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CONTEMPORARY UNDERSTANDING OF THE AYAS PINDA SWEDA MENTIONED IN CHARAKA SAMHITA

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ABSTRACT

Swedana (Fomentation Therapy) is a therapeutic procedure in Ayurveda that involves inducing sweating through various techniques, including exercise, covering the body with a thick cloth, or applying heat using different modalities of heat conductors. Various Swedana techniques are outlined in Ayurveda, tailored to address specific Dosha conditions through different methods of heat transfer. Based on their properties (gunas), Swedana is classified into Snigdha Sweda (unctuous heat) and Ruksha Sweda (dry heat). Ayas Sweda, a type of Ruksha Sweda, utilises a bolus (Pottali) containing heated iron balls. The thermal properties of iron enhance the efficient transfer of heat energy. When heated, iron emits far infrared radiation, which penetrates the skin, causing capillary expansion and facilitating the elimination of toxins and metabolic waste. Modern research highlights the therapeutic benefits of far infrared radiation, aligning closely with the benefits attributed to Swedana Karma in Ayurveda practice.

KEYWORDS: Ayas Pinda Sweda, Panchakarma, Far-Infrared Radiation, Iron Balls.

1. INTRODUCTION

Panchakarma is well-known for its effectiveness in the curative, preventive, and rejuvenative roles in the management of diseases. Snehana (Oleation Therapy) and Swedana (Fomentation Therapy), collectively known as Purvakarma.[1] (Preparatory Procedure), help to mobilise vitiated Doshas (Morbid Factors) for elimination through Samshodhana (Purificatory Therapy) therapies like Vamana (Therapeutic Emesis), Virechana (Therapeutic Purgation), and Basti (Therapeutic Enema), etc. Beyond preparation for Shodhana, both are also used as independent Upakramas (allied external therapy) for Shamana (Pacification of Morbid factors) of certain diseases, offering symptom relief and systemic balance.[2]

Swedana Karma provides both immediate and long-term relief in various diseases by alleviating stiffness, pain, and facilitating Dosha elimination. It is classified based on its properties from Ruksha (Dry Heat) to Snigdha (Unctuous), allowing for its application according to the predominance of Dosha.[3]

The term Swedana means to induce sweating in the body. This can be achieved through various methods, and Sweda Karma is categorised into two types based on the use of fire: Saagni (with fire) and Niragni Sweda (without fire).[4] Saagni sweda is further divided into two forms: Ruksha sweda and Snigdha sweda.[5] The common approach for administering Ruksha Sweda is through Valuka Sweda (Dry Sand), which involves creating a Pottali (Bolus) using sand. However, many patients find it difficult to undergo Valuka Sweda regularly. Additionally, limiting Ruksha Sweda exclusively to Valuka Sweda seems inadequate, as the Charaka Sutra Sthana Swedadhyaya clearly states that Ruksha Sweda can also be performed using specific Ruksha Dravya (Dry substances) designated for fomentation.

2. LITERATURE REVIEW

Therapeutic Action of Ayas Pinda Sweda

Ayas Pinda Sweda, a form of Ruksha Swedana, offers multiple therapeutic benefits rooted in both Ayurveda principles and modern biomedical mechanisms. The application of heated hollow iron balls to specific body regions provides localised dry heat, which is particularly effective in managing Amavata (Rheumatoid Arthritis) and other Kapha (factor responsible for binding factor) dominant disorders. According to Ayurveda, the Ruksha and Ushna qualities of the Swedana help in digesting Ama (toxins formed due to impaired digestion),[6] reducing Shotha (swelling), alleviating Stambha (stiffness), and promoting the movement of

vitiated Vata (factor responsible for neurological and cognitive response in the body) back to its normal pathway (Anulomana). The thermal stimulation aids in Srotoshodhana (clearing of bodily channels), thereby restoring physiological balance and improving Agni (digestive/metabolic fire). Thermally, the heated iron balls emit far-infrared radiation (FIR), which penetrates 2–5 cm into the skin and muscle tissues, enhancing blood flow, promoting lymphatic drainage, and reducing inflammatory mediators.[7] This results in improved joint mobility, relief from musculoskeletal pain, and faster tissue recovery. The mechanical pressure from the bolus application further provides a mild massage effect, which assists in muscle relaxation, spasm reduction, and improved proprioceptive signalling.[8] FIR exposure has also been shown to stimulate mitochondrial ATP production, thereby supporting cellular energy metabolism and enhancing the tissue's ability to repair and regenerate.[9] The Iron (Ayas) used in the Sweda may also contribute subtle bioenergetic effects. The hollow design of the balls allows for prolonged retention and gradual release of heat, ensuring a sustained therapeutic window without the risk of burns or superficial tissue damage. Thus, Ayas Pinda Sweda acts through a combined effect of heat, radiation, pressure, and the intrinsic qualities of iron, offering a scientifically coherent and traditionally validated approach to treating inflammatory and degenerative musculoskeletal conditions.

3. METHODOLOGY

Preparation Of Ayas Pinda Sweda

1) Ayas is a metal in the form of iron, which is used in the form of small hollow balls (20mm in size).
2) Ayas will be heated up to 42 degrees using a thermal gun, the temperature will be monitored, and then tied in a double-layered cloth into a bolus.
3) The heated bolus will be continuously applied according to the classical Sarvanga Pinda Sweda (Full Body Fomentation) procedure method.
4) When the temperature of the bolus decreases, it will be reheated by placing it back on the pan.
5) The procedure will be continued for about 30 min, and the patient will be asked to rest for about an hour in a room devoid of direct exposure to wind, cold, & breeze.

Image 01: Ayas Pinda materials and bolus preparation.

Image 01: shows the materials required for Ayasa Pinda Sweda and the preparation of the bolus.

Thermal Properties of Iron Balls

1) The specific heat of the iron is 0.45 (KJ/ (kg K), which is comparatively lower than sand, 0.7 (KJ/ (kg K))
2) The thermal conductivity of iron is 73 W/m.k, which is much higher than sand-1.5W/m.k
3) Relative Density of Iron is 7.8, which is much higher than sand, -2.65
4) The Melting Point of Iron is 1536 degrees Celsius, which is lower than that of sand, 1700 degrees.

4. OBSERVATIONS AND RESULTS

Valuka Pinda Sweda remains the most practised form of Ruksha Sweda in contemporary Ayurveda clinical settings. Classical Ayurveda texts also describe a range of other substances

for Pinda Sweda, including Pamsu, Ayas, Karisha, Pashana, and Kolakulatha Choorna.[10] Despite their mention in classical literature, these alternatives are not utilised nowadays. It may be due to limited clinical exploration and a lack of contemporary evidence supporting their efficacy.

Image 02: Some of the easily available varieties of Ruksha Pinda mentioned in the Ayurveda Classics

Image 02 shows the materials used for (a) Valuka Pinda Sweda (Bolus Containing Heated Beach Sand/ White Sand), (b) Pamsu Pinda Sweda (Bolus Containing Heated Gravel), (c) Pashana Pinda Sweda (Bolus Containing Heated Smooth round pebbles), (d) Karisha Pinda Sweda (Bolus Containing Dry Cow Dung Powder), (e) Ayas Pinda Sweda (Bolus Containing Heated Iron Balls), and (f) Kolakulatha Choorna Pinda Sweda (Bolus Containing Kolakulatha Choorna), respectively.

It is possible that the Acharyas recommended these various substances thoughtfully, tailoring the intensity of Sweda to the severity of symptoms and the individual patient's heat tolerance. For instance, in mild cases or among heat-sensitive patients, a gentle fomentation such as Karisha Pinda Sweda, which retains heat for only 2–3 minutes, may suffice. In contrast, for chronic or more severe conditions requiring deeper tissue penetration and prolonged heat application, a more intense modality like Ayas Pinda Sweda, with a heat retention time of up to 30 minutes, may be more beneficial.

However, these therapies are not without limitations. Ayas Pinda Sweda, while effective, tends to overheat rapidly, which can lead to burning of the bolus cloth and, more critically, pose a risk of thermal injury to the patient if not carefully monitored. This necessitates precise heating control and cautious handling during application. Likewise, Karisha and Kolakulathadi Choorna are highly combustible and, when overheated, may ignite or produce smoke, thereby compromising both treatment safety and efficacy. These challenges underscore the importance of standardised heating protocols, adequate therapist training, and real-time observation to ensure the safe and effective administration of Pinda Swedana therapies.

Table 01: Characteristics of the different utilisable Ruksha pinda sweda.

SL. No.	Characteristics	Ayas Pinda Sweda	Valuka (Sikata) Pinda Sweda	Pamsu Pinda Sweda	Pashana Pinda Sweda	Kolakulatha Choorna Pinda Sweda	Karisha (Gomaya) Pinda Sweda
1)	Hardness	Hard, used without tying	Hard, used without tying	Hard, used without tying	Hard, used without tying	Soft, used with tying	Soft, used with tying
2)	Heating time	3min (med flame)	5min (med flame)	5min (med flame)	4min (med flame)	10min (low flame)	10min (low flame)
3)	Heat retention time	30min	10min	10min	15min	3min	2min
4)	The type of Cloth preferred for covering	Napkin (cloth with GSM above 300)	Napkin (cloth with GSM above 300)	Napkin (cloth with GSM above 300)	Napkin (cloth with GSM above 300)	Cotton Cloth (GSM 125 - 150)	Cotton Cloth (GSM 125 - 150)
5)	Average Weight of 1 bolus	250gm	250gm	250gm	250gm	250gm	250gm
6)	Days of reuse	Unlimited	Unlimited	Unlimited	Unlimited	3 days	3 days
7)	Cost for 1 bolus & cost for 7 days of full-body therapy for a patient	Rs. 250, Rs. 500 (for 2 boluses, unlimited use)	-	-	-	Rs. 300, Rs. 1200 (for 4 boluses, 3 days' use)	Rs. 10, Rs. 40 (for 4 boluses, 3 days' use)

Table 01 shows the comparison of characteristics of different available forms of Ruksha pinda sweda modalities mentioned in Ayurveda classics.

5. DISCUSSION

Thermodynamic Action of Ayas Pinda Sweda

The therapeutic efficacy of Ayas Pinda Sweda—the application of heated hollow iron balls for localised dry fomentation—can be scientifically understood through its thermodynamic

principles. When these iron balls are heated, they act as thermal reservoirs, storing and gradually releasing heat energy through conduction, convection, and infrared radiation. The high thermal conductivity of iron allows for rapid and uniform heat distribution across the ball's surface, ensuring consistent temperature transfer to the body upon contact. Once applied, this heat transfers to the skin and underlying tissues, following the second law of thermodynamics, which states that heat flows from a region of higher to lower temperature until thermal equilibrium is achieved.[11]

From a physiological standpoint, this controlled heat application induces vasodilation, thereby enhancing local blood circulation and tissue oxygenation.[8] Additionally, the heated iron balls emit far-infrared radiation (FIR)—typically in the 8–12 μm wavelength range at temperatures between 100–300°C—which can penetrate 2–5 cm into the tissues, affecting deeper subcutaneous structures.[7] This FIR emission further contributes to cellular metabolism by stimulating mitochondrial activity, thereby increasing ATP production, which supports tissue repair and reduces inflammation.[9]

Moreover, the specific heat capacity and emissivity of iron contribute significantly to its ability to retain and release thermal energy gradually. The hollow design of the iron balls enhances thermal inertia, enabling prolonged heat emission and a more sustained therapeutic effect. This helps prevent excessive superficial heating while delivering effective deep tissue warming, thus maximising therapeutic benefits in conditions like Amavata and other Kapha-Ama disorders.

Ayas Pinda Sweda as Infrared Therapy

Iron, when heated, emits infrared radiation, particularly in the far-infrared range (FIR: 4–16 μm). This is the same therapeutic range utilised in modern IR therapy devices. Far-infrared radiation (FIR) penetrates approximately 2 to 5 centimeters into the skin and underlying muscle tissues, allowing it to exert effects deep within the body. This penetration enhances microcirculation and oxygen delivery to tissues, thereby promoting better nutrient exchange and waste removal at the cellular level. As a result, FIR therapy is known to reduce muscular stiffness, alleviate muscle spasms, and decrease inflammation, especially in conditions involving chronic pain or joint disorders.[7] Additionally, FIR stimulates mitochondrial activity, leading to increased ATP (adenosine triphosphate) production, which supports cellular energy metabolism and accelerates the body's natural healing processes.[9]

Table 02: Comparative Mechanism.[7,8,11]

Parameter	Ayas Pinda Sweda	Infrared Therapy
Heat Source	Fire-heated hollow iron balls	FIR ceramic/tourmaline plates
Radiation Type	Naturally emitted IR from metal	Artificially generated FIR
Delivery	Local, direct contact	Surface or ambient exposure
Tissue Penetration	Up to 2–3 cm	2–5 cm (documented)
Therapeutic Stimulations	Dry heat, Pressure, Dry massage in the direction of hair follicles, FIR stimulations.	Dry heat, IR nerve stimulation, Photo biomodulation
Therapeutic Effects	Vasodilation, Pain relief, and Anti-inflammatory	Vasodilation, Pain relief, and Anti-inflammatory

Table 02 shows the comparative mechanism of the Ayas Pinda Sweda & Infrared Therapy

6. CONCLUSION

In Ayurveda, the choice of Dravya (substance) used in Swedana Karma is guided by the dominant Dosha involved in the disease. Depending on whether the condition is Vata, Kapha, or Vata-Kapha predominant, different forms of Swedana are recommended—Snigdha, Ruksha, or Snigdha-Ruksha (combined), respectively. While Patra Pinda Sweda exemplifies the Snigdha variety and Valuka Sweda stands out as a classical Ruksha Sweda modality, Ayas Pinda Sweda can be placed within an advanced form of Ruksha Sweda, offering a unique advantage due to its metallic thermal properties and infrared radiation emission.

Unlike Valuka, which uses sand as the heat-retaining medium, Ayas Pinda Sweda uses heated hollow iron balls, which produce dry, intense, and deeply penetrating heat. The high emissivity and conductivity of iron, combined with the hollow bolus design, ensure uniform heat distribution and prolonged infrared radiation that mimics modern far-infrared therapy. This makes it particularly effective in Kapha and Ama conditions such as Amavata, where deep tissue detoxification, circulatory stimulation, and relief from stiffness and pain are primary therapeutic goals.

Additionally, in cases where Snigdha-Ruksha type of Sweda is intended—as in Vata-Kapha presentations—a mild Snehana (Abhyanga) may be administered before Ayas Pinda Sweda to balance the dryness of heat with unctuousness, thereby making the therapy safer and more effective. Thus, Ayas Pinda Sweda represents an innovative yet classical evolution of Sweda Karma, integrating traditional Ayurveda wisdom with scientifically validated

thermotherapeutic mechanisms, and providing a strong foundation for its inclusion in modern integrative care for rheumatic and musculoskeletal disorders.[12]

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9. CONFLICT OF INTEREST

There is no conflict of interest among the authors.

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