



A STUDY ON ROLE OF GUGGULU BASED PALASHA KSHARASUTRA IN THE MANAGEMENT OF SHALYAJA NADI VRANA (PILONIDAL SINUS)

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ABSTRACT:

One of the most discussed and proven techniques in *Ayurveda* surgery is *Ksharasutra*. Currently, it is the answer to some of the surgically treatable disease(s) which have high recurrence rates post-surgery especially in diseases like Pilonidal sinus. *Ksharasutra* finds its place even in international surgical texts. The surgical approach of pilonidal sinus is based on the removal of causative factors which include complete radical excision of the track. Post-operatively patients will have severe pain, and discomfort, need a long hospital stay, and require prolonged dressings along with antibiotics. Recurrence is very common even with adequate excision of the tract and proper surgical wound management. Complications include post-op infection, wound dehiscence, and seroma can be seen along with the recurrence. In the past two decades, various types of research have been carried out on *Kshara* and *Ksharasutra*. As a treatment modality for Pilonidal sinus (*ShalyajanadiVrana*), the application of *Ksharasutra* has been explained in *Sushruta Samhita* and *Chakradatta*. Recent researches aim to produce *Ksharasutra* out of available *Kshara* drugs. One such combination is *Guggulu*-based *Palashaksharasutra*. *Guggulu* can be used as a base material and is slowly replacing *Snuhiksheera* due to its availability, affordability, and analgesic action. *Palasha* also is abundant and thus tops the list of *kshara* drugs. This clinical study conducted

on 50 subjects of *ShalyajaNadiVrana*(Pilonidal sinus) treated with *Guggulu*-based *PalashaKsharasutra* showed significant statistical results concerning Pain, discharge, tenderness, and length of the tract

Index Terms - Ksharasutra, Pilonidal sinus, ShalyajaNadiVrana, Guggulu, Palasha

INTRODUCTION: -

Pilonidal sinus is one of the chronic or acute acquired diseases. The disease involves formation of the track filled with pus, hair etc. The word pilonidal derives from the Latin words' *pilus* ("hair") and *nidus* ("nest"). Although it is clinically asymptomatic in some cases, Pilonidal Sinus disease may also present as a chronic, complicated disease, characterized by multiple sinus tracts, leading to severe impairment of patient quality of life.¹

Pilonidal Sinus Disease (PSD) was previously referred to as Jeep driver disease when it was noticed amongst American soldiers driving the eponymous vehicles in World War II.²It is a common problem in the medical practice, affecting young-to-middle-aged males more commonly as compared to females due to the presence of excess body hair.

It is a common problem in the medical practice, affecting young-to-middle-aged males more commonly as compared to females due to the presence of excess body hair.³Due to upright body posture in sitting and standing position, the broken hair tends to accumulate in the midline in the natal cleft.⁴Hair penetrates into the skin of the gluteal cleft causes a cyst and sinus formation because of reaction to a foreign matter, leading to secondary infections and abscess formation⁵.

Its management is surgical for more than 100 years, despite that the optimal approach remains controversial, because no method satisfies all requirements for the ideal treatment, so many reports have advocated various different approaches with different outcomes.⁶

According to *Ayurveda* it can be considered as *Nadi Vrana*. '*Nadi*'-means a tract and '*Vrana*' - means an ulcer. So an ulcer, which is having a tract, is called as '*Nadi Vrana*'. Among eight types of *Nadi Vrana*, *Shalyaja Nadi Vrana*⁷ can be considered as pilonidal sinus as '*Bala Shalya*' (hair) is an important factor in causing the *Shalyajanya Nadi Vrana*.

Kshara sutra is one of the best sought methods of treatment for *Nadi vrana*⁸. Pilonidal sinus being considered as *Nadivrana*, the present study adopts *Kshara sutra* as study topic. The *Guggulu* based *Palasha Kshara sutra* is used in the present study.

The *Kshara Sutra* works through various mechanisms to treat Pilonidal sinus. The *Kshara* sutra has smearing of *Haridra*, *Guggulu* and *Palasha Kshara* to assist every stage of healing. The *Palasha Kshara* in *Kshara sutra* helps in debridement of the Pilonidal sinus tract, removing the unhealthy tissues and promotes healing. The other ingredients *Guggulu* and *Haridra* have antimicrobial properties, which help in reducing infection, inflammation and pain. The *Kshara sutra* also acts as a draining medium, allowing any accumulated pus or fluid to be released. Over time, the healthy tissues regenerate, and the tract gradually closes and heals.

In the present clinical study 50 patients were recruited for the study. The special case Performa was prepared and recordings were made before treatment, 7th day, 14th day, 21st day, 28th day and follow-up after 28th day. All the changes were recorded. The statistical analysis was done for these intervals.

AIMS AND OBJECTIVES:

The present study is conducted with aim to evaluate clinical efficacy of *Guggulu* based *Palasha Kshara sutra* in the management of *Shalyaja Nadivrana* w.r.t Pilonidal Sinus.

MATERIAL AND METHODS: -

The patients visiting IPD and OPD of AMV Hubli were recruited for the present study irrespective of gender, religion, caste, occupation etc. the patients were screened for the eligibility criteria for the study.

DIAGNOSTIC CRITERIA

Diagnosis will be made on the basis of symptoms of *Shalyaja Nadi vrana* (Pilonidal sinus) mentioned in the inclusion criteria.

INCLUSION CRITERIA:

Patients having signs and symptoms of *Shalyaja Nadi vrana* such as

- A. Pain
- B. Pus discharge with foul smell
- C. Presence of *Nadi* (tract) in the natal cleft confirmed by probing

EXCLUSION CRITERIA:

1. *Shalyaja Nadi vrana* associated with systemic diseases
2. *Shalyaja Nadi vrana* secondary to Pathology like Tuberculosis, Crohn's disease, Ulcerative Colitis, HIV, HbsAg, Osteomyelitis, Uncontrolled DM

A total number of **50 cases** of *Shalyaja Nadi vrana* after considering the above-mentioned criteria shall be included for the study.

PROCEDURE OF KSHARASUTRA APPLICATION:

Patient was placed in prone position. Under aseptic precautions local anesthesia was administered and probing was done to the sinus track starting from the opening having discharge and wider opening (may be primary opening at midline of natal cleft or secondary opening other than midline) till the resistance was felt, then an artificial opening was made over the skin at the site of resistance thus making the sinus having two openings, if there is a direct communication between primary and secondary opening then no need of creating an artificial opening.

A suitable length of surgical thread was taken and threaded into the eye of probe. Then probe was pulled out through the other opening thus leaving plain thread in the tract. The two ends of the Plain thread were then tied together with a moderate tightness; this procedure is called probing and primary threading.

On the seventh day onwards weekly once *Guggulu* based *Palasha Kshara sutra* was changed using railroad technique. Patient was advised to attend his/her normal duty during the treatment period.

OBSERVATIONS:

Statistical analysis was done using SPSS software version 26, 64 bits. All the grading recorded were entered into SPSS software and code book was prepared. For the ordinal data, Chi-square test followed Wilcoxin signed rank test was applied. The Bonferroni correction was set at 0.01.

Table No-1 Statistical analysis for Pain: -

Variable-Pain	ON	EN	R	Chi-Square	df	x2- value
No hurt	49	25.0	24.0	46.080	1	0.000
Hurts little bit	1	25.0	-24.0			
Total	50					

ON-observed N, EN-expected N, R-Residual,

For the variable pain, the result was significant with X^2 value <0.001 .

VariablePain-(Bonferroni correction=0.01)	NR	PR	Ties	Total	MR	SR	Z	P-value
Pain on 7th day (WB scale) - Pain before treatment (WB scale)	47	0	3	50	24.00	1128.00	-6.104	0.000
Pain on 14th day (WB scale) - Pain on 7th day (WB scale)	38	0	12	50	19.50	741.00	-5.658	0.000
Pain on 21st day (WB scale) - Pain on 14th day (WB scale)	41	0	9	50	21.00	861.00	-5.972	0.000
Pain on 28th day (WB scale) - Pain on 21st day (WB scale)	19	0	31	50	10.00	190.00	-4.264	0.000
Pain on Follow up (WB scale) - Pain on 28th day (WB scale)	1	0	49	50	1.00	1.00	-1.000	0.317

NR-Negative ranks, PR-Positive ranks, MR-Mean ranks, SR-Sum of ranks, WB-Wong Baker

The results were assessed at intervals of 7th day, 14th day, 21st day, 28th day and follow up. The results were statistically significant at all the levels with $p<0.001$. The patients healed completely by 28th day. The same results were sustained even on follow up. The pain reduced significantly in second sitting.

Table No-2 Statistical analysis for discharge: -

Variable-Discharge	ON	EN	R	Chi-Square	df	p- value
No discharge	49	25.0	24.0	46.080	1	0.000
Mild discharge (wets 2x2 gauge piece/day)	1	25.0	-24.0			
Total	50					

ON-observed N, EN-expected N, R-Residual,

For the variable discharge, the result was significant with X^2 value <0.001 .

Variable –Discharge	NR	PR	Ties	Total	MR	SR	Z	P-value
Discharge 7th day of the treatment - Discharge Before Treatment	39	0	11	50	20.00	780.00	-6.044	0.000
Discharge 14th day of the treatment - Discharge 7th day of the treatment	18	0	32	50	9.50	171.00	-4.243	0.000
Discharge 21st day of the treatment - Discharge 14th day of the treatment	31	0	19	50	16.00	496.00	-5.488	0.000
Discharge 28th day of the treatment - Discharge 21st day of the treatment	19	0	31	50	10.00	190.00	-4.359	0.000
Discharge Follow up of the treatment - Discharge 28th day of the treatment	1	0	49	50	1.00	1.00	-1.000	0.317

NR-Negative ranks, PR-Positive ranks, MR-Mean ranks, SR-Sum of ranks

The results were statistically significant at all the levels with $p < 0.001$ for variable discharge. The patients healed completely by 28th day. The same results were sustained even on follow up. The discharge reduced significantly in second sitting.

Table No-3 Statistical analysis for Tenderness.

Variable- Tenderness	ON	EN	R	Chi-Square	Df	p- value
No hurt	49	25.0	24.0	46.080	1	0.000
Hurts little bit	1	25.0	-24.0			
Total	50					

ON-observed N, EN-expected N, R-Residual.

For the variable tenderness, the result was significant with X^2 value <0.001 .

Variable -Tenderness	NR	PR	Ties	Total	MR	SR	Z	P-value
Tenderness on 7th day of the treatment - Tenderness before treatment.	47	0	3	50	24.00	1128.00	-6.104	0.000
Tenderness on 14th day of the treatment - Tenderness on 7th day of the treatment.	38	0	12	50	19.50	741.00	-5.658	0.000
Tenderness on 21st day of the treatment - Tenderness on 14th day of the treatment.	41	0	9	50	21.00	861.00	-5.972	0.000
Tenderness on 28th day of the treatment.	19	0	31	50	10.00	190.00	-4.264	0.000
Tenderness on Follow up of the treatment - Tenderness on 28th day of the treatment.	1	0	49	50	1.00	1.00	-1.000	0.317

NR-Negative ranks, PR-Positive ranks, MR-Mean ranks, SR-Sum of ranks

The mean ranks before treatment was 24 which reduced to 10 after 28 days of treatment. The results were statistically significant at all the levels with $p < 0.001$ for variable tenderness. The patients healed completely by 28th day. The same results were sustained even on follow up. The tenderness reduced significantly in second sitting clinically.

Table No-4 Statistical analysis for length of tract:

Pairs	Mean	SD	SEM	T	df	p-value
Length of tract before treatment - Length of tract on 7th day of the treatment	0.656	0.268	0.038	17.323	49	0.000
Length of tract on 7th day of the treatment - Length of tract on 14th day of the treatment	0.644	0.296	0.042	15.375	49	0.000
Length of tract on 14th day of the treatment - Length of tract on 21st day of the treatment	0.568	0.215	0.030	18.665	49	0.000
Length of tract on 21st day of the treatment - Length of tract on 28th day of the treatment	0.224	0.291	0.041	5.439	49	0.000
Length of tract on 28th day of the treatment - Length of tract on Follow up day of the treatment	0.020	0.141	0.020	1.000	49	0.322

Length being a numerical variable, t-test was used for statistical analysis. The mean length of tract before treatment was 0.656 cms which reduced 0.224 cms after 28 days treatment. The mean of length of tract reduced to 0.020 cms after follow-up. The results were statistically significant at all levels with $p < 0.001$.

DISCUSSION

Pilonidal sinus occurs around the natal cleft with single or multiple openings and contains foreign bodies like hair or debris. This is associated with pain and discharge. *Acharya Sushruta* mentions about the disease "*Shalyaja nadi vrana*" which is similar to Pilonidal sinus and advocated the use of *Kshara sutra* as management principle. The *kshara sutra* helps in debridement and lysis of tissue with antibacterial, anti-fungal and anti-inflammatory action. The *Kshara sutra* acts as good drainage for the wound. *Kshara sutra* has alkaline pH so it possesses de-sloughing property.

The action of the *Kshara Sutra* is believed to be multi-factorial. The *Palasha Kshara* applied to the thread acts as a caustic agent, promoting the cutting and draining of the tract. It also helps in destroying infective or necrotic tissue and stimulating the healing process. *Palasha Kshara Sutra* treatment has several advantages, including minimal invasion, lower recurrence rates compared to conventional surgical methods, and faster healing with minimal discomfort.

In the present study the results were statistically significant for all variables with $p < 0.001$. All the patients who have undergone *Guggulu* based *Palasha Kshara Sutra* application have reported positive outcomes and high levels of satisfaction. Hence the results were significant clinically also.

CONCLUSION

Kshara Sutra treatment takes a holistic approach to healing, considering the physical, mental, and spiritual aspects of the individual. Ayurvedic practitioners often emphasize the importance of maintaining a healthy lifestyle, managing stress, and promoting overall well-being alongside the treatment itself.

The field of *Ayurvedic* medicine, including *Kshara Sutra* treatment, continues to evolve with ongoing research and advancements. Newer techniques, modifications in the *Kshara* composition, and further understanding of the mechanism of action may lead to improvements in outcomes and patient care.

References: -

1. Guner, A., Cekic, A.B., Boz, A. *et al.* A proposed staging system for chronic symptomatic pilonidal sinus disease and results in patients treated with stage-based approach. *BMC Surg* **16**, 18 (2016). <https://doi.org/10.1186/s12893-016-0134-5>.
2. Lim J, Shabbir J (2019) Pilonidal sinus disease—a literature review. *World J Surg Surgical Res* 2: 1117.
3. Karandikar S, Naik NG (2017) Retrospective analysis of 30 cases of pilonidal sinus by various techniques of conservative and surgical management and review of literature. *Int Surg J* 4: 291-295. doi: [10.18203/2349-2902.isj20164457](https://doi.org/10.18203/2349-2902.isj20164457).
4. Karandikar S, Naik NG (2017) Retrospective analysis of 30 cases of pilonidal sinus by various techniques of conservative and surgical management and review of literature. *Int Surg J* 4: 291-295. doi: [10.18203/2349-2902.isj20164457](https://doi.org/10.18203/2349-2902.isj20164457).
5. Darwish AA, Eskandaros MS, Hegab A (2017) Sacrococcygeal pilonidal sinus: modified sinotomy versus lay-open, limited excision, and primary closure. *Egypt J Surg* 36: 13-19. doi: [10.4103/1110-1121.199901](https://doi.org/10.4103/1110-1121.199901)
6. Mohamed Abd-Elfattah AM, Elsayed Fahmi KS, Eltih OA, et al. (2020) The Karydakias Flap Versus the Limberg Flap in the treatment of pilonidal sinus disease. *Zagazig Univ Med J* 26: 900-907.
7. Sushruta. Sushruta samhita- Edited with Ayurveda Tatva Sandipika Hindi Commentary By Kaviraja Ambikadutta Shastri. Varanasi: Choukambha Sanskrit Sansthan; 2010. Vol I. Nidana Sthaana 10/9-14.
8. Sushruta. Sushruta samhita- Edited with Ayurveda Tatva Sandipika Hindi Commentary By Kaviraja Ambikadutta Shastri. Varanasi: Choukambha Sanskrit Sansthan; 2010. Vol I. Sutra Sthaana 26/3,5,24. 25/3,7,10. 17/3,6-8,15,20,30-32. 23/6. 29/8,9.