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Management Of Systemic Sclerosis Through Ayurveda- A Case Report

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Abstract:
Systemic sclerosis (SSc) is an autoimmune condition characterized by excessive collagen deposition, resulting in fibrosis of the skin and various internal organs. Gastrointestinal involvement is common in SSc, particularly esophageal manifestations such as esophagitis and dysphagia, which significantly affect the patient's quality of life. This is a case report of a patient aged 35-years, who was diagnosed with systemic sclerosis, a disease complex along with esophageal dysmotility, Reflux esophagitis, Gastritis with dysphagia & persistent vomiting. He is also presented with complaints of whole-body stiffness, joint pain, stony hard swelling on B/L thighs and legs, thickening of skin all over the body, Ayurveda offers a holistic framework for managing chronic diseases with emphasis on Panchakarma (Basti Chikista) and lifestyle modification. The patient received treatment over a period of 1 to 1.5 years, with intervals of 3 to 4 months between each session. The patient underwent Basti Karma with Manjishtadi Kshara Basti, Tiktaka Ksheera Basti, Abhyanga, Various type of Swedana (Sudation) like Patra Pinda & Shashtika Shali Pinda Sweda and other local therapies, resulting in improvement in swelling and stiffness in both upper and lower limb joints, a reduction in joint pain and dysphagia, and an overall improvement in health, enabling the patient to carry out daily and professional activities. This case report outlines the successful management of diffuse systemic sclerosis by analyzing the complex disease structure through the lens of Ayurvedic Principles in treating it with Ayurvedic medicine and therapeutic procedures.

KEYWORDS- SSc, Systemic Sclerosis, Ayurveda Basti Chikitsa,

INTRODUCTION-

Systemic sclerosis (SSc), also known as scleroderma, is a rare autoimmune disorder that causes vasomotor disturbances and results in the thickening and hardening of skin and connective tissues throughout the body. The condition is marked by an overproduction of collagen, leading to fibrosis or the stiffening of tissues, which can affect not only the skin but also vital internal organs, including the lungs, heart, kidneys, and gastrointestinal tract. This progressive tissue damage can result in severe health issues, with symptoms such as dysphagia (difficulty swallowing), joint stiffness, and reduced ability to perform daily activities. SSc is classified into two forms: limited cutaneous (affecting specific areas like the hands and face) and diffuse cutaneous (involving broader skin and organ systems). While the exact cause of SSc is still unclear, it is believed to stem from a combination of genetic predisposition and environmental factors. Symptoms can range from Raynaud's phenomenon and joint stiffness to issues with digestion and respiration. Although there

is no cure, treatment aims to manage symptoms and slow disease progression, often through immunosuppressive drugs and therapies targeted at specific organs.

Patient's Narrative-

A 35 years old male presented to outpatient department with complaints of vomiting since morning 4 times, pain and burning sensation in epigastric & in retrosternal region, pain in multiple joints since 3 months, swelling and stiffness in thighs & calf muscle aggravated on walking, difficulty in standing, walking, unable to fold legs, generalized weakness & disturbed sleep.

On examination, he had hyperpigmentation of skin over both legs, with edema and stiffness. Cardiovascular, neurological, abdominal and respiratory examinations were unremarkable.

Patient was healthy before Oct 2022, then he developed above mentioned symptoms for which he approached to SPARSH Hospital on 5/11/22 where he was diagnosed with Systemic Sclerosis (Anti Scl70 Positive +++),

Mr. Puttaraju K was admitted to SPARSH hospital with the above-mentioned complaints. Routine blood investigations were done. CRP was 25.79mg/L. LFT was deranged with elevated SGOT (147) and SGPT (137). In view of ECG changes and elevated troponin -I (326.9) cardiology opinion was sought and advice followed. 2D Echo was normal. Repeat troponin -1 was 428. Patient underwent coronary angiography which showed anomalous origin of left circumflex and normal coronaries. General surgery opinion sought for abdominal pain and advice followed. Medical gastroenterology opinion was sought for persisting vomiting and advice followed. Upper GI endoscopy showed reflux esophagitis (LA-grade III) and gastritis. Biopsy from stomach and esophagus sent and report awaited. Rheumatology opinion was taught and advised follows. He was treated with PPI Infusions, pro kinetics, anti-platelets, anticoagulants, IV fluids and other symptomatic and supportive measures. He was symptomatically better, repeat CRP was 11.38mg/L and was being discharged.

Later for further management and to find permanent solution patient has approached to SDM Hospital, department of Shalya Tantra, (Surgery) OPD on 11/11/2022 & admitted for further management.

Diagnostics-

Type Value Unit 2021-11-05 CRP (C-reactive protein) 34.31mg/L 2022-10-21 ANA (antinuclear antibody) positive ESR (erythrocyte sedimentation rate)-115mm/1st hour. Auto Antibody- ENA- Antibody to Scl70-Positive +++ (21/10/2022) - Systemic Sclerosis, (Anti-Scl-70 or anti-topoisomerase I) - 94+++, blood grouping-A (rh type positive).

Lab. Investigations-

Sl. No	11/11/22	16/1/23	17/6/23	24/11/23	2/10/24
Hb%	9.8gm%	9.2 gm%	10.2gm%	11 gm%	12.2 gm%
ESR	118mm/hr	70 mm/hr	72 mm/hr	54 mm/hr	21 mm/hr
CRP	24.31				
Neutrophils	69%	64%	65%	66%	72%
Eosinophils	1%	3%	3%	2%	1%
LFT					
Albumin	2.0 mg/dl	2.9 mg/dl	2.6mg/dl	3.2mg/dl	3.5mg/dl
SGOT	82.9 U/L	94.6 U/L	38.4 U/L	26.6 U/L	35.2 U/L
SGPT	98 U/L	109.8 U/L	18.6 U/L	24.9 U/L	26.4 U/L
RFT					
Sr Creatinine	0.7 mg/dl	0.7 mg/dl	1.2 mg/dl	0.8 mg/dl	0.7 mg/dl

Treatment Plan –

Sl No	Treatments	Oral Medications	Discharge Medications
	Admission –1st - 11/11/2022 to 12/12/2022 (IPD IP-062396)		
1	Modified Kala Basti – Anuvasana with PTG & Panchagavya Ghrita & Niruha Basti with Ksheerapaka of Bala, Kapikacchu, Yashtimadhu Basti. Matra Basti with PTG & Panchagavya Ghrita	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food	Panchagavya Ghrita 10ml BD with warm water at empty stomach 30 mins to 1 hour before food.
2	Sarvanga Abhyanga with Mahanarayan Taila & Sarvanga Pariseka with Dashamoola Ksheerapaka	Tab Gokshuradi Guggulu 2 TID after food Tab Arogyavardhini Vati 2 TID Before food	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food
3	Shiro Pichu With Brahmi Taila	Amalaki choorna 1tsp BD after food	Tab Gokshuradi Guggulu 2 TID after food, Tab Arogyavardhini Vati 2 TID Before Bhargavaprokta Rasayan 1tsp BID with warm milk/ water after food.

Sl No	Treatments	Oral Medications	Discharge Medications
	Admission –2nd - 16/01/2023 to 04/02/2023 (IPD IP-063862)		
1	Modified Kala Basti – Anuvasana with PTG & Panchagavya Ghrita & Niruha Basti with Manjishtadi Kshara Basti.	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food	1)Panchagavya Ghrita 10ml BD with warm water at empty stomach 30 mins to 1 hour before food.
2	Sarvanga Abhyanga with Ksheerabala Taila & Sarvanga Pariseka with Dashamoola Ksheerapaka	Tab Gokshuradi Guggulu 2 TID after food Tab Arogyavardhini Vati 2 TID Before food Tab Anuloma DS 2 HS Before food	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food
3	Shiropichu with Brahmi Taila	Yashtimadhu Ksheerapaka 100ml Before food	Tab Gokshuradi Guggulu 2 TID after food, Tab Arogyavardhini Vati 2 TID Before

Sl No	Treatments	Oral Medications	Discharge Medications
	Admission –3rd - 17/06/2023 to 01/07/2023 (IPD IP-067865)		
1	Modified Kala Basti – Anuvasana with PTG & Panchagavya Ghrita & Niruha Basti with Mustadi Raj Yapana Basti.	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food	Panchagavya Ghrita 10ml BD with warm water at empty stomach 30 mins to 1 hour before food.
2	Sarvanga Abhyanga with Mahanarayan Taila & Sarvanga Pariseka with Dashamoola Ksheerapaka	Tab Gokshuradi Guggulu 2 TID after food Tab Arogyavardhini Vati 2 TID Before food	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food
3	Shastika Shali Pinda Sweeda	Amalaki choorna 1tsp BD after food	Tab Gokshuradi Guggulu 2 TID after food, Tab Arogyavardhini Vati 2 TID Before

Sl No	Treatments	Oral Medications	Discharge Medications
	Admission –4th - 24/11/2023 to 11/12/2023 (IPD IP- 071553)		
1	Modified Kala Basti – Anuvasana with PTG & Panchagavya Ghrita & Niruha Basti with Manjishtadi Kshara Basti.	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food	Panchagavya Ghrita 10ml BD with warm water at empty stomach 30 mins to 1 hour before food.
2	Sarvanga Abhyanga with Mahanarayan Taila & Sarvanga Pariseka with Dashamoola Ksheerapaka	Tab Gokshuradi Guggulu 2 TID after food Tab Arogyavardhini Vati 2 TID Before food	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food
3	Shiro Pichu With Brahmi Taila	Amalaki choorna 1tsp BD after food	Tab Gokshuradi Guggulu 2 TID after food, Tab Arogyavardhini Vati 2 TID Before Bhargavaprokta Rasayan 1tsp BID with warm milk/ water after food.

Sl No	Treatments	Oral Medications	Discharge Medications
	Admission –5th - 2/10/2024 to 20/10/2024 (IPD IP- 078446)		
1	Modified Kala Basti – Anuvasana with PTG & Panchagavya Ghrita & Niruha Basti with Manjishtadi Kshara Basti.	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food	Panchagavya Ghrita 10ml BD with warm water at empty stomach 30 mins to 1 hour before food.
2	Sarvanga Abhyanga with Mahanarayan Taila & Sarvanga Pariseka with Dashamoola Ksheerapaka	Tab Gokshuradi Guggulu 2 TID after food Tab Arogyavardhini Vati 2 TID Before food	Punarnavashtaka Kashaya 15 ml TID after food Patola Katurohinyadi Kashaya 10 mml TID after food
3	Shiro Pichu With Brahmi Taila, Shashtika Sahali Pinda Sweda	Amalaki choorna 1tsp BD after food	Tab Gokshuradi Guggulu 2 TID after food, Tab Arogyavardhini Vati 2 TID Before Bhargavaprokta Rasayan 1tsp BID with warm milk/ water after food.
4.	At Modern Hospital, Balloon Dilatation of Esophagus is done on 8/10/24		

PATIENTS ASSESSMENT-

Subjective parameters

Clinical Examination-

Grades of Dysphagia-

Grades	Types of Dysphagia	Before Rx	After Rx
Grade 0	No dysphagia		
Grade 1	Dysphagia to solids		+++
Grade 2	Dysphagia to soft solids	+++	
Grade 3	Dysphagia to solids & liquids		
Grade 4	Unable to swallow liquids, but able to swallow saliva		
Grade 5	Cannot even swallow saliva		

Grading of Muscle tones-

Grades	Description	Before Rx	After Rx
	The Ashworth Scale (Ashworth Scale 1964)		
Grade 0	No increase in tone		
Grade 1	Slight increase in tone giving a catch when the limb is moved in flexion or extension		+++
Grade 2	More marked increase in tone but limb easily flexed		
Grade 3	Considerable increase in tone difficult - passive movement is	+++	
Grade 4	Limb rigid in flexion or extension		

Grading of Muscle Spasticity

Grades	Description	Before Rx	After Rx
5-Normal	Complete range of motion against gravity with full resistance.		
4-Good	Complete range of motion against gravity with some resistance.		+++
3-Fair	Complete range of motion against gravity.		
2-Poor	Complete range of motion with gravity eliminated.	+++	
1- Trace	Evidence of slight contractility. No joint motion.		
0-Zero	No evidence of contractility.		

Grading of Vomiting severity

Grades	Description	Before Rx	After Rx
0	No vomiting		
1	Mild vomiting, not requesting pharmacological rescue		+++
2	Moderate vomiting, requesting pharmacological rescue		
3	Severe vomiting resistant to pharmacological treatment	+++	

Grading of Remarks

Grades	Description	Before Rx	After Rx
Good Response	If the overall improvement is >75%		+++
Fair Response	If the overall improvement is greater than or equal to 50% but <75/%		
Poor Response	If the overall improvement is greater than or equal to 25% but <50%		
No Response	If the overall improvement is less than 25%	+++	

DISCUSSION-

The following factors, alone or in combination, may contribute to the development of autoimmune diseases: Penetration of deep tissues & Reasons are- Weak digestion leads to the accumulation of incompletely processed metabolites, disrupting metabolic processes and causing the production of Ama. Vitiation of Dosha, caused by any imbalance, also leads to various diseases. Accumulation of metabolic waste, resulting from suppressing the natural urge to eliminate waste, obstructs body channels and increases toxin levels, leading to an increase in Ama. Dysfunction of Agni, the digestive fire, hinders proper digestion and causes Ama formation. Bhutagni, the accumulation of Ama at Jatharagni and Dhatvagni levels, initiates pathological events inside the body. Ama further deteriorates digestive and metabolic activities, obstructs Strotas, vitiates Dhatus and Rakta, and causes various diseases, including autoimmune disorders.

Probable Mode of action of Basti according to Ayurveda

Based on the above-mentioned facts we can explain that the active principle from *Basti Dravyas* inserted into the sigmoid colon via anus is absorbed through rectal veins and via portal vein it spreads to whole body and produces its effect. Moreover, it certainly affects the enteric nervous system and through neurotransmitters present in the enteric system it acts on the brain via spinal tract and produces its effect on the whole body. The systemic action of Basti the Veerya of Basti administered through the Basti into the *Pakvashaya* reaches the whole body through the channels (*Srotasa*), as the active principles. In the water, when poured at the root of the tree reaches the whole plant. *Pakvashayaad Basti Veeryam Khai Dehamanusarpati। Vrik Shamoole Nishiktaanaamapaam Veery Amiva Drumama॥* [6]

Probable action of Basti according to Modern Science-

The neural control of the small intestine and colon has intrinsic and extrinsic innervations. The intrinsic innervation, also called the enteric nervous system, comprises myenteric, submucosal, and mucosal neuronal layers. The number of neurons in this enteric system is about 10 crores, exactly equal to the number in the entire spinal cord. The function of these layers is modulated by interneurons through the action of neurotransmitter amines or peptides including acetylcholine, opioids, norepinephrine, serotonin, ATP, and nitric oxide. The myenteric plexus regulates smooth muscle function, and the submucosal plexus affects secretion and absorption. The extrinsic innervations of the small intestine and colon are part of the autonomic nervous system and modulate both motor and secretory function. The para sympathetic nerve supply conveys visceral, sensory as well as excitatory pathways to the motor components of the colon parasympathetic fibers via the vagus nerve reach, the small intestine and proximal colon along the branches of the superior mesenteric artery.

The distal colon is supplied by sacral para sympathetic nerves (S2- 4) via the pelvic plexus. These fibers course through the wall of the colon as ascending intracolonic fibers as far as and in some instance including the proximal colon. The chief excitatory neurotransmitters controlling motor function are acetylcholine and

the tachykinins such as substance p. The sympathetic nerve supply modulates motor functions and reaches the small intestine and colon alongside the arterial arcades of the superior and inferior mesenteric vessels. Sympathetic input to the gut is excitatory to sphincters and inhibitory to non-sphincteric muscle. Visceral offer nets convey sensation from the gut to the central nervous system. Initially they course along sympathetic fibers but as they approach the spinal cord, they separate to have cell bodies in the dorsal root ganglion and enter the dorsal horn of the spinal cord. Afferent signals are conveyed to the brain along the lateral spinothalamic tract and the nociceptive dorsal column pathway and are then perceived. Other afferent fibers synapse in the pre-vertebral ganglia and reflexly modulate intestinal motility.

Panchakarma therapy is a very imperative and essential part of Ayurvedic treatment. As it has a wide spectrum of effect and is "*Ardhachikitsa*" in Ayurveda. Action of *Bastidravyas* in *Koshta* that too *Pakvashaya* i.e., sthana of vata Dosha after the absorption of *Bastidravyas*, *Vyavayi* and *Sukshama guna* of *Bastidravyas* it circulates all over the body.[9] Basti *Veerya* may act through ENS. The gastrointestinal system has network of nerve fibers, which is known as "Enteric Nervous System" like brain ENS sends, receive impulses, and activate to CNS. Basti nourishes the five types of Vata and normalizes their function. In *Vatavyadhi* chiefly effected Dosha is *Vata* Dosha sometimes it also associated with Pitta and kapha doshas. Vata is the main cause for vitiation of others Dosha and dhatus also. So, treat *Vata* Dosha along with associated Dosha with *Basti Chikitsa* more comfortable and effective in treating *Vatadi* Dosha with permutation and combination of *Tridoshashara dravyas* in *Basti chikitsa*. Ksheer Basti has a large and effective applicability in Asthivaha Sroto Vikara[10]. Basti chikitsa can be given in *Dhatukshayajanya* and *Margavarodhajanya vatavyadhi*, Amaja *Vataroga* and *Niramajavata rogas*. In many of vatavyadhi samadosha will be present different bastis like karma, kala, yoga basti which has effect of *Amanirharana* action. So, combination of *Niruha* and *Anuvasana basti* has effective than only *Matrabasti*

CONCLUSION-

Basti Karma mentioned in Ayurvedic classics is having broader therapeutic index on all the tissues of the body and has rejuvenating, curative and preventive and health promotive actions.

It becomes incurable when it affects all the joints of the hand, feet, head, heels, waist, knee, and thighs causing painful swelling, which shifts from place to place (joint to joint), severe pain resembling that of scorpion sting (*Vrishchika damshavat*). While considering the prognosis of this condition, disease is curable if one Dosha is involved, difficult to cure if two Doshas are involved, and incurable if all three Doshas are involved also if swelling is moving to all joints of the body. So present condition of the patient of SSC is incurable in nature. Even though it is incurable, the principle modalities of *Amavata* could improve the QOL of the patient. Objective parameters like ESR have significant improvement. Subjective parameters also show significant changes.

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