



CASE REPORT

Ayurvedic conservative management of Raynaud's phenomenon associated with Rheumatoid Arthritis -A case report

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ARTICLE HISTORY

Received: 09 March 2025

Accepted: 25 June 2025

Available online

Version 1.0 : 31 June 2025

Keywords

Raynaud's phenomenon, Rheumatoid Arthritis, *vatarakta*, *nijavrana chikitsa*

Additional information

Peer review: Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

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CITE THIS ARTICLE

Harsha H, Abdul SMM, Deepa J. Ayurvedic conservative management of Raynaud's phenomenon associated with Rheumatoid Arthritis -A case report. Kerala Journal of Ayurveda. 2025;4(2):01-06.



<https://doi.org/10.55718/kja.390>

Abstract

Raynaud's phenomenon manifests as an intensified vasospastic response to emotional stress or exposure to cold, leading to a tri-color change in the peripheral regions of the body. The classic progression of colors includes white, which indicates ischemia resulting from vasospasms; blue, which reflects the deoxygenation of blood; and red, which occurs during reperfusion. Rheumatoid Arthritis is classified as an autoimmune and chronic inflammatory disorder, wherein the immune system mistakenly attacks healthy cells, resulting in inflammation. A range of causes and related diseases have been associated with the onset of Raynaud's phenomenon, with Rheumatoid Arthritis being a notable example.

This case report details a 29-year-old female patient who presented to the outpatient department of the Government Ayurveda College Hospital in Thripunithura, Ernakulam, Kerala. She reported significant concerns, including a blackish discoloration on the distal extremities of her hands and feet, as well as joint pain affecting all limbs. Clinical examination revealed the presence of gangrene at the tips of her fingers and toes, an ulcer located at the lower end of her right foot, coldness in her extremities, swelling in the elbow and knee joints, edema in her hands and feet and a loss of pinprick sensation on the bilateral plantar surfaces of her feet. Based on her clinical manifestations and investigative results, she was diagnosed with Raynaud's phenomenon in conjunction with Rheumatoid Arthritis. Initial treatment focused on managing the Rheumatoid Arthritis, followed by symptomatic care for vasculitis. The therapeutic approach adhered to the protocols outlined in the *Brihatrayees*, specifically targeting *vatarakta* and *nijavrana chikitsa*. Internal *sneha* preparations utilized included *Jeevanthaydi ghrita*, *Madhuparnyadi taila* and *Ksheerabala*, while external applications comprised *Ksheerabala*, *Balaguduchyadi taila* and *Pinda taila*, supplemented by panchakarma therapies. The patient exhibited significant improvements, including pain relief and stabilization of gangrene progression; however, no reversal of symptoms was observed even after one year of treatment.

Introduction

Raynaud's phenomenon is characterized by a triad of symptoms: pallor, cyanosis and redness in the extremities, particularly the hands and feet, resulting from episodic vasospasms in the digital arteries¹. This condition is typically triggered by exposure to cold temperatures or emotional stress. While the fingers are predominantly affected, approximately 40% of individuals also experience symptoms in their toes. The pallor observed is indicative of ischemia caused by vasospasms, cyanosis arises from the deoxygenation of blood and the subsequent redness is attributed to reperfusion following the cessation of spasms. Raynaud's phenomenon is classified into two subtypes: primary Raynaud's, which occurs independently of other medical conditions and secondary Raynaud's, which is associated with various rheumatological disorders, including systemic sclerosis, systemic lupus erythematosus and mixed connective tissue diseases^{6,7}.

In this scenario, Raynaud's phenomenon may be attributed to rheumatoid vasculitis. The mechanisms proposed include vasoconstriction that affects arteriovenous anastomoses and nutritional blood flow, as well as intravascular factors that contribute to increased blood viscosity, thus precipitating Raynaud's phenomenon⁵. Rheumatoid vasculitis is a rare inflammatory disorder that occurs as a late consequence of chronic rheumatoid arthritis, impacting small and medium-sized blood vessels⁴. Its pathogenesis is akin to that of *vatarakta*. To mitigate the severe inflammatory pain associated with *vatarakta* disease, both internal and external applications of *Sneha* and *karaskara ksheera dhara* are recommended³. In this case study, the management of Raynaud's disease involved the *Vataraktha chikitsa*² protocol and *nijavrana chikitsa*. Following treatment, the patient reported pain relief, an enhancement in pulse volume and the cessation of fingertip gangrene progression.

Case report

A 29-year-old female patient presented to the outpatient department of the Government Ayurveda College Hospital in Thripunithura, Ernakulam, Kerala, on December 8, 2022. She reported significant concerns, including blackish discoloration affecting the distal regions of her hands and feet, as well as joint pain in all limbs for one year. Notably, in the last 10 months, she exhibited signs of gangrene at the tips of her fingers and toes, along with an ulcer located at the lower end of the right big toe. Additional symptoms included cold extremities, swelling in the elbow and knee joints, edema in the hands and feet and a loss of pinprick sensation on the

bilateral plantar surfaces of her feet, which she noted for 8 months. Consequently, she was admitted for further evaluation and management. The investigations conducted for this patient are detailed below.

Laboratory Parameters on 25/11/2022

Hemoglobin concentration stands at 8.5 gm%, with an erythrocyte sedimentation rate of 74 mm/hr. The rheumatoid factor is significantly elevated at 635.4 IU/mL. Antinuclear antibody levels are recorded at 1.1 U and the anti-cyclic citrullinated peptide antibody test returns a positive result. Furthermore, C-reactive protein is measured at 293.78 mg/L and troponin-I is detected at 75.4 ng/mL.

Colour doppler on 5/11/2022 showed normal triphasic flow in upper limb and lower limb except for monophasic flow in bilateral dorsalis pedis artery.

Autoimmune arthritis works up showed positive antibody IgM Elisa for beta 2 glycoprotein and cardiolipin antibody on 6/11/2022.

She was admitted in Medical Trust Hospital, Ernakulam for the above complaints on 21/10/22. Based on the comprehensive clinical evaluations and investigative results, the patient received a diagnosis of Rheumatoid Arthritis accompanied by Raynaud's phenomenon. Initial treatment was for Rheumatoid Arthritis, followed by symptomatic management for the associated vasculitis and the prognosis was poor. She was on WARF- 2BT and Ecospirin AV75 0-1-0 and was doing physiotherapy for one year which only provided symptomatic relief.

There was no relevant family, psycho-social history and genetic information available.

Conservative management

Internal medications (from 08/12/2022 to 31/01/2023)

1	<i>Guloochyadi kashyam</i> -90ml twice before food
2	<i>Thikthaka gritham</i> -10 ml morning with kashayam
3	<i>Madhuyastyadi thailam</i> -10 ml evening with kashyam
4	<i>Avipathy choornam</i> -5gm with hotwater bedtime
5	<i>Guggulupanchapalachoornam</i> -10 gm with honey 11am

External therapy

Date	Treatment with duration	Medicines used	Remarks
10/12/22-20/01/23	Vrana prakshalana-30 days	Triphalakashaya	
17/12/22-19/01/23	Ulcer Dressing -30 days	Jatyadi ghritha	Improved ulcer healing
22/12/22-28/12/22	Local dhara-7 days	karaskaraksheeram	
29/12/22-05/1/23	Thaila dhara-8 days	MadhuyashtyadiThailam	After karaskaraksheera dhara, inflammation reduced and pin prick needle sensation over bilateral plantar aspect of feet reduced. After thailadhara pain and swelling over elbow and knee joints reduced
06/01/23-12/01/23	Abhyanga-7 days	Pinda thailam	
13/01/23-19/01/23	Sastika pinda sweda-7 days	Dhanwantaram+Pinda thailam	
21/01/23-23/01/23	Matravasthi- 3 days	Madhuyastyadi thailam	After vasthi, burning pain and discolouration reduced, progression of gangrene arrested.
24/01/23-30/01/23	Panchatikthaka ksheeravasthi-7 days	Guggulutikthakgritham & Thikthakaksheerakashaya	Peripheral pulses were palpable and normal in volume



Fig. 1. Before treatment



Fig. 2. After treatment

Results and Discussion

The pathophysiology of Raynaud's phenomenon is fundamentally characterized by an elevation in vascular tone, which includes vasospasm affecting the digital arteries. In this context, Raynaud's phenomenon may be attributed to rheumatoid vasculitis. Proposed mechanisms include vasoconstriction that compromises arteriovenous

anastomoses and nutritional blood flow, alongside intravascular factors that increase blood viscosity, thereby triggering Raynaud's phenomenon⁴. In Ayurveda, *Vatarakta* is a condition resulting from the vitiation of *Vata dosha* and *Rakta dhatu* (blood tissue). The aggravation of *Vata* leads to constriction of blood vessels (*Srotorodha*), impairing circulation and leading to symptoms similar to Raynaud's phenomenon,

such as pallor, cold extremities, pain and discoloration. This obstruction aggravates *Vata*, further disrupting tissue nourishment and causing progressive gangrene.

Following treatment based on the *vatarakta* and *nijavrana chikitsa* protocols, the patient experienced complete pain relief and improved sleep quality. The treatment mainly focused on *Vata-Pitta Shamana*, *Srotoshodhana*, *Rakta Prasadana* (Blood Purification), *Vrana Ropana* (Wound Healing) and *Ama Pachana* (Detoxification). The advancement of gangrene in the fingers and toes was halted through *Vrana shodhana* and *Vrana ropana*, with pain relief achieved via external medications like *Karaskara ksheeradhara* which especially reduced pain, inflammation and burning sensation clearing microchannels and promoted circulation. The application of *Triphala kashaya kshalana* and *Jatyadi ghrita* dressing, known for their *vrnashodana* and *ropana* properties, facilitated accelerated ulcer healing. Additionally, *Madhuyashtyadi dhara* and *Pinda thaila abhyanga*, as indicated, provided analgesic effects and enhanced lower limb

sensation⁵ which primarily pacifies *Pitta*-induced inflammation and *Vata*-related pain and prevents fluid retention in the joints and surrounding tissues.

Ksheera vasthi alleviated burning pain, discoloration and the progression of gangrene by its anti-inflammatory, immune modulation and detoxification properties (*Vata-Pittahara*) *Guggulu Panchapala Choornam* reduces Kapha and Meda, clearing the channels (*Srotoshodhana*) and allows free blood flow and thus it contributed to improved circulation and metabolic function hence promoting faster ulcer healing and enhanced pulse quality. *Thiktaka ghrita snehapana* acted as a *Rakta Shodhaka* (blood purifier), reducing oxidative stress and inflammation and thereby it demonstrated both analgesic and healing properties². Post-treatment, the C-reactive protein level decreased from 293.78 mg/L to 79 mg/L. There were no systematic side-effects during the treatment period. These results indicate a positive response and tolerability to the intervention.

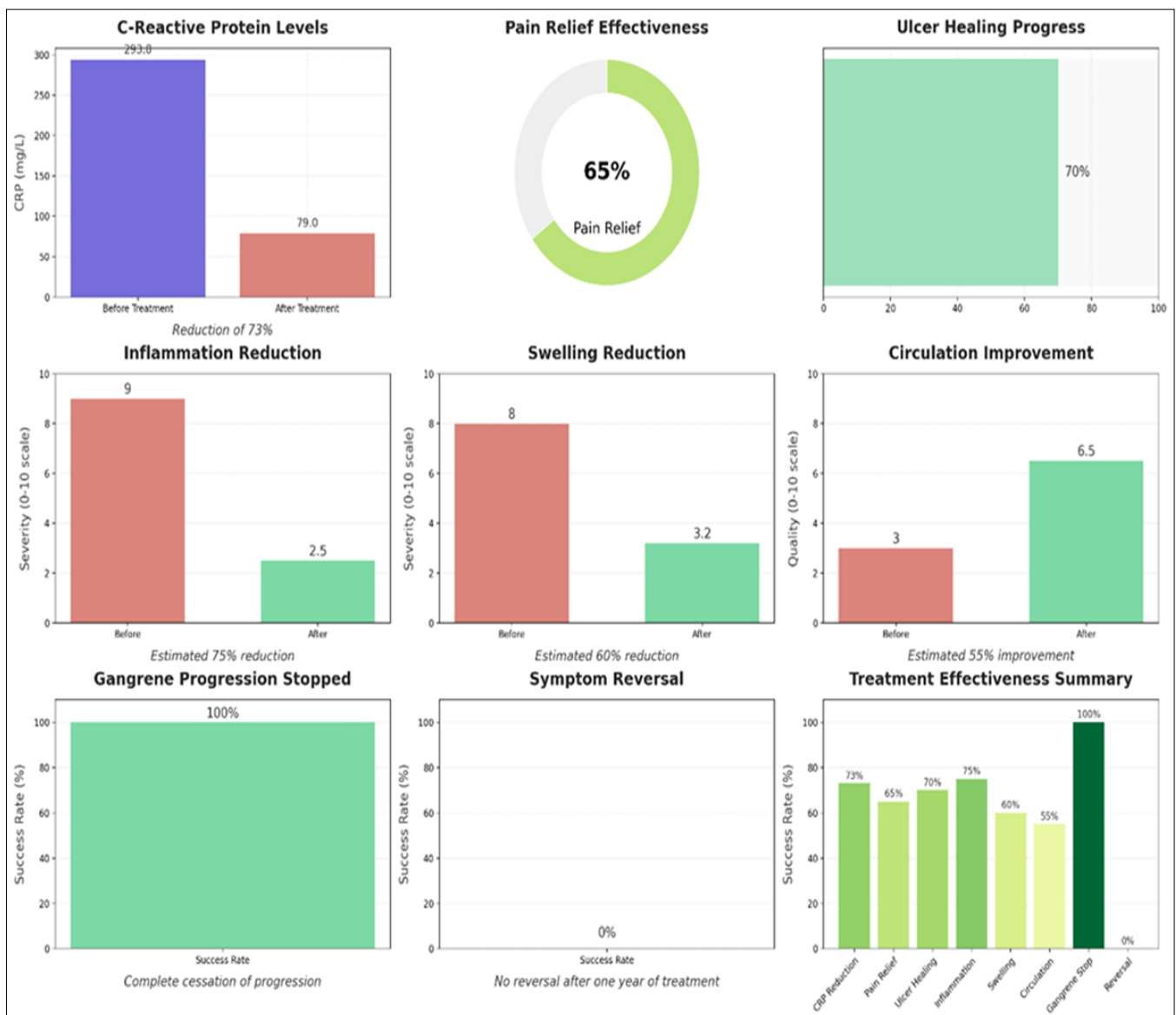


Fig. 3. Graphical representation of results




Email: info@mathewsbabyhospital.org

Patient No	:	[REDACTED]	Invoice no	:	IP2403204
Name	:	[REDACTED]	Invoice Date	:	05/05/2023 10:05:15 AM
Gender/ Age	:	FEMALE / 30 Y 4 M 11 D	Result Ready	:	23/06/2023 09:35:26 AM
Referred By	:	Dr HARIKRISHNAN B	IP Number	:	009793

Colour Doppler and Pulse Wave Doppler Study of Right Lower Limb Veins

Superficial and deep veins (CFV, SFV, PV, ATV & PTV) appear compressible with normal luminal flow, phasicity within.

No evidence of deep vein thrombosis.

Mild subcutaneous edema in right leg and ankle.

No significant abnormality seen in right thigh at the site of pain.

Done by :- **Dr. Sukanya S**
Jr. Consultant - Radiology

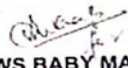

Dr MATHEWS BABY MADATHIL MD RD
 CONSULTANT RADIOLOGIST
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Fig. 4. Doppler after treatment

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Name: [REDACTED] Doctor: [REDACTED] Hospital: HOME COLLECTION Phone: 7736605952	Age/Dob/Sex: 30/Female Sample Collected at: 23-05-2023 08:44:01 Report on: 23-05-2023 11:10:41 Passport/Ship No:	SRD NO: ITNDY2300630 REF NO: Ipop No: Dr Harikrishnan
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Test Description	Value Observed	Biological Reference Interval
DEPARTMENT OF BIOCHEMISTRY		
C REACTIVE PROTEIN (CRP)	79 mg/L (H)	<5.0 mg/L
AST / SGOT	17 U/L	Upto 32 U/L

Fig. 5. Blood report after treatment

Conclusion

Previously, the management strategy for patients suffering from Rheumatoid arthritis primarily focused on reducing inflammation and improving the mobility of the affected limbs. The introduction of advanced biological therapies has shifted this paradigm towards achieving complete remission, preventing tissue ischemia and controlling disease progression, thus allowing patients to carry out their daily routines effectively. The occurrence of Raynaud's phenomenon in conjunction with toe gangrene is an uncommon clinical scenario in rheumatoid arthritis. This case report demonstrates the potential efficacy of Ayurvedic conservative management in treating Raynaud's phenomenon associated with Rheumatoid Arthritis. The study employed the *vatarakta* and *Nija Vrana chikitsa* protocols, leading to significant pain relief, the cessation of gangrene progression and enhanced circulation. It highlights the importance of a holistic treatment approach in managing complex autoimmune conditions. While the results are promising, it's crucial to note that this is a single

case study and further research with larger patient groups is necessary to validate these findings. The report also underscores the value of integrating traditional Ayurvedic practices with modern diagnostic tools for better patient outcomes. Lastly, it opens new avenues for exploring Ayurvedic treatments in cases where conventional therapies may have limitations, particularly in managing rare complications of rheumatoid arthritis such as Raynaud's phenomenon. This underscores the *vatarakta chikitsa* protocol, even in the presence of gangrene.

Limitation of study

The occurrence of Raynaud's phenomenon in conjunction with rheumatoid arthritis is infrequent, rendering clinical trials impractical. Consequently, the traditional sequences of *Shodana* and *Samana* in *Vatarakta chikitsa* are not strictly adhered to, as the primary focus has been on pain management and the prevention of gangrene.

Strength of Study

This case report introduced a novel approach to the conservative Ayurvedic management of Raynaud's phenomenon in patients with Rheumatoid Arthritis.

Acknowledgements

I extend my heartfelt appreciation to my teachers and colleagues for their essential advice and generous support.

Ethical Considerations

The patient has provided written informed consent for the treatment as well as for the publication of relevant data and images. Measures have been taken to ensure the confidentiality of this data. Ethical clearance was obtained from the Institutional Ethics Committee at Government Ayurveda College, Tripunithura, on May 24, 2024, with the reference number 04/SL-AR/IEC/2024.

Conflict of Interest

The author affirms that there are no conflicts of interest to disclose.

Guarantor

The guarantor of this article and its contents is the corresponding author.

Source Of Support

There are no available sources of support

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