

MANAGEMENT OF ACUTE TRAUMATIC INJURY WITH AYURVEDIC MEDICINES- A CASE STUDY ON ACUTE ROTATOR CUFF INJURY

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ABSTRACT

PURPOSE

Rotator cuff tear (RCT) is the most prevalent shoulder disorder, with asymptomatic RCT occurring in 20-25% of the general population and symptomatic tears affecting 30-40% of individuals over 60. Causes include injury, aging, degeneration, and reduced blood flow, leading to clinical features such as shoulder pain and restricted movement. In Ayurveda, RCT aligns with the concepts of vatavyadhi, apabahuka, and amsa marmabhighata, involving doshas like vata, pitha, raktha (acute stage), and kapha (later stage). Ayurvedic treatment consists of Samanam (curative) and Sodhana (purificatory) approaches, combining internal and external medications with strengthening exercises, yielding satisfactory outcomes particularly for mild to moderate tears. This case study details the successful Ayurvedic management of a 63-year-old female with a right rotator cuff injury from a fall, treated at Arya Vaidya Sala Salyatantra Vibhagam.

METHODS

Assessments were conducted on multiple days (Day 1, 7, 14, 17-21, 31, 62, 90) utilizing special tests (Drop Arm, Lag Sign, Lift-Off, Empty Can) to evaluate signs and symptoms. Tailored Ayurvedic interventions included internal and external medicines, focusing on pain (VAS) and range of motion (ROM).

RESULTS

Significant improvements were observed: range of motion increased from 30° to 160° in goniometer measurement, and pain reduced from VAS score of 8 to 0-2 post-agnikarmam. Follow-up assessments every 15 days confirmed ongoing progress, leading to full Range Of Movments and minimal pain at 90 days.

CONCLUSION

This case report underscores the effectiveness of conservative Ayurvedic management in treating rotator cuff injuries, indicating a need for further studies to evaluate long-term outcomes.

INTRODUCTION

Rotator cuff is a coined term for group of four muscle together they deliver the various movements of the upper limb on shoulder joint and also provide the stability to the glenohumeral joint. It consists supraspinatus, infraspinatus, teres minor and subscapularis muscles. Apart from the stabilization of glenohumeral joint supraspinatus initiates the abduction, infraspinatus helps in external rotation, teres minor helps in external rotation and adduction, and subscapularis helps in internal rotation of arm. Rotator cuff injuries refer to tears or damage to this group of muscles.

Acute rotator cuff tear is affected commonly in middle aged people with trauma, with prevalence increasing with age and activity level. Asymptomatic rotator cuff tears affect about 20-25% of individuals over 60, while symptomatic tears occur in 30-40% of those aged 60 and older, surpassing 50% in individuals over 80. Rotator cuff (RC) tears increase with age. Yamaguchi et al. found 33.8% of unilateral and 30.1% of bilateral RC tears in study

participants averaging 58.7 and 67.8 years old. Asymptomatic individuals have a 17.3% prevalence, rising to 20% for ages 60-69 and 40.7% for those over 70¹. A systematic review showed RC abnormalities range from 9.7% in those under 20 to 62% for those 80 and older². Up to 39% of asymptomatic and 64% of symptomatic individuals may have RC tears, indicating these injuries are common in aging³.

Excruciating pain and inability to move the affected limb will be the initial presenting complaints. The mechanism of the fall is generally falling on an outstretched arm. The current available treatment modalities in rotator cuff injuries include the initially protection to the limb, rest, icing and compression bandages with arm sling support. After proper investigation for assessing the severity through MRI, either surgical correction of the ruptured muscles and post operative rehabilitation methods for strengthening and bringing the range of movements are done. Utility of Ayurvedic medicines in each stage after injury varies depending up on the symptoms. The usual outcomes depend up on

the severity of tear, age of the patient, association of comorbidities like diabetes mellitus, patients' observances in physical therapies. Usually, the tear happens around to the insertion of these muscles.

*Amsa sandhi*⁴ is the ayurvedic terminology for shoulder joint it is an *ulookhala sandhi*⁵, *cheshtavantha sandhi*⁶. This is also related to *amsa marma*⁷. The injury to the rotator cuff can be understood for the purpose of management aspect as 1. *Abhighatam*⁸ (injury), 2. *Sandhi-asthi-snayu vidha Avastha*⁹, (specified symptoms of injury happened to *marma* of *mamsa* - muscles, *asthi*- bones, *snayu*- soft-tissues especially ligaments). 3. *Marmabhighata*¹⁰ to *amsa marma*, *amsa phalaka marma*¹¹ (injury to the vital point related to *amsa marma*) 4- *apabahuka vatavyadhi*¹². (a particular *vatadosha* predominated disease affecting the shoulder joint. The treatment strategies which covering all these principles found much efficient in managing the rotator cuff injuries. This case study highlights the successful management of a rotator cuff tear using Ayurvedic principles and medicines

Case description

A 63-year-old lady consulted the Salyatantra Vibhagam outpatient department at Arya Vaidya Sala Kottakkal, Kerala with complaint of severe pain with restricted movement of her right arm for two days with an alleged history of fall on outstretched right hand. She expressed the pain as severe and agonizing, with reddish discoloration in her right shoulder joint. Then an X-ray was advised and found with no bony injury.

Patient Background

- **Name:** Ms. Sujatha
- **Age:** 63
- **Occupation:** Retired teacher
- **Chief Complaint:** severe pain with restricted movement of her right arm for two days with an alleged history of fall on outstretched right hand. She expressed the pain as severe and agonizing, with reddish discoloration in her right shoulder joint.

Diagnosis: supraspinatus tendon full thickness tear with retraction of 9 mm - infraspinatus - tear of superior fiber with mild retraction, mild joint effusion, no obvious labral tear noted, subscapularis - shows mild tendinosis.

Past history

The patient does not have diabetes mellitus, hypertension or any other comorbidities. There is no family history of Musculo-skeletal illness. The patient was on mixed diet.

Ayurvedic Assessment

The patient's condition was analysed through Ayurvedic diagnostic methods:

- **Prakriti:** *Vata-Pitta* dominant
- **Symptoms:** Pain (*Shoola*), stiffness (*Stambha*), and weakness (*Daurbalya*) aligned with *Vata* vitiation.
- **Cause:** Acute fall leading to localized imbalance of *Vata*, *raktha* dosha and impaired *Rasa* (fluid) circulation in the shoulder joint. In subsequent days the *pitha* and *kapha dushta* symptoms were also noticed

Physical examination:

Weight: 68 kg, height: 158cm BMI: 27.24 kg/m² blood pressure: 130/80mm Hg. No pallor, icterus, cynosis, and clubbing. Edema noticed on her right arm around shoulder joint. Cardiovascular system (CVS): normal, respiratory system (RS): clear, no added sound; central nervous system (CNS): consciousness, attention, orientation, memory and speech are normal. Reflexed in both upper limb and lower limb were in normal level and muscle power was elicited 5/5 in all limbs, except on right arm where 1/5 in the right upper limb, 5/5 in left upper limb, 5/5 in both lower limbs, Prakriti: *vata* pradhana *kaphaja* shoulder joint examination: left side is normal and right side was as described below. Swelling: present. Tenderness: present. The lift-off test¹³ (patient was asked to lift hand off her lower back), drop arm test¹⁴ (try to raise the arm overhead and lower with out assistance), empty can test¹⁵ (extend the affected arm and turn the hand downward like emptying a glass), and lag sign¹⁶ (flex at elbow at 90° apply pressure inward and try to resist) were positive. Range of movements-fully restricted. The hand was held flexed at elbow and supported by the other hand. VAS score for pain was 8.

Investigations

Both hematological and biochemical investigations carried out were found within the physiological limit. X ray taken was found normal with no bony irregularities.

MRI (19/12/2023): supraspinatus tendon full thickness tear with retraction of 9 mm - infraspinatus - tear of superior fiber with mild retraction, mild joint effusion, no obvious labral tear noted, subscapularis - shows mild tendinosis.

Treatment Plan

The treatment approach focused on pacifying *Vata*, *raktha* to reducing inflammation, and promoting tissue healing through internal medicines, external therapies, and lifestyle changes. The line of treatment used here were initially *abhighatha*, *sopha*, *vrana* principles like *lepanam*¹⁷ (paste applications), *bandhanam*¹⁸ (bandages), *nassya*¹⁹ (nasal instillation of medicine), *vrana ropana* medicines, *brumhana* (nourishing) medications²⁰.

Internal medicines:

1. *Punarnavadi Kashayam*²¹: Alleviate edema, it helps in reduction of inflammation, it pacifies the *tridosha* especially *pitha* predominant, it acts as *vata anulomaka* (pacifies *vata dosha*)
2. *Rasnairandadi kashayam*²²: *Rasnairandadi kashayam* is *vata rakta rujapaham*, it pacifies pain and swelling associated with *vata*, *raktha* which are affected at *jangha*(calves), *uru*(thighs), *trika*(joints of three parts- Hip, SI joints + LS Spine and neck region along with both shoulder), *prishta* (the back), *parswa*(flanks), *hanu*(temporo-mandibular joints)
3. *Prasaranyadi kashayam*²³: it alleviates *vata* especially in case affecting the shoulder mobility (*apabahuka*) *bumhana* (nourishing the tissue) in action.
4. *Mustadi marma kashayam*²⁴: traumatic conditions, soft tissue injuries, fracture, dislocations, chronic injury related conditions, it help in promoting the healing after injury.
5. *Vatagajankusa rasam*²⁵: the medicine act as *Vedana samana* (reduces the pain) *vata samanam*, *vata anulomanam* (pacifies *vata dosha*), *rakta prasadakam*(pacifies the *raktha* vitiation affected), *brumhanam* (nourishing the tissue), *rasayana* (rejuvenation), in action.
6. *Gandha thailam*²⁶: medicine acts in traumatic conditions, soft tissue injuries, fracture, dislocations, chronic injury related conditions, (*sandhanakaraka*) it help in promoting the healing after injury. It acts as *rasayanam* (rejuvenative)
7. *Valiyamarma gulika*²⁷: *marmabhighatam* (acts in injury to *marma*, protects the *marma*), *kshataghnam* (it reduces the effects of injury), *abhighata rujapaham* (reduces the pain), *sopha haram* (helps in reduction of swelling/edema), *sandhaneeya* (helps in union of the fracture/injury of soft tissue/dislocation), *raktam*, *mamsa prasadhaka* (pacify the vitiation of blood and muscle /soft tissue), *darddyakrit* (improves strength), *ropana guna* (healing), *vatapitha prasamana* (alleviates *vata pitha dosha*).

External medicines

1. *Madhukadi lepanam*²⁸: *vataha pitha samanam* (alleviates *vata* and *pitha dosha*), *raktha mamsa prasadanam*(purifies *raktha* and *mamsa* vitiation) *seetah veerya* (cold in potency)-*sopha*ghnam (anti-inflammatory, reduces the edema, balances the hematoma formation). *Ruja haram* (reduces the pain)
2. *Satadhouta ghritham*²⁹:*vataha pitha samanam* (alleviates *vata* and *pitha dosha*), *raktha pitha prasadanam*(purifies *raktha* and *pitha* vitiation) *seetah veerya* (cold in potency)-
3. *Murivenna*³⁰: *sandhanaka* (promotes the healing of the injury), *vata*, *pitha samana* (alleviates *vata* and *pitha dosha*). This oil is acts in reduction of acute injury followed by fall, assault, burn, dislocation, fracture etc.
4. *Parinathakeri ksheeradi thailam*³¹: This oil used for alleviating the pain, healing the injury, for reduction of the inflammation, this also helps in pain associated with shoulder and upper back injuries.
5. *Karpasasthyadi thailam*³²: *vata kapha samanam* in nature. Action defines the diseases afflicted by *Vata* in *snayu*, *sandhi*, *asthi*, (ligaments, joints, bone) etc. *brumhana* (nourishing the tissue), improves the mobility, strength of the affected areas
6. *Nagaradi churnam*³³: basically, acts in injury, injury related inflammation, edema, stiffness. It reduces the pain. It

improves the stiffness. Usually, the powder is mixed along with rice bran water and cooked make a homogenous mixture and applied on affected region.

7. Panchagandha churnam³⁴ *vata pitha samanam* (alleviates *vata* and *pitha dosha*), *mamsa raktha prasadanam*, *pitha- raktha- mamsa prasadanam* (purifies *pitha dosha - raktha* and *mamsa dhathu gatha* vitiation), *sthambhana*- it helps in reduction of inflammation, *seetah veerya* (cold in potency), *soolasopha haram*- pacifies the pain and edema. The *panchagandha churnam* applied along with rose water - which enhances the action of the churnam with its *sukhma*- (penetrative, minuteness in action)
8. *Tilamashadi churnam*³⁵: this powder contains medicines which are *vata hara* (reduces the *vata*), *brumhana* (nourishing the tissue), improves the *abhighata* (injury). This powder is made in to a semi solid consistency by cooking with *ksheera* (milk) then it used as a poultice for fomenting the area. This fomentation will help in improving the circulation to the area. This reduces the *Vata* associated with *kapha*.

External mode of application used

1. *Bandhanam*¹⁸ (bandage)- *swasthika bandhanam* (figure of 'eight')- on *sandhi* this bandage technique were advised. With *utsangi bandha* (sling)- provide *sthairaya* and *bala* compactness strength.
2. *Pichu*³⁶ (application of oil dipped cotton/ cloth piece for a period of time)
3. *Agnikarmam*³⁷ (therapeutic Branting)- on the sites where muscles spasms were noted
4. *Abhyangam*³⁸ (external oil application with gentle massaging):
5. *Lepanam*³⁸ (application of medicine in a paste form either after heating or without heating)
6. *Upanaham*³⁹ (poultice bandages for fomentation- a type of fomentation modes)

Diet and Lifestyle Recommendations

1. **Diet:** *Vata*-pacifying diet, including warm, easily digestible foods, ghee, and herbs like ginger and turmeric.
2. **Lifestyle:** Avoidance of cold exposure, heavy lifting, and excessive overhead activities. Gentle yoga and specific exercises were incorporated to strengthen the rotator cuff muscles in the later periods.

Samprapthi ghataka (factors of pathogenesis as per Ayurveda)

1. **Dosha:** *Vyana vata*, *Sleshaka kapha*, *pitha* (occasionally)
2. **Dooshya:** *Rasa*, *Raktha*, *Mamsa*, *Sira*, *snayu*, *kandara*, *Asthi*
3. **Srotas-** *Mamsavaha*, *Asthivaha*;
4. **Srotodushti:** *Srotoabhighatam*, *Sanga*, *Vimargagamana*.
5. **Marga:** *Madhyama*;
6. **UdbhavaSthana:** *Pakwasaya*, *Abhighata*- *Amsasandhi*;
7. **Vyaktasthana-** *amsa Pradesha*.
8. **Vyadhi swabhava-** *Asukari*.

Progress and Outcome:

Table 1. Assessment of the rotator cuff injury and stage wise improvement

Day	VAS- PERCENTAGE	Flexion	Extension	Abduction
1	8- 100%	0	0	0
7	6-25%	0	0	0
14	5-37.5%	20%	20%	20%
21	7-12.5%	20%	37.5%	16.7%
32	4-50%	28.6%	75%	25%
62	3-4- 68.75%	64.3%	78%	75%
90	2-3-68.75%	96%	94%	97%

Improvement Analysis and Summary (ROM and Pain Only):

1. (VAS Score): -68.75% reduction in pain from Day 1 to Day 90.
2. Flexion: 96% improvement by Day 90.
3. Extension: 94% improvement by Day 62, maintained through Day 90.
4. Abduction: 97% improvement by Day 90.

Table no 2: detailed evaluation of the pain (VAS score) range of movements (ROM) and functional assessments

Day wise changes	Assessment criteria	Results

Based on all these factors, a two-pronged approach based on the severity and nature of the injury. Initially, management strategies focused on addressing *Abhighata* (injury/assault), *Sadyovrana* (acute injury), *Bhagna* (fracture), and *Sandhivishlesha* (dislocation). This phase involved the application of *Seethopachara*^{40,41} (cold application) and immobilization, complemented by internal medicines to reduce the initial vitiation of *Vata*, *Pitta dosha*, and *Raktha Dhathu* (blood).

As the condition progressed, it was observed that *Vata* and *Kapha* were aggravated, necessitating a shift in management strategies. For this stage, *Lepana* (paste application) and additional internal medicines were employed. Notably, stiffness and muscle spasms were managed with a single session of *Agnikarma*, utilizing a *Panchloha Salaka* (alloy metal instrument for therapeutic branding). Following this procedure, *Satadhouta Ghrita* was applied, leading to wound healing within seven days.

Throughout the treatment, occasional aggravations of *Pithadhikya* (inflammation) were monitored and managed with adjustments in the medicinal regimen. The initial phase aimed at *Kshatoshma Nigrahanam*⁴¹ (reduction of temperature elevation caused by *Vata* and *Raktha*) was addressed with *Madhuka Manjishta Rakta Chandana Satadhouta Ghrita Lepam*⁴⁰ and *Bandhanam* (bandage) using *Murivenna*. This phase extended for approximately 21 days, during which the patient received internal medicines with *Seetha* (cold) and *Ushna* (hot) potencies, along with *Raktha Prasadanam* (managing blood vitiation) and *Vatasamana Dravyas* (*Vata* mitigating substances).

During the initial days, *Lepana* consisted of *Madhuka Manjishta Rakta Chandana* combined with *Satadhouta Ghrita*, with *Murivenna Pichu* (cloth dipped in *Murivenna*) applied to the shoulder joint. The *Bandhana* procedure employed was *Swasthika Bandhana* (figure of 'eight') to stabilize the joint.

As treatment progressed, the focus shifted to managing the aggravation of *Vata* and *Kapha*. The paste application was modified to *Nagaradi Choornam* mixed with rice bran water, which possesses *Abhighata Dosha Samana* (effects on injury-induced *dosha* imbalance) properties. Internal medicines were adjusted to include *Prasaranyadi Kashayam* and *Mustadi Marma Kashayam*, alongside *Gandha Thailam* and *Valiyamarma Gulika*, considering the nature of the tear.

Intermittent *Pithadhikya* (inflammation around the joint and bursa) was treated with *Panchagandha Churnam Lepanam* mixed with rose water. Additionally, *Pratimarsa Nasya* with *Gandha Thailam* was introduced to promote healing. Active non-weight-bearing movements, including swinging motions of the affected shoulder, were encouraged.

For pain relief, alongside *Murivenna*, *Parinatakeri Ksheeradi Thailam* and *Karpasasthyadi Thailam* were used for *Lepanam*. Assessments were conducted every seventh day using the Visual Analog Scale (VAS) for pain and range of motion (ROM) evaluations with a goniometer. Functional tests, including the Drop Arm Test, Empty Can Test, and Lift-Off Sign, were also performed to monitor recovery progress.

Day 1	VAS SCORE: 8 ROM: - 0° (Flexion, extension, abduction) Drop arm test - +ve Lag sign-+ve Lift arm test-+ve Empty can test -+ve	Pain reduction - VAS score reduced 8-6 after lepanam and bandhanam
Day 7	VAS SCORE- 6 ROM- flexion, extension, abduction - not possible Drop arm test - +ve Lag sign-+ve Lift arm test-+ve Empty can test -+ve	Total severity of pain was reduced Edema around the shoulder joint - reduced
Day 14	VAS SCORE-5 ROM-0-20° with pain (flexion 20° extension-10°, abduction 20°) Drop arm test - +ve Lag sign-+ve Lift arm test-+ve Empty can test -+ve	Reduction in VAS score ROM - improving
Day17- 21	VAS score - 7 ROM-0-20° with pain (flexion 20° extension-15°, more than abduction 20°) Drop arm test - +ve Lag sign-+ve Lift arm test-+ve Empty can test -+ve ROM-0-20° with pain	VAS score increased ROM - not changed Inflammation of the muscle fibers with respect to the load imbalance increases the strain, the sub acromial bursa and sub deltoid bursa were inflamed.
Day 31	VAS score -4 ROM-0-40° (flexion 40° extension-30° more than abduction 30°) with pain patient was able to lift the hand much higher with help of the other hand Drop arm test - +ve improved strength noticed Lag sign - +ve improved strength noticed Lift arm test - +ve improved strength noticed Empty can test - +ve - improved strength noticed	As the inflammation substantially reduced the VAS score also reduced As the strength in other muscles gained the mobility were also improved.
Day 62	VAS SCORE -3-4 occasionally reaching up to 6 more often in the early morning and during sleep. After the exercises ROM (flexion 90° extension-40°, abduction 90°) Drop arm test - -ve improved strength noticed Lag sign - -ve improved strength noticed Lift arm test - +ve improved strength noticed Empty can test - -ve - improved strength noticed	Occasional pain aggravations were causing the VAS SCORE to elevate. The ongoing inflammations were reduced by medicines given. patient was able to lift the hand much higher without the help of other hand with strain
Day 90	VAS SCORE rated 0-2 with full Range of movements almost achieved ROM (flexion 175° extension-50°, more than abduction 160°) Drop arm test - -ve Lag sign - -ve Lift arm test - -ve Empty can test - -ve -	The muscles strength intended were achieved with minimal scapulo-humeral movements.

DISCUSSION

In the management of rotator cuff injuries, an Ayurvedic approach rooted in classical concepts can provide a structured understanding of pathology and targeted treatment strategies. This case was interpreted through the lens of multiple Ayurvedic frameworks including *Sadyovrana* (acute traumatic wound), *Abhighātaja Śopha* (traumatic swelling), *Marmabhighāta* (injury involving vital anatomical structures), *samānya sandhimukta lakṣhaṇa* (joint dislocation), and the long-term manifestation as *Apabahuka* (a type of Vātavyādhī).

Phase 1: acute stage (day 1-14)

Initially, the patient presented with severe pain (VAS 8), inflammation, and restricted ROM with positive special tests. This stage was treated as *Sadyovrana avastha*⁴², where immediate therapeutic goals were *Vedana śamana* (pain alleviation) and *Kṣatōśma nigrahanam*⁴¹ (management of inflammatory heat). Management involved *Seetopachara* (cold application), *Bandhana* (immobilization), and *Pichu* with *Murivenna*, addressing local inflammation and trauma.

Swasthika Bandhana (figure-of-eight bandaging) with *Utsangi Bandha* (sling) was used to stabilize the shoulder joint and

maintain proper alignment. External applications such as *Madhukadi Lepam* and *Satadhouta Ghritham* were used for their *Vata-Pitta samana*, *sophaghna*, and *twak-mamsa rakta prasādana* actions. Internally, medicines like *Punarnavadi Kashayam*, *Rasnairandadi Kashayam*, *Valiyamarma Gulika*, *Gandha Thailam*, and *Vatagajankusa Rasam* addressed the *Vata-Rakta* imbalance and promoted wound healing and tissue regeneration.

By Day 7, pain decreased (VAS 6), though ROM remained limited. By Day 14, inflammatory signs reduced, but increasing *Sthambha* and *Kapha* involvement indicated a *Vata-Kapha dushti*, prompting a change in both internal and external regimens.

Phase II: subacute to transition phase (Day14-31)

During this stage, stiffness and heaviness suggested the onset of *Kapha anubandha*, and treatments were shifted accordingly. *Nagaradi Churnam* with warm rice bran water was used for *Ushna-Snigdha Lepana*, promoting circulation and reducing *Kapha-Vata dushti*.

Internal medicines were modified to include *Prasaranyadi Kashayam* and *Mustadi Marma Kashayam*, which are indicated in conditions involving joint pain and *marma* injury. Continued use of *Gandha Thailam* and *Valiyamarma Gulika* supported tissue

healing, especially in *Snāyu* (ligament), *Sandhi* (joint), and *Asthi* (bone) structures.

From Day 17, the patient experienced transient worsening of pain due to *Samavastha* (pathological accumulation) in deeper tissues caused by *Srotorodha* (obstruction in body channels). This was effectively managed with *Agnikarma* at trigger points using *Panchaloha Salāka*, followed by application of *Satadhouta Ghritham*. Pain relief and improved ROM followed immediately after this intervention.

The inflammatory response (*Pittadhikeya*) was later addressed using *Panchagandha Churnam* mixed with rose water, a *Vata-Pitta samana* formulation. The addition of *Pratimarsha Nasya* with *Gandha Thailam* supported muscle repair and helped reduce stiffness. Active non-weight-bearing mobilization, including shoulder pendulum exercises, was introduced to prevent secondary adhesive capsulitis and enhance circulation.

Phase III: Recovery and strengthening Phase (Day 31-90)

By Day 31, the condition evolved into a more *Vata*-predominant chronic stage. Alternating applications of *Tilamashadi Churnam Upanaha* (warm poultice) and *Nagaradi Churnam* were employed for deep tissue nourishment and pain relief. Oils like *Karpasasthyadi Thailam*, *Parinathakeri Ksheeradi Thailam*, and *Murivenna* were used in *Abhyanga* to strengthen ligaments and muscle tissue.

Functional improvements were noted progressively. By Day 62, ROM improved (flexion 90°, abduction 90°, extension 40°), with VAS pain scores consistently ranging between 3-4. Shoulder elevation became independent with minor strain. Functional tests such as Drop Arm Test, Empty Can Test, and Lift-Off Sign showed gradual improvement.

By Day 90, shoulder strength and ROM had nearly normalized—flexion 175°, extension 50°, abduction 160°—with VAS score between 2-3 and no scapulohumeral compensation. All special tests turned negative, indicating full recovery of the rotator cuff function.

CONCLUSION

Rotator cuff injuries are frequently encountered in orthopedic practice and are often referred for surgical intervention, especially in cases of extensive tears or when functional demands are high. However, this case highlights that Ayurvedic management, when implemented systematically with regular follow-up, can offer significant functional recovery and pain relief, even in non-surgically managed cases. The integration of internal and external Ayurvedic therapies, along with supportive physiotherapy and necessary occupational modifications, plays a crucial role in rehabilitation. This underscores the potential of *Ayurveda* as a viable conservative treatment modality in selected cases of rotator cuff injuries.

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