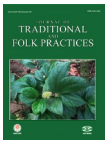
Volume 09 (01 & 02) December 2021, 152-157
ISSN 2278- 5906
http://jtfp.jntbgri.res.in



Journal of Traditional and Folk Practices

Wound care in Siddha system of medicine and importance of external application

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Received: 01 September 2021 Accepted: 25 November 2021

Abstract

Siddha system of medicine has been an inseparable part of Tamil culture since time immemorial. Siddhars were pioneers of the Siddha system of medicine and they excelled in all dimensions like metaphysics, metallurgy, geology and phytochemistry. They have used all kinds of herbs, metals, minerals,and animal products to treat diseases. Sage Agathiyar classified 4448 diseases in the Siddha system of medicine. Since the *sangam* age (a period in Tamil history), wound care management has been a well-established portrait in classical Tamil literary works like *tholkappiyam* and *puranaanooru*. Wound care comes under *aruvai maruthuvam* of Siddha medicine. Wound (*pun),* were described in detail with their characteristics and specific treatment protocol. The preparatory phase and post-wound care schedules were well described. Literature evidence depicts the surgical management for certain wounds and the utility of ancient surgical instruments in battlefield wounds. Various classical Siddha preparations used by Siddhars andvaidyars, depending on the *tridosam* concepts, were formulated and designed for specific wounds. Most of the external wounds were treated with external applications e.g., *mathan tailam*. Moreover, chronic wounds needinternal medicine too e.g., *meghanatha tailam*. In the modern era, many classical Siddha preparations havebeen adapted through scientific analysis and global standardization. SCRI and government agencies focus on the modern documentation process to help the newer generation witness the magnitude of the Siddha medicinal treasure to mankind.

Keywords: Herbal, Siddha, Skin injury, Traditional, Wound

1. Introduction

Wound care has been a challenge since time immemorial for the medical fraternity across the globe. Thus, traditional and cultural practices with available resources namely plants, herbs, mineral products, animals and aquatic products came into vogue. The traditional medical practice comprises of knowledge developed over generations, including Siddha and Ayurveda all over India. Even in the modern era, around 65 - 80% of the population still relies primarily on traditional medicine (Pan *et al*., 2014). The World Health Organization (WHO) hailed the traditional system of medicine as a healthy practice, harbinger of health and a way of life. The knowledge of incorporating plant, animal, and mineral-based medicines has been passed on to generations through conventional training and household milieu. Exercises and *varmam* techniques channelling the body's flow of energy have been applied in wound management for ages (Vanmathi and Harihara, 2018). Even in the modern era, the wound management is a challenge. The management strategies are multifaceted, like surgical debridement and the usage of appropriate antibiotics. In this connection, Siddha system of medicine gives a holistic approach to wound care.

1.1. Wound care in ancient Siddha system of medicine: past to present

Siddha system of medicine was in vogue since 3000 BC in South India. A Tamil classic '*Tholkappiyam*' written in 1400 BC contains lot of medical information. It conceptualizes the theory of five

elements and five senses. *Tirukkural* written in the 2nd Century BC has a separate chapter on science of healing and medicine as *Maruntu atikaram* (medicine chapter) (Ministry of AYUSH, 2019). Treatises have also documented wound management. During the *Sangam* age, advanced cultural practices were portrayed in *Puranaanooru* the oldest Tamil literary work (Thirunthilaiyan, 1985). Most of the literature content is in poetic form. *Thirumanthiram,* famous literature, popularly known for spiritual explanations and references written by sage Thirumoolar dates back to sixth to seventh century BC (Richard S Weiss, 2009). It also speaks about the medicinal value of black Pepper- *Piper nigrum* L., *Vanni* - *Prosopis cineraria* (L.) Druce*, Vilvam* - *Aegle marmelos* (L.) Correa, *Vembu* - *Azadirachta indica* A. Juss. and eighty more herbs (Panchavarnam, 2015). Tamil literature classified the land topography into five categories as *thinai* (types of landscapes). They are *kurinji* (hilly area), *mullai* (pastoral), *marudam* (agricultural), *neidal* (coastal) and *palai* (desert). It explains the nature of the land, lifestyle, occupation, cultivation, food habits and spiritual identity. All five *thinais* practised medicine and residents depended on their available natural resources - herbal, animal and aquatic origin sources to treat the diseases (Srinivasan, 2016). For example, fig fruit- *Ficus carica* L. extract (milky juice/ resin) was used to regain skin texture. Specific herbomineral preparations applied and gelled in the cotton were used to seal the cut and open wounds. *Jeevaga chinthamani* one of the five *perunkaappiyams*, highlighted the role of medicated rags in deep rooted injuries to control the bleeding.

The English East India Company documented evidence of Siddha system of medicine practiced in south India (1600–1858). Physicians and British surgeons used bazaar medicine (referred to as native medicine), and these substances were listed as "bazaar medicine" in the hospital records. They are opium, gum arabic, aloe, glycyrrhiza, cinnamon, smilax, sesame oil, dried ginger and cumin seeds. These were considered items of trade as much as for treatment (Chakrabarti, 2006). The *materia medica* of Hindoostan published in 1813 by Whitelaw Ainslie, who was then superintendent surgeon in Madras, describes the complex lineages of bazaar medicines which were either product of Hindoostan or brought here from Asiatic countries and are to be sold in the bazaars of this populous town, including many drugs of the Tamil, Arabian and Persian *materia medica* (Ainslie, 1813). Koman (1921) reported on the investigation about indigenous drugs to the honourable Surgeon General of Government of Madras stating the details of the plants and their usage, metallic preparations (known as *parpam* and *chenduram* traditionally) and their administration details with statistical analysis of patients treated for various diseases like asthma, rheumatism, diabetes at the Madras General Hospital. They detailed the wound healing mechanism of these traditional medicines (Koman, 1921). In 1891, Moideen Shif Khan Bahadur, who graduated from Madras Medical College, documented about 954 drugs and descriptive catalogues in the book of Materia Medica of Madras. It was archived in Harvard University Countway library of medicine. In 1798, Sergeant Ian Foley (formerly Surgeon General of Tranquebar) documented the surgical skills of Tamil doctors who practiced along with Europeans then in their hospitals (Jensen, 2005). Professor Robert Henry Elliot (1864 - 1936) British ophthalmic surgeon studied the technique of Indian Couching (one of the oldest eye surgical procedures) for cataracts from Dr. Ekambaram when he worked under Madras Presidency known as "Kannadiputhur" (Elliott, 1917). Regarding surgical practices in ancient south India, an article published in Neurology India mentioned cranial trepanation as one of the oldest surgical procedures since neolithic period. Trepanation has been reported from ancient north and south Americas, Europe, Asia and Africa. India has a towering surgical history from prehistoric times. The report of cranial trepanation was first detected in two skulls from Adichanallur, an ancient mining site of Tamil Nadu and these are still preserved in Chennai archaeology museum. This site was rendered with multiple excavations since the early 19th century and the facts which were unearthed were flabbergasted. In mining practice, as is common even today, head injuries were common and they were successfully treated with surgical procedures. A study of the skulls reveals that some of them had continued trauma and others had infections. One had evidence of scaphocephalic shape suggesting sagittal craniosynostosis and two had evidence of trepanation, which speaks of the excellence of ancient surgeons in head and neck surgery (Reddy and Satyamurthy, 2019). Leaving back the prehistoric surgical nostalgia and coming to wound management proper which form the main discussion of this communication.

2. Wounds classification and description in Siddha system of medicine

Ancient wound management has been well described in *Siddha Aruvai Maruthuvam* (Siddha textbook of Surgery), a compilation of various Siddha surgical textbook references. The list of literature describes the cause of wound, its characterization and management. *Agastya Rana vaidhyam, Agathiyar nayana vidhi,*

Terar taila varga surukkam, Terar maha karisal, Terar venba, Yugi chintamani, Siddha vaidya thirattu, Padartha guna chintamani, Nagamuni nayana vidhi, Terar maruthuva bharatham, Jeevarakshamrityam, Pararasasegaram and Singai aruvai maruthuvam rajasekaram. (Uthamarayan, 1968).

2.1. Description of *Pun* (wound)

In Siddha system of medicine, *Pun (*wound) has been described systematically with the classification of the tridosam concept, which focuses on the diagnosis and treatment aspects. *Pun* (wound) is a condition associated with injury to the tissue and destruction of the cells characterized by pain (*vali*), discharges (*seel vadithal*) and deformities (*vikuruthi*). These can be caused by either injury by any trauma, accident, weapon or rupture of an abscess. Depending on the morphology and behavior, *pun* (wound) is classified into 16 types (Uthamarayan, 1968).

Vali pun, azal pun and *aiya pun* are three foundation concepts in classification of the pun into further 13 types which are permutations and combinations of the above three (Table 1). The other 13 types of combinations are *valiazal, valiaiya, azalaiya, mukkutra, kuruthi, kuruthi vali, kuruthi azal, kuruthi aiya, kuruthi mukkutra, kuruthi valiazal, kuruthi valiaya ,silai pun* and *parangi pun.*

2.2. Healing characteristics of *Pun* (wound)

It depends on seven *udal thathu* (body tissues), age of thepatient, area affected and the structure of wound (Table 2).

3. Treatment procedures

- Spacious room with aeration and ventilation to stay.
- Sitting patiently without any vigorous activities.
- Patient's bed should be flat and wide.
- Adequately cleaned and fumigated (to decontaminate).

3.1. External medicine

There were 32 types of external medicines classified in Siddha system of medicine of which *pattru* (poultice), *poochu* (liquid application), *kalimbu* (ointment), *seelai* (medicated gauze), *kali* (paste), *podi* (powder), *neer* (medicated liquid) and p*ugai* (medicated wick) are commonly used for external wound.

Basic steps in initial wound management:

- Cleaning the wound with *padikara neer* (alum water).
- Removing specks of dirt.
- Debridement of necrotic tissue.

Table 1. Pathophysiological classification of *pun* (wound) as per Siddha *Aruvai Maruthuvam*

Sl. No.	Types	Characteristics of wound
1	*Vali pun*	Blackish red, margin Whey coloured liquid ooze Pain would be predominant
2	*Azal pun*	Yellowish red margins with burning sensation Cow urine coloured ooze Local heat and redness around the wound can be perceived
3	*Aiya pun*	Yellowish white purulent discharge, sticky and broth like consistency ooze with deep rooted wound Itching is perceived and thickening is observed while healing

Table 2. Healing and non-healing wound

Almost healing characteristics	Healing characteristics	Non-healing characteristics
Grey with tiny black dots	Grey base without any thickness, no discharge	Shapes other than rounded or triangular or quadrangular
Margin resembles standard skin colour	Elevated margin or yellow mixed	*Pun* in Front of the Leg, Groin, Axilla, Heel, *Varma points* (pranic energy points), *Amirthanilai* areas (energy centres in the human body based on the lunar phases), corner of the eyes, bones and exposed bone marrow wounds, vertex and fingertips. *Pun* associated with diabetes, tuberculosis and leprosy.

Specific types of external medication for different wounds like:

- *Valiazal pun* (fresh wound) – *Pattru* (poultice) and *kali* (paste) are used.
- *Azalaiya pun* (infected wound) – Fumigation (exposure of the wound to medicated smoke from dry leaves), medicated wicks. *kandankathiri* - *Solanum xanthocarpum* Schrad. & H. Wendl., *peippudal* - *Trichosanthes cucumerina* L. and dried neem leaves- *Azadirachta indica* L. are used for fumigation.
- *Mukkutra pun* (gangrenous wound)- Fumigation with certainresin products (*mattippal* - *Ailanthus triphysa* (Dennst.) Alston, *karbogarisi* - *Psoralea corylifolia* L., *devadaru* - *Cedrus deodara* (Roxb. Ex Don) G. Don, *aghil- Aquilaria agallocha* Roxb., *palingu sambrani* - *Boswellia serrata* Roxb. and *poonaikann kungiliyam* - *Shorea robusta* C. F. Gaertn. were used for fumigation (Table 3).
- *Silai pun* **(**necrotizing tissue wound**)** is followed by deep tissues injury, which involves blood vessels, muscles, bone and bone marrow. Medicated thread is used to seal this type of wound. *Karanool chikichai* (medicated thread treatment) is a unique para surgical treatment carried out to manage fistula. *Achyranthus* salt, *Pergularia daemia* (Forssk.) Chiov. salts are smearedon a surgical thread used to cut the tract and close it permanently by what is known as chemical cauterization in Western medicine.

Table.3 Common External applications used in current Practice for *Pun* (Essential Drug List Siddha Medicine, Department of Ayush, Ministry of Health and Welfare, Government of India, New Delhi,2013).

Medicine Name	Indication	Reference
Kilinjal mezhugu	*Pitta vedippu* (skin burns)	Siddha formulary of India
Vanga vennai	*Parangi Pun* (gangrene)	Siddha formulary of India
Mega virana kalimbu	*Pun*	Siddha formulary of India
Venkara podi	*Pun*	Siddha formulary of India
Padiga panner	*Vai pun* (mouth wound)	Siddha formulary of India

3.2. Commonly used medicine for wound management

3.2.1 *Mathan tailam*

This preparation includes datura leaf extract, coconut oil and copper sulphate. It is indicated purely for external application for all types of wounds. *Mathan tailam* is the most used formulation in Government Siddha medical colleges and Government public health centres in Tamil Nadu. It is widely prescribed for chronic ulcers, bedsores, ear infections, anal abscess, non-healing of external ulcers and folliculitis. Siddha Central Research Institute (SCRI), Chennai had standardized the preparation method for *mathan tailam* (Arunadevi *et al*., 2020). A casereport published by SCRI reveals *mathan tailam* will potentially reduce infection rates, amputations, improve the overall quality of life, and lower the economic burden in treating diabetic foot ulcers. Central Leather Research Institute (CLRI) has done animal studies on burns wounds of animals using Datura alba (Shanmuga Priya *et al*., 2002) and provided the scientific rationale for *mathan tailam* in wound management and was considered to be sensitive against MRSA strains.

3.2.2 *Uoon poochu tailam*

This oil contains *sangu parpam*, *nayyuruvi* (*Achyranthus aspera* L.), sesame seed epicarps. This is indicated for deep-seated ulcers, gangrene and carbuncles. It will replace and rejuvenate the necrotized tissues (Uthamarayan, 1968).

3.2.3 *Megha rajanga tailam*

Megha rajanga tailam is a unique preparation mentioned in the text *Terar taila varga surukkam*. More than fifty plant parts like root, bark, resin and leaves are used in this preparation.

Sage Terar indicated this oil for chronic gangrene wounds and deep tissue injury and burns, both internal and external. The oil showed promising results in various wounds like necrotizing myositis, 3rd degree burns, gangrene and non-responding diabetic ulcers. No scientific analysis has been carried out regarding this and hence remains an enigma tothe modern world and it needs to be standardized.

3.3. Internal medicine

Internal medication specific to wound type would be chosen depending on the tridosam (*vali, azal* and *aiyam*) and level of affliction of body tissues (*udal thathukkal*). Initialassessment of wound *and en vagai therivu* (general examination of constitutional categorization) and *nadi* (pulse reading) will decide the internal medication (Table 4).

Table 4. Common Internal Drugs used in current Practice for *Pun* (Essential Drug List Siddha Medicine, Department of Ayush, Ministry of Health and Welfare, Government of India, New Delhi, 2013)

Medicine Name	Indication	Reference
Parangi rasayanam	*Parangi pun*	Siddha formulary of India
Rasaganthi mezhgu	*mukkutra pun*	Siddha formulary of India
Ganthaga sudar thailam	*Pun*	Siddha formulary of India
Virana sanjeevi thailam	*Pun*	Siddha formulary of India

Before administering the Internal medicine, *Thega suthi* (purification of the body) *virechanam* (purgation) will be advised depending on the constitutional requirement.

- *Agasthiya kuzhambu, kumari ennai* and *siddhathi ennai* were the common drugs used to cleanse the body tissues.
- *Gandagam* (Sulphur) and *parangipattai* (*Smilax china*) can be given in case *saram thathu* is affected.
- If *senneer* (blood) is deranged, *ayam* (iron) and *thamiram* (copper) related medicine can be given.
- If *thasai* (muscle) or *moolai* (bone marrow) are deranged, iron, coral, *rasam* (mercurial preparation) and *thamiram* (copper) related medicine can be given.

4. Surgery in Siddha system of medicine

Wide range of surgical instruments were used in the ancient period right from skull injury to complex pelvic fractures. *Pararasasekaram*, ancient literature highlights different protocols adapted for wound management. Preoperative procedures and post-operative care were established in the ancient period (Rajasekaram, 2010). Ancient surgical instrument are given in Fig. 1.

Numerous Siddha classical preparations, both external and internal, are indicated for wound care. Formulations are primarily oil-based. Both internal and external medical management of wound care comes under the *Siddha Aruvai Maruthuvam* (Siddha surgery medicine), in which more types of therapeutic procedures have been described and followed, namely *Aruvai* (Surgery), *Keeral* (Incision), *Kuruthy Vaankal* (Bloodletting), *Attai Vidal* (Leech therapy), *Podi* (Powder Form Of Medication), *Kalimbu* (Ointment), *Seelai* (Medicated gauze - plastering) and *Pasai* (Paste) (Rajasekaram, 2010). Vaidhyars practiced single or compound mixture of herbs for treating various types of wounds and injuries. Thousands of classical preparations, from simple formulations to strenuous procedural preparations, were formulated and used accordingly.

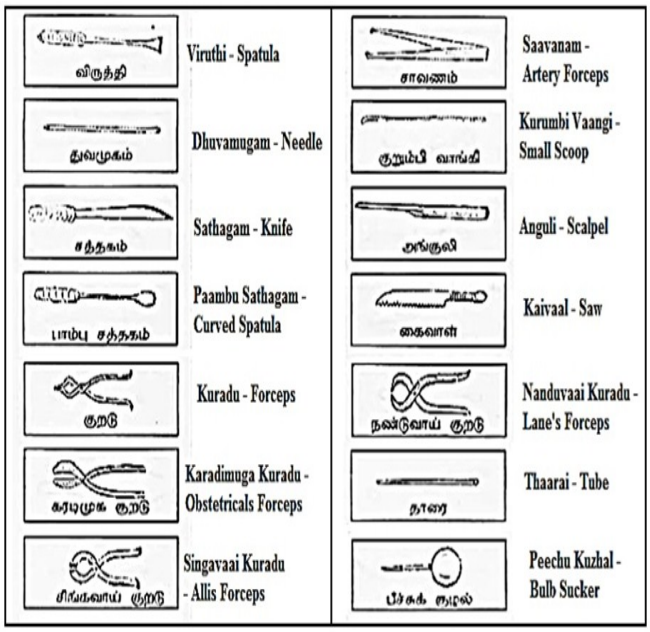

Fig. 1. Various ancient Siddha surgical instruments for wound debridement and management.

4. Conclusion

Wound care has got numerous formulations in Siddha system of medicine of which, very few are used in current practice, as identification of the herb and its availability is a challenge. We need to get these indigenous preparations to the academic limelight. SCRI, an autonomous body that works under the Ministry of AYUSH, Government of India, is an apex body in India undertaking, coordinating, formulating, developing, and promoting research on scientific lines in Siddha system of medicine. Delayed wound healing is one of the morbid and financially burdening issues in medicine today. Cutaneous wound healing is a highly well-regulated and complex process divided into 3 phases: inflammation, proliferation and tissue remodeling. Still, medical fraternity does not understand this process precisely enough to guide impaired healing processes effectively. Many new developments in wound healing have provided fascinating insights and may improve our ability to manage wound healing. Our goal is to create interest in the reader's mind about the usefulness of natural or herbal medications as external applications in wound healing.

Acknowledgements

Dr. J Sriram, Lecturer, Government Siddha medical college, Palayamkottai, Tamil Nadu, India.

References

Arunadevi R, Susila R, Murugammal S and Divya S 2020. Preparation and standardization of Mathan Tailam: A classical Siddha formulation for diabetic ulcerative wound healing. J. Ayurveda Integr. Med. 11(1): 10-15.

Ainslie W 1813. Materia Medica of Hindoostan, and Artisan's and Agriculturist's Nomenclature, etc. Government Press. pp 1.

Chakrabarti P 2006. "Neither of meate nor drinke, but what the Doctor alloweth": Medicine amidst War and Commerce in Eighteenth-century Madras. Bull Hist Med. 80(1): 1-38.

Elliot R H 1917. The Hunterian Lectures on the Indian Operation of Couching for Cataract Delivered at the Royal College of Surgeons of England on February 19th and 21st, 1917. Br. J. Ophthalmol. 1(6): 367-72.

Jensen N T 2005. The medical skills of the Malabar doctors in Tranquebar, India, as recorded by surgeon T L F Folly, 1798. Medical history. 49 (4):489–515.

Koman M C 1921. Government Press, Madras. Report on the investigation on indigenous drugs. pp. 31-35.

Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) 2019. Siddha System of Medicine The Science of Holistic Health. Government of India, New Delhi. 1: pp 4-6.

Panchavarnam 2015, Tirumandira Thavarangal. Panchavarnam Foundation, Cuddalore.1: pp. 26-95.

Pan S Y, Litscher G, Chan K, Yu, Z L, Chen, H Q and Ko K M 2014. Traditional medicines in the world: where to go next?. Evidence-based complementary and alternative medicine: 739895.

Rajasekaram 2010. Singai Arasarkalin Aruvai Maruthuvam. Youth league for Sanathana Dharmic Perception, Srilanka. 1: pp. 42-52.

Reddy D R and Satyamurthy T. 2019. Cranial trepanation in ancient India. Neurol India. 67(3):639-42.

Richard S Weiss 2009. Recipes of immortality Medicine, Religion and Community in South India. The miraculous origin of Siddha Medicine. Oxford University press, New York. pp.58.

Shanmuga Priya K, Gnanamani A, Radhakrishnan N and Babu M 2002. Antibacterial activity of *Datura alba*. Indian drugs. 39(2):113 -116.

Srinivasan T M 2016. Agricultural Practices as gleaned from the Tamil Literature of the Sangam Age. Indian J. History Sci. 51(1): 167-189.

Thiruinthilaiyan 1985. Tamil Illakiya varalaru. Tamil. 10th ed. Kanchipuram. Tamil Sangam pp. 1-12.

Uthamarayan K S 1968. Aruvai Maruthuvam. Indian Medicine and Homeopathy Department. Chennai. 1: pp. 59-67.

Vanmathi P and Harihara Mahadevan M 2018. Applications of *Centalla asiatica* (L) Urb. in Siddha Varmam therapy: A Literature review International Journal of Creative Research Thoughts. 6(2 : 1085-1087.