



A Conceptual Study on Manibandha Marma w.s.r. to Wrist Injuries in Sports Person

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Manibandha Marma is a vital energy point described in Ayurveda, located at the wrist joint, playing a significant role in mobility, strength, and neuromuscular coordination. Sportsperson are particularly susceptible to wrist injuries due to repetitive stress, overloading, and improper biomechanics. Such injuries can lead to pain, reduced grip strength, and long-term functional impairment, affecting athletic performance. This conceptual study aims to explore the significance of Manibandha Marma in relation to wrist injuries in sportsperson by integrating Ayurvedic principles with modern sports medicine perspectives. Studying Marma Sharir from the perspective of sports medicine is essential. It is also crucial to protect Marma sites from trauma to prevent future complications. In sportspersons, the risk of injury to Manibandha Marma, located at the wrist joint, is particularly high. Therefore, a thorough understanding of Manibandha Marma is necessary to help prevent such injuries in athletes. Damage to Manibandha Marma can lead to severe pain, restricted movements. Ayurvedic interventions, such as Marma Chikitsa (Marma therapy), massage, herbal applications, and therapeutic exercises, are believed to aid in injury prevention and recovery.

Keywords: Manibandha Marma, Marma, Wrist Injury, Sports Person

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Introduction

There are hundred and seven *Marmas*, which may be divided into five classes, such as the *Mamsa Marma*, *Sira Marma*, *Snayu Marma*, *Asthi Marma* and *Sandhi Marma*. The junction of *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi* (joints) are called *Marmas* which naturally and specifically form the seats of 'Pran' (life) and hence an injury to the *Marma* always produces severe life threatening symptoms to minor pain. According to *Acharya Sushruta*, *Manibandha Marma* is a *Rujakar Marma*. *Rujakar Marmas* are having 'Agnaya' and 'Vayu' properties become extremely painful as both of them are pain producing in their properties. An injury to the *Manibandha Marma* leads to 'Kunthata' (dysfunction) of the affected hand. Two fingers breadth should be avoided from its location in making any incision on *Manibandha*. [1]

Manibandha Marma injury may cause the loss of function of flexion, extension, adduction and abduction of the hand. It can cause incoordination, dislocation and disfigurement of the hand. It may cause wasting of the hand also.[2]

The ancient Indian science of *Ayurveda* describes *Marma Sthan* as vital energy centres where muscles, veins, ligaments, bones, and joints intersect. *Manibandha Marma*, located at the wrist joint, plays a crucial role in hand movements, grip strength, and overall upper limb functionality. In sportsperson the wrist joint undergoes significant stress due to repetitive loading, making it susceptible to injuries such as sprains, strains, ligament tears, and joint instability. In *Ayurveda*, *Manibandha Marma* is categorized as a *Sandhi* (joint) *Marma*, also it is a *Rujakar Marma*. When any *Marma* gets injured, all *Doshas Vata, Pitta* or *Kapha* are bound to get aggravated. If *Vata* is aggravated, then there is severe pain not only at the site of *Marma* but in the whole body. If *Pitta* gets aggravated, then there are symptoms like inflammations, bleeding etc. When *Kapha* gets aggravated then there is swelling, accumulation of fluid etc.[3]

Aim and Objectives

1. To study *Manibandha Marma* in detail.
2. To assess the relationship between *Marmabhighat* of *Manibandha Marma* and wrist injuries in sportsperson.

Materials and Methods

1. Reviewing of Ayurvedic classics and Modern Medicine literature.
2. Reviewing of journals, internet materials and previous research paper related to this subject.

Description



Figure 1: *Manibandha Marma*

Number – 2 (Right and Left)

Measurement - 2 *Anqul*

Type - *Sandhi Marma*

Site - ½ inch lateral to the centre of the wrist joint.
Controls *Asthivaha Srotas*.**[4]**

Anatomical structures/Tissue Involved-Wrist joint, Radio-ulnar and radio-carpal ligaments, Radial and Median nerve and artery.[5]

In *Ayurveda*, *Manibandha Marma* is categorized as a *Sandhi* (joint) *Marma*, also it is a *Rujakar Marma*. The wrist is a complex of eight small carpal bones connecting the forearm and hand.

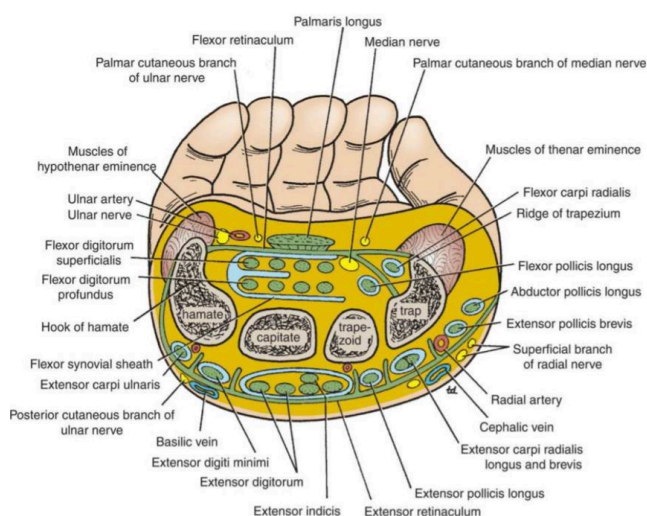


Figure 2: Relation of the tendons, nerves and arteries to the flexor and extensor retinacula.

[Image source-snells clinical anatomy by regions, tenth edition]

Articulation:

Occurs between the distal end of the radius, the articular disc above, and the scaphoid, lunate, and triquetral bones below. The proximal articular surface forms an ellipsoid concave surface, which is adapted to the distal ellipsoid convex surface.

Ligaments:

Anterior and posterior ligaments strengthen the capsule.

The medial ligament is attached to the styloid process of the ulna and to the triquetral bone.

The Lateral ligament is attached to the styloid process of the radius and to the scaphoid bone

Type: Synovial ellipsoid joint.

Capsule: Encloses the joint and is attached above to the distal ends of the radius and ulna and below to the proximal row of carpal bones.

Synovial membrane: This lines the capsule and is attached to the margins of the articular surfaces. The joint cavity does not communicate with that of the distal radioulnar joint or with the joint cavities of the intercarpal joints

Nerve supply: Anterior interosseous nerve and the deep branch of the radial nerve.[6]

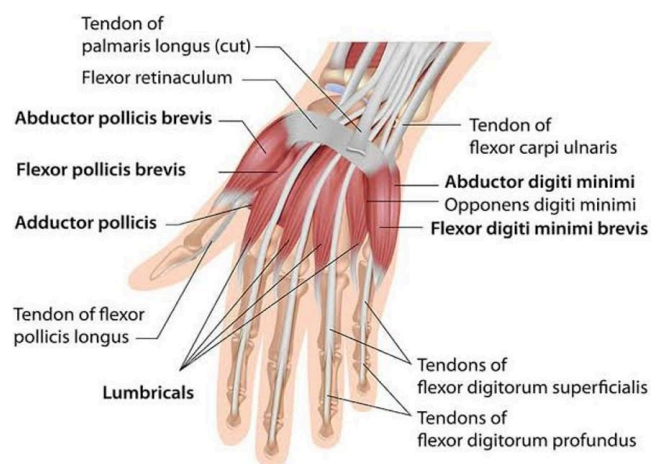


Figure 3: Wrist joint [image source - internet]

Anatomical structures of wrist joint - Anterior view

The following structures pass superficial to the flexor retinaculum (outside the carpal tunnel), in medial to lateral sequence:

1. Flexor carpi ulnaris tendon
2. Ulnar nerve
3. Ulnar artery
4. Palmar cutaneous branch of the ulnar nerve
5. Palmaris longus tendon
6. Palmar cutaneous branch of the median nerve

Following structures pass deep to flexor retinaculum (within carpal tunnel), from medial to lateral

1. Flexor digitorum superficialis tendons
2. Tendons of the flexor digitorum profundus
3. Median nerve
4. Flexor pollicis longus tendon
5. Flexor carpi radialis tendon

Anatomical structures of wrist joint - Posterior view

The following structures pass superficial to the extensor retinaculum, from medial to lateral

1. Dorsal (posterior) cutaneous bran. of ulnar nerve
2. Basilic vein
3. Cephalic vein
4. Superficial branch of the radial nerve

The following structures pass deep to the extensor retinaculum from medial to lateral, within the six extensor tunnels of the retinaculum:

1. Extensor carpi ulnaris tendon
2. Extensor digiti minimi tendon
3. Extensor digitorum and extensor indicis tendons
4. Extensor pollicis longus tendon
5. Extensor carpi radialis longus and brevis tendons
6. Abductor pollicis longus and extensor pollicis brevis tendons[7]

Injury at wrist - Related Structures and Causes

Fractures & Ligament Injuries

Scaphoid Fracture

Cause: Often results from falling on an outstretched hand with the wrist extended, pronated, and radially deviated. Most frequently fractured carpal bone.

Scapholunate Ligament Injury

Cause: Caused by wrist hyperextension combined with ulnar deviation and supination. May occur alongside scaphoid fractures.

Hook of Hamate Fracture

Cause: Typically occurs from forceful gripping or trauma to the heel (hypotheneal) of the hand.

Symptoms: Pain when pressing on the area or during strong gripping activities.

Tendon Disorders

De Quervain's Tenosynovitis

Cause: Repetitive movements involving thumb abduction and extension.

Involved Tendons: Abductor pollicis longus (APL) and extensor pollicis brevis (EPB).

Effect: Thickening and irritation of the tendon sheath.

Oarsman's Wrist

Cause: Friction where tendons of the first extensor compartment cross over those of the second compartment.

Seen in: Rowers and other athletes performing repetitive wrist extension.

Flexor Carpi Radialis (FCR) Tendonitis

Cause: Repeated wrist flexion or a sudden overstretching injury.

Symptoms: Pain on the palm side near the base of the thumb, worsens with resisted wrist flexion.

Extensor Carpi Ulnaris (ECU) Injury

Cause: Chronic overuse or sudden trauma during wrist flexion, supination, and ulnar deviation.

Symptoms: Pain and possible snapping sensation on the ulnar side during movement.

Cartilage & Joint Issues

Triangular Fibrocartilage Complex (TFCC) Tear

Cause: Common in athletes who perform repeated gripping and wrist rotation (e.g., golfers, racquet sports).

Symptoms: Pain on the ulnar side of the wrist.

Can lead to secondary ECU tendon irritation.

Ulnar Abutment Syndrome (Ulnocarpal Impaction)

Cause: Caused by repeated wrist movements involving pronation, ulnar deviation, and axial loading.

Symptoms: Chronic pain along the ulnar side of the wrist.[8]

Nerve Compression Syndrome

Carpal Tunnel Syndrome

Cause: Compression of the median nerve due to reduced space in the carpal tunnel.

Symptoms: Tingling, numbness, and pain in the thumb, index, middle, and part of the ring finger.

Common Triggers: Repetitive wrist motion, inflammation, or anatomical narrowing of the tunnel.

Discussion

Marmas are also the sites where not only *Tridosha* (*Vata*, *Pitta*, *Kapha*) are present but their subtle forms *Pran*, *Ojus* (*Soma*) and *Tejas* (*Agni*) are also present with *Sattva*, *Rajas* and *Tamas*. Hence this is a specific area on the body which has relation through *Pranic* channel to various internal organs. [9]

Sportsperson involves repetitive movement of the wrist specially flexion and extension and intense gripping. One of the key factors in preventing sports injuries is education and awareness about vital point - *Marma*. Athletes should be trained in proper techniques, use appropriate equipment, and follow routines that include warm-up and cool-down exercises.

Coaches, trainers and doctors should know the knowledge of *Marma* and *Marma* therapy and ensuring players do not push beyond their physical limits. Understanding the causes, preventive measures, and treatments of sports injuries is essential for promoting safety and long-term athletic performance. With proper care and precaution, many sports injuries can be avoided, allowing athletes to enjoy their activities without interruption.

Conclusion

According to *Acharya Sushrut*, *Manibandha Marma* is a *Sandhi Marma* and also *Rujakar Marma*. *Manibandha Marma* falls under the category of *Rujakar Marma* on the basis of effect wise classification. *Ruja* the word stands for pain. *Rujakar Marma* shows the dominance of *Agni* and *Vayu* elements in its *Panchabhautik* composition. Damage to *Manibandha Marma* can lead to severe pain, restricted movements.

Ayurvedic interventions, such as *Marma Chikitsa* (Marma therapy), massage, herbal applications, and therapeutic exercises, are believed to aid in injury prevention and recovery.

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