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Case Report

Serankottai induced contact dermatitis during *suthi* process in Siddha -A case report

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ABSTRACT

Background: *In Siddha, the famous quote 'Chukkuku pura nanju ,Kadukaiku aga nanju', reveals that most of the plants are adjoined with the toxic part /chemical which has to be removed by the Suthi process before its medicinal uses. Any untoward medical occurrence during treatment is the ADR (Adverse Drug Reaction). Contact dermatitis is one of the common toxic symptoms/known ADR of most of the poisonous drugs. Serankottai (Semecarpus anacardium nuts- SA nuts) is enormously used in Siddha medicine for various challenging diseases like Rheumatoid arthritis, Cancer, Psoriasis, etc. This drug comes under poisonous herbs Schedule-E drugs and the expected adverse events are allergic contact dermatitis, redness, severe itching, burning sensation, facial edema, anasarca and anaphylactic reaction in extreme conditions. This study reports about the toxic signs developed by Serankottai and its management through Siddha medicines.*

Methods: *Reporting of a different case, presented with Contact dermatitis during Siddha purification method in Siddha manufacturing unit and the negative rechallenge of the symptoms by Siddha antidotes were discussed.*

Results: *It is to report that, Serankottai induced contact dermatitis has been successfully managed by proper Siddha antidotes like Puli ilai kudineer (Tamarind leaf decoction) and Sengal podi ottradam (Brick powder Fomentation) as mentioned in Gunapadam Mooligai Vagupu and Sattam Saarndha Maruthuvamum Nanju Maruthuvamum.*

Discussion: *Proper purification of Toxic plants reduces toxicity to end user. Siddhars have documented step by step SOP in Purification of Toxic Plants. They have also prescribed remediation helping in Negative rechallenge. Here a case has been reported with Clinical manifestations like Blisters and boils after getting consent as per the CARE Guidelines to reveal the Negative rechallenge in pharmacovigilance.*

Keywords: *ADR, Negative rechallenge, Pharmacovigilance, Semecarpus anacardium-nut, Suthimuraigal (Siddha purification process).*

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INTRODUCTION

Toxicity is the unwanted ill-effect during therapeutic/any use of a substance. The toxic plant materials are also widely used by the people especially more in rural population for various purposes like Marking nut- used by washer man to mark on the cloth, Castor beans-used for making castor oil from the seeds ,Rosary pea - used as rosary beads and as jewelries, Oleander -widely used for its beautiful flowers as ornamental flowers, Tobacco- a commercial non food plant and those such plants are always very easily available on the roadside or in the forests or among the dwelling places, the people are more prone to their toxic illustrations. Likewise, the pharmacies in which the Siddha and Ayurvedha medicines prepared tempt to have more exposure to toxic plants, minerals and metals. Pharmacy is the place where all the raw drugs are to purification, drying, washing, burning, etc are performed. Pharmacies are assured to deliver quality medicines. Pharmacy is a term to denote a shop or store or other place where drugs are dispensed, measured or weighed or mode up and supplied or where prescriptions are compounded; or where drugs are prepared; or which has upon it or displayed within it, or affixed to or used in connection with it. The poisons shall be stored and clearly marked in red letters-Poison-in white background. Any untoward medical occurrence during treatment with a pharmaceutical product which does not have a causal relationship with the treatment is the ADR (Adverse Drug Reaction).According to the protocol of Pharmacovigilance programme, the toxicity or the adverse effects of Indian plants should also be reported.

Hence the knowledge and also the practical usage of appropriate antidote are very essential to handle them during their toxic exposure especially in pharmacies and can be used as first line of treatment. To counteract with the toxic effects, a peculiar antidote is required for every poisonous plant. In Siddha, antidotes are used in different ways, to eliminate the poison, to counteract its effect, to nullify its toxin, and to resist its absorption.

Semecarpus anacardium Linn. (Family: *Anacardiaceae*) is one among the poisonous plants and is distributed in sub-Himalayan region, tropical and central parts of India. The nut is commonly known as 'marking nut'. [2, 3]The nuts are blackish, glossy, and measure around 25–40 mm in length (Fig. 1b). They contain a dark oil, known as ''bhilawan oil'', which has strong vesicant properties. Many ailments like Asthma, Hemorrhoids, Warts, Chronic skin diseases and Joint pain could be healed in indigenous medicine and used as abortificient. The children use this nut as ornament protection against an ''evil eye'' and its oil widely used in hair dye. Urushiol is a primary irritant and it is a mixture of potent allergens. Severe redness, itching, urticaria, papules, vesicles, bullae, or erythema multiforme may persist for 2-3 weeks after its contact. [4] Anacardic acid (which is closely related to Urushiol) and Bhilawanol which are responsible for allergic skin rash [5]. Ghorpade et. al presented a case report of developing contact dermatitis and erythema while using oil of marking nut to relieve joint pain and he documented a series of IV injections of Hydrocortisone acetate 100 mg administered at 12-hour intervals over four days with topical hydrocortisone acetate ointment, and hydroxyzine hydrochloride 10 mg tab lets once per day for 20 days relieved the symptoms.[4] Verma et al documented a case history of contact dermatitis when he used marking nut as an external application as a treatment for Alopecia areata and then resolved after taking Prednisolone 40 mg daily with a combination drug .[6] Ghorpade et al stated that a patient who suffered with edema in peri orbital region and facial lesions had exposure to marking nut fumes. He got improvement after taking Hydrocortisone acetate inj. and hydroxyzine hydrochloride tablets, 25 mg twice daily. [7] Jie Sen fok et al explained a case of anaphylaxis due to *Semecarpus anacardium* nut after ingestion of a Hindi traditional food given in a temple. He was relieved from symptoms after administration of Adrenaline. [8]

Even though the contact dermatitis due to allergy of marking nut has been documented, here we discussed about a peculiar case of contact dermatitis developed during the purification process of marking nut after getting consent as per the CARE guidelines. There exists a strong belief among the Siddha practitioners that after purification of this drug, the toxicity of the nut diminishes and the allergic symptoms may not exist even after continuous exposure to the purified nut. Also Siddha texts explained that those who are having elevated *Azhal* (*Pitham*) in their body or usually referred as *Azhal udalinan* are more prone to sudden or severe allergy . *Serankottai* is a primary ingredient of many Siddha herbo, herbo-mineral preparations like *Rasagandhi mezhughu, Idivallathy mezhugu, Nandhi mezhughu, Serankottai nei, Mahavallathy legium ,Gandhi vallathy, Sootha vallathy,Amirdha Gandhi kukil vallathy* etc which are indicated for chronic diseases like *Vadha* diseases, *Udhira vadha sronitham, Mudaku vadham*, *Putru, Kattigal*, Skin diseases, Neurological diseases etc. These medicines are prepared after proper *suthi* (Siddha purification process) explained in the text. Some process insists in removing its cotyledon. While removing the cotyledons as a part of *suthi* process, as mentioned in the texts, *Anuboga vaithya navaneetham and Gunapadam –mooligai vagupu*, the contact dermatitis has developed.

METHODS

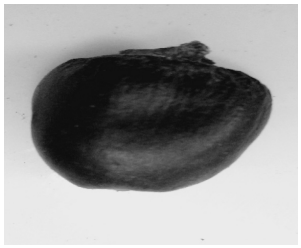

Fig.No:1&2.*Serankottai*– *Semecarpus anacardium* Nuts

Fig.No:3.Cotyledon Removing Process

Fig.No:4. Cotyledon Removed SA Nut

A 28 year male Researcher while doing the purification process in *Semecarpus anacardium* nuts has developed the allergic symptoms like erythema, burning sensation , papular eruption and vesiculation [9,10]. Tarry oil present in the pericarp of the fruit contains Anacardic Acid which is present in urushiol, might cause blisters on contact. The time duration for the presentation of allergic symptoms like vesiculation, papular eruptions were 2 days after the exposure. The symptoms drained and gradually, vanished after taking the proper antidotes like *Puli ilai kudineer*[10] 120 ml internally thrice a day and topical fomentation with fried brick powder twice a day [10].The allergic reactions disappeared within a week. The allergic dermatitis has not replicated afterword till 6 months of exposure.

Table 1: Siddha Treatment Regimen for *Serankottai* (*Semecarpus anacardium*) allergy:

Administration	Medicine	Dose	Duration	*Pathiyam* (Diet Restriction)
Internal medicine	*Puliilai kudineer* (Tamarind leaf juice)[10]	120 ml-thrice a day	1 week	Take more buttermilk and curd
External medicine	Fomentation with fried Brick powder placed in cotton cloth [9]	Twice daily	1 week	Apply coconut oil after fomentation therapy

Moreover, during further purification process ,the allergic symptoms has not occurred after prior precautions along with intake of tamarind leaf decoction -60 ml once daily before *suthi* process.

Fig.No:5&6. Contact dermatitis and erythema caused by *Serankottai.*

Fig.No:7.Boils and ulcers caused in the right forearm due to *Serankottai* during *suthi*.

Fig.No:8. Boils caused in the posterior part of right leg due to *Serankottai* during *suthi*.

The toxicity symptoms [9]occurred as mentioned in Siddha system of medicine has been reported and the symptoms relieved after administration of antidote as described in Siddha texts.

Fig.No:9. Tamarind leaf for decoction(internal medicine)

Fig.No:10. Brick powder fomentation on erythema in rt forearm (external medicine)

RESULTS & DISCUSSION

The toxic symptoms may occur due to a mixture of phytochemicals present in the toxic plants. *Serankottai* contains 90 % Anacardic acid and 10% Cardol. The content of Anacardic acid which is closely related to Urushiol may be reduced during traditional purification methods, so that the *Serankottai* may be made effective before added in medicine preparations. Thus reduction of the toxic tarry oil content in *Serankottai* may reduce the toxic nature of the Nuts. *Serankottai* is having the *veriyam* as hot and it is hot in nature. Hence when the *Pitham* gets provoked (mainly in *Pitha udalinan*) ,the inflamed, erythmatous skin rashes and boils appear. The Sage *Theraiyar* told *"Vathamalathu Meni kedathu*" i.e. the imbalance in *Vatham* causes skin diseases. Hence in this case, the provoked *Pitham* adjoins the *Vatham* and causes the symptoms.

As per the Siddha text, "*Vatham melitaal Mathuram Puli Uppu*", the tastes sweet, sour and salt can be used for neutralizing the vitiated *Vatham*. Hence *Puli ilai* (Tamarind leaves) because of its Sour taste, act as the best choice of drug to minimize the ill effects caused in the skin.

Contact dermatitis is the major ill effect noticed in the pharmacy and it is a considerable issue while doing *Suthi* process. Even though, there are many medicines which can revert these type of symptoms, this case have been treated differently with novel, appropriate antidotes mentioned in *Siddha* texts which are cost effective and easily available. These drugs can be used at the site of allergic symptoms and these antidotes do not produce any further side effect or adverse effect.

CONCLUSION

The present work discusses a case report of contact dermatitis caused by *Serankottai* during the purification process and the management of *Serankottai* induced contact dermatitis through Siddha medication in pharmacies. It has been concluded that it is hopeful in reversing the toxic symptoms / known ADR of the Schedule E(1) drugs like *Serankottai* through *Siddha* medication and antidotes. The purified SA nuts do not cause any allergy when it is implicated in medicines. Hence, further studies are required to validate the changes during the purification process and analytical studies are to be carried out in future research.

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