

## Chronic rotator cuff injury in an elderly patient - full functional recovery through conservative Ayurvedic management - A Case Report

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### ABSTRACT:

Rotator cuff injury is one of the most frequently seen orthopedic conditions. The two main causes of rotator cuff injury are trauma and degeneration. A 70 year old male patient visited *Shalyatantra* Outpatient division of Government Ayurveda college Tripunithura Ernakulam Kerala India on 09-10-2022 with right shoulder pain and restricted shoulder movements with a history of fall two months back. In MRI, the case was diagnosed as rotator cuff tear and bicipital tendinopathy of the right shoulder joint. On examination of right shoulder joint, all shoulder movements were restricted due to pain. Hawkin's impingement test, Neer's test, Empty can test, Belly press test were found to be positive. He underwent a treatment protocol of *Bhagna* followed by *Vatavyadhi Chikitsa*. Ayurvedic preparations like *Maharasnadi kashayam*, *Amruthotharam kashayam*, *Kaisora guggulu*, *Dasamoolahareethaki lehyam*, *Lakshadi guggulu*, *Gandha thailam* were given internally. *Abhyanga*, *Dhanyamladhara*, *Thailadhara*, *Pathrapottali sweda*, *Shashtika pinda sweda* along with active shoulder exercises were the treatments followed in this case. After treatment patient got full range of motion for the right shoulder joint. This case study highlighted that in less than six weeks the chronic rotator cuff injury got complete functional restoration of the shoulder joint by conservative ayurvedic management only.

**KEYWORDS:** *Ayurveda*, *Bhagna Chikitsa*, Chronic rotator cuff injury, *Vatavyadhi Chikitsa*.

Received: 23.02.2023 Revised: 09.03.2023 Accepted: 12.03.2023 Published: 20.03.2023

### Quick Response code



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### INTRODUCTION:

The rotator cuff is a group of muscles in the shoulder joint that allows a wide range of movement by maintaining the stability of the glenohumeral joint. The rotator cuff includes the muscles supraspinatus, infraspinatus, teres minor, and subscapularis. A rotator cuff tear is an injury where one or more tendons or muscles of the shoulder get torn.

Tear can happen in the rotator cuff due to a number of factors like trauma and degeneration due to aging. Fall on an outstretched hand is a common traumatic cause of rotator cuff injury. Partial thickness tear occurs within the tendon and does not communicate with the subacromial bursa. When a tendon is completely detached from the greater tuberosity of the humerus it is

referred to as full thickness complete tear in which surgical management is needed.

Rotator cuff tear due to trauma can be correlated with *Amsasandhi vislishtam* and *Amsa marma abhigata*. In acute partial rotator cuff tear, immobilization of the shoulder joint with *Swasthika bandha* (shoulder bandage) and *Utsangi bandha* (arm sling) relieves pain, promotes healing and thus improves functional mobility. In chronic stage of rotator cuff injury, functional mobility and muscle strength can be achieved by the Ayurvedic treatment protocol of *Bhagna* followed by *Vatavyadhi Chikitsa*.<sup>[2]</sup> In this case, study 70 year old male patient with chronic rotator cuff injury is managed conservatively following the *bhagna* and *vata vyadhi chikitsa* protocol and got complete functional restoration of the affected shoulder joint in less than six weeks. This case study highlighted the beneficial effect of *bhagna* and *vata vyadhi chikitsa* protocol in chronic rotator cuff injury.

#### CASE HISTORY:

A 70 year old male patient presented to *Shalyatantra* outpatient division of Government Ayurveda College Tripunithura, Ernakulam, Kerala, India on 09 /10/2022 with right shoulder pain and restricted shoulder movements. He had a previous history of falls on his right shoulder in 2019. He was unable to lift and lower the arm. At that time he took a Magnetic Resonance Image (MRI) of the right shoulder and found that there is a complete tear of the supraspinatus the of right rotator cuff. He underwent ayurvedic treatment and got complete relief.

Two months back he had another history of fall with an outstretched hand. He consulted an allopathic physician and they advised for MRI Scan of the right shoulder joint. Through MRI the injury was diagnosed as rotator cuff tear and bicipital tendinopathy of the right shoulder joint and suggested surgical management. As he was not willing to do

surgery he took only calcium and vitamin D3 supplements 500mg twice daily. But he felt severe pain and difficulty performing his daily activities. So he preferred ayurvedic management for his ailment and underwent in patient (IP) management in this hospital. According to his personal history, he had a good appetite, with a mixed diet. Micturition and bowel habits were regular. There was no history of addiction and allergies.

On general examination, the patient was moderately built with a body weight of 58 kg and of height of 162 cm. The patient's vitals were normal. No abnormal clinical findings were found in the cardiovascular system, central nervous system, respiratory system and gastro intestinal system. The *Prakriti* of patient was assessed as *Vata Kapha*.

Local examination of right shoulder joint was done (Table 1)

Inspection and palpation of the left shoulder joint: No abnormalities were detected

Range of motion of left shoulder joint: All movements were possible.

#### MRI impression (23/03/2019)

Type III acromion with a spur in the lateral aspect causing impingement of supraspinatus tendon. There is full thickness complete supraspinatus tear with the refraction of the musculotendinous junction for a length of 1.3 cm from insertion with moderate joint effusion

#### MRI impression (01/09/2022)

Discontinuity of bursal fibers of the supraspinatus and infraspinatus tendon of humeral attachment. A~10 mm intratendinous ganglion cyst is seen in the infraspinatus tendon. Focal irregularity of glenoid articular cartilage is seen in the antero anterior superior quadrant, subchondral cysts are also seen in the antero anterior superior aspect of the glenoid. There is significant peritendinous peri tendinous fluid surrounding the bicipital tendon. The bicipital tendon is thinned. The

acromion process is the type I. The acromion humeral distance is ~5.2 mm.

From clinical examination and MRI report, the case was diagnosed as a rotator cuff injury on the right shoulder joint

#### THERAPEUTIC INTERVENTION:

Conservative ayurvedic treatment protocol of *Bhagna* and *Vatavyadhi* was done (Table 2).

**Table 1: Local examination of right shoulder joint - 09/10/2022**

Inspection	Palpation	Range of movements	Special tests
Wasting of muscle present at the scapular region	1. Tenderness - Grade 3 at the site of the bicipital groove 2. Crepitus - grating sensation	1. Flexion - 40° painful 2. Extension - restricted due to pain 3. Adduction - possible without pain 4. Abduction - 40° painful on active, 180° painful on passive	1. Painful arc - + at 40° 2. Hawkin's impingement test - + 3. Neer's test - + 4. Empty can test - + 5. Belly press test - +

(+ : Test is positive / - : Test is negative)

**Table 2: Therapeutic interventions**

Date	Interventions
10/10/2022 - 18 /11/2022	Internal Medicines 1. <i>Maharasnadi kashayam</i> + <i>Amruthotharam kashayam</i> (90 ml bd before food) 2. <i>Kaisora guggulu</i> 2-0-2 after food 3. <i>Dasamoolahareethaki lehyam</i> 15 gm bed time after food 4. <i>Lakshadi guggulu</i> 1-0-1 after food 5. <i>Gandha thailam</i> 8 drops with milk
10/10/2022 -18 /11/2022	1. <i>Pratimarsa nasyam</i> with <i>Dhanwantharam Thailam</i> 21 A (2 drops ) bd 6 am, 6 pm
10/10/2022 - 13/10/2022	2. <i>Pichu</i> on right shoulder joint with <i>Murivenna Thailam</i> At 11 am
10/10/22 - 19/10/22	3. <i>Lepam</i> of <i>Kottamchukkadi Choornam</i> on right shoulder joint at 4 pm
10/10/2022 - 14/10 /2022	4. Local <i>abhyanga</i> and <i>Sweda</i> (infra-red radiation) with <i>Murivenna Thailam</i> and <i>Karpooradi Thailam</i>
15/10/2022 - 21/10/2022	5. <i>Dhanyamladhara</i>
24 /10/2022 -28/10 /2022	6. Local <i>Thailadhara</i> with <i>Murivenna Thailam</i>
30/10/2022 -11/10/2022	7. Local <i>Pathrapottalisweda</i> with <i>Murivenna Thailam</i>
30/10/2022 -18/11/2022	8. Active exercises for shoulder joint( done twice daily morning and evening) 1. Active resisted extension 2. Active resisted external rotation

	3. Active resisted internal rotation 4. Scaption with external rotation
12/11/2022 -18/11/2022	8. <i>Shashtika pinda sweda</i> with <i>Murivenna Thailam</i> and <i>Dhanwantharam Thailam</i>

Table 3: Improvement in clinical findings

Range of movements of the shoulder joint	10/10/2022	30/10/2022	18/11/2022
Flexion	40° (painful)	100° (painful )	180° (no pain)
Extension	Restricted due to pain	Pain decreased	No pain in movement
Adduction	Possible without pain	Possible without pain	Possible without pain
Abduction	40° painful on active movement 180° painful on passive movement	100° (painful on active movement ) 180° (painful on passive movement )	180° (active possible) 180° (passive possible )
Painful arc	+ve( at 40° )	+ ve(at 100° )	-ve
Hawkin's impingement test	+ve	+ve	-ve
Neer 's test	+ve	+ve	-ve
Empty can test	+ve	+ve	-ve
Belly press test	+ve	-ve	-ve

+: Test is positive, - : Test is negative

### RESULT:

After the treatment, the patient got full range of motion for the right shoulder joint. Hawkin's impingement test, Neer's test, Empty can test, Belly press test in right shoulder joint were found to be negative. He got full functional recovery through Ayurvedic management and got discharged on 18/11/2022. The patient restored his original strength of right shoulder joint upto a fair extent in less than six weeks by ayurvedic conservative management.

### DISCUSSION:

In this 70 year old male patient, the degeneration due to old age combined with trauma may be the cause of rotator cuff injury. The treatment protocol of *Bhagna* followed by *Vatavyadhi* was followed in this case of chronic rotator cuff injury. In this case study patient got full symptomatic relief

and functional improvement through ayurvedic conservative management with less than six weeks.

Combined effect of *Maharasnadi kashayam* with *Amruthotharam kashayam* reduces shoulder joint effusion by its anti-inflammatory action.<sup>[2][3]</sup> *Kaisora guggulu* also aids in the anti-inflammatory action and analgesic action thus increases the mobility of shoulder joint in the rotator cuff injury<sup>[4]</sup>. *Lakshadi guggulu* which is mentioned in *Bhagnadhikara* is known for its analgesic property. <sup>[5]</sup> It enhances the healing process of rotator cuff injury. *Dasamoolahareethaki lehyam* is beneficial in chronic inflammatory conditions associated with swelling <sup>[6]</sup>. *Gandha thailam* which is indicated as *Sada pathyam bhagnanam sarvakarmasu* and *Greevaskandhorasam vridhiramunaivopajayathe* enhances the muscle strength in rotator cuff injury. <sup>[7]</sup>

Thus the combination of these internal medicines helps to decrease the inflammation, pain and to repair, restore the functional mobility of shoulder joint.

*Nasyam* is specifically indicated in *Urdhwakaya bhagna* [8] *Pratimarsa nasyam* with *Dhanwantharam Thailam* 21 A by its *Vatasamana* and *Brmhana* property increases shoulder joint mobility and muscle strength in chronic rotator cuff injury. *Murivenna* is a powerful analgesic oil extensively used for traumatic and inflammatory conditions [9]. The drugs of *Murivenna* are having *Sandhaneeya* property. *Susrutha* have mentioned that it is the *Veeryam* of the externally applied medicines that enters the ending of the *Damanis* [10]. As the active ingredients are dissolved in the liquid fat they can be easily diffuse into deeper layers of skin. Thus, *Pichu* with *Murivenna* helps in *Sandhana* of rotator cuff injury and *Lepam* with *Kottamchukkadi Choornam* helps to alleviate the inflammation and joint pain. Local *Abhyanga* with *Murivenna* and *Karpooradi thailam* combining with infra-red radiation comes under *Sneha sweda* [11]. It increases blood flow, thus eases down the inflammation, and speeds up the healing process. *Dhanyamladhara* is a type of *Drava sweda* with the property of quick action and deep penetrating effect of *Dhanyamla* through which it enables proper supply of nutrition in repair phase of rotator cuff injury. Local *Thailadhara* with *Murivenna* is a type *Sneha seka* mentioned in *Amsa sandhi cyuthi* in *Bhagna chikitsa* by *Susrutha* [12]. Local *Pathrapottali sweda* with *Murivenna* which comes under *Sneha sweda* leads to stimulation of the sympathetic nervous system for vasodilation which leads to revascularization of tendons around the shoulder joint, thus speeding up the healing process. *Dhanwantharam thailam* is an oil

for *Kkshata* and *Vata vikara* [13]. Active shoulder exercises help to restore muscle strength and mobility of shoulder joint. *Shashtika pinda sweda* with *Murivenna* and *Dhanwantharam thailam* works for *Dhatuposhana*. It improves muscle tone, increases muscle strength by providing proper nourishment to *Dhatu*.

All these improved the healing process of ruptured tendons and thereby restored its original strength up to a fair extent and achieved a good outcome with conservative ayurvedic management.

### CONCLUSION:

The present case of chronic rotator cuff injury in the elderly was successfully rehabilitated and got complete functional restoration of the shoulder joint by conservative ayurvedic treatment protocol of *Bhagna* and *Vatavyadhi*.

### LIMITATIONS:

This is a single case report, still more studies are expected to prove it scientifically. MRI report not taken after treatment due to financial inconvenience.

### STRENGTH:

This case report paved a new way of ayurvedic management in chronic rotator cuff injury. *Bhagna Chikitsa* followed by *Vatavyadhi Chikitsa* have a beneficial effect in chronic rotator cuff injury.

### ACKNOWLEDGEMENT:

I am thankful to my teachers, colleagues for their suggestions.

### INFORMED CONSENT:

The written informed consent has been obtained from patient for treatment and publication of data.



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**CONFLICT OF INTEREST:** Author declares that there is no conflict of interest.

**GUARANTOR:** Corresponding author is guarantor of this article and its contents.

**SOURCE OF SUPPORT:** None

**HOW TO CITE THIS ARTICLE:**

Varghese V, Abdul Shukkoor MM, Subi NH, Deepa Jose. Chronic Rotator Cuff Injury in an Elderly Patient – Full Functional Recovery through Conservative Ayurvedic Management - A Case Report. Int. J. AYUSH CaRe. 2023;7(1):24-29.