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Research Article

COMPARATIVE CLINICAL STUDY OF JATYADI VARTI AND ARAGWADADI VARTI IN THE MANAGEMENT OF NADI VRANA (PILONIDAL SINUS)

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ABSTRACT
Nadi vrana (Pilonidal sinus), a type of Dushta vrana, commonly seen in Sacro-coccygeal region, is a condition wherein a blind tract is formed, with its opening in the skin or near the cleft at the top of the buttocks and containing hair. Ayurveda advises the use of Varti (medicated wick) in the management of Nadi vrana which is very safe, economical and effective. Hence, a comparative clinical study was done using Jatyadi varti and Aragwadadi varti with 15 patients in each group and it was found that Jatyadi varti showed highly significant results.
Key Words: Jatyadi varti, Aragwadadi varti, Nadi vrana, Pilonidal sinus

INTRODUCTION

The term Nadi implies a tube like structure and the Nadi vrana is treated as a sinus. Sinus is defined as a blind tract leading from surface down into the tissue and lined either by granulation tissue or epithelium. It persists due to the presence of foreign body, non dependant drainage and infection. According to classical text Nadi vrana comes under Dusta vrana because of its non healing nature. Pilonidal sinus means short tract leading from an opening in the skin or near the cleft at the top of the buttocks and containing hair, usually presented during third decade. It is more common in male than female in the ratio of approximately 6:1. The etiology of Pilonidal sinus is not yet fully understood, although hormonal imbalance, presence of hair, friction and infection are often implicated. Modern surgery employs wide excision and depends on secondary healing for the treatment of pilonidal sinus which is time consuming, cause uneasiness to the patient and with high chance of recurrence. Hence, there is a need for the alternative or innovative techniques for the management of this challenging disease so as to minimize recurrence, make it cost effective, with improved acceptability and minimum hospitalization. In this regard an Ayurvedic conservative method was chosen for the treatment of Nadi vrana, which is explained by Chakradatta, using Jatyadi varti and Aragwadadi varti .The drugs in these varti possess properties like lekhana, shodhana and ropana which help in the early healing.

MATERIALS AND METHODS

Jatyadi varti and Aragwadadi varti were prepared as per the text Chakradatta. Patients (30) were selected from Shalya OPD/IPD irrespective of age, sex and occupation from Sri Siddharudha Charitable hospital and research centre, Bidar, Karnataka which is attached to the N. K. J. Ayurvedic Medical College and were randomly divided into two groups of 15 each after taking written consent from them.

The inclusion criteria were as follows:

- Pilonidal sinus at sacro-coccygeal region with straight tract.
- Patients suffering with long standing Nadi vrana.
- Patients who were unwilling for surgery.

The exclusion criteria were:

- Patients having diabetis melitus.
- Patients having Neoplastic sinus.
- Tubercular sinus and the sinus having multiple openings.

Methodology

The patient was made to lie down in prone position. Surrounding area was shaved and the tract was assessed with the help of probe, after which, depending upon the length of the tract, the Varti was introduced slowly. It was then dressed with sterile gauze pad. The varti was changed weekly twice and the assessment was done once in a week for seven weeks.

Parameters for assessment

The patients were assessed on the basis of both subjective and objective parameters before and after treatment as follows:

Pain on VAS (vas analogue scale)
G_0: 0 mark: Absence of pain /no pain.
G_1: 1- 3 mark: mild pain that can be easily ignored.
G_2: 4- 6 mark: moderate pain that cannot be ignored and needs treatment.
G_3: 7-10 mark: severe pain which needs constant attention.

Discharge
G_0: No discharge.
G_1: Mild: If discharge wets one pad of 4x4cm gauze.
G_2: Moderate: If discharge wets 2 pads of 4x4 cm gauze.
G_3: Profuse: If discharge wets more than two pads of 4x4 cm gauze.

Tenderness was assessed by gentle palpation
G_0: No tenderness
G_1: Mild: Tenderness on firm pressure.
G_2: Moderate: Tenderness on gentle pressure.
G_3: Severe: Patient denies touching.

Indurations
G_0: No inflammatory reaction.
G_1: Mild: Inflammatory reaction with tissue edema and cellular response.
G_2: Moderate: G_1 reaction with involvement of reticular layer of dermis.
G_3: severe: G_2 reaction with involvement of subcutaneous tissue.

Length of the tract was noted with the help of probe:
G_0: No tract
G_1: 0 – 10 mm
G_2: 11 mm – 20 mm

G_3: 21 mm – 30 mm
G_4: More than 30 mm

Unit healing time (mm/week) is the difference between initial length of the tract and the length of the tract after the treatment.

Observations

Jatyadi varti (group 1)

In case of **pain** the mean ± S.E. before treatment was **1.6 ±0.13** and was increased to **1.93±0.06** after 7 days (AT1), **1.8±0.10** after 14 days (AT2), and **1.46±0.13** after 21 days (AT3), **1.06± 0.11** after 28 days (AT4), **0.73 ± 0.11** after 35 days (AT5)**, 0.53 ±0.13** after 42 days (AT6) and after 7th week (AT7) reduced to **0.26 ± 0.11.** The test of significance shows that Jatyadi varti is not significant to reduce pain with the p value >0.01 in AT1, AT2 &AT3 and it is highly significance at AT4 AT5 AT6 and AT7 respectively with P value of <0.001.

In case of **discharge** the mean ± S.E. before treatment was **2.46±0.13** and was increased to **2.86±0.09** after 7 days, **2.53±0.13** after 14 days, and reduced to **1.73±0.11** after 21 days. **1.33± 0.13** after 28 days**, 1.06± 0.06**after 35 days,**0.67± 0.12** after 42 days**,** and after 7th week **0.26 ±0.11.** The test of significance shows that Jatyadi varti is not significant to reduce discharge with the P-value >0.01in AT1 and AT2, it is significant in AT3 with P value <0.05 and it is highly significant at AT4 &AT5 AT6 and AT7 with p-value <0.001 respectively.

In case of **tenderness** the mean ± S.E. before treatment was **2.46±0.13** and was reduced to **2.06±0.06** after 7 days, **1.73±0.11 after** 14 days, and **1.53±0.13** after 21 days.**1.26± 0.15** after 28 days**, 0.93 ±0.20** after 35 days**, 0.46 ±0.13** after 42 days**,** after 7th week **0.4 ±0.13**. The test of significance shows that Jatyadi varti is Significant to reduce tenderness with P-value <0.05 in AT1, highly significant at AT2 AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001.

In case of **induration** the mean ± S.E. before treatment was **2.53±0.13** and was reduced to **2.47±0.13** after 7 days, **1.33±0.13** after 14 days, and **1.33± 0.13** after 21 days, **1.07± 0.07** after 28 days **0.53 ±0.13** after35 days**, 0.4 ±0.13** after 42 days**, 0.2± 0.11** after 7th week. The test of significance shows that Jatyadi varti is not significant to reduce induration with the P-value >0.01 in AT1, and highly significant at AT2 AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001

In case of **tract healing,** the mean ± S.E. before treatment was **3±0** was reduced to **2.46±0.13** after 7 days, **1.8±0.10 after** 14 days, and **1.26±0.11** after 21 days. **0.86± 0.13** after 28 days**,0.26± 0.11** after 35 days**,0.13 ±0.09** after 42 days**,0.06 ±0.06** after 7th week. Test of significance showed that Jatyadi varti is not significant to promote tract healing the P-value >0.01in AT1, highly significant at AT2 AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001.

Aragwadadi varti (group 2)

The statistical analysis shows that in case of **pain** the mean ± S.E. before treatment was **2.26±0.11** and was reduced to **1.93±0.06** after 7 days, **1.8±0.106 after** 14 days, **1.8 ±0.106** after 21 days**, 1.8± 0.106** after 28 days**, 1.47± 0.13** after 35 days**, 0.86 ±0.09** after 42 days, and **0.53± 0.13** after7th weeks. The test of significance shows that Aragwadadi varti is not significant to reduce pain with P value of >0.01 in AT1. It is Significant to reduce tenderness with the P-value <0.05 in AT2 AT3 AT4 and highly significant at AT5 AT6 and AT7 respectively with P value <0.001.

In case of **discharge** the mean ± S.E. before treatment was**2.66±0.12** and was reduced to **2.8±0.106** after 7 days, **2.06 ±0.06 after** 14 days, and **1.8±0.106** after 21 days. **1.33 ±0.12** after 28 days**,1.0± 0.09** after 35 days**,0.66± 0.12** after 42 days**,0.4 ±0.13** after 7th week. The test of significance shows that Aragwadadi varti is not significant to reduce discharge with P value of >0.01 in AT1 and highly significant at AT2 AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001.

In case of **tenderness** the mean ± S.E. before treatment was **2.22±0.106** and was reduced to **2 ±0.16** after 7 days, **1.66±0.12 after** 14 days, and **1.53±0.13** after 21 days.**1.33 ±0.12** after 28 days**, 0.86± 0.13** after 35 days**, 0.53 ±0.13** after 42 days**, 0.4 ±0.13** after 7th week, The test of significance shows that Aragwadadi varti is not significant to reduce tenderness with P value of >0.01 in AT1. It is significant in AT2 with P value of <0.05 and highly significant at AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001.

In case of **induration** mean ± S.E. BT was **2.26±0.11**, was reduced to **2.06±0.06** after 7 days, **2.0±0 after** 14 days, and **1.86±0.09** after 21 days. **1.53 ±0.13** after 28 days**,1.2± 0.17** after 35 days**, 0.6 ±0.16** after 42 days**, 0.33 ±0.12** after7th week**.** The test of significance shows that Aragwadadi varti is not significant to reduce induration with P value of >0.01 in AT1. It is Significant to reduce induration with P-value <0.05 in AT2 AT3 AT4, highly significant at AT5 AT6 and AT7 respectively with P value <0.001.

In case of **tract healing,** the mean ± S.E. before treatment was **3±0** and was reduced to **2.93±0.06** after 7 days, **2.06±0.06 after** 14 days, and **1.46±0.13** after 21 days. **1.27± 0.11** after 28 days**, 0.6 ±0.16** after 35 days**, 0.26± 0.11** after 42 days**, 0.13± 0.09** after 7th week . The test of significance shows that Aragwadadi varti is not significant to reduce pain with P value of >0.01 in AT1 and highly significant at AT2 AT3 AT4 AT5 AT6 and AT7 respectively with P value <0.001.

Table 1: Overall assessment of Jatyadi varti group

Result	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week
Complete relief (100%)	0	0	0	0	0	3	9
Maximum relief (75% to 99%)	0	0	0	0	0	6	0
Moderate relief (50% to 74%)	0	0	4	8	13	6	6
Mild relief (25% to 49%)	0	6	8	7	2	0	0
No relief (<25%)	15	9	3	0	0	0	0

Table 2: Overall assessment of Aragwadadi varti group

Result	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week
Complete relief (100%)	0	0	0	0	0	0	6
Maximum relief (75% to 99%)	0	0	0	0	0	6	3
Moderate relief (50% to 74%)	0	0	0	2	10	9	6
Mild relief (25% to 49%)	0	3	10	10	5	0	0
No relief (<25%)	15	12	5	3	0	0	0

DISCUSSION

During clinical Trail among 30, 6 patients (20%) have mild pain. 20 patients (66.66%) have moderate pain and 4 (13.33%) patients of severe pain. Usually mild and moderate pain is present in all pilonidal cases and severity of pain is due to infection.

In case of discharge, Among 30, 11 patients (36.67%) have pus discharge, 7 patients have serous discharge i.e. (23.33%), 5 patients have mixed type of discharge i.e. (16.67%), 3 patients have mucopurulant discharge i.e. (10%), 1 patients have mucous discharge i.e. (3.33%) and 3 patients have blood discharge i.e. (10%).the discharge is due to infection and irritation of the tract.

In case of tenderness, among 30 patients, no patients with mild tenderness, 20 patients (66.67%) having moderate tenderness, 10(33.33%) of sever tenderness, because of obstruction of the external opening and recurrent infecion of the sinus.

In case of Induration, among 30 patients, 18 patients i.e (60%) are having moderate induration and 12 patients i.e (40%) are having severe induration, this is due to chronic inflammation.

On probing the initial length of the tract is i.e. 0.1mm- 10 mm is found in 23.33% number of patients, 10-20 mm is found in 43.33% number of patients, and 20-30mm is found in 33.33% of patients. Length of tract depends upon chronicity.

Discussion upon the results

Pain

It is observed that in **Group 1**: **Pain** was increased by 20% in AT1, by 12.5% in AT2. It is observed to be decreased by 8.33% in AT3, by 44.82% inAT4, by 59.25% in AT5, by 63.63% in AT6 and by 75% in AT7. It is observed that in **Group 2**: **Pain** was decreased by 14.70% in AT1, by 20.58% in AT2, by 20.58% in AT3, by 24.13% in AT4, by 33.33% in AT5, by 51.85% in AT6 and by 63.63% in AT7. It is observed that in case of group 1 AT1 and AT2 the intensity of the pain is increased due to the properties of the drugs like tikshna, ushna, ruksha and lekhana. In group 2 the intensity of the pain was decreased due to the action of haridra,manjista, madhu, ghritha etc.

Discharge

It is observed that in **Group 1**: **Discharge** was increased by 16.21% in AT1, by 2.70% in AT2, decreased by 29.72% in AT3, by 53.48% inAT4, by 57.89% in AT5, by 61.53% in AT6 and by 80% in AT7. It is observed that in **Group 2**: **Discharge** was increased by 5% in AT1, decreased by 22.5% in AT2, by 32.5% in AT3, by 52.38% inAT4, by 51.61% in AT5, by 62.92% in AT6 and by 70% in AT7.In group 1 due to the corrosive action of arka and snuhi leads to profuse discharge in early stage of treatment, later it was reduced or absent due to formation of healthy granulation (healing). In group 2 there is mild increased in the discharge at the earlier stage, later the discharge was reduced or absent due to action of drugs of the Aragwadadi varti.

Induration

It is observed that in **Group 1**: **Induration** was decreased by 2.63% in AT1, by 47.37% in AT2, by 47.37% in AT3, by 56.76% in AT4, by 60% in AT5, by 70% in AT6 and by 81.25% in AT7. It is observed that in **Group 2**: **Induration** was decreased by 8.82% in AT1, by 11.76% in AT2, by 17.64% in AT3, by 25.80% inAT4, by 40% in AT5, by 67.85% in AT6 and by 78.26% in AT7. In group 1 due to synergetic action of the drugs like jati, arka, karanja, danti,aragvadha having the shothagnha properties. In group 2 the drugs like haridra, manjista,madhu,gritha having the anti inflammatory properties which reduces the induration.

Tenderness

It is observed that in **Group 1**: **Tenderness** was decreased by 16.21% in AT1, by 29.72% in AT2, by 37.83% in AT3, by 38.70% inAT4, by 46.15% in AT5, by 69.56% in AT6 and by 68.42% in AT7. It is observed that in **Group 2**: **Tenderness** was decreased by 9.09% in AT1, by 24.24% in AT2, by 30.30% in AT3, by 33.33% inAT4, by 48% in AT5, by 65.21% in AT6 and by 70% in AT7.It is observed in both groups that due to subsidence of the inflammation, the tenderness was reduced.

Tract healing

It is observed that in **Group 1**: **Tract healing** was found to be improved by 17.77% in AT1, by 40% in AT2, by 57.77% in AT3, by 64.86% inAT4, by 85.18% in AT5, by 89.47% in AT6 and by 92.30% in AT7. It is observed that in **Group 2**: **Tract healing** was found to be improved by 2.22% in AT1, by 31.11% in AT2, by 51.11% in AT3, by 56.81% inAT4, by 70.96% in AT5, by 81.81% in AT6 and by 89.47% in AT7.In both groups it is observed that the length of the tract was reduced due to lekhana, ropana, and shodana properties of the drugs in both the vartis.

It was observed that out of 30 patients, 28 (93.3%) patients were between the age group of 20 – 40 years, which substantiates the fact that pilonidal sinus is most commonly occurs in the third decade. Male patients were 27 and female were only 3. The high number of male patients is due to the reason that male having more hair on the body and also at natal cleft which leads to formation of pilonidal sinus. Incidence of occupational status revealed that drivers, employees, farmers are effected more because of heavy work, continuous friction and more pressure over the area leading to pilonidal sinus. In case of socio economic status lower

middle class patients were effected more because of unhygenic maintainence due to negligency.

Pain in Jatyadi varti group was relieved by 75% and in Aragwadadi varti by 63.63%. It was observed that in case of Jatyadi varti group, the intensity of the pain is increased due to the properties of the drugs like tikshna, usna, ruksha and lekhana and then gradually decreased. In Aragwadadi varti group the intensity of the pain was decreased due to the action of haridra, manjista, madhu and ghritha.

Discharge in Jatyadi varti group was relieved by 80% and in Aragwadadi varti group by 70%. In Jatyadi varti group due to the corrosive action of arka and snuhi, profuse discharge in early stage of treatment was seen. Later it was reduced or absent due to formation of healthy granulation. In Aragwadadi varti group there was mild increase in the discharge at the earlier stage where as later the discharge was reduced or absent due to action of drugs of the Aragwadadi varti.

Induration in Jatyadi varti group was relieved by 81.25% due to synergetic action of the drugs like jati, arka, karanja, danti, aragvadha having the shothagnha properties and in Aragwadadi varti group it was 78.26% with the ingredients like haridra, manjista, madhu, gritha having the anti inflammatory properties which reduces the induration.

Tenderness in Jatyadi varti group was relieved by 68.42% and in Aragwadadi varti group by 70%. It was observed in both the groups that due to subsidence of the inflammation, the tenderness was reduced.

Tract healing in Jatyadi varti group was relieved by 92.30% and in Aragwadadi varti group it was 89.47%. In both groups it was observed that the length of the tract was reduced due to lekhana, ropana, and shodana properties of the drugs in both the vartis .

Table 3: Probable Mode of Action of Varti

Varti	Predominant Rasa	Guna	Karma	Probable action
Jatyadi varti and Aragwadadi Varti	Katu, Tikta, Kashaya, Lavana	Laghu, ruksha, Ushna, Teekshna	amapachana, kapha-vata shamana Lekhana, Chedana, Krimi hara	Checks The Vrana Varna, Vedana, Gandha, Srava , Akruthi and helps in healthy granulation and tissue formation leading to Shodhana and ropana of Nadi Vrana

CONCLUSION

The incidence of pilonidal sinus was observed in age group of 20 to 40 years, more in male patients which is due to the presence of excessive hair and occupational reasons. Nadi vrana is considered as dusta vrana which takes long time to heal by means of proper debridement and aseptic maintenence. After statistical analysis Jatyadi varti showed highly significant effect than the Aragwadadi varti. Both the vartis are cost effective, can be easily prepared and can be easily applied with less recurrence after treatment in comparison to surgical procedure.

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