



## UNDERSTANDING THE MANAGEMENT OF SCLERODERMA IN AYURVEDA

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## ABSTRACT

Scleroderma is an Autoimmune connective tissue disorder in which there is overproduction of collagen, and it is characterized by fibrosis of visceral organs, skin, and blood vessels... Its estimated prevalence is fewer than 1 million cases per year in India. It is more common in women than in men and the age group of 20 to 50yrs<sup>1</sup>. By looking at its characteristics, it can nearly be compared with *Vatarakta* in Ayurveda Classics. *Vatarakta* is a vitiation of both *Vata* and *Rakta*. Though Scleroderma is said to have no specific treatment according to modern science, by following the protocol of *Vatarakta Chikitsa* as mentioned in various Ayurvedic classics, it can be boldly managed. *Shodhana*, *Shamana*, *Bahirparimarjana Chikitsa*, and *Pathyapathya* in Autoimmune pathologies are highly effective with a significant decrease in the symptoms.

**Keywords:** Scleroderma, *Vatarakta*, Autoimmune pathologies, *Bahirparimarjana Chikitsa*

## INTRODUCTION

The term Scleroderma denotes Sclerosis- a kind of tethering or hardening of the skin; it is better appreciated by palpation rather than visual inspection<sup>2</sup>. It is an Autoimmune connective tissue disorder that is characterized by fibrosis of visceral organs, skin, and

blood vessels. Its estimated prevalence is fewer than 1 million cases per year in India. It is more common in women than in men and the age group of 20 to 50 yrs. Scleroderma is characterized by over and abnormal production of collagen which results in harden-

ing of the dermis. The abnormality in the collagen may be so unimpressive as to be easily missed. However, a careful inspection will reveal that the collagen bundles are thickened and closely packed and besides their usual location in the dermis, are also visualized in the subcutaneous zone; the latter represents new collagen. In the early stage, a mild lymphocytic infiltrate is present, whilst the late stage is characterized by atrophy of the epidermis and skin appendages, obliterative vascular changes, and the disappearance of elastic tissue. It is mainly divided into two types, Limited and Diffuse systemic sclerosis. The limited symptoms of scleroderma are referred to as CREST SINDROME<sup>3</sup>. Calcinosis- Calcium deposit in the skin Reynaud's Phenomenon- spasm of blood vessels in response to cold or stress Esophageal dysfunction- Acid reflux and decrease in motility of esophagus Sclerodactyly- thickening and tightening of the skin on the fingers and hands Telangiectasias- dilation of capillaries causing red marks on the surface of the skin. By looking at its characters we can nearly compare it to *Vatarakta* in Ayurveda. *Vatarakta* is the vitiation of both *Vata* and *Rakta*. Vitiating *Vayu* obstructs the path of vitiated *Rakta* in the beginning and then gets vitiated by *Rakta* further this complete process is known as *Vatarakta*. It is mentioned as one of the chronic illnesses by our Acharyas. *Charakacharya* has mentioned it under a separate chapter whereas *Sushrutacharya* has included it under *Vatavyadhi*. The explanation is found under both *Brihatrayis* and *Laghutrayis*. *Vata Shonita*, *Khuddaroga*, *Vatabalasa*, and *Adhyavata* are synonymous words for *Vatarakta*.

**MATERIALS AND METHODS:** For the present review detailed literary study is performed. The content and the references are analyzed from the available text. Also, relevant references are taken from Ayurvedic & Modern texts and research articles.

**AIMS AND OBJECTIVES:**

1. To discuss and elaborate on the concept of pathogenesis in Scleroderma in Modern Science.
2. To discuss and elaborate on the concept of *Vatarakta* in Ayurveda.
3. To understand the management of Scleroderma according to Ayurveda.

**SCLERODERMA**

**Definition:** The term Scleroderma denotes Sclerosis- a kind of tethering or hardening of the skin. It is an Autoimmune connective tissue disorder that is characterized by fibrosis of visceral organs, skin, and blood vessels.

**Etiology:** The cause is unknown, but it probably involves an environmental trigger in a genetically predisposed person.

**Environmental factors:**

Silica dust, Vinyl chloride, Bleomycin, Hypoxy resins, Trichloroethylene

**Types:** Mainly two types<sup>4</sup> –

1) Localized (only skin is involved):

a) Morphea b) Linear Scleroderma c) Generalized

2) Systemic (skin +viscera):

a) Localized SSC b) Diffused SSC c) Systemic Sine

**Clinical features of Localized scleroderma:**

**Morphea: Plaque lesions:**

- Reddish or purplish patches on the skin.
- Affect only the outermost layer of skin (the dermis and the fatty tissue just beneath the dermis).
- Hair is usually lost in the affected area and sweating is reduced.
- Hyperpigmentation may develop.
- Nonpitting edema may be an initial change in some lesions.
- The integument is thickened and cannot be pinched or picked up as a normal fold between fingers.
- Mostly on the abdomen, chest, back, face, arms, and legs.

**Linear lesions:**

- Usually seen in children
- Unilateral
- Involvement of deeper tissues is more likely
- Lesion resembling a scar from a sword cut- a variant of Linear Morphea affecting the scalp and extending onto the face.
- Frequently associated with abnormalities of the corresponding mandible, teeth, tongue, and skull bones
- Facial Hemiatrophy may develop in extreme cases.

**Guttate lesions:**

- Lesions are multiple small atrophic macules, sometimes pigmented
- These may be indistinguishable from Lichen sclerosus and atrophicus

**Generalized Morphea:**

More severe and raises the fear of systemic involvement

- Plaques may coalesce to form large areas of sclerosis
- Viscera isn't affected
- The integument develops brawny non-pitting edema, hardening, and pigmentation.
- Trunks and thighs are the areas of common involvement.

**Clinical features of systemic sclerosis:**

- Initial manifestation is usually non-pitting oedema of fingers and hands, slowly progressing to tightness and difficulty in clenching fists. Feet may be similarly affected.
- Progresses to result in a characteristic appearance called 'sclerodactyly' –tapered fingers, shiny skin, atrophic and tightly bound and there is periungual telangiectasia.
- Ulcers and stellate scars develop, along with flexion contractures, resorption of bones, and calcinosis cutis in subsequent stages.

**Facial Changes:**

- Consist of masked facies
- Restricted mouth opening
- Radial furrows
- Pinched nose
- Thin lips
- Puckered chin
- The integument is smooth, shiny, and thickened
- Telangiectasis develop early
- Sclerotic changes with the pigmentation of the mouth and also of the upper trunk
- Acral parts are typically affected in contrast to generalized morphea in which it is the trunk.
- Cutaneous features like Alopecia, anhidrosis, and Addisonian pigmentation

**Crest syndrome: Calcinosis-** calcium deposit in the skin

**Reynaud's phenomenon-** spasm of blood vessels in response to cold or stress

**Esophageal dysfunction-** acid reflux and decrease in motility of the esophagus

**Sclerodactyly-** thickening and tightening of the skin on the fingers and hands

**Telangiectasias-** dilation of capillaries causing red marks on the surface of the skin

**Limited SSc**

- Most common
- Distal extremities. Limited usually just to the fingers and sometimes the hands, forearms, or the face.
- Internal organ damage is less likely.
- Good prognosis

**Diffuse SSc:**

- Proximal skin thickening. Large areas like fingers, hands, arms, and ant. Trunk, legs, and face.
- Early involvement of internal organs
- poor prognosis

**Sine:**

- Systemic organ disease
- Raynaud's phenomenon is present

Skin thickening is absent

**Diagnosis:**

The most important test is physical examination (assessment of skin thickening and swelling). A simple noninvasive test that looks at the skin near the base of the fingernail with a magnifier to determine if there is capillary loss or distortion such as dilatation.

• **Laboratory findings:**

ESR, Blood eosinophilia, ANA (Antinuclear antibodies)<sup>5</sup>, MRI & CT X-Ray

**Treatment:**

Although there is no satisfactory specific treatment<sup>6</sup>, symptomatic and specific organ complication is the target of treatment. Modalities to prevent internal organ damage, arrest or slow the deterioration of function in previously involved organs and improve their function including the skin.

**Morphea** -Topical and intralesional steroids

**Shulman syndrome and early systemic sclerosis-** systemic steroids

**Raynaud's phenomenon-** Protection from cold and changes in temperature, vasodilators. Diltiazem and dihydropyridine calcium-channel blockers (CCBs) like amlodipine, and nifedipine are effective.

Oral 1, 25-dehydroxy vitamin D3 has been found in high dosages to be beneficial in the treatment of systemic sclerosis and localized scleroderma<sup>7</sup>.

**Digital ulcers-** analgesic and local wound care, sympathetic blocks, and intra-arterial injections of vasodilators have shown good results.

**GI-** reflux symptoms can be controlled with proton pump inhibitors and dilatation of esophageal strictures. Prokinetic agents like metoclopramide for a peristaltic symptom. Octreotide for intestinal pseudo-

obstruction. Small bowel bacterial overgrowth with ciprofloxacin and metronidazole.

**Other Non-Pharmacologic therapies:** Avoiding excess bathing and using proper moisturizing creams can aid in skin care. Aggressive occupational and physical therapy may be helpful early in the course of the disease to minimize contractures. Patients with scleroderma are at increased risk for depression and despair. Support groups may be beneficial.

**Surgical management:** post-operative healing can be difficult in SSc patients. However, digital ulcers can become infected and may need debridement. Amputations may be necessary for deeper infections.

**VATARAKTA:**

**Table 01:** NIDANA<sup>8</sup>

Vata Prakopaka	Rakta Prakopaka	Other
Kashaya, Katu, Tikta and Ruksha Ahara	Lavan, Amla, Katu, Kshara & Snigdha Ahara	Sukumarata, Avyayama
Alpa Bhojana, Anashana	Klinna, Shushka & Anupa Mamsa sevana	Mithya Ahara Vihara
Excessive Horse or camel riding (vehicle riding)	Tilakatu, Mulaka, Kulattha, Masha	Excessive intake of sweet
Excessive jumping or swimming	Dadhi, Kanji, Sura, Takra & Asava	Sedentary lifestyle
Excessive walking in Greeshma Ritu	Viruddha Ahara, Bhojana in Ajeerna-vastha	Abhighata
Atimaitun, Vegadharan & Jagarana	Krodha, Diwaswapna, Ratrijagarana	Ashudhya (not performing any Shodhana Karma)

**SAMPRAPTI<sup>9</sup>:** Vata Dosha and Rakta Dhātu get vitiated by their own specific Nidana simultaneously. Dushta Vata does again Dushti of Rakta. It does

Sanchara in Sarva Shareera and Khavaigunya in Raktavaha Srotas. This obstructs the path of Vata and leads to Vatarakta Roga.

**BHEDA<sup>10</sup>:**

**Table 02:** Types of Vatarakta

Ashraya Bheda	Dosha Bheda
1. Uttana	Ekadoshaja (Raktadhika, Vataadhika, Pittadhika & Kaphadhika) -4
2. Gambheera	Dwandwaja -3
	Tridoshaja -1

**Table 03:** POORVAROOPA AND ROOPA:

Poorvaroopa	Samanya Roopa
➤ Swedoatyartha	➤ Starts in Sandhis, especially in smaller Sandhis
➤ Karshyanam	

<ul style="list-style-type: none"> <li>➤ Sparsha Agnyana</li> <li>➤ Kshate Atiruk</li> <li>➤ Sandhi Shaithilya</li> <li>➤ Alasya</li> <li>➤ Sadanam</li> <li>➤ Pidakodgam</li> <li>➤ Pain in Janu, Jangha, Uru, Kati, Amsa, Hasta, Pada</li> <li>➤ Spoorana Bhedo</li> <li>➤ Gurutwam</li> <li>➤ Shoonyata</li> <li>➤ Kandu</li> <li>➤ Sandhi Pida</li> <li>➤ Vaivarnya</li> </ul>	<ul style="list-style-type: none"> <li>➤ Pain starts especially at nighttime</li> <li>➤ Jwara</li> <li>➤ Trishna</li> <li>➤ Shareera Kampa</li> <li>➤ Shotha and redness in Sandhis</li> </ul>
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**Table 04: UTTANA & GAMBHEERA VATARAKTA:**

<i>Uttana Vatarakta</i>	<i>Gambheera Vatarakta</i>
<p>Affects <i>Twacha</i> and <i>Mamsa</i>, <i>Lakshanas</i> are</p> <ul style="list-style-type: none"> <li>➤ <i>Kandu</i></li> <li>➤ <i>Daha</i></li> <li>➤ <i>Ruk</i></li> <li>➤ <i>Aayama</i></li> <li>➤ <i>Toda</i></li> <li>➤ <i>Sphoorana</i></li> <li>➤ <i>Akunchana</i></li> <li>➤ <i>Shyava</i> or <i>Tamra Varna Twacha</i></li> </ul>	<p>Affects <i>Rakta</i>, <i>Mamsa</i>, <i>Meda</i> <i>adi Dhatus</i>, and <i>Lakshnas</i> are:</p> <ul style="list-style-type: none"> <li>➤ <i>Kathina Shotha</i></li> <li>➤ <i>Stabdha</i></li> <li>➤ Pain in the <i>Shotha Sthana</i></li> <li>➤ <i>Shyava/ Tamra Varna Twacha</i></li> <li>➤ <i>Daha, Toda, Sphoorana &amp; Paka</i> in <i>Sandhis</i></li> </ul>

**Table 05: VISHISHTA ROOPA:**

<i>Vatadhik</i>	<i>Pittadhik</i>	<i>Kaphadhik</i>	<i>Raktadhik</i>
<ul style="list-style-type: none"> <li>➤ <i>Sirayama</i></li> <li>➤ <i>Shoola, Sphoorana, Toda</i></li> <li>➤ <i>Krishna</i> or <i>Shyava &amp; Ruksha Shotha</i></li> <li>➤ <i>Lakshanas</i> sometimes subside and sometimes aggravate</li> <li>➤ <i>Sankocha</i> in <i>Dhamani Anguli</i> and <i>Sandhi</i></li> <li>➤ <i>Stambha</i></li> <li>➤ <i>Sheeta Ahara Vi-hara Dwesha</i></li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Shareera Vidaha, Vedana, and Moorcha</i></li> <li>➤ <i>Swedhadhikya</i></li> <li>➤ <i>Trishnadhikya</i></li> <li>➤ <i>Mada, Bhrama</i></li> <li>➤ <i>Raga, Paka, Bhedanavat Pida</i></li> <li>➤ <i>Anga Shosha, Ushmadhikya (Jwara)</i></li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Staimitya</i></li> <li>➤ <i>Shareera Gouravata, Snigdghata, Shunyata</i></li> <li>➤ <i>Manda Vedana</i></li> <li>➤ <i>Kandu</i></li> </ul>	<ul style="list-style-type: none"> <li>➤ <i>Kandu</i> and <i>Kleda Yukta Shotha</i></li> <li>➤ <i>Vedanayukta Sandhi Shotha</i></li> <li>➤ <i>Toda</i> and <i>Chimchimayamana Yukta Shotha</i></li> <li>➤ Aggravation of <i>Vyadhi</i> by <i>Snigdha</i> and <i>Ruksha Dravyas</i></li> </ul>

**UPADRAVA:** Aswapna, Arochaka, Shwasa, Ruk, Trishna, Pangulya, Anguli Vakra, Stabdha etc.

**SADHYASADHYATA:** Krichrasadhya

**CHIKITSA SUTRA**

Vatarakta Chikitsa Upakrama:

1. Nidana Parivarjanam
2. Samshodhana Chikitsa
3. Bahir Parimarjana Chikitsa
4. Samshamana Chikitsa

**ANTAH PARMARJANA CHIKITSA:**

**SHODHANA CHIKITSA<sup>11</sup>:**

➤ **Ama Pachana:** Carried out prior to Shodhana Karma with Tikta, Katu Rasa, and Ruksha Guna Pradhana drugs according to Roga and Rogi Bala for a duration of 3 days.

Eg: Shaddharana Churna, Guduchyadi Churna

➤ **Snehapana:** This is carried out according to the Prakriti of the patient's Koshtha Bala and also according to the predominance of Dosha. Like Mahatiktaka Ghrita, Guggulutiktaka Ghrita etc

➤ **Swedana:** Contraindicated in Vatarakta but for Virechana, Mridu Swedana can be given. Potalam & Sekam- in Kapha Pradhana Vatarakta. Mild Upanaha Swedana is advised -in Vata Pradhana Vatarakta.

➤ **Vamana:** Mridu Vamana Karma is advised in Gambhira & Kaphaja Vatarakta, and in Pittaja Vatarakta associated with Updrava - with Madana Phala, Yashtimadhu & Ksheera (according to Koshta Bala & Rogi and Roga Avastha)

➤ **Virechana:** In Gambhira, Pitta, Kapha, Rakta Pradhanata, and Mridu Kirechana Karma with

Erand Tailam or Nimba Amrita Eranda Tailam along with milk.

➤ **Basti:** In Vata Pradhana Vatarakta, basti is said to be the best choice of treatment. **Vata Pradhana:** Ksheera Basti (Balaguduchyadi Ksheera Basti). **Kapha Pradhana:** Guduchyadi Yapana Basti. **Pitta Pradhana:** Panchatiktaka Basti

➤ **Raktamokshana:** Raktamokshana is mentioned as the first line of treatment for chronic Vatarakta conditions. Prior to Raktamokshana, measures like Snehana, Mridu Virechana, and Basti should be followed.

**SHAMANA CHIKITSA:**

Guduchi is considered as Agra Aushadi for Vatarakta. It is administered in many forms. Drugs used in Vatrakta are Kaishor Guggulu, Arogyavardhini Vati, Manjishtadyarishta, Amritadyarishta, Amritottara Kashaya, Dashamoola Kashaya, Vardhamana Rasayana, etc.

**BAHIR PARMARJANA CHIKITSA:**

Bahir Parimarjana Chikitsa is followed as a general measure of treatment for all types of Vatarakta but is specifically considered as the main line of treatment for Uttana Vatarakta. External measures like:

➤ **Avagahana (fumigation):** Nimba Patra, Guduchi Patra

➤ **Lepa:** Madhuchishta, Dashanga, Tagaradi

➤ **Upanaha:** Vataghna Snigdha Upanaha, Tila Pinda Upanaha.

➤ **Seka:** Dhanyamla, Dashamoola

➤ **Abhyanga:** Pinda Taila

**SINGLE DRUGS:** Guduchi, Sariva, Guggulu, Shilajith, Bhallataka, Erandamoola, Patola, Shunthi

**Table 06: PATHYAPTHYA<sup>12</sup>:**

PATHYA		APATHYA	
Aharaja	Viharaja	Aharaja	Viharaja
➤ Purana shali	➤ Upanaha	➤ Masha	➤ Vyayama
➤ Mudga	➤ Parisheka	➤ Kulatha	➤ Maithun
➤ Karavellaka	➤ Pradeha	➤ Tila	➤ Kopam
➤ Amalaki, Draksha	➤ Sukha Shayana	➤ Dadhi	➤ Diwaswapna
➤ Ghrita, Navaneeta	➤ Mridu Sanhana	➤ Amla, Lavana, Katu Rasayukta Dravya	➤ Ratri Jagarana
➤ Godugdha, Ajadugdha		➤ Kshariya Padartha	
		➤ Ushna & Vidhahi Padartha	

## CONCLUSION

Scleroderma is an Autoimmune connective tissue disorder that is characterized by fibrosis of visceral organs, skin, and blood vessels. Sclerosis- a kind of tethering or hardening of the skin. *Vatarakta* is vitiation of *Vata* and *Rakta*. It is explained in both *Brihatrayee* and *Laghutrayee*. Scleroderma can be nearly compared to *Vatarakta*. Management of Scleroderma is a challenge as the disease in modern science is said to have no cure. Symptomatic and specific organ complication is the target of treatment. By following the treatment protocol of *Vatarakta* explained in Classics it can be managed well. The localized Scleroderma can be compared with *Uttana Vatarakta* and can be managed by *Shamana Chikitsa* and *Bahirparimarjana Chikitsa*. It will help in improving the elasticity of the skin. Whereas Systemic Sclerosis which involves organs can be compared to *Gambheera Vatarakta* and can be managed by *Shodhana Chikitsa* after assessing *Rogi Bala*. *Mridu Virechana* can be adopted. Later *Shamana Chikitsa* and *Bahirparimarjana Chikitsa* should be adopted. *Bahirparimarjana* and *Pathyapathya* are said to be important factors in the management of scleroderma.

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