

Case Report

Comprehensive management of rotator cuff tendinopathy in diabetic patients with Ayurveda and myofascial release

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ABSTRACT

Shoulder disorders are markedly more common in individuals with diabetes than in the general population. Rotator cuff tendinopathy, a form of persistent tendon pain and dysfunction from mechanical loading, arises when tendon regeneration fails, leading to structural disorganization, thickening, and potential rupture. Its etiology involves intrinsic factors such as aging, altered tendon biology, vascular compromise, and overload, as well as extrinsic factors including impingement from structural variations, soft-tissue tightness, muscle imbalance, and overuse, all of which contribute to compromised tendon integrity and function. A 49-year-old male patient who is a known case of Diabetes mellitus was admitted to Kayachikitsa IPD of Vaidyaratnam Ayurveda College, Ollur on 09 July 2024 with bilateral shoulder joint pain more at right side with stiffness and limited range of motion. He underwent a treatment protocol of *vatavyadhi* and myofascial release with an effort to keep diabetes under control. The patient got relief from pain (VAS score 6 to 1) and stiffness and range of movements were improved. There is remarkable functional restoration (SPADI 57.69 to 10). In rotator cuff tendinopathy of diabetic patients, a combined use of *pramehahara oushadha*, *vatavyadhi chikitsa* and myofascial release can be effective.

Keywords: Case report, Diabetic rotator cuff tendinopathy, SPADI, Sandhigathavata- amsa sandhi, Vatavyadhi chikitsa, Myofascial release

INTRODUCTION

Shoulder disorders are significantly more prevalent in individuals with diabetes (27.5%) than in the general population (5%).¹ Tendinopathy is the preferred term for persistent tendon pain and loss of function related to mechanical loading.² Rotator cuff (RC) tendinopathy develops when the body fails to effectively regenerate tendon tissue, leading to structural disorganization and thickening that weaken its mechanical properties, cause fatigue, and may progress to tendon rupture. The term tendinitis generally describes tendon pain from overuse, irritation, strain, degeneration, or faulty mechanics, whereas tendinosis refers to degenerated, disorganized collagen with increased vascularity and cellularity but without obvious inflammatory cells; both are subtypes of

tendinopathy. Rotator cuff tendinopathy can result from multiple causes. Intrinsic mechanisms contributing to rotator cuff tendon degeneration involve age-related changes, altered tendon biology, diminished microvascular supply, and structural deterioration resulting from mechanical overload, overuse, or trauma. Extrinsic causes of rotator cuff tendinopathy, mainly subacromial or internal impingement, stem from structural variations, soft-tissue tightness, scapular and muscle dysfunction, and overuse, which narrow the subacromial space, reduce blood flow, and compress the tendon, causing inflammation, degeneration, and loss of function.³

Diabetes mellitus, particularly type 2, increases the risk of rotator cuff injury and tendon rupture, and is associated with poorer prognosis and lower healing rates after repair

and cause persistent changes in gene expression profiles of affected tendons, regardless of whether or not insulin was used and possibly due to micro vascular changes and glycosylation in shoulder joint tissues and the synovium.^{1,4} Diagnosis relies on clinical examination and imaging is not always necessary, while management includes NSAIDs, steroid injections, physiotherapy, and surgery in severe cases.^{2,4} There are various conservative methods available for treating rotator cuff tendinopathy including stretching, strengthening exercises, proprioceptive neuromuscular facilitation (PNF) and mobilization techniques to relieve pain and improve glenohumeral range of motion.

Myofascial trigger points can coexist with all degenerative tendinopathy situations.⁵ Early detection and treatment of them may prevent chronic shoulder pain and degeneration by targeting soft tissue restrictions and non-contractile pathologies such as capsular adhesions and fibro vascular inflammation.⁶ Myofascial release alleviates rotator cuff tendinopathy by applying deep pressure to trigger points, reducing pain, restoring range of motion, and enhancing muscle function through fascial modulation.⁷

In *Ayurveda* it is considered as *sandhigatha vata* at *amsa sandhi* (shoulder joint). *Dhatu kshaya* and *kapha kshaya* due to *prameha* (a condition broadly correlating with diabetes mellitus), and over activity might have caused *Vata vrudhi* in *amsa sandhi* and produce symptoms like *prasarana akunjana pravarthi savedana* (painful and restricted range of motion) *sthamba* (stiffness), *sankocha* and *ruk* in *amsa sandhi*. Ayurvedic management includes *vatha vyadhi chikitsa* and keeping *prameha* under control to prevent further damage. In this case 49 years old diabetic patient with features of rotator cuff tendinopathy is treated. We have incorporated myofascial release with traditional *vathavyadhi chikitsa*. This case study may be useful in determining the future scope of a conservative Ayurvedic treatment protocol and myofascial release for symptomatic relief and successful restoration of joint mobility in rotator cuff tendinopathy in diabetic patients.

CASE REPORT

Primary concerns and symptoms

Pain and stiffness of bilateral shoulder joints (> right) since 8 months.

Case history

49-years-old male patient k/c/o DM since 18 years was under control of the disease by oral medicines before 8 months. He is a k/c/o of bipolar disorder since 10 years and under medication, including lithium carbonate. In September 2023 he was diagnosed with cholecystitis, chronic liver disease with portal hypertension and cholecystectomy was done at October 2023. During post-surgical hospitalization his DM became uncontrollable and was began with insulin therapy. He had acute onset of bilateral shoulder joint pain severe at right side while

shifting ward lifting his arm externally rotated. It was associated with stiffness and the pain was non radiating and aggravated during joint movement especially external rotation. MRI (07 November 2023) showed insertional tendinosis of superior subscapularis and supraspinatus with gleno humeral joint effusion. He was given NSAIDs and intra articular steroid injection, local analgesics with physiotherapy sessions once per week for 1 month. For next 3 months' symptoms were reduced. The patient had a history of frequent bus travel over several consecutive days, during which he habitually grasped the handrail for support. He subsequently experienced an acute exacerbation of pain precipitated by a sudden jerk of the bus. Again he was administered with oral pain killers but he had severe stiffness with pain managed for action time of analgesics only which affected daily life activities. In May 2024 he consulted kayachikitsa 2 OPD of Vaidyaratnam ayurveda college hospital (op no: 54776) he was advised with internal medicines, local fomentation with *kulatha pinda sweda* at home and got mild relief. Then took treatment at IPD of same hospital after 2 months (Ip no: 240601, bed no: 25, DOA: 09/07/24, DOD: 29/07/24).

History of past illness

It included cholecystitis, chronic liver disease with portal hypertension, and bipolar disorder.

Medical history

It included insulin injection: 40 units-0-30 units (diabetes mellitus), Pan insulin: 0-0-30 units (diabetes mellitus), Clonazepam 1 mg: 0-0-1(SOS) (antimaniac), lithium carbonate: 0-0-1 (antimaniac), and Oxcarbazepine 300 mg: 1-0-0 (anticonvulsant).

Family history

Parents had history of diabetes mellitus.

Clinical findings

General examination

Normosthenic built with neat, tidy and groomed general appearance and was cooperative. He was well nourished. An altered gait with minimal arm swing on the right side and an antalgic posture with the right shoulder in a slightly elevated and adducted posture to minimize pain and muscle spasm were noticed. He had body height 164.5 cm and weight 78 kg with BMI 28.8 kg/m². His vitals are within normal limits with BP 128/70 mmHg, heart rate 76/minute, and respiratory rate 16/minute.

Systemic examination

Respiratory system and cardio vascular system didn't open any abnormalities. Urogenital system examination revealed polyuria and nocturia. Gastrointestinal system

examination revealed palpable liver. In nervous system higher mental functions are affected. MSE revealed subtle sedative appearance, reduced spontaneity of speech, mildly blunted mood, and behavior. Thought process, cognition, insight and judgment were intact. Motor system showed no wasting, with normotonicity of upper and lower limb muscles. All the muscles had normal power, though there was restriction or inhibition of muscles of chest and upper arm while testing due to pain. All the deep tendon and superficial reflex were within normal limits. In the deep tendon spinal reflexes, especially biceps, triceps and brachioradialis deep tendon reflex showed normal contracture of response muscles. The coordination tests revealed normal response with absence of nystagmus, dysdiadochokinesis and intentional tremor. In sensory system examination light touch, pin prick, temperature, vibration (128 Hz tuning fork), proprioception, 2-point discrimination and monofilament were intact.

Locomotary system

Examination of spine showed normal curvature. On cervical spine palpation there was tenderness over paraspinal muscle trapezius. He had reduced ROM in neck lateral flexion and rotation. Thoracic and lumbosacral spine showed no abnormalities. There had any bone enlargement, redness, edema or temperature rise. The joints hip, knee, elbow, ankle and small joints had normal ROM with no pain, swelling or deformities.

Table 1: Inspection and palpation of shoulder joint.

Variables	Right shoulder joint	Left shoulder joint
inspection		
Symmetry	Maintained	
Color	Normal	Normal
Resting position	Elevated on right side due to muscle spasm	Normal
Wasting	Absent	Absent
Winging of scapula	Absent	Absent
Nodules	Absent	Absent
Deformities	Absent	Absent
Swelling	On lateral aspect of upper arm	Absent
Palpation		
Temperature	Absent	Absent
Edema	On lateral aspect of upper arm	Absent
Tenderness	Present over anterior shoulder, greater tuberosity and acromioclavicular joint	Absent
Crepitus	Absent	Absent

Table 2: Range of motion of shoulder joint.

Variables	Right shoulder joint (°)	Left shoulder joint (°)
Flexion	55	138
Extension	26	45
Abduction	85	143
Adduction	28	30
Internal rotation	15	35
External rotation	45	90
Special tests		
Neer’s test	Positive	Negative
Empty can test	Positive	Negative
Arm abduction test	Negative	Negative
Painful external rotation+ trapezius trigger point	Positive	Negative

Diagnostic assessment

Lab investigations were done on 10 July 2024, which included ESR-10 mm/hour, FBS-92 mg%, PPBS-246 mg%, lipid profile-serum cholesterol-123 mg%, serum triglycerides-59 mg%, HDL cholesterol-41 mg%, LDL cholesterol- 86 mg%, LFT-SGOT-30 U/l, SGPT-17 U/l, S. alkaline phosphatase-47 U/l, serum bilirubin total-1.0 mg%, serum bilirubin direct-0.3 mg%, serum proteins-5.4 gm%, S. albumin-2.7 gm%, HbA1c-9.3%, 25-hydroxy vitamin D total-26.37 ng/ml, and serum creatinine-0.5 mg%. MRI of right shoulder joint is given in Figure 1.

Surveys

It included visual analog scale (VAS), shoulder pain and disability index (SPADI).^{8,9}

Dasavidha pareeksha

Prakrithi was Kapha pitha Prakriti calculated using TNMC prakruti questionnaire.¹⁰ In Vikrithi, Manodosha rajas, thamas and Saririka doshas; Vata-Prana, Udana, Samana, Vyana, Apana Pitha-sadhaka pitha, Pachaka, Ranjaka, Kapha-Sleshaka, Tarpaka, Dushyas; Rasa, Raktha, Mamsa, Medas, majja, Mala-mutra, Upadhatu – Snayu, Kandara,sira Saram: Madhyama , Samhananam: pravaram , Sathwam : Avara, Sathmyam: madhura, amla, katu, Pramanam: pravara, Aharasakthi-Abyavaharana sakthi: madhyama, Jarana Sakthi: madhyama, Vyayamasakthi: madhyama, Vaya: madhyama, Kalam – Kshanadi: varsha, Vyadhyavastha: navam, in Desham Bhoomi was Sadaranam, Deham was sarvangam, especially amsa sandhi. The affected Rogamargam is Madyama. Srothas affected are Udakavaha srothas (Pipasa), Annavaha srotha (adhmana, Pipasa), Mamsa (swayadhu), Majja vaha srothas (gouravam, thoda, sthamba, aswapna), Medovaha srothas (Talusosha, pipasa) Mutravaha srothas (Atirushta mutra), Purishvaha srothas (constipation, Kruchra purisha nirgamana), Manovaha (chintha, anidra, bhaya).¹¹

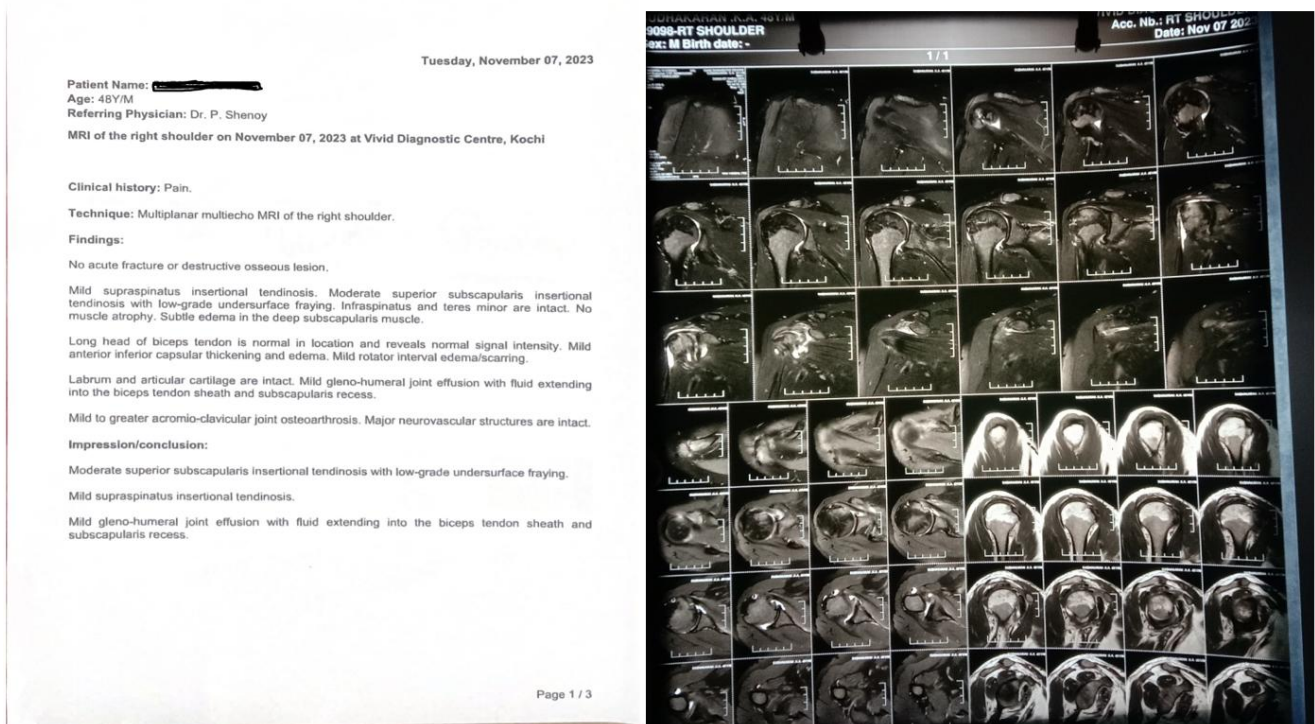


Figure 1: MRI of right shoulder joint.

Table 3: Therapeutic intervention-internal medicines.

Date	Medicine	Dose	Time of administration
10-29 July 2024	Rasnasapthakam kashayam	60 ml	Before food BD
10-29 July 2024	Yogaraja guggulu	1-0-1	With kashayam
10-29 July 2024	Nishakathakadi kashayam- Thoyam	15 gm boiled in 2 liters of water	Frequently at day time

Table 4: Therapeutic intervention-external medications.

Date	Procedure	Duration (minutes)	Medications
10-27 July 2024	Abhyanga followed by myofascial release	30	Murivenna+ chinchadi thailam
10-15 July 2024	Sarvangadhara	30	Dhanyamlam
16-22 July 2024	Jambirapinda sweda	30	Murivenna+ Chinchadi thailam
19-30 July 2024	Nasyam- 6 drops each nostril		Karpasasthyadi mezhupakam
23-29 July 2024	Shashtikasalipinda sweda	30	Karpasasthyadi thailam+ Mahamasha thailam
15-25 July 2024	Myofascial release with mobilizing exercises		
Session	Focus area	Duration (minutes)	Technique
15 and 16 July 2024	Subscapularis, supraspinatus	20	Direct MFR, Cross-fiber release
17 and 18 July 2024	Anterior shoulder and pectorals	15	Unwinding, MFR of pectoralis
19 and 20 July 2024	Scapulothoracic region	20	Scapular MFR, posterior chain release
21-24 July 2024	Reassessment + repeat cycle	30	

Diagnostic challenge was co-existence of multiple pathologies.

Prognosis is yapyam.

Final diagnosis included *Sandigatha vata in amsa sandhi* (rotator cuff tendinopathy).

Therapeutic intervention

The goals of treatment were to relieve the pain, to reduce the muscle spasm and stiffness, to increase the range of motion and restore strength of muscles and tendons. Mobilizing exercises administered to regain the functional ability and prevent further damage by educating the patient. An effort to keep diabetes at control by giving *pramehahara* medicine was done. *Vatavyadhi Chikitsa* incorporated with myofascial release was administered. *Deepanam* (*dhatu level agnimandya*), *vedanasamanam*, *sophaghna* (anti-inflammatory), *snehana-swedana* (lubrication) and the *dhatuposhana* (nourishment) were the basic approach.

Changes in therapeutic intervention with rationale

Internal medicines were the same throughout the course. As the patient had HbA1c of 9.3 even after taking insulin, administration of *nishakathakadi Ks thoyam* was continued for entire course. Due to presence of chronic liver disease internal medicines were limited to three. In external treatment, 4th day with *abhyanga* (oil massage) and *dhanyamladhara* (whole-body streaming) pain reduced. *Dhanyamla sarvangadhara* was continued until reduction in spasm of paraspinal and right upper arm muscles. On 6th day began with myofascial release

consecutive to *abhyanga* and continued for next 10 days, contributed with better range of motion except internal rotation. After subsiding tenderness, *Jambirapinda sweda* (bolus fomentation with lemon) with oil was started and by the end of it a marked reduction in stiffness was observed. Following assessment at 14th day, with an intention to repair and strengthening of tendons and muscles, *shashtika pinda sweda* (medicated rice bolus fomentation) and *nasya* with *karpasasthyadi thailam* was done. After the first course of therapy for duration of 20 days, the patient showed a marked clinical improvement.

Intervention adherence and tolerability included tolerant to treatment done.

Adverse and unanticipated events were absent.

Clinician and patient assessment outcomes

These outcomes are reported in Tables 5 and 6.

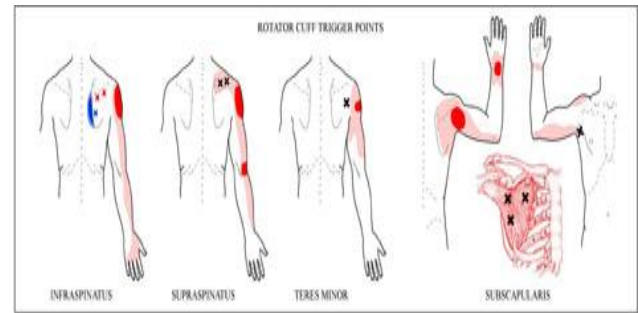


Figure 2: Rotator cuff tender points.

Table 5: SPADI score and VAS score.

S. no.	Pain score questions	BT	14 th day	AT
1	At its worst?	7	4	2
2	When lying on the involved side?	7	3	2
3	Reaching for something on a high shelf?	8	3	1
4	Touching the back of your neck?	5	2	0
5	Pushing with the involved arm?	6	2	1
Total pain score		33/50×100=66	14/50×100=28	6/50×100=12
Disability questions		BT	14 th day	AT
1	Washing your hair?	4	1	0
2	Washing your back?	7	5	3
3	Putting on an undershirt or jumper?	5	2	0
4	Putting on a shirt that buttons down the front?	4	1	0
5	Putting on your pants?	4	1	1
6	Placing an object on a high shelf?	6	2	1
7	Carrying a heavy object of 10 pounds (4.5 kg)	6	3	2
8	Removing something from your back pocket?	6	2	0
Total disability score		42÷80×100=52.5	17÷80×100=21.25	7÷80×100=8.75
Total SPADI score		57.69	23.84	10
VAS score		6	2	1

Table 6: Changes in range of motion BT, 14th day and AT with special tests.

Variables	Right shoulder joint (°)			Left shoulder joint (°)		
	BT	14 th day	AT	BT	14 th day	AT
Flexion	55	116	160	138	140	162
Extension	26	40	60	45	50	60
Abduction	85	140	145	143	148	150
Adduction	28	30	30	30	34	36
Internal rotation	15	40	56	35	48	62
External rotation	45	70	90	90	94	100
Special tests						
Neer's test	Positive	Positive	Negative	Negative	Negative	Negative
Empty can test	Positive	Positive	Negative	Negative	Negative	Negative
Arm abduction test	Negative	Negative	Negative	Negative	Negative	Negative
Painful external rotation+ trapezius trigger point	Positive	Negative	Negative	Negative	Negative	Negative

Continued.

DISCUSSION

In this case, long-standing diabetes mellitus might have contributed to degeneration of rotator cuff tendons and thickening of the joint capsule, compounded by a history of trauma that likely induced glenohumeral joint inflammation. The therapeutic protocol combining *Vatavyadhi* and *Prameha* management with mobilizing exercises and myofascial release was therefore designed to address both systemic and local pathology. The disease was challenging to treat ever since of contrast treatment measures. Therefore, therapies were directed at both *vata* and *kapha* simultaneously to restore the balance of the *doshas*. In this patient, *vata* imbalance caused functional and structural derangements in the shoulder (*amsasandhi*). Hence, *vatavyadhi chikitsa* was adopted, which traditionally includes internal and external *snehana* (oleation) and *swedana* (sudation therapy). In *prameha* patients, excessive use of heat (*swedana*) is contraindicated as it may further deplete body tissues (*dhatu*). For rotator cuff tendinopathy, localized treatment at the tissue level is also essential, usually addressed by *sneha-sweda* in ayurveda. To minimize repeated heat application, myofascial release was integrated, which provided faster pain relief.

Following twenty days of treatment, the patient achieved striking symptomatic and functional recovery. The SPADI pain component dropped from 66% to 12%, disability from 52.5% to 8.75%, and the total SPADI score from 57.69 to 10. The VAS score decreased from 6 to 1. By day 14, combined treatment including *Abhyanga*, *Sarvangadhara*, *Jambira Pinda Sweda*, and myofascial release, pain and disability had already fallen to 28% and 21%, showing steady progression rather than transient relief. Tasks such as reaching a high shelf and removing objects from the back pocket showed the greatest improvement. Goniometric evaluation confirmed substantial gains—flexion improved from 55° to 160°, abduction from 85° to 145°, and internal rotation from 15° to 56°. Positive Neer's and empty-can tests became negative, and trapezius trigger-point tenderness resolved,

signifying structural recovery and neuromuscular re-education.

In the final week, restorative treatments including *Shashtika Pinda Sweda*, *Bruhmana Nasya* (nutritive nasal therapy), and myofascial release further improved pain and disability. The gradual progression from the fourteenth-day scores (SPADI 28%, VAS 2) to near-normal values at discharge illustrates steady tissue remodeling rather than transient relief. Comparable improvements in shoulder pain and motion after fascial and trigger-point therapy have been reported by Pérez-Palomares et al, Bron et al, and Zeng et al, reinforcing the mechanical plausibility of these findings.^{7,12,13} Overall, the patient experienced significant relief after treatment. Factor and Dale emphasized that restoring muscle balance and reducing subacromial compression are central to conservative management of rotator cuff tendinopathy, which aligns with the mechanical correction achieved through fascial manipulation in this case.³

Diabetes has been recognized as an independent risk factor for poor tendon healing and structural disorganization. Xu et al. established that chronic hyperglycemia alters tendon gene expression and vascularity, resulting in slower recovery and increased risk of re-injury.⁴ The gradual but sustained improvement in the present case reflects the advantage of an integrative approach combining metabolic correction (*Pramehahara oushadha*) with mechanical therapy (myofascial release), supporting the need for a multimodal management strategy in diabetic patients.

From the Ayurvedic perspective, *Dhatu Kshaya* and *Shleshaka Kapha* depletion due to *Prameha* lead to *Vata vridhhi* manifesting as *Amsa Sandhigata Vata* with pain (*shoola*), stiffness (*stambha*), and restricted movement (*sankocha*). Formulations such as *Rasnasaptaka Kashaya*, *Yogaraja Guggulu*, and *Nisha Katakadi Kashaya* acted synergistically to alleviate *Vata-Kapha* imbalance while addressing hyperglycemia and tissue degeneration.

Previous studies have shown that *Nisha Katakadi Kashaya* exerts hypoglycemic and antioxidant effects, and *Yogaraja Guggulu* enhances metabolic function and tissue regeneration.¹²⁻¹⁵ These pharmacological properties likely contributed to the overall clinical improvement.

Integration of myofascial release with *Sneha-Sweda* therapy provided local mechanical and circulatory benefits, consistent with the fascial remodeling mechanisms described by Barnes and Ajimsha et al.^{23,24}

By improving fascial glide and reducing muscle tension, these techniques reduced pain and facilitated recovery without the extensive use of heat, which is advantageous in diabetic patients where excessive *Swedana* is contraindicated.

Overall, the outcome supports the combined therapeutic potential of Ayurvedic management and myofascial release in diabetic rotator cuff tendinopathy. Similar to findings from Wilke et al and Stecco et al, who highlighted the biomechanical role of fascia in maintaining joint function, the present case emphasizes that addressing fascial dysfunction along with systemic doshic imbalance yields a faster and more stable recovery.^{25,26}

Scientific rationale for conclusions (including assessment of possible causes)

In *Prameha*, *Kapha dosha* is initially vitiated, with secondary *Vata* aggravation in later stages. This imbalance impairs Medas (adipose tissue), Mamsa (muscle), and Kleda (body fluids), leading to polyuria and further *Vata* aggravation. Unlike conventional medicine, which focuses mainly on lowering blood glucose, Ayurveda views *Prameha* as a systemic disorder extending beyond hyperglycemia. *Nisha-Katakadi Kashayam* is a polyherbal formulation of 12 botanicals, namely *Kataka* (*Strychnos potatorum*), *Khadira* (*Acacia catechu*), *Dhatri* (*Emblia officinalis*), *Vairi* (*Salacia chinensis*), *Darvi* (*Berberis aristata*), *Samanga* (*Mimosa pudica*), *Vidula* (*Salex caprea*), *Rajani* (*Curcuma longa*), *Patha* (*Cissampelos pariera*), *Chuta-bija* (*Mangifera indica*), *Haritaki* (*Terminalia chebula*) and *Mustaka* (*Cyperus rotundus*) most with *Kashaya* (astringent), *tikata* (bitter taste), *rasa*, *laghu* (light), *ruksha* (dry), *guna* (qualities) and, *Vata-Kapha pacifying* properties. These attributes are traditionally considered beneficial in metabolic disorders. Modern studies corroborate its hypoglycemic effects and safety, supporting its therapeutic role in *Prameha*.¹⁴

Degeneration of body tissues (*dhatu kshaya*) leads to *Vata* aggravation, which disrupts *Shleshaka Kapha* (the lubricating factor of joints). This imbalance manifests as pain (*shoola*), stiffness (*stambha*), and restricted joint mobility (*sankocha*). *Yogaraja Guggulu*, a classical Ayurvedic formulation, is described to enhance metabolic activity (*Agni deepana*), improve vitality (*tejas*), and strengthen tissues (*bala*). It is specifically indicated for

Vata disorders affecting joints and bone marrow (*sandhi-majja gata vata*).^{15,16}

Rasnasaptaka Kashaya is indicated in *Trikashoola* and effectively alleviates key symptoms of arthritis, including inflammation, pain, and stiffness. The constituent herbs act synergistically as immunosuppressants and antioxidants, modulating disease processes at the cellular and biomolecular level. Freshly prepared *kashaya* was administered instead of bottled formulations to avoid preservative-induced hepatic burden.¹⁷

The treatment with *Dhanyamla sarvangadhara* effectively reduced the features Joint stiffness, pain, heaviness and swelling.¹⁸

According to Acharya Charaka, *Nasya* therapy acts through absorption at the *Shringataka marma*, from where the medicine influences disorders of the shoulder (*Amsa, skandha*), neck (*Greeva*), and surrounding regions, while also facilitating the expulsion of aggravated doshas from the head region (*Shira pradasha*). It is specifically indicated in *Apabahuka*, a condition resembling the patient's presentation with localized shoulder involvement.¹⁷ *Brimhana Nasya* is considered *Vatahara* and thereby helps in alleviating pain. In addition, *Nasya* therapy provides olfactory stimulation, which in turn may influence the central nervous system by promoting the release of neuropeptides with analgesic action. The *Paka* of the *Taila* used for *Nasya* is *Mridu*, which retains the water-soluble principles along with lipid soluble particles at an optimum level. *Nasya* with a nourishing drug can induce some nourishment to tissues by impregnating *Kapha Bhavas* and may reduce degeneration.¹⁹

Shashtika shali pinda sweda, is considered as *Bruhmana, vatanasnana* and *srotoshodhana*.²⁰ *Karpasasthyadi thaila* is *sarva anilapaham, viseshath apabahum* and here used for *nasya* in *mrudupaka* and *abhyanga* during *shashtika pinda sweda* in *kharapaka*.²⁰ *Mahamashathaila* indicated for, *bahusosha* and *avabahuka* mentioned especially in *vatavyadhi adhikara* of *bhaishajyaratnavali*.²¹

Among the myofascial release technique employed, subscapularis direct myofascial release produce sustained pressure and shear loading soften the ground substance of fascia, reduce densification, and improve extensibility of the subscapularis fascia and associated myotendinous units. This might have resulted in Improving internal rotation mobility, reduced mechanical tension on the inflamed subscapularis tendon, and facilitated localized circulation and lymphatic drainage.^{22,23}

Supraspinatus cross-fiber MFR does cross-fiber friction disrupts adhesions in the collagenous matrix and aligns collagen fibers along the line of stress, enhancing repair of tendinosis. Reduces stiffness in the supraspinatus belly and tendon, enhances collagen remodeling, and reduces pain during abduction.²⁴

With the anterior shoulder fascial unwinding, gentle fascial stretch releases tension in the rotator interval and anterior glenohumeral capsule by engaging the elastic component of fascia. Relieves compression over joint capsule and biceps tendon sheath; promotes decompression and reduces effusion-related irritation.²⁵

Scapulothoracic fascial mobilization does mobilization of fascial interfaces around the scapula reduces restrictions in scapulothoracic glide, improving scapular rhythm which results in unloading of rotator cuff tendons and improved dynamic shoulder stability.²⁶

Pectoralis major/minor myofascial release reduces fascial shortening and myofascial trigger points in anterior chain, improving postural alignment and relieving anterior capsular pressure which enhances subacromial space, reduces anterior translation of humeral head, and decompresses rotator cuff.²⁷

Strengths

The availability of safe internal medications for *Prameha*, along with the integration of myofascial release into traditional Ayurvedic therapies (*Sneha-Sweda*), was a key strength. The preventive and restorative potential of *Nasya* and *Shashtika Pinda Sweda* added therapeutic value.

Limitations

The coexistence of multiple pathologies made it difficult to fully understand the disease mechanism and standardize treatment. Post-treatment MRI could not be performed to confirm structural changes. Since this was a comprehensive multimodal approach, the individual contribution of each therapy to the final outcome could not be distinguished.

CONCLUSION

The combination of vathavyadhi treatment and myofascial release has provided the reduction in pain and restricted movements which was measured using goniometer, SPADI index and VAS score. There is reduction in SPADI score and VAS score along with marked improvement in ROM of joint with the treatment. It is effective as there are minimal chances for adverse reactions. The findings in this single case study have given strong hope for management of Rotator cuff tendinopathy in diabetic patients through *pramehahara oushadha*, *vathavyadhi chikitsa* and myofascial release. It was noted that combining myofascial release with traditional sneha sweda therapy can give better results with minimizing the need of sweda like hot treatments in diabetic patients offering a lesser duration hospital stay. Randomized controlled clinical trials with large sample size are needed to substantiate the results. Outcomes of myofascial release depend on clinician skill, tissue sensitivity, and patient-clinician interaction, making objectivity challenging. Observational

follow-up studies are also essential to investigate the long-term effects of such a fusion treatment.

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