



The Role of *Ayurveda Kshara Karma* in the Management of *Keloid*: A Case Study

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Abstract

Keloids, the benign dermal fibro-proliferative nodular lesions, which often tend to cause socio-economic and psycho-somatic stress pose a major challenge to clinicians till date. Apprehending and analyzing *keloids* under the concept of *Vranagranthi* described in the ancient science of *Ayurveda* and amalgamating the therapeutic principles explained in the classics can emerge as a ray of hope in the condition. *Kshara karma* (chemical cauterization) is an important para-surgical procedure which can be effectively incorporated into the treatment of wounds, *Keloids* and hypertrophic scars. An 18-year-old client who presented with overgrowth of scar tissue at the right anterolateral part of the chest region was treated at the OPD of the Division of Ayurveda, MAHE, Manipal. *Kshara karma*, which included the painting of *Teekshna Apamarga kshara* (ashes of *Achyranthes aspera*) for a duration of 100 *Matra kala* (approximately 2 mins), in two sittings brought about total regression of the *Vranagranthi* and the associated symptoms. No signs of recurrence were noticed during the follow-ups. Thus, *Kshara karma* can emerge as a promising solution in the stress-filled life of *Keloid* patients.

Keywords: *Ayurveda, Keloid, Kshara Karma, Vranagranthi*

1. Introduction

Man's curiosity, courage, perseverance and unlimited efforts to succeed in the uphill battle of life have inflicted his life with wounds. Proper wound healing with minimal scar formation has been a factual challenge to the clinician till date. Abnormal wound healing can lead to the formation of *Keloids*, which are pathological scars, benign dermal fibro-proliferative nodular lesions that tend to recur after excision¹ and rarely or never regress spontaneously².

Keloids are aesthetically disfiguring, often lead to psychological stress and affect the quality of life³. There are numerous scientific and technological advancements in wound care and therapeutic interventions like surgical excision, cryotherapy, intra-lesional steroid and interferon

injections, laser therapy, irradiation, mechanical compression dressing, and silicone sheet applications are all being incorporated in the treatment of *keloids*⁴. Despite these efforts, there is no universally accepted single, effective, reliable treatment protocol for keloid and hypertrophic scars. This poses a major challenge to clinicians.

Ayurveda, the Indian system of holistic medicine is undoubtedly an answer to many unresolved problems of the medical world. *Shalya tantra* is one among the *Astanga* or the eight main branches of *Ayurveda* and the concept of *Vrana* (wounds) and its healing process is an inseparable part of this branch.

Ayurveda scholars and researchers believe that the condition of '*Keloid*' described in the contemporary medical system can be correlated with the concept of

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'*Vranagranthi*' described in the distinguished classics of *Ayurveda*^{5,6}.

Acharya Vagbhata, in his most celebrated treatises *Ashtanga Hridaya* and *Ashtanga Samgraha*, has explained in detail about *Vranagranthi* (keloids)^{7,8}.

Acharya Sushruta and Acharya Charaka have explained the aetiology and pathology of the same under the concept of *Granthi*^{9,10}. Acharya Sharangdhara, in his treatise *Sharangadhara Samhitha* has described of *Vranagranthi* while explaining the concept of *Granthi*¹¹. Acharya Sushruta, in his great treatise *Sushruta Samhitha* has elaborately explained and exemplified 15 types of *Anushastra karma* (para surgical procedures)¹² of which *Kshara karma* is said to be the best procedure¹³.

Kshara karma is the procedure which involves internal administration or external application of *Khara*, a caustic, alkaline medicament obtained from the ashes of selected medicinal plants. It is said to possess qualities such as *Chedhana* (Excision), *Bhedhana* (Incision), *Lekhana* (Scraping) and destroy *Tridoshaja* disorders (disorders caused due to vitiation of all the three senses of humor, *Vata*, *Pitta* and *Kapha*)¹⁴. It is indicated in wounds associated with indurations, itching, those which are hard to clean and have raised hypertrophied granulation tissue¹⁵.

The procedure of external application of *Kshara* called the *Pratisaraneeya kshara* in *Ayurveda*¹⁶ is indicated in diseases such as *Arshas* (Internal haemorrhoids), *Bhagandara* (fistula in ano), *Arbuda* (tumours), *Baahya Vidradhi* (external abscess) *Visha* (Disease produced due to poisons), *Dushta Vrana* (ulcers), *Nadi vrana* (Sinus ulcer), *Charma keela* (warts) and such others¹⁷.

Considering all the above verities explained in the celebrated classics of *Ayurveda*, this study that aimed at explicating and establishing the role of *Ayurveda Kshara karma* in the management of *Vranagranthi* or *Keloid* was designed and accomplished.

2. Materials and Methods

2.1 Case Report

An 18-years-old male client with complaints of over-growth of scar tissue on the right anterolateral part of the chest region visited the OPD of the Division of *Ayurveda*. The growth was associated with localized pain, hypersensitivity, occasional itching and pulling sensation

in the adjoining muscles. A thorough history of the patient was taken and systemic as well as local examination was carried out by the treating physician.

The client, a college student, who was normal six years back, is said to have noticed some kind of fluid accumulation below the skin in the right anterolateral part of the chest region, for which he was operated at a local hospital. After a few months, he noticed that there was an increase in the area of the scar tissue formed. He consulted his doctor and was advised a second operation for the same. Within a gap of eight months, a second operation was performed on him. However, the formation of hypertrophied scar tissue continued to reappear. The client was not able to appreciate the gravity of the problem and neglected the scar tissue. As he noticed that the scar was increasing in size with time, started to experience tightness in the region and for aesthetic purposes, he approached another hospital, where a clinical diagnosis of keloid was made, and he was advised a course of injections with sclerosing agents. He had been administered a single-shot injection of a sclerosing agent, which was very painful. The client could not tolerate the pain, itching and hypersensitivity post treatment and so discontinued it. He then approached the OPD of the Division of *Ayurveda*, for further evaluation and *Ayurveda* treatment.

The client neither had any family history of hypertrophied scars nor any comorbidities. He is said to be accustomed to having normal mixed diet with normal appetite, bowel habits and sleep pattern. Systemic examination confirmed that the client was otherwise a healthy individual.

Local examination: A brownish red nodular growth with grooves which is firm, non-tender and shiny was found on the right anterolateral part of the chest. It was irregular, about 14cm X 1.5cm X 1cm (lxbxh).

2.2 Diagnostic Focus and Assessment

The case was diagnosed as that of *Vranagranthi* i.e., *Keloid* and was thus corroborated clinically (Figure 1).

2.3 Therapeutic Focus and Assessment

Considering the limitations of medical intervention in the treatment of *Vranagranthi*, in the present case, *Kshara karma*, which is one of the most effective para-surgical procedures described in the classics of *Ayurveda*, was prescribed, planned and performed.



Figure 1. *Vranagranthi* or *Keloid* before treatment



Figure 2. *Vrana granthi* or *Keloid* during the application of *kshara*.

2.4 Therapeutic Intervention

In this study, *Apamarga kshara* was used for *kshara karma*. Preparation of *Apamarga kshara*: in accordance with *Ksharapatana vidhi* explained by Acharya Vagbhata¹⁸.

About 5 kg of the *Panchanga* (whole plant) of *Apamarga* (*Achyranthes aspera*) was collected, dried up and burnt. About 500 gm of the ash obtained was collected and mixed with 6 times (approx. 3 lrs) of water, stirred well and later allowed to settle down overnight. Then it was filtered through double folded sterilized muslin cloth for twenty one times and the residue was discarded. The amber coloured clear filtrate was heated on slow, continuous flame until it reduced to half of its quantity (*Kshara Jala*). 50 gm of red hot *Shukti* (limestone) was added to the filtrate solution, with continuous stirring until it reduced to 1/3rd of its original quantity. This is said to be *Madhyama* (moderate) *kshara*. 5 gm of *Chitraka Kalka* (paste of *Plumbago zeylanica*) was added to it and heated further until the consistency with minimal Total Dissolved Solids (TLS) which is described by Acharya Sushrutha as the consistency which is neither solid nor liquid was obtained. This is known as *Pratisaraneeya Teekshana kshara* or highly concentrated *kshara*. It was collected and stored in an air tight container.

Procedure:

- The patient was laid down in left lateral position.
- The right anterolateral region was sterilized using *Thriphala kashayam* (decoction).
- The paste of *Teekshna Apamarga kshara* was painted on the prominent part of the *Vranagranthi* lesion with the help of a *Shalaka* (a rod like surgical instrument).

- The *kshara* was kept in place for 100 *Matra kala* (*Matra* being the time taken to pronounce a short syllable) or about 2 mins.
- Later, the area was washed with *Dhanyamla* (fermented medicated liquid).
- After application of *kshara*, the *Vranagranthi* changed to blackish colour, similar to a *Jambu phala* or *Syzygium cumini* fruit (Figure 2).
- *Madhu* (honey) and *Ghrita* (ghee) were applied to overcome *Daha* or burning sensation.
- Lose bandaging was done with sterilized gauze and cotton pads.
- The client was given *Shatadhouta ghrita* for application to the region regularly and Tab. *Gandhaka Rasayana* 1-0-1 after food for a period of 15 days.

This entire procedure was carried out a second time covering the entire length of the lesion with a gap of one month between the two sittings.

3. Results

At the end of the first sitting, the prominent part of *Vranagranthi* had turned into a blackish hard mass, regressed in size, and the slough formed was seen peeling off. After performing the *Kshara karma* for a second time the covering entire length of it, a slough formed over the tissue of the keloid was seen scaling off. Total regression of the symptoms and the size of keloid tissue were noted one month after the application.

The skin in the region was however very sensitive for a few days which slowly gained normalcy. (Figure 3).



Figure 3. *Vrana granthi* or *Keloid* after the *Kshara karma*.

The patient was called for two follow-ups three months and one year after the second sitting of *Kshara karma*. No signs of recurrence were noticed during these follow-ups.

4. Discussion

Keloids are benign dermal fibro-proliferative nodular lesions which never regress spontaneously. Researchers often co-relate it with the concept of *Vranagranthi*, described in the immense, illustrious classics of Ayurveda^{5,19}. While explaining the concept and treatment of *Vrana* (wounds) the classics have elucidated that improper management of wounds and intake of incompatible, unbalanced diet by the patient not only hampers the healing process but also aggravates the *Kapha-Vata pradhana Tridosha* (the other humor being *Pitta dosha*) and vitiates the *Mamsa*, *Medas* and *Rakta dhatu*, often related to muscle, adipose tissue and blood cells respectively²⁰. This further causes the accumulation of *Kapha dosha* and the formation of round, thick, elevated and slightly nodular swelling, which may be associated with pain and itching^{21,22}.

We can consider the vitiation of *Rakta* described in *Ayurveda* as hyper vascularity and the vitiation of *Mamsa* and *Medas dhatu* as excess collagen, which are involved in constituting the pathogenesis of *Keloid*.

Ksharakarma, as described by Acharya Sushruta, is an important para-surgical procedure which is very much indicated in *Granthi roga* or tumorous growths²³ arising from any non-vital part of the body due to its properties of *Pachana* (suppuration), *Vilayana* (dissolving), *Shodhana* (cleansing), *Ropana* (uneventful healing), *Shoshana* (drying up), *Sthambana* (arresting or blocking) besides its *Chedhana* (Excision), *Bhedhana* (Incision), *Lekhana* (Scraping) and *Tridosha shamaka* (pacifying all the three vitiated *Dosha*) qualities²⁴.

In general, the qualities of *kshara* which facilitate the above functions include *Lavana* (salty), *Tikta* (bitter)

Rasa; *Ruksha* (dry), *Teekshna Guna* (sharpness); *Ushna* (hot) *Virya* (potency); and *Katu* (pungent) *Vipaka* (attributes of drug assimilation)²⁵. *Apamarga kshara* is one such preparation which pacifies *Kapha* and *Vata dosha*²⁶. Contemporary researches have also proved that an alkaline salt of *Achyranthus aspera* is a strong alkali with high calcium content. It is capable of bringing about caustic action leading to cutting of the tissue and also debridement of unhealthy tissue. It is considered to facilitate chemical cauterization and act as an anti-inflammatory and anti-bacterial medicament²⁷. Researches have also established that calcium electroporation for *keloids* was a safe therapeutic method, with minor side effects²⁸. The majesty of the ancient classics in understanding the subtle issues and judiciously using them has to be appreciated here.

And also, *Kshara karma* causes minimal post-procedural pain, does not cause any bleeding and is free of surgical complications like incontinence, stenosis and stricture. The chances of recurrence after *Kshara karma* is minimal in the present case. This procedure can be performed on an outpatient basis and does not require hospitalization, making the treatment of *Keloid* cost-effective and patient friendly.

5. Conclusion

The medical world has always put forth its best to check this aesthetically disfiguring, stress causing condition²⁹. As the condition still remains a challenge without any universally accepted, effective, reliable treatment protocol in the contemporary medical system, it is much essential to understand the therapeutic modalities for the same explained and exemplified in Ayurveda and such other ancient, authentic, holistic healthcare systems in the world. This was an attempt in this regard, which emerged as an eye-opener.

The distinguished classics of *Ayurveda* describe the condition as *Vranagranthi*, and Acharya Sushruta, the Father of Surgery, describes numerous methods of dealing with such conditions and their importance.

Kshara karma, the external application of a caustic, alkaline medicament prepared from the ashes of the plant *Apamarga* (*Achyranthes aspera*), in this case, thus proves to be an effective treatment option in the treatment of *Vranagranthi* or *Keloid*. *Kshara karma* can be considered to be a non-invasive, safe, economical, reliable treatment

method in the treatment of *Vranagranthi* or *Keloid*, as concluded by the above study.

Further studies and research on these lines can emerge as a promising solution in the stress-filled life of *Keloid* patients. This also explicates and exemplifies the realism in the *Ayurveda* classics with modern parameters.

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