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Siraj Granthi (Varicose Veins): An Integrative Review of Ayurvedic Concepts, Modern Perspectives, and the Therapeutic Role of Raktamokshana

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Abstract: *Siraj Granthi*, described in Ayurvedic classics as a disorder involving vitiation of Vata, Rakta, and associated structural derangement of Sira, closely resembles the modern clinical entity of varicose veins. Varicose veins are a common chronic venous disorder characterized by dilated, elongated, and tortuous superficial veins of the lower limbs, often associated with pain, swelling, discoloration, and reduced quality of life. Despite advances in modern vascular interventions, recurrence, cost, and procedural limitations continue to challenge long-term management. Ayurveda offers a holistic understanding of this condition through the concepts of Siragata Vata and Siraj Granthi, emphasizing Dosha-Dushya involvement, impaired Rakta Pravaha, and structural vascular changes. Among the therapeutic modalities described, Raktamokshana holds significant importance, particularly Jalaukavacharana (leech therapy) and Siravyadha (venesection), which are traditionally indicated for vitiated Rakta and vascular disorders. This review integrates classical Ayurvedic literature with contemporary medical understanding to explore the etiopathogenesis, clinical correlation, and management of Siraj Granthi with special emphasis on Raktamokshana. Classical references from major Ayurvedic texts are critically correlated with current concepts of chronic venous insufficiency, vascular pathology, and non-surgical management strategies. The review highlights that Ayurvedic approaches, especially bloodletting procedures, may provide a cost-effective, symptom-relieving, and clinically relevant complementary strategy in managing varicose veins. Integrating traditional wisdom with modern understanding may broaden therapeutic possibilities and encourage further evidence-based research in vascular care.

Keywords: *Siraj Granthi, Varicose Veins, Ayurveda, Siragata Vata, Raktamokshana, Jalaukavacharana, Siravyadha, Leech Therapy, Venous Insufficiency, Ayurvedic Management.*

I. INTRODUCTION

Siraj Granthi, an Ayurvedic pathological entity involving structural and functional derangement of Sira (vascular channels),¹ bears significant resemblance to the modern condition of varicose veins. Varicose veins are among the most common chronic venous disorders affecting the lower extremities and are characterized by dilated, elongated, tortuous superficial veins resulting from venous valve incompetence and impaired blood flow.^{10,11} Although often considered non-fatal, the condition substantially affects quality of life by producing pain, heaviness, itching, swelling, skin discoloration, nocturnal cramps, and in advanced stages, venous ulceration. With increasing prevalence due to sedentary lifestyle, prolonged standing occupations, obesity, pregnancy, and ageing,^{12,13} varicose veins have emerged as a major vascular health concern worldwide.

Ayurveda, the ancient science of life, has long recognized vascular disorders through concepts such as Siragata Vata, Siraj Granthi, and Kutila Sira.^{1,3,6} Classical Acharyas, particularly Sushruta and Vagbhata,^{1,3} described pathological changes in Sira caused by vitiated Vata along with Rakta and Kapha involvement, leading to Samkochana (constriction), Vakreekarana (tortuosity), Shotha (swelling), and Vaivarnaya (discoloration). These descriptions closely parallel the clinical manifestations of varicose veins. Rather than viewing disease solely as a localized vascular abnormality, Ayurveda interprets it as a systemic disturbance involving Dosha imbalance, Rakta Dushti, and impaired circulation.

In contemporary medicine, management of varicose veins ranges from conservative measures such as compression therapy to invasive interventions including sclerotherapy, endovenous ablation, and surgery. While effective in selected cases, these approaches may be limited by recurrence, cost, procedural complications, and restricted accessibility. This has created increasing interest in traditional and integrative treatment modalities that address both symptoms and underlying pathology.^{10,12}

Among *Ayurvedic* therapeutic approaches, *Raktamokshana* (bloodletting therapy) occupies a central role in disorders involving vitiated *Rakta* and vascular stagnation. *Jalaukavacharana* (medicinal leech therapy) and *Siravyadha* (therapeutic blood letting) are specifically indicated for conditions characterized by localized blood vitiation, congestion, inflammation, and vascular abnormalities. *Jalaukavacharana*, due to its gentle yet targeted action, is particularly valued for improving microcirculation, reducing inflammation, and relieving venous stasis, while *Siravyadha* provides broader bloodletting benefits through removal of vitiated blood.^{1,4,5}

The growing global interest in complementary medicine and the renewed scientific exploration of leech therapy have opened avenues for re-evaluating *Ayurvedic* principles in the management of chronic venous disorders. An integrative review of *Siraj Granthi* from both *Ayurvedic* and modern perspectives is therefore essential to establish conceptual clarity, therapeutic relevance, and future research directions.

This review aims to critically examine the *Ayurvedic* understanding of *Siraj Granthi*, correlate it with modern concepts of varicose veins, and explore the therapeutic significance of *Raktamokshana*—particularly *Jalaukavacharana* and *Siravyadha*—as potential strategies in comprehensive vascular care.

II. MATERIALS & METHODS

- 1) This review article was based exclusively on literary data extracted from the thesis, including historical review, *Ayurvedic* review, modern review, and previous research studies.
- 2) Classical *Ayurvedic* literature was reviewed from major texts such as *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Ashtanga Sangraha*, and relevant commentaries.
- 3) *Ayurvedic* concepts related to *Sira*, *Siraj Granthi*, *Siragata Vata*, *Rakta Dushti*, and *Raktamokshana* were systematically analyzed.
- 4) Modern medical information regarding varicose veins, including epidemiology, etiopathogenesis, clinical features, and management, was collected from standard surgical and pathology sources.
- 5) Previous studies on *Jalaukavacharana*, *Siravyadha*, and related *Raktamokshana* procedures were reviewed to evaluate therapeutic significance.
- 6) Collected information was critically compared and organized under thematic headings to establish an integrative *Ayurvedic*–modern correlation.
- 7) This study was designed as a narrative review; therefore, no clinical intervention, patient recruitment, or statistical analysis was involved.

III. AYURVEDIC & MODERN PERSPECTIVES

A. Historical Evolution of *Sira* and *Siraj Granthi*

The concept of *Sira* (vascular channels) has been recognized since the earliest phases of *Ayurvedic* thought, reflecting a profound classical understanding of circulation, vascular integrity, and blood-related disorders. References to structures analogous to *Sira* are found in the Vedic period, particularly in the *Atharvaveda*,⁹ where terms such as *Sira* and *Dhamani* were used to denote channels responsible for the movement of vital substances. These early descriptions suggest an embryonic awareness of circulatory pathways and the physiological significance of blood flow.

During the *Upanishadic* and *Puranic* periods, the understanding of *Sira* expanded further through descriptions of *Nadi* and vascular channels as pathways of nourishment, vitality, and systemic connectivity. Though often philosophical, these concepts indicate progressive recognition of the body's internal transport systems and their importance in sustaining life.

A more structured and clinically relevant interpretation emerged during the *Samhita* period. *Charaka* described *Sira* as channels responsible for transportation of bodily elements and distinguished them from *Dhamani* and *Srotas* based on function.² *Sushruta* provided the most elaborate account of *Sira* through detailed anatomical classification, physiological significance, pathological manifestations, and therapeutic interventions.^{1,4} His descriptions of *Siragata Vata*, *Kutila Sira*, and *Siraj Granthi* reveal an advanced understanding of vascular abnormalities characterized by pain, tortuosity, swelling, and discoloration. These features bear close resemblance to the clinical presentation of varicose veins.

Vagbhata further enriched this concept by emphasizing the role of aggravated *Vata* in producing *Samkochana* (constriction), *Vakreekarana* (tortuosity), and *Shotha* (swelling) within vascular structures. Such descriptions demonstrate that *Ayurvedic* scholars recognized vascular pathology not merely as structural abnormality, but as a consequence of systemic *Dosha* imbalance and *Rakta Dushti*.^{3,6,7}

The historical evolution of *Sira* from generalized vascular channels to the clinically defined concept of *Siraj Granthi* highlights the sophistication of *Ayurvedic* vascular science. This progressive understanding forms a strong conceptual bridge for correlating *Siraj Granthi* with modern chronic venous disorders such as varicose veins.

Table 1. Historical Development of the Concept of *Sira* and *Siraj Granthi* in *Ayurveda*

Period	Key Contributions
Vedic Period	Early references to <i>Sira</i> and <i>Dhamani</i> as channels involved in circulation
Upanishadic & Puranic Period	Expansion of <i>Sira/Nadi</i> concepts as pathways of nourishment and vitality
Charaka Samhita	Functional distinction between <i>Sira</i> , <i>Dhamani</i> , and <i>Srotas</i>
Sushruta Samhita	Detailed anatomical, pathological, and therapeutic description of <i>Sira</i> , <i>Siragata Vata</i> , and <i>Siraj Granthi</i>
Vagbhata	Elaboration of <i>Vata</i> -induced vascular distortion including <i>Vakreekarana</i> , <i>Samkochana</i> , and <i>Shotha</i>

B. *Ayurvedic* Concept of *Siraj Granthi*^{1-6,14}

Siraj Granthi is described in *Ayurveda* as a pathological condition arising from derangement of *Sira* (vascular channels) due to the vitiation of *Doshas*, predominantly *Vata*, along with *Rakta* and *Kapha* involvement. Although varicose veins are not explicitly named as a separate disease entity in classical *Ayurvedic* texts, their clinical presentation closely correlates with *Siraj Granthi*, *Siragata Vata*, and *Kutila Sira* as described by *Acharya Sushruta*, *Charaka*, and *Vagbhata*. Among these, *Siraj Granthi* is considered the most appropriate *Ayurvedic* correlate due to its characteristic vascular enlargement, tortuosity, and associated symptomatology.

According to *Sushruta*, aggravated *Vata* affects the *Sira*, producing *Sampeedana* (compression), *Samkochana* (constriction), and *Vishoshana* (desiccation), ultimately leading to structural distortion and formation of *Granthi* (abnormal vascular swelling). *Dalhana*'s commentary further clarifies this condition as *Kutila Sira*, emphasizing tortuous and dilated vascular channels. *Vagbhata* similarly described *Vakreekarana* (twisting), *Unnata* (elevation), and *Shotha* (swelling), which parallel the pathological features of venous insufficiency and varicosity.

The *Nidana* (etiological factors) of *Siraj Granthi* primarily involve activities that aggravate *Vata* and disturb *Rakta* circulation. Excessive physical exertion, prolonged standing, overstrain in debilitated individuals, sudden exposure to cold after exertion, and impairment of *Vyana Vayu* are considered major causative factors. These factors result in vitiation of *Vata*, which in turn causes constriction, dryness, and distortion of vascular pathways. *Rakta Dushti* and *Kapha* involvement contribute to stagnation, discoloration, heaviness, and swelling.

From a *Samprapti* (pathogenesis) perspective, aggravated *Vata* localizes in *Sira* and disturbs normal *Rakta Pravaha* (blood flow), producing structural deformity, *Vakrata* (tortuosity), and *Granthi* formation. Impaired circulation gradually leads to symptoms such as *Shoola* (pain), *Kandu* (itching), *Shotha* (swelling), *Vaivarnaya* (discoloration), and visible engorgement of veins. This pathogenesis strongly reflects the hemodynamic and structural progression observed in modern varicose veins.

Classical *Lakshanas* (clinical features) of *Siraj Granthi* include *Vrutta* (rounded or dilated swelling), *Unnata* (elevated appearance), *Vakra Sira* (tortuous veins), *Shyava* or *Vaivarnaya* (discoloration), *Shotha*, and varying degrees of pain. *Sushruta* differentiated painful and painless forms, while *Vagbhata* highlighted non-pulsatile, distorted vascular swelling. These descriptions indicate a sophisticated clinical understanding of venous pathology.

Management of *Siraj Granthi* in *Ayurveda* emphasizes correction of *Dosha* imbalance, restoration of *Rakta* circulation, and removal of vitiated blood. *Raktamokshana*, particularly *Jalaaukavacharana* and *Siravyadha*, is considered central to treatment due to its direct action on *Rakta Dushti* and vascular stagnation. Additional therapies such as *Basti*, local applications, and *Vata*-pacifying measures are also described depending on disease stage and severity.

Thus, the *Ayurvedic* concept of *Siraj Granthi* reflects a comprehensive vascular disorder involving structural, functional, and systemic pathology. Its detailed description in classical literature strongly supports its correlation with varicose veins and highlights *Ayurveda*'s advanced perspective on chronic venous disease.

Table 2. Ayurvedic Understanding of Siraj Granthi

Ayurvedic Aspect	Description
Primary <i>Dosha</i>	Predominantly <i>Vata</i> , with <i>Rakta</i> and <i>Kapha</i> involvement
Main <i>Dushya</i>	<i>Rakta</i> , <i>Sira</i>
Important <i>Nidana</i>	Excess exertion, prolonged standing, <i>Vyana Vayu</i> disturbance, cold exposure
Samprapti	<i>Vata</i> vitiation causing <i>Samkochana</i> , <i>Vakreekarana</i> , <i>Rakta</i> stasis, and <i>Granthi</i> formation
Major <i>Lakshanas</i>	<i>Shoola</i> , <i>Kandu</i> , <i>Shotha</i> , <i>Vaivarnaya</i> , <i>Vakrata</i> of <i>Sira</i>
<i>Chikitsa</i>	<i>Raktamokshana</i> (<i>Jalaukavacharana</i> , <i>Siravyadha</i>), <i>Vatahara</i> measures, <i>Basti</i>

C. Modern Perspective of Varicose Veins¹⁰⁻¹³

Varicose veins are a common manifestation of chronic venous insufficiency characterized by dilated, elongated, tortuous superficial veins, most frequently affecting the lower limbs. They develop primarily due to venous valvular incompetence, which leads to reflux of blood, increased venous pressure, venous wall dilation, and progressive vascular distortion. Although often perceived as a cosmetic concern in early stages, varicose veins represent a significant vascular disorder that can adversely affect functional capacity, quality of life, and long-term tissue health.

From an epidemiological perspective, varicose veins are highly prevalent worldwide, with increased incidence among individuals exposed to prolonged standing occupations, sedentary lifestyle, obesity, pregnancy, ageing, and genetic predisposition. Women are generally affected more frequently than men, partly due to hormonal influences, pregnancy-related venous pressure, and connective tissue changes. Occupational groups such as teachers, surgeons, traffic personnel, vendors, and industrial workers are particularly vulnerable due to sustained orthostatic stress.

The fundamental pathophysiology of varicose veins involves failure of venous valves, especially within the superficial venous system, resulting in retrograde blood flow and venous hypertension. Prolonged venous pressure causes progressive weakening of the venous wall, reduced elasticity, dilation, and tortuosity. Microcirculatory impairment, inflammatory mediator release, endothelial dysfunction, and tissue hypoxia further contribute to edema, pigmentation, dermatitis, and ulceration in advanced stages.

Clinically, patients commonly present with visible dilated veins, leg heaviness, aching pain, itching, swelling, burning sensation, nocturnal cramps, and skin discoloration. Symptoms often worsen after prolonged standing and improve with leg elevation. Advanced disease may lead to chronic edema, eczema, lipodermatosclerosis, thrombophlebitis, and venous ulcers, significantly impairing daily functioning.

Diagnosis is primarily clinical, supported by Doppler ultrasonography for assessing venous reflux, valve competence, and deep venous involvement. Management strategies depend on severity and include conservative approaches such as compression stockings, lifestyle modification, exercise, weight reduction, and limb elevation. Interventional modalities include sclerotherapy, endovenous laser ablation, radiofrequency ablation, foam therapy, and surgical ligation or stripping. While these methods may provide symptomatic and structural improvement, limitations such as recurrence, cost, invasiveness, procedural complications, and limited accessibility remain significant concerns.

Modern medicine increasingly recognizes that varicose veins are not solely structural abnormalities but involve complex hemodynamic, inflammatory, and microvascular disturbances. This broader understanding aligns conceptually with *Ayurvedic* descriptions of disturbed circulation, vascular deformity, and chronic progression. Thus, modern vascular science provides a valuable framework for correlating varicose veins with *Siraj Granthi* and exploring integrative therapeutic approaches.

Table 3. Modern Overview of Varicose Veins

Modern Aspect	Description
Definition	Dilated, elongated, tortuous superficial veins due to venous insufficiency
Primary Pathology	Venous valve incompetence and venous hypertension
Major Risk Factors	Prolonged standing, obesity, pregnancy, ageing, heredity
Common Symptoms	Pain, heaviness, itching, swelling, cramps, discoloration
Complications	Dermatitis, edema, thrombophlebitis, venous ulcer
Diagnosis	Clinical examination, Doppler ultrasonography
Management	Compression therapy, lifestyle modification, sclerotherapy, endovenous procedures, surgery

D. Therapeutic Role of Raktamokshana in Siraj Granthi^{1,4,5,10,14}

Raktamokshana, one of the important therapeutic modalities described in *Ayurveda*, holds a central position in the management of diseases involving *Rakta Dushti*, localized vascular stagnation, inflammation, and structural abnormalities of *Sira*. In the context of *Siraj Granthi*, where vitiated *Vata* disturbs vascular integrity and *Rakta Dushti* contributes to congestion, discoloration, and impaired circulation, *Raktamokshana* is considered a rational and targeted intervention. Classical *Ayurvedic* texts emphasize that elimination of vitiated blood not only reduces local pathology but also restores physiological balance, improves circulation, and alleviates symptoms.

Among the various forms of *Raktamokshana*, *Jalaukavacharana* (medicinal leech therapy) and *Siravyadha* (therapeutic blood letting) are particularly relevant in *Siraj Granthi*. *Jalaukavacharana* is traditionally preferred in conditions involving Pitta and *Rakta* vitiation with localized inflammation, tenderness, discoloration, and vascular congestion. Due to its gentle, controlled, and site-specific action, it is considered suitable even for delicate individuals. Therapeutically, *Jalaukavacharana* facilitates removal of vitiated blood while simultaneously exerting additional benefits through leech saliva, which contains bioactive substances with anticoagulant, anti-inflammatory, analgesic, vasodilatory, and microcirculatory-enhancing properties. These actions may help reduce venous stasis, improve tissue perfusion, decrease edema, and relieve symptoms such as pain, itching, and discoloration.

Siravyadha, on the other hand, is a more direct bloodletting procedure aimed at expelling vitiated blood from affected vascular channels. It is particularly indicated in disorders involving severe *Rakta Dushti*, vascular congestion, and obstructed circulation. By reducing blood volume and relieving pressure within affected vessels, *Siravyadha* may assist in reducing venous pooling and associated symptom burden. Classical texts regard *Siravyadha* as an effective intervention in *Siragata Vata* and related vascular disorders.

From an integrative perspective, the role of *Raktamokshana* in *Siraj Granthi* can be understood through both *Ayurvedic* and modern mechanisms. According to *Ayurveda*, it removes vitiated *Rakta*, pacifies *Dosha* imbalance, and restores *Srotoshuddhi* (channel purification). Biomedically, it may improve venous drainage, reduce inflammatory load, and enhance local microcirculation. This dual relevance strengthens its significance as a complementary therapeutic strategy.

Compared to modern invasive interventions, *Raktamokshana* offers a comparatively economical, minimally invasive, and traditionally validated approach, especially in early to moderate stages of disease. While *Jalaukavacharana* often demonstrates superior localized therapeutic benefits, *Siravyadha* retains importance as a broader bloodletting procedure. Together, these therapies represent *Ayurveda*'s specialized vascular interventions for managing *Siraj Granthi*.

Thus, *Raktamokshana* serves not merely as bloodletting but as a targeted vascular therapeutic principle that addresses both symptomatic relief and underlying pathological processes in *Siraj Granthi*. Its classical relevance, biological plausibility, and growing contemporary interest make it a valuable subject for further evidence-based vascular research.

Table 4. Comparative Therapeutic Role of *Jalaukavacharana* and *Siravyadha* in *Siraj Granthi*

Parameter	<i>Jalaukavacharana</i>	<i>Siravyadha</i>
Nature of Procedure	Localized medicinal leech therapy	Direct blood letting
Primary Action	Local removal of vitiated <i>Rakta</i> with bioactive effects	Systemic evacuation of vitiated blood
Major Benefits	Anti-inflammatory, anticoagulant, microcirculatory enhancement	Reduction of vascular congestion and pressure
Ideal Use	Localized congestion, discoloration, tenderness	Generalized <i>Rakta Dushti</i> , vascular stagnation
Clinical Advantages	Gentle, targeted, minimally invasive	Effective decompression of congested vessels
<i>Ayurvedic</i> Relevance	Preferred in <i>Rakta-Pitta</i> dominant conditions	Indicated in <i>Siragata Vata</i> and vascular obstruction

E. Correlation Between Siraj Granthi and Varicose Veins^{1,3,10-12}

Siraj Granthi, though described within the *Ayurvedic* framework of *Dosha-Dushya* imbalance and *Sira* pathology, demonstrates remarkable conceptual and clinical similarity to the modern condition of varicose veins. While *Ayurveda* explains the disease through *Vata* predominance, *Rakta Dushti*, impaired *Vyana Vayu*, and structural distortion of *Sira*, modern medicine attributes varicose veins primarily to venous valvular incompetence, venous hypertension, vascular wall weakness, and chronic venous insufficiency. Despite differences in terminology and explanatory models, both systems describe a progressive vascular disorder characterized by disturbed circulation, structural venous changes, and chronic symptomatology.

From an etiological perspective, prolonged standing, excessive exertion, and strain described in *Ayurveda* as causative factors for *Vata* aggravation closely parallel modern occupational and lifestyle risk factors such as prolonged orthostatic posture, obesity, and physical stress. In both systems, these factors ultimately impair vascular integrity and circulation.

The *Ayurvedic* Samprapti of *Siraj Granthi* involving *Samkochana* (constriction), *Vakreekarana* (tortuosity), *Rakta Stambha* (stagnation), and *Granthi* formation strongly resembles the hemodynamic progression of venous valve failure, venous reflux, venous hypertension, vascular dilation, and tortuous superficial veins. *Rakta Dushti* can be conceptually correlated with venous stasis, inflammatory mediator accumulation, and microcirculatory dysfunction observed in chronic venous disease.

Clinically, both conditions share significant overlap. Symptoms such as *Shoola* (pain), *Kandu* (itching), *Shotha* (swelling), *Vaivarnaya* (discoloration), and visible distorted *Sira* correspond closely with pain, pruritus, edema, pigmentation, and dilated tortuous veins in varicose disease. This symptomatic congruence strengthens the identification of *Siraj Granthi* as a probable *Ayurvedic* equivalent of varicose veins.

Therapeutically, *Ayurveda*'s emphasis on *Raktamokshana* for removing vitiated *Rakta* and relieving vascular congestion aligns conceptually with modern goals of reducing venous pressure, improving circulation, and preventing disease progression. *Jalaukavacharana* may be compared with targeted microcirculatory decompression and anti-inflammatory intervention, while *Siravyadha* resembles direct pressure-relieving vascular evacuation.

Thus, *Siraj Granthi* can be understood as a clinically relevant *Ayurvedic* correlate of varicose veins, offering a holistic interpretation that incorporates systemic pathology, vascular dysfunction, and therapeutic intervention. This correlation not only validates classical *Ayurvedic* observations but also provides a meaningful framework for integrative vascular management.

Table 5. Comparative Correlation between *Siraj Granthi* and Varicose Veins

<i>Ayurvedic</i> Concept (<i>Siraj Granthi</i>)	Modern Correlate (Varicose Veins)
<i>Vata</i> vitiation in <i>Sira</i>	Venous valvular dysfunction and altered venous flow
<i>Rakta Dushti</i>	Venous stasis, inflammation, and microcirculatory impairment
<i>Vyana Vayu</i> disturbance	Impaired venous return and circulatory dysfunction
<i>Samkochana</i>	Vascular structural compromise
<i>Vakreekarana</i> / <i>Kutula Sira</i>	Tortuous dilated veins
<i>Granthi</i>	Venous enlargement / varicosity
<i>Shotha</i>	Edema
<i>Vaivarnaya</i> / <i>Shyavata</i>	Hyperpigmentation / skin discoloration
<i>Shoola</i> / <i>Kandu</i>	Pain, heaviness, itching
<i>Raktamokshana</i>	Vascular decompression and circulatory correction

IV. DISCUSSION

Siraj Granthi, when critically interpreted through both *Ayurvedic* and modern frameworks, emerges as a remarkably relevant classical correlate of varicose veins, demonstrating the depth of *Ayurvedic* vascular understanding long before the development of contemporary venous pathology. The present integrative review highlights that although modern medicine explains varicose veins primarily through venous valvular incompetence, venous hypertension, and structural vascular degeneration, *Ayurveda* conceptualized a comparable disorder through the pathological interplay of *Vata* vitiation, *Rakta Dushti*, impaired *Vyana Vayu*, and structural derangement of *Sira*. This conceptual parallel underscores that ancient *Ayurvedic* scholars had identified not only the visible manifestations of venous disorders but also their progressive pathophysiological nature.

A major strength of the *Ayurvedic* perspective lies in its systemic interpretation of vascular disease. Rather than viewing *Siraj Granthi* solely as localized venous dilation, *Ayurveda* considers it a consequence of disturbed *Dosha* equilibrium, impaired circulation, tissue dysfunction, and chronic vascular compromise. *Vata*-induced *Samkochana*, *Vakreekarana*, and *Vishoshana* closely resemble the progressive venous wall changes, reflux, and tortuosity recognized in modern vascular medicine. Similarly, *Rakta Dushti* may be interpreted in present-day terms as circulatory stagnation, inflammatory changes, and microvascular dysfunction. This broad systemic model provides a more holistic framework for understanding chronic venous disease beyond purely structural pathology.

The correlation between classical *Lakshanas* of *Siraj Granthi* and modern clinical features of varicose veins is particularly compelling. Symptoms such as *Shoola*, *Kandu*, *Shotha*, *Vaivarnaya*, and *Vakra Sira* demonstrate substantial overlap with pain, itching, edema, pigmentation, and tortuous superficial veins. This close symptomatic alignment strengthens the argument that *Siraj Granthi* represents a clinically meaningful *Ayurvedic* equivalent of varicose veins rather than a loosely analogous condition.

Therapeutically, *Raktamokshana* occupies a unique and sophisticated role within *Ayurvedic* management. Unlike many contemporary interventions that primarily focus on mechanical correction of venous reflux, *Ayurvedic* bloodletting procedures aim to address both symptomatic burden and underlying pathological stagnation. *Jalaukavacharana*, in particular, appears especially noteworthy due to its dual classical and biomedical plausibility. From the *Ayurvedic* standpoint, it facilitates localized removal of vitiated *Rakta*, pacification of *Dosha* imbalance, and restoration of *Srotoshuddhi*. From a modern scientific perspective, the bioactive components of leech saliva—including anticoagulant, anti-inflammatory, vasodilatory, and microcirculatory-enhancing substances—may provide therapeutic benefits extending beyond simple blood evacuation. These properties may explain its potential superiority in reducing pain, edema, venous congestion, and discoloration.

Siravyadha, while comparatively broader in action, also retains substantial therapeutic significance by reducing vascular congestion and pressure. Together, *Jalaukavacharana* and *Siravyadha* represent targeted vascular interventions that align conceptually with decompressive and circulatory objectives recognized in modern venous care. Their cost-effectiveness, minimal invasiveness, and traditional validation may hold particular value in settings where advanced vascular interventions are inaccessible or economically restrictive.

Despite the strengths of *Ayurvedic* therapeutics, modern vascular interventions remain essential in advanced disease, particularly when structural damage, ulceration, or severe reflux necessitate procedural correction. Therefore, the true value of this integrative understanding lies not in replacement of one system by another, but in the possibility of complementary management. Early-stage or symptom-dominant disease may particularly benefit from *Ayurvedic* approaches, while advanced pathology may require combined strategies.

This review also reveals an important research gap: although conceptual correlations are strong, high-quality comparative clinical studies, standardized therapeutic protocols, and mechanistic biomedical investigations remain limited. Future interdisciplinary research should focus on validating classical therapies through robust clinical trials, Doppler-based vascular outcomes, and biomolecular analysis.

In essence, *Siraj Granthi* exemplifies how classical *Ayurvedic* knowledge can meaningfully intersect with modern vascular science. The therapeutic relevance of *Raktamokshana*—especially *Jalaukavacharana*—suggests that *Ayurveda* may offer not merely historical insight, but clinically relevant complementary strategies in chronic venous disease. Integrating this traditional wisdom with modern evidence-based frameworks may broaden therapeutic possibilities, improve accessibility, and enrich the future of vascular healthcare.

V. CONCLUSION

Siraj Granthi, as described in *Ayurveda*, closely parallels the modern understanding of varicose veins and demonstrates the advanced classical insight into chronic vascular disorders. The integrative correlation between *Ayurvedic* concepts such as *Vata* vitiation, *Rakta Dushti*, and *Sira* *Vaikruti* with modern mechanisms of venous insufficiency highlights the enduring clinical relevance of *Ayurvedic* pathology. *Raktamokshana*, particularly through *Jalaukavacharana* and *Siravyadha*, offers a rational therapeutic approach by addressing vascular stagnation, impaired circulation, and symptomatic burden. These therapies may serve as valuable complementary strategies, especially in early and moderate stages where cost-effectiveness and minimal invasiveness are advantageous. While contemporary vascular interventions remain indispensable in advanced pathology, *Ayurvedic* management broadens the therapeutic spectrum through a holistic and individualized approach. The convergence of classical wisdom and modern vascular science underscores the need for further evidence-based research to validate and integrate *Ayurvedic* therapies into comprehensive venous healthcare.

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