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Case Study

AYURVEDIC MANAGEMENT OF THE POST-CESAREAN SECTION *VRANAGRANTHI* (KELOID): A CASE REPORT DEMONSTRATING MARKED VOLUMETRIC REDUCTION

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ABSTRACT

Vranagranthi (Keloid) are fibroproliferative disorders resulting due to abnormal wound healing, generally occurs after surgery or trauma. In modern medicine there is high rate of recurrence even after proper treatment of keloid. This study evaluates the Ayurvedic management of *Vranagranthi* due to *Vata-Kapha prokhapa* (aggravation) with *Mamsa-Rakta Dhatu* (muscle tissue and blood) *Dusti*. **Method:** A clinical case study was done on a 28 years old female with symptomatic Post-Cesarean Section Keloid. The treatment was combination of oral medications (*Kaishar Guggulu & Kanchanar Guggulu*- 2 tablets twice daily) and topical medication *(Kshara Tailam)* application of sufficient amount over the keloid twice daily for 6 months. Objective assessment was performed by volumetric analysis (L x B x H) at baseline, 3 months and 6 months. **Result:** Significant reduction involute of keloid from baseline of 3.1752cm^3 to 2.40cm^3 at the end of 3 months (24.41% reduction) and reached 1.5984cm^3 by the end of 6 months. Total reduction was 49.66% and there was relieved from clinical symptoms like *Kandu* (itching), *Toda* (pain), *Khara* (lesion hardness), *Stambha* (stiffness) and dark brown discolouration of keloid lesion. **Conclusion:** The integrated effect of *Shothahara* (anti-inflammation) and *Lekhana* (scraping) Ayurvedic management showed significant reduction of keloid volume and relieve in clinical symptoms. The non-invasive treatment provides an effective management for post-surgical keloid with minimal recurrence risk.

INTRODUCTION

Keloids are fibroproliferative abnormal condition of the dermis of skin that arise due to an excessive and dysregulated wound healing response. Unlike hypertrophic scars, keloids extend beyond the original margin of injury, characterized by the excessive accumulations of extracellular matrix proteins, primarily collagen[1]. In the context of post lower segment cesarean section (LSCS) surgery keloid often present with unique challenges, which cause not only physical symptoms like itching, pain and burning sensation but also uneasiness regarding abdominal aesthetics and functional mobility[2], effecting self-image of the women.

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In present days conventional treatments are highly invasive and often present high recurrence rate and most of the cases leads to side effect[3].

In Ayurveda, keloid is correlated with *Vranagranthi*. The *Samprapti* (pathogenesis) of *Vranagranthi* are mainly *Prakopa* (aggravation) of *Vata* and *Kapha Dosha* with *Mamsa* and *Rakta dusti* (muscle tissue and blood) at the site of surgical incision *(Vrana).*

According to Acharya Sushruta, when *Vata-Kapha* get aggravated with *Mamsa* and *Rakta Dhatu dusti*, the leads to a *Sthira* (localized), *Khara* (hard), and elevated growth[4]. Due to *Vata Dosha* there is pain, dark brown or blackish discolouration and irregular shape. While because of *Kapha* there is *Khara* (hardness), *Sthira* (stability) and slow growth of the *Granthi* (keloid lesion)[5], leading to the condition where the tissue becomes dense and resistant to the natural resolution.

Further, Acharya Vagbhata and others classical commentator of Ayurveda emphasize that the involvement of *Medo Dhatu* (fatty tissue) leads to the compactness and resilience of the *Granthi*, making it a challenging clinical condition to treat with standard therapies alone[6]. While various Ayurvedic formulations and methods have been used, but there is no any objective clinical documentation of their efficacy in post-surgical scars[7].

This case study evaluates the clinical efficacy of the 6 months Ayurvedic treatment consisting of both oral and topical medication (*Kaishar guggulu*, *Kanchanar guggulu* and *Kshara tailam).* In this study volumetric analysis is applied to quantitively assess the reduction rate of keloid size. In final observation it is found that there is potential long-term recovery through this integrated management, demonstrating marked improvement without any invasive procedures.

AIM

To evaluate the clinical efficacy of Ayurvedic management consisting of *Kaishar guggulu* and *Kanchanar guggulu* with *Kshara tailamin* post cesarean section *Vranagranthi* (keloid) over the 6 months duration.

OBJECTIVE

1. To quantify the volumetric reduction of the keloid at baseline, 3 months and 6 months intervals.
2. To calculate the percentage of the rate of reduction from baseline to completion of treatment.
3. Ro observe the improvement in morphological factors like char (hardness) and *Vaivarnya* (discolouration).

MATERIALS AND METHODS

Study Design

This is a single subject clinical case report documenting the treatment result and finding of Ayurvedic management consisting of oral and topical medication in post-cesarean section keloid over the period of 6 months.

Patient selection and Consent

1. Patients already diagnosed with keloid *(Vranagranthi)* at the site of previous LSCS surgical scars.
2. Patient age between 18-50 years.
3. Patient willing for Ayurvedic treatment and agreed to follow -up.
4. Full written informed consent has been taken from patient in present of husband/witness, for clinical use of data, scientific journal publication and use of photographs.

Exclusion Criteria

1. Pregnant and lactating women.
2. Keloids located in sensitive areas such as eyelids, genital region etc.
3. Patient with systemic disease or other dermatological conditions.
4. Patient currently undergoing for any treatment for keloids or who have got treatment within last 3-6 months.

Case report

A 28 years old female patient came to Ayurveda OPD at Zonal General Hospital, Bomdila, West Kameng, Arunachal Pradesh with complain of a raised scar over the lower abdominal region following Lower Segment Cesarean Section (LSCS) surgery which was done on 13th September 2022.

About three months after the surgery, she noticed gradual development of raised lesion over the scar site with pain, severe itching, stiffness, hardness along with dark brown or blackish discolouration. As the size of the scar increased along the pain itching, she visited the Obs-Gynae OPD at Zonal General Hospital, Bomdila there she was diagnosed as a case of keloid and given some oral medication and intralesional injection. She took only single shot of injection, but it was painful and distressing, so she discontinued the treatment. After that she visited the Ayurvedic OPD on 6th April 2024 for alternative management of the same.

History of Past Illness: No any history of major illness.

Family History: No relevant family history was found.

Treatment History: Took oral medication and a single shot if sclerosing injection almost 1 year back.

Personal History

Diet - Mixed
Appetite - Normal
Bowel - Clear
Micturation - Normal
Thirst - Normal
Sleep - Disturbed
Addiction - Nil

Local Examination

Inspection
Site - Lower abdomen
Size - 12.6 cm
Breath - 0.6 cm (irregular)
Height - 4.2 mm (0.42 cm)
Colour - Dark brown
Surface - Smooth
Margin - Irregular

Palpation

Consistency - Firm

Tenderness - Absent

Percussion - N/L

Auscultation - N/L

Ayurvedic Diagnosis: *Vata-Kaphaj Vranagranthi*

MATERIALS

The following Ayurvedic medications were given to patient in this case study as they are *Shothahara* (anti-inflammatory) and *Lekhana* (scraping) and *Rakta Prasadhana* (blood purifying) in *Guna* (property).

1) Oral Medication

- *Kaishar Guggulu*- 2 tablets (500mg each tablet) twice daily after food with lukewarm water for 6 months.
- *Kanchanar Guggulu*- 2 tablets (500mg each tablet) twice daily after food with lukewarm water for 6 months.

2) Topical application

Kshara tail- Apply sufficient amount of *Kshara tail* over the keloid lesion twice daily (morning and evening) followed by a gentle massage till the absorption. In *Yogaratnakara Kshara tail* is described as *Ksharana guna* (corrosive/dissolving) on abnormal skin growth[10].

RESULT

The keloid scar of the patient showed progressive improvement in both measurements and clinical symptoms over the 6 months of study period.

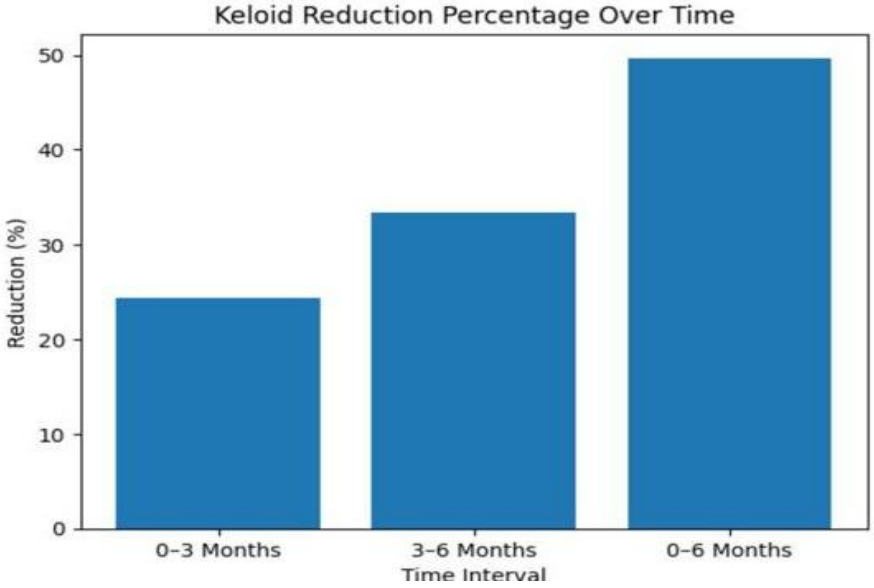
Objective volumetric reduction rate in percentage

The primary outcome was significant reduction in the volume of the keloid. The baseline volume was 3.18cm^3, which decreased to 2.40cm^3 at the end of 3 month and finally it reduced to 1.60cm^3 at the 6 months. That become the total volumetric reduction of 49.66%.

Table 1: Changes in keloid Dimensions and volume

Time line	Length	Breath (cm)	Height (cm)	Volume (cm^3)	% Reduction
Day 0	12.6	0.6	0.42	3.18	-
3 Months	12	0.5	0.40	2.40	24.41%
6 Months	10.8	0.4	0.37	1.60	33.40%
Total	-	-	-	-	49.66%

* Reduction calculation from the previous follow- up.



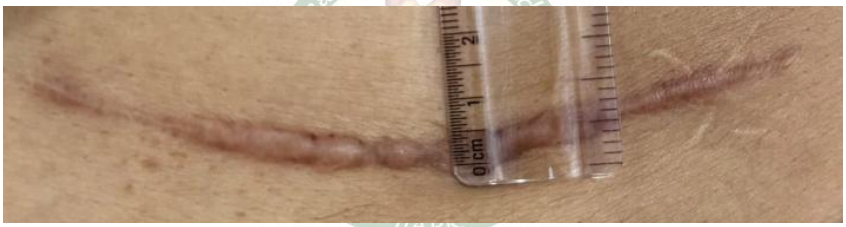
Relief in clinical symptoms

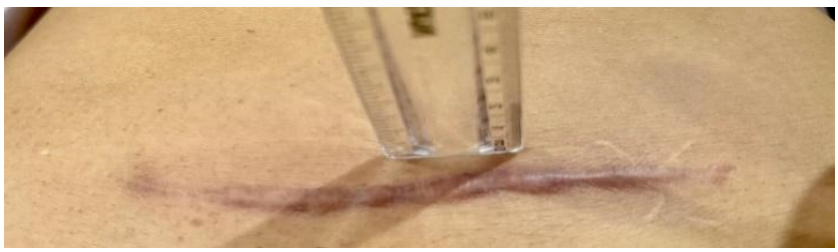
Subjective symptoms were assessed using a qualitative scale. At baseline, the main complain of patient was *Kandu* (persistent itching) *Toda* (pain), *Stambha* (stiffness) and dark brown discolouration and it was hard to touch. By the end of 3 months, the itching reduced noticeably along with pain, discolouration became brown, highness and hardness also lessen. At the end 6 months follow-up, the lesion was *Mridu* (soft) and there was significant relieve in pain, itching and keloid discolouration also become much lighter compare to baseline.

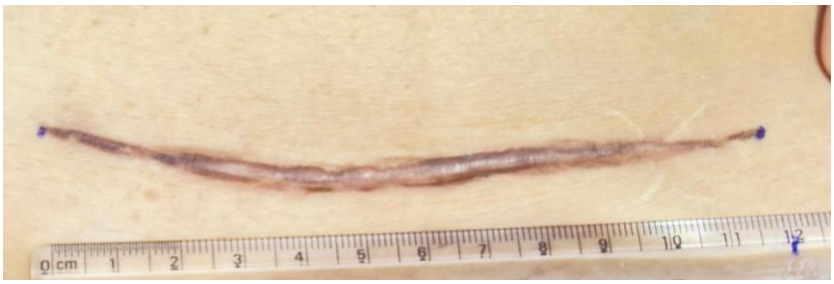
Dimensions and volume

Day 0 of treatment post LSCS keloid (L x B x H)

12.6 cm x 0.6 cm x 0.42 cm =3.175 cm^3







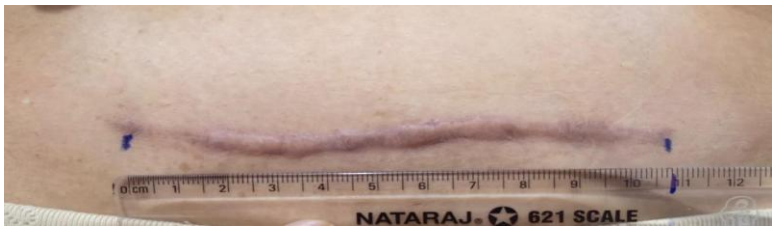
Dimensions and volume

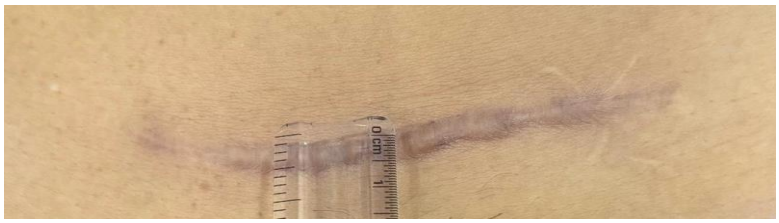
3 months after treatment started for post LSCS keloid

(L x B x H) volumetric measurement:

12 cm x 0.5 cm x 0.40 cm =2.40 cm^3

And reduction rate is 24.41%





Dimensions and volume

Changes in post LSCS keloid dimensions and volume on 6 months after treatment started

(L x B x H)

10.8 cm x 0.4 cm x 0.37cm =1.60 cm^3 and reduction rate in percentage is 33.40% from completion of 3rd month (previous follow up)

And total reduction rate is 49.66%

DISCUSSION

In this cause report it is found that Ayurvedic treatment can be effective in management of post-cesarean *Vranagranthi*. The 49.66% volume reduction shows that the integrated use of both oral and topical medication can successfully cure the underlying *Samprapti* (pathogenesis).

Oral Pharmaco- dynamic

- *Kaishar guggulu*: There are pain and itching due to *Rakta Dhatu* (blood) *Dusti* in keloid. *Kaishar Guggulu* acts as *Rakta- Prasadhana* (blood purifying) and it also pacify the *Vata-Kapha Dosha* this helps in relieving the symptoms[8].
- *Kanchanar Guggulu*: It is indicated for *Granthi* and *Arbuda* (tumour), its bark has *Lekhana guna* (scraping property). It acts on *Mamsa* and *Meda Dhatu* (muscle tissue and fatty) thereby stopping the abnormal proliferation of keloidal tissue[9].

Topical Action of *Kshara Tailam*

The topical application of Kosher tail is important for the localised reduction of the abnormal growth. *Kshara* is known for its *Ksharana guna* (corrosive/dissolving property). Due to its *Teekshana* (sharp) and *Ushna guna* (hot), it penetrates the thick *Kapha-Mamsa* complex in keloid, by "scraping" the excess collagen fibres and improving the local blood circulation and soften the scar[10].

Clinical Significance

The increased in reduction rate the second phase (3rd to 6th month) was 33.40%, it suggests that long- term use is important for managing keloids. Unlike surgical excision, which usually triggers the keloid growth further due to fresh trauma, this non-invasive Ayurveda. Management reduces the abnormal growth without stimulating any new inflammatory reaction.

CONCLUSION

In this case report it is found that the Ayurvedic treatment is effective in management of Post- Cesarean Section *Vranagranthi* (keloid). The integrated use of oral and topical medication (*Kaishar guggulu* and *Kanchanar Guggulu* with *Kshara tailam* application) resulted in 49.66% volumetric reduction over 6 months period. Along with the objective reduction there was also significant relief in clinical symptoms (pain, itching and dark brown-blackish discolouration) with notable improvement in stiffness *(Stambha).*

The finding suggests the *Lekhanya* (scraping) and *Shothahara guna* (anti-inflammatory) of these medications were effective in *Vata-Kapha Dosha* and *Mamsa-Rakta dusti* correction, which cause the keloid growth. This non-invasive management give safe low cost and alternative high potential treatment in Keloid with high recusancy rate.

Further large-scale clinical trial can trial standardize this management as a one of main alternate treatment for post-surgical fibroproliferative growth.

Author contribution

Both the authors have reviewed the full case study before submitting for publication and agreed to be responsible for all the information and data furnished in article.

Disclosures

Human subject; full written informed consent was taken from the patient in present her husband as witness for research work and journal publication with use of photographs.

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