



CASE REPORT

AYURVEDIC MANAGEMENT OF PAEDIATRIC MEDIAL EPICONDYLE FRACTURE - A CASE REPORT

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ARTICLE HISTORY

Received: 17 July 2025

Accepted: 23 August 2025

Available online

Version 1.0 : 30 September 2025

Keywords

Medial epicondyle fracture, paediatric elbow injury, *koorpara sandhi bhagnam*

Additional information

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

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CITE THIS ARTICLE

Aswathy J, Namitha TP. Ayurvedic Management of Paediatric Medial Epicondyle Fracture- A Case Report. Kerala Journal of Ayurveda. 2025;4(3):30-34.

<https://doi.org/10.55718/kja.442>

Abstract

Medial epicondyle fractures are one of the most common paediatric elbow injuries. Isolated injuries can occur from either direct trauma or avulsion. Medial epicondyle fractures also occur in combination with elbow dislocations. This is a case of a 4-yr old girl with a history of fall from bed on an out stretched left hand while playing. She was brought to *Shalyatantra* OPD on the very next day and after proper examination, radiology of left elbow joint was suggested and was diagnosed with medial epicondyle fracture. The fracture was managed conservatively using traditional *Ayurvedic Bhagnasthapana Upayas*, involving the application of one posterior L-shaped splint and two flat splints medially and laterally, secured with a *Murivenna* bandage for three weeks followed by a simple *Murivenna* bandage for one week. Two weeks of follow up was done along with rehabilitation exercises. Classical *Ayurvedic* formulations were administered as internal medicines throughout the treatment period. The intervention resulted in complete restoration of elbow and forearm movements, with full symptom relief and absence of deformity or complications, thereby affirming the efficacy of Ayurvedic principles in paediatric fracture management.

Introduction

Medial epicondyle fractures are one of the most common paediatric elbow injuries. It accounts for about 20% of elbow fractures, 60% of which are associated with elbow dislocation.¹ Epicondylar fractures are more common in children and adolescents. Among epicondylar fractures, medial epicondyle fractures are more common whereas most condylar fractures affect the lateral one.² It is because the epiphysis of medial epicondyle appears early and fuses late with main epiphysis of lower humerus.³ It is usually caused by direct violence more precisely saying forcible valgus injury to elbow or an avulsion injury during a fall in which epicondyle pulled off by flexor muscles. In avulsion type it is usually associated with posterior dislocation of elbow joint. Usually there is displacement of fracture fragments and with ulnar nerve injury. Clinically there will be swelling and tenderness over medial side of elbow joint.

The management of epicondylar fractures is based on clinical and radiological findings. Uncomplicated cases require only symptomatic management. Elbow is usually immobilised in plaster for 3 weeks in an undisplaced or minimally displaced fractures.⁴ It helps in relieving pain and then joint movement should be restored by active exercises. In displaced type or with fragments trapped in elbow joint open reduction and elbow arthrotomy is indicated. ⁴The complications of epicondyle fracture are injury to ulnar nerve, inclusion of epicondylar fragment in the joint.⁵

The treatment of fractures (*Bhagna*) has been systematically described by *Acharya Sushruta* in the *Chikitsasthana* of the *Sushruta Samhita*. The foundational principles of fracture management outlined by him include *Bhagnasthapana* (realignment or reduction of the fracture), *Bhagnasthireekarana* (immobilization), and *Punercheshtapacharam* (rehabilitation). In addition to these, *Sushruta* has emphasized techniques such as *Anchana* (traction), *Peedana* and *Samkshepana* (manual manipulation), and *Bandhana* (bandaging) as integral components of fracture care.⁶

The overarching objective of fracture management is to facilitate optimal healing while preventing deformity, restoring complete range of motion, and ensuring full functional recovery of the affected limb within a minimal time frame. Following appropriate reduction, immobilization is achieved through various traditional bandaging methods. Splints prepared from the bark of trees such as Bamboo, Ficus, and Arjuna are commonly employed in this context.⁷ Notably, in the traditional practice of Kerala, splinted bandaging combined with the application of *Murivenna* oil is widely utilized. Clinical observations suggest that this method provides effective relief within a shorter duration, with minimal complications, thereby enabling the patient to regain normal functional activity.

CASE HISTORY:

PATIENTS INFORMATION

A 4-year-old girl presented with acute onset of left elbow pain and swelling with restricted movement since the previous night, following a fall from bed while dancing, landing on her outstretched hand. The symptoms were severe enough to disturb her sleep, prompting her mother to apply *Murivenna* locally. As symptoms persisted, she was brought to the outpatient department of shalyatantra GAVC, Kannur the very next day. Physical examination revealed localized swelling, mild warmth, and tenderness over the medial elbow, with the limb held in a semi-flexed position. Plain radiographs were taken and demonstrated a medial epicondyle fracture of the left humerus - a common paediatric injury often resulting from valgus stress after a fall on an outstretched hand.

PERSONAL HISTORY

Bowel : regular
Appetite : good
Micturition : with in normal limit
Sleep : disturbed due to pain
Diet : prefers sweet items
Allergy : not yet detected
Height : 110 cm
Weight : 19 kg

GENERAL EXAMINATION

Appearance : moderate
Behaviour : appropriate
Grooming : well, dressed
Attitude : cooperative
Mental state : pleasant
Pallor : Absent
Icterus : Absent
Cyanosis : Absent
Clubbing : Absent
Lymphadenopathy : Absent
Edema : localized edema over left elbow

LOCAL EXAMINATION

Attitude : left hand in a semi flexed supine position and cradled with right hand

Inspection : localised swelling on medial aspect of left elbow joint not associated With redness.

Palpation : 1. Temperature rise on medial aspect over the swelling of left elbow.

2. Grade 2 Tenderness on medial aspect of left elbow joint

Range of movements : Flexion - restricted and painful; possible up to 90°

Extension - possible with mild pain

Supination and pronation - possible with slight pain

METHODOLOGY/ TREATMENT GIVEN:

Internal medicines given throughout the treatment period is listed in table 1

Management of fracture:

The patient was managed according to the classical *Bhagnasthāpana Upāyas*, an *Ayurvedic* approach to fracture reduction and immobilization. The patient was made to sit comfortably on a flat examination table. *Murivenna*, was

Table 1: INTERNAL MEDICINES

Date	Medicine	Dose	Remarks
26/03/25to06/04/25	<i>Punarnavasavam</i>	15 ml twice daily after food	Reduces swelling
07/04/25to26/04/25	<i>Punarnavasavam</i>	15 ml twice daily after food	Reduces swelling
	<i>Ganda tailam</i>	5 drops with milk twice daily	Improves bone healing
27/04/25to 10/05/25	<i>Ganda tailam</i>	5 drops with milk twice daily	Improves bone healing and provides bone strength

applied locally over the elbow joint. Padding was applied from the mid-forearm to the mid-upper arm, covering the elbow region thoroughly with sterile cotton and gauze rolls to provide cushioning and prevent pressure-related complications. For external stabilization, an L-shaped splint was fabricated using two bamboo splints joined at the centre with a cardboard interface and subsequently covered with cotton padding and gauze and is positioned along the posterior aspect of the elbow joint, while two smaller bamboo splints were applied to the medial and lateral aspects of the joint to ensure adequate immobilization and maintain alignment. All splints were secured using sterile bandages to maintain stability. A final external dressing was applied using a layer of sterile gauze followed by wrapping with *Kora* cloth, which provides both firmness and breathability. The forearm was then supported in

Patient presented with a grade 2(moderate) Swelling; grade 3 Tenderness; Pain of VAS score 8 and grade 2 Temperature rise. All movements were restricted. Weekly progression of the condition is as follows

After 1 week

Swelling - grade 1

Tenderness - grade 2

Pain - VAS 5

Temperature - grade 0

Range of Flexion improved up to 110° with pain

Supination and pronation improved with pain

After 2 weeks

Swelling - grade 0

Tenderness - nil

Pain - VAS 2

Temperature - grade 0

Range of Flexion improved upto 130° with pain

Supination and pronation improved with pain

After 3 weeks

Swelling - nil

Tenderness - nil

Pain - VAS 0

Temperature - grade 0

Range of Flexion improved upto 145° with pain

Supination and pronation improved with pain

After follow up period

Swelling - nil

Tenderness - nil

Pain - VAS 0

Temperature - grade 0

Range of Flexion improved up to 145° without pain

Supination and pronation improved without pain

No deformity noted

Post X ray (left elbow joint AP & lateral) shows-sufficient callus formation over medial epicondyle of left elbow joint.

Date	Treatment
26/03/25	<i>Murivenna</i> bandage using 3 splints over the dorsal, medial and lateral sides by maintaining the traction Arm sling advised
1/04/25	Rebandage done with <i>Murivenna</i> and splints Finger movements advised
7/04/25	Rebandage done with <i>Murivenna</i> and splints
13/04/25	Simple bandage done with <i>Murivenna</i> Passive supination and pronation with flexed elbow suggested Passive flexion and extension suggested <i>Murivenna</i> application suggested
26/04/25 to 09/05/25 (Follow up period)	Active supination and pronation with flexed elbow suggested Active flexion and extension suggested

an arm sling, maintaining the limb in a functional position and minimizing strain on the elbow joint.

Details of fracture management is given in table 2

X- RAY IMAGING

X - ray of left elbow joint - AP and Lateral view

Findings

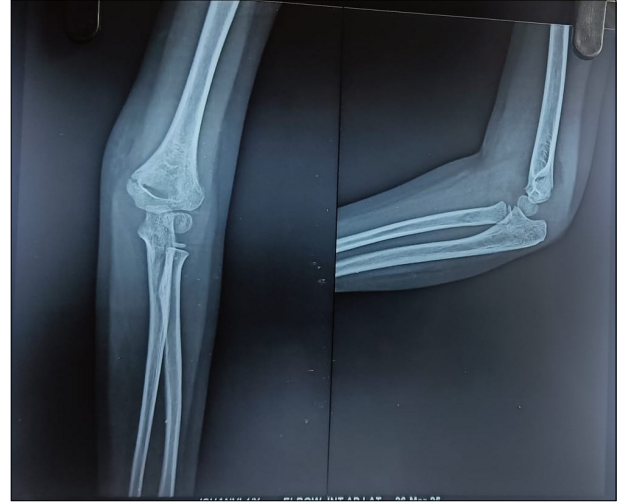
- Hairline fracture noted over medial epicondyle of left elbow joint

Result and Discussion

RESULT: Patient diagnosed with medial epicondyle fracture of left elbow joint by x ray (AP & Lateral) as a hairline fracture.



Pre-Examination



Pre xray



Murivenna bandage with splints



Post-Examination



Post xray

DISCUSSION

Elbow joint consists of mainly lower end of humerus, upper end of radius and ulna. The three bony points which are the landmarks of elbow joint are lateral epicondyle, medial epicondyle and olecranon process. The medial epicondyle serves as the origin for the forearm flexor-pronator muscle group and the medial collateral ligament (MCL) of the elbow. As such, it plays a critical role in elbow stability, particularly against valgus stress. Radiographic evaluation, including AP,

lateral, and oblique views, is essential to assess displacement and to detect fragment incarceration. Orthopaedic conditions, including fractures and dislocations, are thoroughly described in *Ayurvedic* literature under the branch of *Bhagna Chikitsa*. According to *Acharya Sushruta*, an injury involving the bone is termed *Kandabhagna*, while an injury affecting the joint is referred to as *Sandhimukta*. The classical *Ayurvedic* approach to managing fractures and dislocations is based on three core principles: *Bhagna Sthapana* (realignment or reduction of the fracture), *Bhagna Sthireekarana* (immobilization to stabilize

the injury), and *Punah Cheshta Prasarana* (rehabilitation to restore movement and function). *Acharya Sushruta* also emphasized key procedural steps in treatment, which include:

Anchana (traction to align the bone),

Peedana (gentle compression to maintain alignment),

Sthirakarana (immobilization to prevent movement), and

Bandhana (application of bandages to support and protect the injured area).

In the present case conservative management was given with immobilisation by using 3 bamboo splints along with *Murivenna* bandage. *Anchana* and *peedana* is not essential in present scenario as the fracture is undisplaced. *Punarnavasavam* and *Ganda tailam* were given as internal medicines. With a total of 6 weeks management; pain, swelling and tenderness got completely relieved along with restoration of joint movements. *Murivenna* has got an anti-inflammatory and *sandhaneeya guna* which helps in reducing swelling and aids in fracture healing. *Punarnavasavam* has got an anti-inflammatory and *sothahara* property. It also aids in relieving weakness and fatigue. *Ganda tailam* chiefly acts on *asthi dhatu* and enhances bone healing and provides strength to bones. This case underscores the importance of accurate diagnosis and individualized management of medial epicondyle fractures. The age of patient, the degree of displacement, patient activity, elbow instability should be duly considered in treatment plan. Early rehabilitation and careful follow-up are critical to ensure optimal functional outcomes.

Ayurveda not only focuses on bone healing but also on restoring overall strength, muscle function, and joint mobility through internal medicines, external applications, and physiotherapy. *Ayurvedic* approach promote bone union naturally, improve circulation, and reduce inflammation without the side effects commonly associated with synthetic drugs. In *Ayurvedic* procedure for fracture management a weekly rebandaging is usually advised and this helps in preventing joint stiffness which is a common complication seen in conventional plastering method of elbow fractures. Unlike surgical interventions in conventional treatment, *Ayurvedic* methods are non-invasive, reducing the risk of surgical complications like deformity, muscle atrophy and infections.

Conclusion

Acharya Susrutha made remarkable contributions to orthopaedics, offering detailed and scientific descriptions of bone and joint injuries. Present case is the paediatric fracture of medial epicondyle of left elbow joint. Conservative treatment using *Murivenna* bandaging combined with immobilisation through splints has proven effective in-patient recovery. Over the first three weeks, symptoms such as swelling, pain, and elevated temperature steadily decreased, while movements like supination and pronation showed noticeable improvement. By the end of one month, the patient regained full, pain-free mobility with no deformity. By the end of the treatment, the affected area exhibited complete and effortless movement without discomfort, indicating a sound and healthy union, both clinically and radiologically. After follow up of 2 weeks condition of patient again got improved clinically.

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