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Agnikarma: A Traditional Ayurvedic Parasurgical Procedure – A Conceptual Review

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Abstract : **Ayurveda is regarded as an eternal science of medicine because it is devoted to both the promotion of health and the cure of disease. Acharya Sushruta, celebrated as the father of surgery, described a wide range of surgical and parasurgical measures, among them Bheshaja Karma, Kshara Karma, Agnikarma and Shastra Karma. Of these, Agnikarma holds a distinguished place, as the classical text declares that diseases treated by it do not recur: "भेषजक्षारशस्त्रेभ्योऽग्निकर्म गरीयः, तद्दग्धानां रोगाणामपुनर्भवादिति" (सुश्रुतसंहिता, सूत्रस्थानम्, अग्निकर्मविधिः अध्यायः, १२/३). Pain is an unpleasant sensory and emotional experience, and there is a continuing need for measures that relieve it with minimal distress to the patient. Agnikarma is one such measure: the therapeutic application of heat through specialised instruments at sites specific to the disease. As a parasurgical procedure, it is employed as a curative measure, as a postoperative procedure and as a haemostatic. In Ayurveda, Vata Dosha is chiefly responsible for the various forms of Ruja (pain), and Agnikarma is considered among the best methods of pacifying Vata and Kapha, thereby relieving pain. In contemporary practice, the procedure is recognised as therapeutic burning or cauterisation. This article reviews the classical references, materials, techniques, indications, contraindications and probable mode of action of Agnikarma.**

IndexTerms **- Agnikarma, Ayurveda, Sushruta, Cauterisation, Pain management**

I. INTRODUCTION

The term Agnikarma is derived from Agni (fire) and Karma (procedure), and denotes a procedure performed with Agni for the treatment of disease. It is a form of therapeutic heat therapy that relieves pain in a variety of painful conditions. According to the Ayurvedic classics, Agni possesses Ushna Guna (hot property), which pacifies the Vata and Kapha Doshas and enhances Dhatvagni. In this way it interrupts the pathogenesis (Samprapti) of the disease and reduces pain, so that Agnikarma plays a significant role in musculoskeletal disorders.

Acharya Sushruta is regarded as the pioneer of surgery. He described Bheshaja Karma, Kshara Karma, Agnikarma, Shastra Karma and Raktamokshana as the modalities for managing disease [1]. Agnikarma refers to the application of Agni, directly or indirectly, through various Dravyas in order to relieve the patient of disease. It is the procedure in which a Samyak Dagdha Vrana (a properly produced burn) is created with the help of such materials. In modern terminology, it may be described as an intentional therapeutic heat burn.

Historical Review

The use of fire in healing goes back to the Vedic period. The Atharvaveda reveres Agni as a deity and describes it as a Bheshaja (remedy) in the context of Krimi. The Rigveda mentions Agnikarma Chikitsa in relation to obstetric disorders, and the Yajurveda describes it as a remedy for Sheeta (cold). In the Samaveda, the importance of Agni is evident from a section known as Agneya Kanda.

Acharya Charaka described Agnikarma in several contexts. It appears under Shastra Pranidhana in the 11th chapter of Sutrasthana, in Vrana Chikitsa (Dvivraniya Adhyaya) and in Mamsaja Roga (Vividhashitapitiya Adhyaya). It is also advised in Kaphaja Gulma, in Granthi Roga and Bhagandara (Shvayathu Chikitsa), in Pleehodara and Yakritodara (Udara Chikitsa), and in Arsha Chikitsa alongside Shastra Karma and Kshara Karma. Further references include Granthi Visarpa in Visarpa Chikitsa, Visha Vega Chikitsa, Gridhrasi in Vatavyadhi Chikitsa, and Ardhavabhedaka in the Trimarmiya Chikitsa of Siddhisthana. Charaka has thus made a notable contribution to the literature on Agnikarma.

The Sushruta Samhita contains the most extensive material. In Sutrasthana, Agnikarma is mentioned in the Yantravidhi Adhyaya as an Upayantra, and a dedicated chapter, the Agnikarma Vidhi Adhyaya, treats it in detail. In the Pranashta Shalya Vijnaniya Adhyaya it is described as a Shalya Nirharana Vidhi (method of extracting foreign bodies). In Chikitsasthana it is advised for disorders of Sira, Snayu, Sandhi and Asthi in Vatavyadhi Chikitsa, and in Arsha, Ashmari and Bhagandara (for managing the Vrana), Granthi, Apachi, Arbuda, Vriddhi, Upadamsha and Kshudra Roga.

Chapter 30 of Sutrasthana in the Ashtanga Hridaya is devoted to Agnikarma Vidhi, with further references in the context of other diseases. The Harita Samhita lists Agnikarma among the eight important modalities of treatment, and both the Chakradatta and the Yogaratnakara describe it for Gridhrasi under Vatavyadhi.

Materials Used in Agnikarma

The Dahana Upakarana (materials) mentioned are Pippali, Ajashakrit, Godanta, Shara, Shalaka, Jambavoshtha, Dhatu (metals), Madhu, Madhuchishta, Guda, Vasa, Ghrita, Taila, Yashtimadhu, Suchi, Varti and Suryakanta. They are chosen according to the site of the disease [2]. Pippali, Ajashakrit, Godanta, Shara and Shalaka (Ruksha Dravyas) are used in Twak Dhatu. Loha and Jambavoshtha are used in Mamsa Dhatu. Madhu, Guda and Sneha, including Ghrita and Taila (Snigdha Dravyas), are used in Sira, Snayu, Sandhi and Asthi.

Dahana Vishesha

The Akriti (shape) produced on the site by a red-hot Shalaka is termed Dahana Vishesha [1]. Sushruta described four types: Valaya (circular), Bindu (dot-like), Vilekha (parallel lines) and Pratisarana (rubbing the site with a heated Shalaka without any specific shape). Dalhana explained that a pointed Shalaka should be used for Bindu, and subdivided Vilekha into Tiryak (oblique), Riju (straight) and Vakra (zigzag). Vagbhata added three further shapes: Ardhachandra (crescent), Swastika (four-armed) and Ashtapada (eight-armed).

Classification of Agnikarma

Agnikarma can be classified in several ways. By Dravya, it is Snigdha when Madhu, Ghrita or Taila is used, and Ruksha when Pippali, Shalaka or Godanta is used. By site, it is Sthanika (local), as in Kadara, Arsha and Vicharchika, or Sthanantariya (distant), as in Apachi and Gridhrasi. By disease, it is performed after excision (Chhedana) in Arsha and Kadara, after incision (Bhedana) in Bhagandara and Nadivrana, and after filling the cavity with Guda in Krimidanta. It may also be classified by Akriti, as described above, and by Dhatu. Sushruta describes Twak, Mamsa, Sira-Snayu and Asthi Dagdha, but in present practice many physicians use metals such as Suvarna, Rajata, Loha, Tamra, Kamsya and Panchadhatu according to their own judgement.

Procedure

Purva Karma (pre-operative measures). A proper assessment and thorough counselling of the patient must precede the procedure, and all instruments should be kept ready. The patient is given Picchila Anna beforehand, except in obstructed labour, urolithiasis, fistula, piles, abdominal diseases and diseases of the oral cavity, where the procedure is performed on an empty stomach [3].

Pradhana Karma (operative measures). The site is examined, cleaned and marked with a pen or marker. Agnikarma is continued until the Samyak Dagdha Lakshana appear.

Paschat Karma (post-operative measures). Madhu and Ghrita are applied over the Samyak Dagdha Vrana. According to Sushruta, Madhuchishta Ghrita is the best Ropaka Ghrita for all Agnidagdha Vrana, and a suitable diet should accompany it [4].

Indications

Agnikarma is indicated in Vatakantaka, Shiroroga, Ardhavabhedaka, Vartmaroga, Pakshmakopa, Shlishta Vartma, Vishavartma, Alaji, Arbuda, Puyalasa, Abhishyanda, Adhimantha, Lagana and Medoja disorders. It is further advised in Oshtharoga, Danta Nadi, Krimidanta, Adhidanta, Shitadanta, Dantavriddhi, Jalarbuda, Arsha (including Nasarsha, Karnarsha, Lingarsha and Yonyarsha), Bhagandara, Charmakila, Chippa, Kunakha, Jatumani, Mashaka, Kadara, Valmika, Tilakalaka, Vatashthila, Vishvachi, Galaganda, Gandamala, Apachi, Granthi, Antravriddhi, Shlipada, Nadivrana, Upadamsha, Gulma, Vilambika, Samnyasa, Unmada, Yakrit and Pliha Udara, Shonita Atipravritti, Shira Sandhi Cheda and Visarpa [5].

Contraindications

Agnikarma is contraindicated in persons of Pitta Prakriti and in those with Bhinna Koshtha, debility, Antah Shonita (internal haemorrhage) or an unremoved foreign body (Anuddhrita Shalya). It is also unsuitable for the elderly, children, fearful persons and those with multiple Vranas. Persons in whom Swedana (sudation) is contraindicated, such as those with Pandu, Atisara, Kshaya, Guda Bhramsha, Udara Roga, Nasa Sanga, Chhardi, Shoshita, Ojakshaya, Vishuchika, Raktapitta, Sthula, Ajirna, Krodha, Trishna, Adhyaroga, Garbhini, Prameha, Ruksha, Daurbalya, Visha, Kshudha, Timira and Kshata, are likewise unsuitable. According to Charaka, Agnikarma should not be performed on Vranas involving Snayu, Marma or Netra, nor in Kushtha or in Vrana associated with Visha or Shalya [6].

Features of Samyak Dagdha

The signs of proper Agnikarma depend on the tissue treated [7]. In Twak Dagdha there are a crackling sound, an unpleasant odour and contraction of the skin. In Mamsa Dagdha the colour is ashy dark grey, like a pigeon's, with mild swelling, mild pain and a dry, contracted wound. In Sira-Snayu Dagdha there are blackish discolouration, elevation of the site and stoppage of discharge. In Sandhi-Asthi Dagdha there are dryness, dark red discolouration, roughness and stiffness of the part.

Agnikarma Kala (Time for Agnikarma)

According to Sushruta, Agnikarma may be performed in all seasons except Sharad (autumn) and Grishma (summer). Pitta is naturally aggravated in Sharad, and Agnikarma further provokes it, giving rise to disorders of vitiated Pitta. Grishma, being the hot season, would likewise aggravate Pitta. In an emergency, however, the procedure may be performed in any season [8].

Importance of Agnikarma

Sushruta describes two principal uses of Agnikarma: Roga Unmulana (radical cure of disease) and pain management. Both Sushruta and Vagbhata rank it above Kshara Karma among the Dahana Kriyas. It seals bleeding vessels and induces coagulation, achieving haemostasis. It is regarded as superior because it eradicates disease from the root and so prevents recurrence, and it has a Shamaka (pacifying) effect on both Vata and Kapha.

Complications of Agnikarma

Three complications are described [9]. Plushta Dagdha is discolouration or alteration of the skin colour (Twak Varna Vikriti); Vagbhata renamed it Tuttha Dagdha. It is managed with Ushna Upachara, namely Ushna Lepa, internal Ushna medication and washing the Vrana with warm water. Cooling measures (Sheeta Upachara) should be avoided, as they may cause Rakta Skandana. Durdagdha presents with severe Shotha (swelling), Daha (burning), Lalima (redness), Paka (suppuration) and Vedana (pain), and is managed with both Sheeta and Ushna Upachara, such as Ghrita and Seka. Atidagdha is the most serious: the Mamsa detaches, the burn reaches Sira, Snayu, Sandhi and Asthi, and Jwara (fever), Pipasa (thirst), Murchha (fainting) and Daha follow. The Vrana heals slowly and leaves a scar.

Probable Mode of Action

The diseases in which Agnikarma is indicated arise from vitiation of Vata and Kapha, and the Ushna, Sukshma, Tikshna and Ashukari Gunas of Agni subdue these Doshas. Ayurveda also holds that every Dhatu has its own Dhatvagni, and that disease begins when this Agni is diminished. External heat applied through a red-hot Shalaka enhances Dhatvagni, which assists the digestion (Pachana) of the aggravated Doshas and thereby cures the disease.

From a modern standpoint, local heat raises tissue temperature, improving perfusion and oxygen delivery. Better blood flow helps heal ischaemic and degenerative tissue injury, local inflammatory mediators are cleared, inflammation resolves and pain is reduced. Agnikarma may also stimulate the descending pain inhibitory (DPI) mechanism, which activates the central nervous system and leads to the release of endogenous opioids from proopiomelanocortin (POMC) neurons in the arcuate nucleus and brainstem.

The gate control theory offers a further explanation. It proposes that non-painful input closes the neural gates to painful input, preventing pain signals from reaching the central nervous system, so that non-painful sensations can override painful ones. Local heat acts as a touch stimulus that increases large-fibre activity and inhibits pain signals [10]. According to Van't Hoff's principle, the basal metabolic rate rises with each degree rise in temperature. Warmth also relaxes muscle most readily, which reduces spasm, inflammation and pain [11].

Discussion

The Shalaka plays an important role in Agnikarma Chikitsa. Vata and Kapha possess Sheeta Guna, so pacifying them requires a therapy of opposite quality, namely Ushna Chikitsa. Ushna Guna and Agni share a mutually dependent relationship (Anyonyashritabhava). By virtue of its Ushna, Tikshna, Sukshma and Laghu properties, Agnikarma clears the Srotorodha (channel obstruction) produced by Vata and Kapha. When a heated Tamra Shalaka is applied to the skin, the stored heat passes into the tissue, and these Gunas neutralise the Sheeta Guna of Vata, reducing the severity of pain.

Agnikarma also acts as a Dosha-Dushya Vighatanakara, since Ushna Guna performs two functions. It stimulates (Utkleshana) Dhatvagni, so that localised Ama in the Dhatu is digested, and it dilates the Srotas, so that Srotorodha is relieved and the channels are cleared.

Several further mechanisms have been proposed, all of them hypothetical. The Bindu technique may break down cycles of painful adhesions. After Samyak Dagdha, local antibodies or non-specific immunoglobulins may act as disease-modifying agents. Stimulation of sensory receptors in muscle may prompt endorphin release; endorphins are naturally occurring neuropeptides that, like morphine, bind to the opiate receptors of pain cells and block pain stimuli. Heat may also accelerate metabolism, improve circulation by vasodilatation, reduce oedema and hasten repair, easing the stiffness of joints as in arthritis. Finally, the red-hot Shalaka may destroy the free nerve endings that serve as pain receptors, which tends to close the gate against pain transmission.

Conclusion

Agnikarma appears to be an effective and safe procedure in pain management and cosmetic therapy. It is simple, requires almost no internal or external medication, and is convenient and economical for patients. Performed under skilled guidance, it may give excellent results in a range of ailments, particularly painful conditions. Controlled clinical studies are needed to confirm the mechanisms proposed here.

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