view.

A 28-year-old male patient visited (3 Dec 2018) the OPD of Dr. Sarvepalli Radhakrishnan Rajasthan Ayurveda University Hospital, Jodhpur, Rajasthan with the complaints of a big hole between the gluteal fold along with pain, redness, swelling in the skin of that area from 2-3 months and also foul-smelling discharge from about last 15 days.

History of present illness revealed that the patient was apparently normal before 6 months. Gradually he experienced painful eruption in the skin of gluteal fold, after 5 to 6 days eruption burst leading to discharge of blood mixed pus. After some days in the affected area a hole developed through which watery discharge started and continued to occur for 1-2 months.

Since the lesion was not healing, patient went to a General Surgeon in Karnataka, and was advised for operation. After this consultancy patient got operated before 4 months and from the wound a bunch of hair was removed. Initially the wound started to heal but after few days it got infected and started to increase in size from last 2-3 months with pus discharge.

According to patient now there is pain, swelling, redness from 2-3 months with foul-smelling pus discharge from the wound from about last 15 days. With above complaints patient arrived at *Shalya Tantra* OPD of Rajasthan Ayurveda University, Karwar, Nagore Road Jodhpur, Raj.

History of past illness revealed that the patient was operated for pilonidal sinus in 2014 by the general surgeon in Karnataka. Due to recurrence of this disease within 8-9 months, further operated in 2015 in Karnataka by another general surgeon. The disease further re-occurred after 3 years, and one time again operated in Aug 2018 by the same doctor at the same place.

Personal history revealed that the patient is vegetarian, non-alcoholic, non-smoker, appetite normal, bowel and micturition habits normal, sleep disturbed. There was no genetic linkage of the disease noticed in the family.

General examination of the patient showed mild pallor, BP 120/78 mmHg, pulse rate 88/min, respiratory rate 18/min, temp. 98.8°F, body wt. 64 kg.

On local examination we have observed the size of non-healing ulcer is (3.0×2.5×4cm) with

the presentation of rounded margin, irregular and fibrosis, edge-undermined, floor- contains unhealthy granulating tissue with slough and purulent discharge. Also observed a small pustule 1.5cm above non-healing in that area.

On the basis of clinical presentation, the patient was diagnosed as a case of non-healing ulcer with pilonidal sinus. On the basis the of past history and previous operative history it is termed as PNS cum non-healing ulcer.

The patient was advised for *Ksharsutra* application in *Shalyaj Nadi Vran* (pilonidal sinus) and *Shodana, Ropana* for *Dusta Varna* (non-healing ulcer).

Before planning treatment Complete Blood Count (CBC) and other investigation were done to rule out condition such as Anaemia, Blood Clotting Disorder, Diabetes Mellitus, Tuberculosis, Syphilis, Viral Markers like HIV & HBsAg and other infective disorders.

TREATMENT

Preoperative preparation

Patient's consent was taken prior to operative procedure. Local preparation was done. Lignocaine sensitivity test was done before surgery. Injection Tetanus Toxoid (TT) was administered Intramuscular for prophylaxis.

Operative procedure

- The patient was placed in prone position (jack knife position, i.e. prone with buttocks elevated). Painting and draping were done.
- **For *Shalyaj Nadi Vrana* (pilonidal sinus)** - The external opening was excised under local anaesthesia (2% lignocaine) and the embedded hairs were removed with the help of artery forceps, after that wound was clean with normal saline later *Kshara Sutra* tied covering the entire underlying track for simultaneous cutting and healing.
- **For *Dusta Varna* (non-healing chronic ulcer)**- firstly unhealthy granulation tissue was debrided with the help of toothed forceps and scalpel, after that wound was cleaned with *Triphala Kwath* and then dressing was done with *Jatyadi Ghrit* mixed with *Madhu* (honey).

Postoperative management

- 1- Medicine- Normal pain killer (NSAID) was given SOS for few days. At the same time Ayurvedic medicines was advised as per the protocol up to the next advice

a) <i>Aaghat sachet</i>	1 OD
b) <i>Swarna Basanta Maliti Ras</i>	125 mg
+ <i>Prawal Panchamrita</i>	125mg
+ <i>Yastimadu Churna</i>	1gram
+ <i>Amalki Rasayan</i>	1gram

1 x 2 times with honey

- 2- Dressing- daily wash with *Triphala Kwath* (decoction) than application of paste of *Jatyadi Ghrit* mixed with honey.
- 3- Diet chart- *Shali Chawal*, *Mudga Yusha* (), *Jangal Mans Rasa* (soup of wild animal meat) *Potola Phala* (pointed gourg), *Sahijan Phala* (drumstick), *Mooli* (radish), *Til Tail* (sesame oil), *Sarshap Tail* (mustard oil), *Tikta Dravya* (like -*Nimb*, *Guduchi* etc.), honey, *Grit*, etc.
- 4- At the interval of one weak patient was summoned to attained the *Kshar Sutra* Clinic for change of the thread till the complete removal of the pathological tract.

OBSERVATION

- After application of *Kshara Sutra* in *Shalyaj Nadi Vrana* (pilonidal sinus), collected material in pilonidal sinus drifted till the complete removal of the pathological tract. The length of pathological tract of PNS was gradually decreases (near about at the rate of 1.0 to 1.5 cm/weak) and condition of patient gradually improved.
- After debridement of fibrosed edge of *Dusta Varna* (non-healing chronic ulcer) along with *Shodhan* (with *Triphala Kwath*), *Ropan* (with *Jatyadi Ghrit* mixed honey) and some oral ayurvedic medicine, the wound started to heal within a weak and was healed completely in nearly 28 days.
- During each follow-up, sign and symptom were assessed.

Observations during follow-up visits					
Observations	Before Treatment	During Treatment			
	(at 0 th day)	1 st Visit (after 7 days)	2 nd Visit (after 14 days)	3 rd Visit (after 21 days)	4 th Visit (after 28 days)
General Observation					
Appetite	Normal	Normal	Normal	Normal	Normal
Bowel Habit	Normal	Normal	Normal	Normal	Normal
Micturition	Normal	Normal	Normal	Normal	Normal
Sleep	Disturbed	Disturbed	Improved	Normal	Normal
Blood Pressure	120/78 mmHg	120/80 mmHg	126/80 mmHg	120/76 mmHg	124/76 mmHg
Pulse Rate	88/min	84/min	76/min	76/min	76//min
Resp. Rate	18/min	16/min	18/min	18/min	18/min
Local Observation					
Pain	Severe	Moderate	Moderate	Mild	Mild
Discoloration	Bluish	Light Bluish	Bluish-red	Reddish	Normal healed
Swelling	Moderate	Mild	Absent	Absent	Absent
Pus Discharge	Moderate	Mild	Mild	Absent	Absent
Ulcer Size	3.0X2.5X4.0 cm	2.5X2.0X3.0 cm	1.5X1.0X1.0 cm	1.0X0.5X0.25 cm	Completely Healed
Foul Odour	moderate	Mild	mild	Absent	Absent

Pictures to show Progressive improvement during follow-up Visit



Before Treatment (at 0th day)



During Treatment at 1st Visit (after 7 day)



During Treatment at 2nd Visit (after 14 day)



During Treatment at 3rd Visit (after 21 day)



During Treatment at 4th Visit (after 28 day)

15 days After completion of Treatment

DISCUSSION

Triphala in *Triphala Kwath* develop unfavourable environment for bacteria resulting growth of bacteria inhibited. *Triphala* also increases collagen, hexosamine and uronic acid. *Triphala* promotes healing of infected full-thickness dermal wound. *Triphala* when used to close wounds showed increased thermal stability, water uptake capability, faster wound closure, improved tissue regeneration etc.^[8] *Triphala churna* has Antimicrobial activity against various bacterial pathogens.^[9] *Triphala* has good anti-inflammatory activity by inhibiting endotoxins and also has analgesic, antipyretic and ulcerogenic activities.^[10]

Jatyadi Grita

Jatyadi Grita is a poly-herbal Ayurvedic natural wound healing formula. It has antimicrobial activities so can be used for wound, ulcer, burns. In serious conditions *Jatyadi Grita* is used in combination with other Ayurvedic medicines. It is made up of *Grita* and several herbs including Neem, Jasmine, Turmeric, *Kutki*, *Haritaki*, *Licorice*, Bee's Wax etc.

Madhu (Honey) was used in dressing of the wound. Honey provides a moist environment to promote healing and acts as a viscous barrier to minimise microbial invasion and fluid loss, which in turn limits cross-infection. The antimicrobial quality of honey contributes to the rapid clearance of infection, the reduction of bacterial burden, and the elimination of odour. Honey is reported to act as a debriding agent, to be an anti-inflammatory and, therefore, prepares the wound bed to hasten healing.^[11] There have been numerous reported cases of reduction or elimination of wound odour following the application of honey (Dunford and Hanano, 2004; Robson, 2003; Alcaraz and Kelly, 2002; Kingsley, 2001). Odour control after application of honey is rapid, and, when combined with a necessary increase in the frequency of dressing renewal, this has a positive effect on both the wound and patient.

Yastimadu Churna Glycyrrhizin is extract of *Yashtimadhu* [*Glycyrrhiza glabra*], which reduced the development of inflammation. (Genovese T, *et al.*, 2009). A study result showed that in *Yashtimadhu Tail* treated group showed a higher degree of pain control [Kumar, Shinde Anant 2011].

Ghrit is a *Rasayan* and it adopts properties of other drugs due to its *Sanskaranuvertan guna*. Due to its specific *Sheeta* properties it helps in pacifying symptoms caused *Vata-Pitta Dosha* and *Rakta* like pain, discoloration (redness) and other signs of inflammation. It contains Vit. A, Vit. E and beta-carotene provide anti-oxidant property and its high nutritional value together helps tissue regeneration and promotes wound healing.

Aaghat Sachet and **Swarna Basanta Maliti Ras** Both these medicinal compound act as catalyst, protects as well as promotes normal physiological function in the body, specially prevent the degenerative changes, they further prevent weakling of the tissue, stimulates the reparative and regenerative function in the body by its poly-compound formulation. These compounds also provide complementary/ supplementary minerals for dense tissue healing in a desire way.

Prawal Panchamrita is the formulation and presentation of compound that are ideal source of remineralisation (especially of Calcium) of deficit tissue. Further this compound provides a beneficial environmental media for the promotion of healing process in the normal time.

Amalki Rasayan is potentiated form of *Amalki*. *Amalki* is a richest source of vitamin C, which is a necessary cofactor for collagen synthesis. Deficiency of vitamin C results in breakdown of connective tissue in and around the wall of blood vessels resulting in poor healing of wound. Chronic ulcer defined as wound that does not heal.

CONCLUSION

It can be concluded that *Shalyaj Nadi Vrana* (pilonidal sinus) can be well managed by application of *Kshara Sutra* because it minimizes the rate of complications and recurrence of the disease and is also cost- effective.

Dusta Varna (non-healing chronic ulcer) can be well managed by *Shodhan* (with *Triphala Kwath*), *Ropan* (with *Jatyadi Ghrit* mixed honey) and oral ayurvedic medicine as discuss the above, which can be considered for directly or indirectly support to the wound healing by inhibiting bacterial growth, normalise the ideal healing phenomena, regulates the inflammatory

reaction in the tissues providing essential minerals, vitamins and other nutrients which are required for wound healing.

Declaration of patient consent

The authors certify that they have obtained needed patient consent form. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understand that his names and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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