

Closed Reduction and Ayurvedic Conservative Management of an Isolated Dorsal Dislocation of the Distal Ulna: A Case Report

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ABSTRACT:

Distal radioulnar joint (DRUJ) injuries are frequently seen in association with distal radius fractures; isolated dorsal dislocation of the distal ulna is uncommon and often difficult to diagnose, necessitating careful clinical evaluation and appropriate imaging. This should be considered in patients presenting with ulnar-sided wrist pain after trauma. Early diagnosis and appropriate management are key to prevent long-term morbidity and achieving optimal functional results. A 52-year-old male patient presented with pain, deformity and restricted movements of the left wrist joint following trauma to the left wrist. Radiographic evaluation revealed Dorsal dislocation of the distal ulna. He was treated with a closed manipulative reduction technique followed by a splint bandage with *Murivenna* over the left wrist joint and forearm, and was administered internal medications, which included *Punarnavadi Kashayam* 90ml twice daily before food, along with T. *Chandraprabha* 2 BD, T. *Laksha guggulu* 2 BD after food, and *Gandha thailam* 10 drops twice daily after food for 3 weeks. Re-bandaging was done every 7th day with splints for 2 weeks and a Simple bandage without splints for the next 1 week. The patient showed a marked reduction in pain (VAS from 6 to 0), improved joint stability, and a good functional range of movement of the left wrist joint without the need for surgical intervention. The outcome of this case suggests that conservative Ayurvedic management following successful reduction is effective in the management of DRUJ instability.

Keywords: Ayurvedic conservative approach, *Bhagna*, Dorsal dislocation of distal ulna, Fracture.

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INTRODUCTION:

The **distal radioulnar joint (DRUJ)** is a part of the complex forearm articulation and a fundamental component of forearm and wrist mechanics, permitting **pronation and supination** while serving as a critical link in load transmission between the forearm and hand. The distal radioulnar joint is an incongruent diarthrodial synovial joint formed by the articulation between the distal ends of the radius and ulna. Functionally and anatomically integrated with the ulnocarpal articulation, the DRUJ's stability depends on a complex interplay between its bony architecture — including the sigmoid notch of the radius and the ulnar head — and a dense network of soft tissue stabilisers collectively known as the **triangular fibrocartilage complex (TFCC)** [1][2]. The TFCC, along with radioulnar ligaments and the extensor carpi ulnaris, acts as the primary stabiliser of the DRUJ, resisting translational and rotational forces during daily activities [3].

Isolated dislocation of the distal radioulnar joint is considered a rare injury and is frequently underdiagnosed during the initial evaluation of wrist trauma. Patients commonly present with ulnar-sided wrist pain, restricted pronation or supination, and a prominent ulnar head depending on the direction of dislocation. Dorsal dislocation of the distal ulna usually occurs due to hyperpronation forces acting on the forearm, commonly following a fall on an outstretched hand or a twisting injury. Clinically, the

forearm is seen with a dorsal prominence of the ulnar head, and the radiographic examination in anteroposterior and lateral views confirms the diagnosis.

Accurate evaluation of DRUJ injuries requires a **multimodal approach** incorporating careful clinical testing, such as impingement tests, the piano-key test, and the fovea sign, with detailed imaging including X-rays, computed tomography (CT), and magnetic resonance imaging (MRI). Arthroscopy remains the gold standard for visualising TFCC integrity and intra-articular pathology. Nevertheless, persistent or chronic instability can result in considerable morbidity, manifesting as pain, functional impairment, and degenerative changes such as arthritis [4]. Therefore, suspected DRUJ injury necessitates meticulous clinical evaluation and, when indicated, targeted therapeutic intervention.

Management strategies are adopted according to the severity of the injury, chronicity, and stability. Early or less severe injuries may be addressed with **non-operative measures** including splinting and medications, while **surgical intervention**, ranging from arthroscopic TFCC repair to open reduction and fixation of associated fractures, is often indicated for unstable or complex injury patterns. In cases of chronic DRUJ instability or degenerative arthritis, reconstructive procedures and salvage techniques such as ulnar shortening osteotomy, the Adams-Berger ligament reconstruction, or DRUJ arthroplasty may be required to restore function and relieve pain.

Treatment principles described under *Sandhimuktha Chikitsa* in Ayurveda provide pain relief, stabilisation, and healing, which improved the patient's condition. In Ayurveda, such injuries can be managed according to the treatment principles of *Sandhimuktha Chikitsa* involving the *Manibandha Sandhi* (Wrist joint), as mentioned in *Susrutha Samhitha*. Integrating Ayurvedic interventions and medications for the condition can provide relief from pain, accelerate recovery, improve joint stability, improve the range of motion of the wrist joint, and prevent chronic sequelae of the injury [5].

CASE REPORT:

A 52-year-old male patient, with no known comorbidities, presented to the OPD of GAVC TVM with complaints of severe pain and restricted movements of the left wrist joint following a traumatic incident earlier the same day. The patient reported that he was travelling in a bus when he accidentally slipped on the floor, resulting in a sudden twisting injury to his left hand. Immediately following the incident, he experienced intense pain in the left wrist joint associated with difficulty in moving the joint. There was no history of loss of consciousness, head injury or trauma to other parts of the body. The patient had no symptoms suggestive of sensory or neurovascular involvement, such as numbness or tingling sensation over the affected upper limb.

The pain was acute in onset, severe in intensity, and aggravated by attempted movements of the left wrist and forearm. The patient also noticed an

abnormal appearance of the left wrist joint immediately after the injury. Due to persistent pain, deformity, and functional limitation in the movements of the left wrist joint, he sought medical attention and presented to our OPD without any delay.

On clinical examination, the patient had tenderness (VAS-6) over the left wrist joint with marked restriction of movement. Visible deformity of the left wrist joint was noted, suggestive of underlying joint disruption (Figure no.1). Examination revealed intact skin with no evidence of swelling, open wounds or bleeding over the affected region.

The patient had no previous history of chronic wrist pain or pre-existing joint disorders. But reported a history of Left forearm bone fracture in childhood.

History of past illness:

Had a history of Left forearm bone fracture in childhood (As per patient's words)

Drug history:

Nothing relevant

Personal history:

Appetite: Good

Bowel: Regular 1/day

Micturition: Normal (4-5/day, 1-2/night)

Sleep: Sound

Diet: Mixed

Addiction: Nil

Marital status: Married

Allergy: Nil

SURGICAL HISTORY:

Nothing relevant

IMMUNISATION HISTORY:

Immunised as per schedule

Vital data: Found within normal limits.

Physical examinations:

General state of illness: Severe

Mental state and intelligence: Oriented and conscious

Built: Moderately built

Attitude: Left forearm held in a guarded position with restricted supination and pronation due to pain.

Gait: Normal

Facies: Normal

Decubitus: Supine position

Locomotor system examination:

Left Wrist joint:

Inspection: No signs of bruises/bleeding
Deformity noted with a visible dorsal prominence corresponding to the displaced ulnar styloid process.

Palpation: Grade 3 tenderness (VAS 6) over the left wrist joint

ROM: Left Forearm: Supination and Pronation were painful.

Left wrist joint: Flexion and Extension were restricted.

Neurovascular status of Left upper limb: Intact

Special tests: Left wrist joint:

Impingement sign: Positive (L): The patient experienced pain over the left distal radioulnar joint during forced pronation and supination.

Ulnar fovea sign: Positive(L): Localised tenderness was elicited over the left ulnar fovea region (a small depression on the medial side of the ulnar head) on palpation.

Tabletop test: Positive(L): The patient demonstrated difficulty lifting the left hand off a flat surface due to wrist instability and discomfort.

Grind test: Positive(L): Pain was elicited over the left distal radioulnar joint on axial compression with rotational movement of the forearm.

Diagnostic Assessment:

X Ray Left wrist joint (Dated:09/01/2026) was taken, which revealed:

Visible dorsal prominence corresponding to the displaced ulnar styloid process.

Diagnosed as Dorsal dislocation of the distal ulna (Left)

Based on the patient's complaints together with the interpretation of anteroposterior and lateral views of the X-ray of the left wrist joint, the case was diagnosed as Dorsal dislocation of the distal ulna (Left)

THERAPEUTIC INTERVENTIONS:

Externally, the therapeutic intervention included closed reduction and immobilisation of the left wrist joint with a splint bandage of four splints placed Anteriorly, posteriorly, medially, and laterally from the mid-palm up to the elbow joint (left forearm) and *Murivenna*.

Reduction of dorsal dislocation of distal ulna (left):

The patient was advised to sit down in a chair. The patient's Left forearm was initially positioned in pronation. With direct pressure on the left ulnar head using the thumb and fingers, gentle

traction and counter traction were applied over the joint and gentle manipulation was performed by gradually rotating the prominent ulnar head while simultaneously fully supinating the forearm in 90degree elbow flexion. This combined rotational manoeuvre was continued until the ulnar head was felt to return to its anatomical position. Following reduction, the thumb and fingers were maintained over the wrist joint, and gentle passive movements of the wrist were performed to confirm joint stability and adequacy of reduction.

Later, gauze was applied over the hand, and a continuous stream of *Murivenna* was poured on the anterior aspect of the area over the gauze. The hand was then covered with cotton and splints, and bandaging was done over the left wrist joint with four splints (Anterior, posterior, medial and lateral). Traction and countertraction were maintained till the end of bandaging to avoid displacement of the joint. After this reduction and immobilisation, a neurovascular assessment of the hand was performed and a repeat radiograph was taken to ensure that the distal forearm bones were properly aligned. (Figure no 3)

A sling was provided.

Advice:

1. The patient was advised to report immediately if he experiences symptoms such as severe pain, oedema, numbness, tingling sensation, discolouration of the fingers, and decreased range of finger movements.

2. He was advised to move his fingers regularly to preserve function and facilitate proper blood circulation.
3. He was advised to pour approximately 5 ml of *Murivenna* daily over the affected area.

Post X-ray showed: Successful anatomical reduction of the Dorsal dislocation of the distal ulna(L), indicating joint stability and restoration of normal alignment of distal forearm bones.

ASSESSMENT:

The assessment of Pain (VAS) is mentioned in table-2 and Range of movements (ROM): left wrist joint are mentioned in table-3

SPECIAL TESTS (AFTER 3 weeks):

Special tests: Left wrist joint:

Impingement sign: Negative (L)

Ulnar fovea sign: Negative (L)

Table top test: Negative (L)

Grind test: Negative (L)

After 21 days of bandaging and internal medications, he attained complete unrestricted movement of the Left wrist joint with no pain over the left wrist joint and achieved good functional recovery and stability of the joint. No adverse events were reported throughout the course of treatment.

FOLLOW-UP MEDICINES:

As follow-up medicines, Laksha guggulu Gulika 1 BD after food and Gandha thailam 10 drops with milk at bedtime were advised.

Table-1: Therapeutic interventions with timeline

Date	Medicines	Dose and time
09/1/2026 to 31/01/2026	<i>Punarnavadi kashayam + Chandraprabha gulika (2-0-2) with kashayam</i>	90 ml bd before food 6 am – 6 pm
09/1/2026 to 31/01/2026	<i>Laksha guggulu gulika</i>	(2-0-2) Twice daily with kashayam
09/1/2026 to 31/01/2026	<i>Gandha thailam</i>	10 drops with milk twice daily after food

Table-2: Pain (VAS)

Before reduction	6
After reduction	2
After 2 weeks	1
After 3 weeks	0

Table -3: Clinical evaluation before and after intervention

Clinical evaluation	Before Reduction (Day 0)	After 2 weeks (Day 14)	After 3 weeks (Day 21)
Pain	VAS – 6	VAS – 1	VAS - 0
Tenderness	Grade 3	Grade 1	Grade - 0
ROM	Left Forearm: Supination and Pronation were painful. Left wrist joint: Flexion and Extension were restricted	Left Forearm: Supination and Pronation were possible with mild pain (Grade 1) Left wrist joint: Flexion and Extension were possible with mild pain (Grade 1)	Left Forearm: Supination and Pronation were possible with no pain. Left wrist joint: Flexion and Extension were possible with no pain.
Bandaging	After closed manipulative reduction, bandaging to the left wrist joint was done with splints and <i>Murivenna</i> , along with gentle traction and counter traction. Sling was provided Re-bandaging next	Splints were removed Simple bandage was done with <i>Murivenna</i>	Bandage was removed and mild wrist movements (Left), along with other joint movements.

	week was also done with splints, maintaining gentle traction and counter traction.		
Internal medicines	Advised intake of the prescribed internal medicines Pour <i>Murivenna</i> over the affected site.	Continue the prescribed internal medicines Pour <i>Murivenna</i> over the affected site	Continue Laksha guggulu and Gandha thailam for 2 weeks Stop all other medicines Apply <i>Murivenna</i> over the site for 1 week.



Figure No. 1: Left wrist joint (Before reduction) on inspection: The visible displaced ulnar styloid prominence can be seen.



Figure- 2: X-ray – Left wrist (AP/LAT) – Before reduction



Figure-3: Left wrist (AP) - After reduction and immobilisation, and Left wrist joint after reduction



Post X-ray showed: Successful anatomical reduction of the Dorsal dislocation of the distal ulna(L), indicating joint stability and restoration of normal alignment of the distal forearm bones (Figure no 3)

Figure. No. 4: Left wrist joint after 3 weeks

DISCUSSION:

In a case report published in the International Journal of Surgery Case Reports, the patient with an acute dorsal DRUJ dislocation was treated with closed reduction followed by stabilisation using Kirschner wire (K-wire) fixation and immobilisation in an above-elbow cast for 6 weeks.

In cases where the joint remained unstable after reduction, percutaneous radioulnar pinning using K-wires was recommended to maintain joint stability during the healing phase. These approaches involve invasive procedures and prolonged immobilisation. In contrast, the present case achieved stable joint function and complete symptomatic recovery within three weeks following closed reduction and conservative Ayurvedic management, without K-wire fixation or surgical intervention, suggesting the potential benefits of an early, non-invasive approach with shorter recovery time. [6][7][8].

In the present case, the patient sustained an injury to the left wrist joint following trauma (*Nidana*-etiological factor), leading to Dorsal dislocation of the distal ulna, affecting the *asthi* and *sandhi* of *Manibandha sandhi*, leading to pain (*ruja*), instability (*asthirata*) and restricted mobility (*cheshtanasha*). The treatment protocol follows the principles of *Sandhimuktha Chikitsa*.

In contrast, the present case demonstrates the successful management of dorsal dislocation of the distal ulna through closed manipulative reduction followed by conservative Ayurvedic management in 3 weeks. The

treatment protocol included closed reduction, immobilisation with a splinted bandage, topical application of *Murivenna*, and administration of internal medications such as *Punarnavadi Kashayam*, *Laksha Guggulu*, *Chandraprabha Gulika*, and *Gandha Thailam*.

Ayurveda offers a multidimensional approach that addresses both the symptomatic and fundamental dosha imbalance associated with the musculoskeletal injuries (DRUJ injuries). From an Ayurvedic perspective, this can be correlated with the concept of *Sandhimuktha chikitsa* involving the *Manibandha sandhi*.

The management protocol aims to reduce local inflammation, promote soft tissue healing, and restore joint stability at the earliest.

In the present case, Reduction of the joint was done, which includes *Anchana*, *Peedana*, *Samkshepa*, and *Bandana*. *Bandhana* (Bandage) was adopted with splints, serving as an important component in the initial line of management of *Sandhimuktha Chikitsa*. It provides external support and stabilisation to the wrist joint, helping to maintain proper anatomical alignment and prevent further displacement of the forearm distal bones. This intervention not only aids in pain reduction but also facilitates early functional recovery by creating a stable environment for the healing process. (Figure no 3)

Murivenna is renowned for its properties (Anti-inflammatory and analgesic), making it particularly suitable for traumatic soft tissue and ligament injuries. Its topical application

provides sustained contact of the medicated oil with the site of injury, promoting localised absorption, reducing pain and facilitating the healing process of soft tissues and bony structures.

The internal medications provided serve the principles of *Sandhimuktha Chikitsa* - reducing inflammation and healing the injuries. The *Punarnavadi kashayam* helps in reducing the oedema around the injured site. *Laksha guggulu* and *Gandha thailam* are specifically indicated in *Bhagna chikitsa*, which improves bone mass strength and strengthens the ligaments. *Gandha thailam* is “*Sarva vatavikaranut*” [9][10][11][12]

Clinically, the patient demonstrated significant reduction in pain intensity and full functional recovery of the left wrist joint within a period of 21 days, without the need for surgical intervention or even analgesics.

A notable finding in the present case was the relatively short duration of immobilisation and recovery. Unlike previously reported cases requiring approximately six weeks of immobilisation following surgical stabilisation or casting, the patient achieved satisfactory functional recovery within three weeks of conservative Ayurvedic management. Complete resolution of pain, restoration of wrist mobility, and negative DRUJ instability tests were observed at the end of treatment, suggesting the potential of Ayurvedic principles, including *Sandhimuktha Chikitsa*, as a supportive, non-invasive approach

following reduction to promote early functional recovery and joint stability. However, larger clinical studies with long-term follow-up are required to establish its effectiveness and durability.

CONCLUSION:

Timely closed reduction followed by Ayurvedic conservative management resulted in favourable clinical and functional recovery in dorsal dislocation of the distal ulna.

Internal medications and appropriate bandaging technique provided pain relief, joint stabilisation, and restoration of wrist mobility in a period of 3 weeks. This case highlights the potential role of Ayurveda as a safe, non-invasive approach in the conservative management of DRUJ injuries.

Patient perspective:

The patient reported significant relief from pain in the left wrist joint following the treatment. He expressed satisfaction with the reduction procedure and subsequent conservative management, noting progressive improvement in left wrist movements during the treatment period. By the end of the third week, he was able to perform left wrist joint movements without pain or functional limitation. Overall, the patient conveyed a positive experience with the treatment approach and was satisfied with the outcome.

Declaration of Patient consent:

Informed written consent has been obtained from the patient for publication of data and images without disclosing the identity of the patient.

Limitation of study: Since it is a single rare case, a larger sample is needed for generalisability

Conflict of interest: The author declares that there is no conflict of interest.

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