



Case Study

TREATMENT OF BURN SCAR CONTRACTURE WITH *AGNIKARMA*: A CASE REPORT

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ABSTRACT

The burn scar and contracture cases are highly common. The burn scar is inevitable even after best effort and contracture is common complication after burn which restrict the movement of injured area. The healed burn scar cases lead to varying degrees of functional and aesthetic components. Many treatment modalities are available for their treatment. The occupational therapy, physiotherapy and surgical release of burn contracture are in practice but not cured easily. Ayurveda have different treatment modality for the treatment of wound and their complications one of them is *Agnikarma*. The *Agnikarma* is simply intentional therapeutic heat burn therapy and is in practice to reduce the *Stabdhta* (stiffness) in disease condition. The *Agnikarma* is indicated in diseases caused by *Vata* and *Kapha doshas*. The purpose of case report is to show the role of *Agnikarma* in releasing burn contracture and to make painless hand movement. The traditional *Bindu* type linear *Agnikarma* with the help of *Tamra shalaka* (copper rod) performed at the stiffness site followed by *Ghritkumari* (*Aloevera* Linn.) paste and *Yastimadhu* (*Glycirriza glabra* Linn.) powder application. The *Agnikarma* have effect in loosening and releasing of burn contracture. Finally, the patient got benefited.

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INTRODUCTION

The Ayurveda have description of various preventive, conservative, surgical and parasurgical methods to promote health and cure the diseases^[1,2,3] The parasurgical procedures include *Agnikarma*, a type of heat therapy (thermotherapy).^[4,5] The *Agnikarma* broadly described by Sushruta in a separate chapter and in whole text.^[6] Charak, Vagbhatta and later on writers also mentioned the scope and importance of *Agnikarma* (*Dagdhakarma* or *Dahakarma*).^[7,8] The *Agnikarma* is intentional therapeutic heat burn therapy (ITHBT), indicated in diseases of *Vataja* and *Kaphaja* origin^[9]. The *Stambha* (stricture, contracture) can be managed with the help of heat of therapeutic burn. It is helpful in loosening the contracture and easing the movement.

The burn is a type of *Aagantuja* injury that affects the skin, muscle, tendon etc. The moist burn is due to heat from hot water or oil.^[10] Depending on severity of burn, the various nominal to life

threatening and late complication seen in burn cases.^[11] The burn may causes bone and joint problems, scars, shortening and tightening of skin, muscles, tendons (contracture). Each burn scar contractures causes general problem of quite debilitating and interfering with a patient's daily functional activities. The skin tightening in contracture occurs when second or third degree burn happens. The surrounding skin pulls together and contracted mediated by myofibroblasts. These problems runs lifelong and causes difficulty in movement. Many muscle relaxants drugs, local applicant drugs and procedure adopted to cure it^[12]. But still no satisfactory result seems. Ayurveda also have role in treating the condition with *Agnikarma*^[13].

Case Report

A 26-year-old female patient complains of movement restriction, mild pain and itching at dorsal site of right hand in the last eighteen months.

Patient has no history of diabetes mellitus, tuberculosis and hypertension. Patient has history of epilepsy in the past four year and last episodic attack happen in December 2016. The patient also has significant history of burn (scald) locally before eighteen months. The accidental hot liquid (moist burn, refined oil) burn at right hand occurs during cooking act in a festival. After taking first aid treatment it converted in contracture at right hand site. The colour of hand skin changes into whitish, blackish, spotted with hard band like contracture of approximate ten-centimetre length. The patient feels difficulty in hand movement, itching and pain at local site. Previously the patient took treatment from many health centres but not cured. Then patient attended the Shalya OPD for consultation and treatment. After proper history and examination, patient finally plan for local site *Agnikarma* (ITHBT, intentional therapeutic heat burns therapy) with Ayurvedic drugs.

Treatment Plan

The treatment modality adopted is local *Agnikarma* by copper made *Agnikarma shalaka* and Ayurvedic medicine. The first sitting of *Agnikarma*

was done on 8th January 2019. The total eight sitting of *Agnikarma* performed in approximate seven days interval after each sitting. The *Kaishore Guggulu* two tablet (500 mg each tablet) twice a day with lukewarm water and *Jaatyadi tail* for local application three time in a day was advised.^[14,15] The cleaning of local part by *Dashmool kwatha* (decoction of *Dashmoola* drug) and aseptic precautions taken before therapy. The *Agnikarma* was done with the help of copper *Shalaka* at weekly interval. The *Bindu* type *Agnikarma* made and after that fresh *Ghrithkumari* (*Aloe vera* Linn.) gel and *Yastimadhu* (*Glycyrrhiza glabra* Linn.) powder applied^[16]. Soft bandaging was done after procedure with precautionary advice to protect it from soak and trauma up to 24 hours. After that dressing was removed and advised to use the *Jaatyadi tail* thrice in a day.

Time line

The timeline of the case with duration and particular intervention placed at Annexure Table 1.

Table 1: Timeline of events

Duration	Particular and intervention
July 2017	The burn by warm oil happened at home. Patient takes first aid treatment at their home. Later the burn contracture developed
08 January 2019	First time came in OPD for consultation First sitting of <i>Agnikarma</i> done
17 January 2019	2 nd sitting of <i>Agnikarma</i>
25 January 2019	3 rd sitting of <i>Agnikarma</i>
01 February 2019	4 th sitting of <i>Agnikarma</i>
08 February 2019	5 th sitting of <i>Agnikarma</i>
15 February 2019	6 th sitting of <i>Agnikarma</i>
22 February 2019	7 th sitting of <i>Agnikarma</i>
12 March 2019	8 th sitting of <i>Agnikarma</i>
23 April 2019	First Follow up care
09 May 2019	Second Follow up care

Outcome: After therapy the painless restriction free hand movement achieved. The patient has no complain of itching. The stricture softens but the scar of scald burns still present. The same benefits also seen in follow up period. The detail of outcome measure and follow up placed at Annexure Table 2.

Table 2: Outcome measure and follow up

Sign & symptoms	Before therapy	After therapy	In follow up (after 42 days)
Pain	Present	No	No
Hand movement	Restricted	Free movement	Free movement
Itching	Present	No	No
Stricture	Present	No	No
Scar	Present	Present	Present

Figure 1: Burn scar contracture before, during and after *Agnikarma*

Result and Discussion

In each sitting of *Agnikarma* the burn contracture starts peeling off, going to become soft and gradually start constraint free movement. Initially some spots of *Agnikarma* were seen at procedure site but lastly the spots faded. The whitish patches of earlier scald burn still present. The burn contracture releases gradually. The repeated *Agnikarma* results in painless free hand movement without restriction. The image of consequence events are listed in figure number 1. The deeper burns (2nd degree deep dermal and full thickness) heal by scarring.^[17] This causes local restriction of movement. The facts favouring in treating the burn contracture with the help of *Agnikarma* are mentioned below.

The *Agnikarma* have its historical journey and described in heads of parasurgical procedure in ancient Ayurvedic text. It is indicated in *Karkashsthir-prithu-kathin* (rough-firm-thick-hard ones) type of conditions in context of *Arsha (pile)*.^[18] Simply the *Agnikarma* is a therapeutic heat burn therapy means that a type of heat therapy, which helps in releasing contracture. The action on muscle is that the heat provides the extensibility of collagen fibres so muscle contracture decreased.

The *Agnikarma* was able to reduce the *Stambha* with the help of *Agni*.^[19,20] It burns the unwanted fibrosed tissue, so release the contracture gradually in their consecutive sittings. The pain and itching at local site reduced after loosening in contracture.

The *Kaishore guggulu* act as *Vrana* (wound) healer and complexion promoter.^[21] The *Jaatyadi tail* used as a *Vrana ropaka* (wound healer) in *Dagdha* (burn).^[22] The lubricating nature of oil subsiding pain and ease hand movement. The application of *Ghritkumari* paste after *Agnikarma* acts as a cooling agent, as it has quality of *Guru* (heaviness), *Snigdha* (unctuousness), *Picchila* (sliminess), *Tikta rasa* (bitter taste), *Katu vipaak* (pungent post digestion effect), *Sheet veerya* (cold potency). The *Yastimadhu* (*Glycirriza glabra* Linn.)

have quality of *Guru* (heaviness), *Snigdha* (unctuousness), *Madhur* (sweet) *Sheet* (cold). The *Yastimadhu* have merits of *Varnya* (complexion promoters) and *Ropaka* (wound healing), so it is useful in soothing of *Dagdha vrana* (burn wound) after *Agnikarma*.^[23]

CONCLUSION

The sufferer of burn complication (burn contracture) is commonly seen in society. The *Agnikarma* is a traditional treatment method and is helpful in treating such condition. The patient was finally cured and able to perform normal routine work. The Ayurvedic parasurgical treatment modalities along with medication may able to face such challenges and strengthening the science.

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