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Efficacy of stem fibre of *Erukku (Calotropis gigantea)* in *Siddha Kaarathiri Sigitchai* for *Pouthiram (Low anal fistula)* – Case Study

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ABSTRACT

Aim

This study aims to explore the efficacy of *Erukku Kaarathiri* in fistula in ano.

Objectives

To evaluate the efficacy of *Erukku Kaarathiri* in comparison with *Pappaya Kaarathiri* in the management of *Pouthiram* (Fistula in ano)

Materials

The two different cases of *pouthiram* (anal fistula) are treated with different *Kaarathiris* (threads), one is made from Barbour's linen and another one is made from *Erukku Naaru* (Fibre of *Calotropis gigantea*) thread smeared by latex of young papaya fruit and Marking nut i.e *Serankottai (Semecarpous anacardium)*.

Methods

Assessment was done based on subjective and objective criteria before, during and after the treatment. The data collected was subjected to students paired "t" test for statistics analysis" within the cases and unpaired "t" test for analysis between the cases.

Results

The *Erukku Kaarathiri* (Fibre of *Calotropis gigantea*) in case 2 is having good *Kaaram* (Chemical alkaline cauterization) property and it's Unit Cutting Rate is and effectiveness is significant and took short time to incise and heal the fistulous wound.

Conclusion

The above case showed very hopeful results of *Erukku Karathiri* application on the anal fistula was safe, very good haemostatic and possesses fast incision effect than *Pappaya Kaarathiri*.

Keywords: Erukku Karathiri, Kaaram, Agathiarrana nool, Papaya, Serankottai

INTRODUCTION

Background

Kaarathiri Therapy is a Siddha parasurgical Technique employed to cure deep ulcers, fistula using medicated fibre prepared from latex yielding plants. Saint *Agathiar*, *Therayar* and *Bogar* have described in their classical Siddha texts, the method of preparation of *Kaarathiri* and *Karaseelai*. The use of latex yielding plant stem fibres from *Kodiveli*, *Erukku*, *Nayuruvi* are more effective than surgical thread and requires minimum period of treatment for the in fistula. In this technique, a specially prepared *thiri* (fibre) from *Erukku* (*Calotropis gigantea*) is used to treat *Pouthiram* (fistula in ano) [1-8].

Aim

This study aims to explore the efficacy of *Erukku Kaarathiri* in fistula in ano.

Objectives

- To see the effect of *Erukku Kaarathiri* in the management of *Pouthiram* (Fistula in ano)
- To evaluate the efficacy of *Erukku Kaarathiri* in comparison with *Pappaya Kaarathiri* in the management of *Pouthiram* (Fistula in ano)
- To introduce a simple, safe and effective ancient modality in the management of *Pouthiram* (Fistula in ano)

MATERIALS AND METHODS

Source of Data

2 cases attending OPD in Kokila Siddha Hospital and Research Centre, Madurai were taken for this study. It is a case study and the clinical features are assessed as per standard parameters.

Study design (Interventions)

The two different cases of *pouthiram* (anal fistula) are treated with different *Kaarathiris* (threads), one is made from Barbour's linen and another one is made from *Erukku Naaru* (Fibre of *Calotropis gigantea*) thread smeared by latex of young papaya fruit and Marking nut i.e *Serankottai* (*Semecarpous anacardium*).

Case 1

Application of conventional *Kaarathiri* (Papaya latex) in the fistulous tract was done under strict aseptic precautions and the periodical change of *Kaarathiri* was done on weekly basis till complete cutting and healing of the fistulous tract taken place.

Case 2

Application of conventional *Kaarathiri* (Marking nut latex) in the fistulous tract was done under strict aseptic precautions and the periodical change of *Kaarathiri* was done on weekly basis till complete cutting and healing of the fistulous tract taken place.

Follow up

The 2 cases were followed once in a week until the complete cutting and healing of fistulous tract taken place after that once in month for six months.

Assessment Criteria

Assessment was done based on subjective and objective criteria before, during and after the treatment. The data collected was subjected to students paired "t" test for statistics analysis" within the cases and unpaired "t" test for analysis between the cases.

Subjective Parameter

1. Pain (mild/moderate/severe)

Objective Parameters

1. Discharge (mild/moderate/severe)
2. Length of fistula tract
3. UCT (Unit cutting time)

Parameters used for assessment of pain

Grade – 0	No pain
Grade – 1	Mild pain
Grade – 2	Moderate pain
Grade – 3	Severe pain
Grade – 4	Unbearable pain

Parameters used for assessment of pain

Grade – 0	No discharge
Grade – 1	Mild (If wound wets 1x1 cm gauze piece)
Grade – 2	Moderate (If wound wets 2x2 cm gauze piece)

Grade – 3 Severe (If wound wets more than 2x2 cm gauze piece)
 Grade – 4 Excruciating (Continuous and profuse discharge)

Unit Cutting Time (U.C.T.)

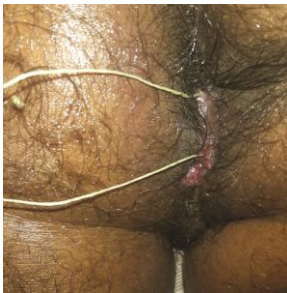
It is an important parameter to assess the efficacy of the Kaarathiri, which indicates the average time in days taken to cut and to heal one centimeter of fistulous tract. The U.C.T. is calculated by the following formula:

$$\text{Unit Cutting Time} = \frac{\text{Total number of days taken to cut through the tract}}{\text{Initial length of the fistula tract in centimeters}}$$

U.C.T = Time taken (in days) to cut one centimeter of fistulous tract with simultaneous heal

Observations and Results

- The case study reveals that, out of 2 cases Case-1 was 52 years and Case-2 was 56 years old came on August 2016 to July 2017, both belong to Hindu religion, taking mixed diet (Vegetarian as well as Non-vegetarian diet) working as store-keeper and driver respectively.
- Both cases had chief complaints of pain and discharge with an associated complaint of wetting in under garments.
- Both cases had past history of painful defecation, irregular bowel habits and constipation.
- Both cases had an external opening in left lower quadrant around anal orifice at 5-6 o clock position.
- Both cases had pus discharge
- Both cases had radial direction on malleable probe



Case 1- During Therapy



Case 1 - During Therapy



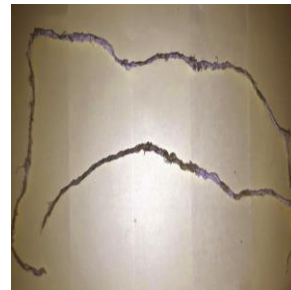
Case 1 - After therapy



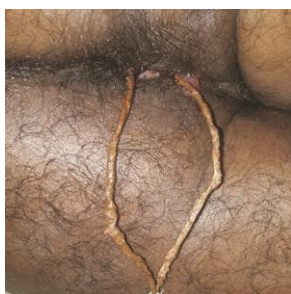
Bark of Erukku Stem



Crushed Fibre



Erukku Kaarathiri



Case 2- During Therapy



Case 2 - During Therapy



Case 2 - After therapy

Table 1 - Calculation of Unit Cutting Time in Case 1 and Case 2

Case	Length of Tract in Centimeters	No. of days treated	Unit Cutting Time
Case 1	5.5	42	7.6
Case 2	7.5	49	6.5

Table: 2 - Measurements of Signs and Symptoms

Symptoms	Case 1		Case 2	
	Before Treatment	After Treatment	Before Treatment	After Treatment
Pain	Moderate to Severe	No Pain	Severe	No pain
Discharge	Moderate	No discharge	Moderate	No discharge
Length of Tract	5.5 centimeters	0 centimeters	7.5 centimeters	0 centimeters

Table: 3 - Effect of conventional *Kaarathiri* (Papaya latex) in Case 1

Symptoms	Mean score ± SEM		Mean Decrease	%	S.D	S.E	“t”	P
	Before Treatment	After Treatment						
Pain	1.45 ± 0.16	0.2 ± 0.42	1.25	93.1	0.28	0.16	9.18	<0.011
Discharge	2.46 ± 0.21	0.0 ± 0.00	2.46	100	0.37	0.21	11.33	<0.001
Length of Tract	5.50 ± 0.27	0.0 ± 0.00	5.50	100	0.47	0.27	19.98	<0.001

Table: 4 - Effect of *Erukku Kaarathiri* (Fibre of *Calotropis gigantea*) in case 2

Symptoms	Mean score ± SEM		Mean Decrease	%	S.D	S.E	“t”	P
	Before Treatment	After Treatment						
Pain	1.5 ± 0.16	0.1 ± 0.005	1.4	93.3	0.28	0.16	9.32	<0.011
Discharge	2.3 ± 0.20	0.0 ± 0.00	2.3	100	0.35	0.20	13.24	<0.005
Length of Tract	7.5 ± 0.08	0.0 ± 0.00	7.5	100	0.15	0.08	86.93	<0.001

Table: 5 - Comparison between Case 1 and Case 2

Symptoms	S.D-1	S.D-2	Mean Difference	Unpaired “t” test	Test of Significance
Pain	0.15	0.10	0.10	t=1.26	Significant
Discharge	0.49	0.10	0.29	t=0.917	Significant
Length of Tract	0.15	0.20	0.08	t=1.56	Significant

DISCUSSION

- The *Erukku Kaarathiri* (Fibre of *Calotropis gigantea*) in case 2 is having good *Kaaram* (Chemical alkaline cauterization) property as per results shown in Table 5.
- The UCT (Unit Cutting Rate in days/centimetre) was higher in Case 1 (7.6 days) compared to the Case 2 (6.5 days).
- Statistically there was much significant difference in the efficacy of treatment between the two cases.
- No recurrence was seen in the 6 months of follow-up for both cases.
- Even though Case 2 showed more pain and discharge during treatment, it's Unit Cutting Rate is and effectiveness is significant and took short time to incise and heal the fistulous wound.
- The *Erukku* fibre based *Kaarathiri* would be a next efficient *Kaarathiri* to treat *Pouthiram*

(fistula in ano) when compared with existing *Kaarathiri*.

CONCLUSION

Thus from the above study it we may conclude that *Siddha Erukku Kaarathiri Sigitchai* is more efficient, effective and costless to battle the fistula rather than the conventional surgical thread. The above case showed very hopeful results of *Erukku Karathiri* application on the anal fistula was safe, very good haemostatic and possesses fast incision effect than *Pappaya Kaarathiri*. The efficacy of *Erukku Kaarathiri Sigitchai* should be carried out in a large sample size will reveal the actual success of this study in future and most reliable method by using plant fibres rather than surgical thread.

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