



WWW.IJAPC.COM

**IJAPC**  
**Vol 13 Iss 2**

**2020**

**G.G.P**





## Manibandha Marma- Anatomical Aspect

Bhumica Bodh<sup>1\*</sup>, Sunil Kumar Yadav<sup>2</sup> and Lovepreet<sup>3</sup>

<sup>1-3</sup>Department of Sharir Rachana, National Institute of Ayurveda, Jaipur, Rajasthan, India

### ABSTRACT

*Marma* are not only the vital points which are to be prevented from any injury but also have gained a lot of therapeutic importance nowadays. *Marma* are considered as seat of *Prana* in *Ayurveda* literature. *Marma* therapy focuses on stimulation of these points for management of related disorders.

*Marma* points have gained a lot of therapeutic importance nowadays. Though they are fatal, but these are seat of *Prana* too. *Prana* stimulation can be used in management of related disorders. A very concise description of *Marma* is given in texts, so location of its exact site is still to be explored. What lies beneath those points which can be visible anatomically and determined parallel to modern medical science? The measurements are given in *Anguli Pramana* of the person himself. *Sushruta* has described the anatomical classification of *Marma* which makes it a little easier to explore them. This will lead to a proper understanding, for better learning and practice of *Marma*. *Manibandha marma* is being explored anatomically, and similarity to structure and result with modern anatomy.

### KEYWORDS

*Marma, Prana, Manibandha, Anguli Pramana, Anatomical Aspect*



**Greentree Group Publishers**

Received 04/08/2020 Accepted 01/09/2020 Published 10/09/2020



## INTRODUCTION

*Marma* are the vital parts of body. It has been described in Ayurveda texts by *Charaka*, *Shushruta* and *Vagbhata*. *Sushruta* has described it anatomically, according to the composition, location and symptoms. However, the description is very specific and concise.

For a better understanding and therapeutic benefits, it is needed that *Marma* points are explored anatomically.

This will be helpful in better learning and practice of *Marma*. *Manibandha Marma* is the subject of choice for anatomical exploration in this article, here it is analysed in relation to its exact site, according to modern human anatomy. *Manibandha* is stated as a *Rujakra Marma* and a type of *Sandhi Marma* and is located as *Udhrva Shakhagat Marma*, with the measurement of two *Angula*<sup>1</sup>.

## METHODS

For this article information have been gathered about *Manibandha* from Ayurveda texts mainly *Sushruta*. For better understanding of nomenclature, Sanskrit dictionaries were also used a reference sources. *Manibandha* as a *Marma* and structural identity is explored with relation to modern anatomy theoretically with reference of Cunninghams Manual Practice

of Anatomy. Various medical books are consulted to co- relate with the structures, measurement, location and the symptoms occurring on injury to that point. Such literary co-relations are done to determine the exact structural knowledge of the *Manibandha*.

## RESULTS

Literal meaning of *Manibandha* is wrist where the carpal bones are arranged together in a fist. Structurally, it is a type of *Sandhi Marma* which means joint, mostly it is taken to be bony joints<sup>2</sup>. It is situated at the junction of two bones of forearm that is, *Prakoshthasthi* and the bones of *Manibandha* which are taken to be as carpals bones. According to symptom it is *Rujakara*, therefore any trauma to this point will result in continuous pain. It is 2 *angula*/fingers in size<sup>3</sup>. The size is assumed to be the depth and the breadth of the point. Features on trauma here leads to excessive pain in hand, stiffness and deformity. Similarly if we explore the wrist joint anatomically, it is radio carpal joint between the radius and carpal bones (scaphoid lunate triquetral) . The structures which form the *Manibandha Marma* were approached after dissecting the Thenar and Hypothenar muscles and then separating



the flexor and extensor retinacula of wrist from bone.

This can be done by cutting through the Thenar and Hypothenar muscles from their origins and reflected distally and separated the flexor and extensor retinacula of wrist from bone<sup>4</sup>.

As we come across the radial carpal joint, its position is indicated approximately by line joining the Styloid Process of radius ulna or by the proximal wrist crease. The prominent tendon of flexor carpi radialis can be seen proximal to the wrist crease and palpated when the wrist is flexed; the radial artery lies on its lateral side. By palpating lateral to flexor carpi radialis, 3 or 4 cm proximal to the wrist crease, it is possible to feel flexor pollicis longus (bending and straightening the thumb will confirm that the examining finger is in the correct place). The area on the ulnar side of flexor carpi radialis is packed most densely with functionally important structures. Median nerve lying close to the skin surface is often injured in lacerations. The four tendons of flexor digitorum superficialis lie deep to the median nerve: tendons for the middle and ring fingers lie in front of those for the index and little fingers as they pass deep to the flexor retinaculum and can be felt and seen moving with flexion of the fingers. Deeper are the tendons of flexor digitorum profundus. The large tendon of flexor carpi

ulnaris is easily palpated on the ulnar side of the front of the wrist; the ulnar nerve, artery and venae comitantes lie in the shelter of its radial edge.

Ulna does not participate in the wrist joint. The distal end of radius and the articular disc of radio-ulnar joint articulates with the proximal row of carpal bones, except from pisiform. The wrist, or carpus, is composed of eight carpal bones (carpals) arranged in proximal and distal rows of four. They provide flexibility to the wrist.

From lateral to medial, the four bones in the proximal row of carpals are the: Scaphoid, Lunate, Triquetrum, and Pisiform.

From lateral to medial, the four bones in the distal row of carpals are the: Trapezium, Trapezoid, Capitate and Hamate.

A fibrous layer of joint capsule surrounds the wrist joint and is attached to the distal ends of radius and ulna and the proximal row of carpals. The synovial membrane lines the internal surface of the fibrous layer of joint capsule and is attached to the margins of the articular surfaces.

This fibrous layer of joint capsule is strengthened by strong dorsal and palmar radiocarpal ligaments. The palmar radiocarpal ligaments pass from the radius to the two rows of carpals. The dorsal radiocarpal ligaments take the same direction so the hand follows the radius during pronation of the forearm. The joint capsule is also



strengthened medially by the ulnar collateral ligament, which is attached to the ulnar styloid process and triquetrum. The joint capsule is also strengthened laterally by the radial collateral ligament, which is attached to the radial styloid process and scaphoid<sup>5</sup>.

**Movements-** Movements at the wrist are usually associated with the movements at the mid carpal joint. The active movements are described.

- Flexion: it takes place more at the mid carpal than at the wrist joint. The main flexors are: flexor carpi radialis, flexor carpi ulnaris, palmaris longus. The movement is assisted by long flexors of the fingers and thumb and abductor pollicis longus.
- Extension: it takes place mainly at the wrist joint. The main extensors are: extensor carpi radialis longus, extensor carpi radialis brevis and extensor carpi ulnaris. It is assisted by the extensors of the fingers and thumb
- Abduction: it occurs mainly at the midcarpal joint. The main abductors are: flexor carpi radialis, extensor carpi radialis longus and extensor carpi radialis brevis, abductor pollicis longus and extensor pollicis brevis. Adduction: it occurs mainly at the wrist joint. The main adductors are: flexor carpi ulnaris, extensor carpi ulnaris

- Circumduction: the range of flexion is more than that of extension. Similarly, the range of adduction is greater than abduction (due to shorter styloid process of ulna) .<sup>6</sup>

Fracture of the distal end of the radius is a common fracture in adults > 50 years of age and occurs more frequently in women because their bones are more commonly weakened by osteoporosis. A complete transverse fracture of the distal 2 cm of the radius, called a Colle's fracture, is the most common fracture of the forearm. The distal fragment is displaced dorsally and is often comminuted (broken into pieces). The fracture results from forced dorsiflexion of the hand, usually as the result of trying to ease a fall by outstretching the upper limb. Often the ulnar styloid process is avulsed (broken off). Normally the radial styloid process projects farther distally than the ulnar styloid; consequently, when a Colle's fracture occurs, this relationship is reversed because of shortening of the radius. This clinical condition is often referred to as a dinner fork (silver fork) deformity because a posterior angulation occurs in the forearm just proximal to the wrist and the normal anterior curvature of the relaxed hand. The posterior bending is produced by the posterior displacement and tilt of the distal fragment of the radius<sup>7</sup>.



**Blood supply-** dorsal and palmar carpal arches

**Nerve innervation-** anterior interosseous branch of median nerve, posterior interosseous branch of radial nerve, dorsal and deep branches of ulnar nerve<sup>8</sup>.

## DISCUSSION

After anatomically exploring the area considered as the *Manibandha Marma* in the classics, wrist joint or the radio-carpal joint can be considered as the *Manibandha Marma*.

- Location is at the junction of radioulnar (distal) joint and carpals that is the radio carpal joint.
- Injury to this *Marma* leads to persistent pain. As we know trauma to joint leads to continuous pain for a long time Colle's fracture and also the degenerative joint diseases of wrist are very painful.
- The fractures may lead to deformity like dinner fork deformity, displacement of lunate can lead to compression of median nerve resulting in carpal tunnel syndrome. Thus features like *stabhta*, *kunthta* are well understood.

## CONCLUSION

Therefore *Manibandha Marma* anatomically is explored to be *Marma* of forearm and a *Sandhi Marma*. Besides

being a joint between radius and carpals, many other important structures are found here like median nerve, radial nerve, ulnar collateral ligament, radial collateral ligament, dorsal radial collateral ligament, palmar ulnar collateral ligament, palmar radio collateral ligament, carpal tunnel, the bones themselves radius, ulna and beautifully arranged carpals. All these together make this area a very vulnerable point. Thus it is considered to be *Marma* with context to its fatality and similarity in grave features. Thus, it is to be preserved to avoid any kind of *Marma* injury. So, radio carpal joint can be considered as *Manibandha Marma*.



## REFERENCES-

1. Kaviraja Ambika Dutt Shastri (2012) edited with Ayurveda-Tattva-Sandipika, Shushrut Samhita Part 1; ISBN :978-81-89798-19-2.
2. Monier-Wiliams English-Sanskrit Dictionary, (2013 Edition).
3. Kaviraja Ambika Dutt Shastri (2012) edited with Ayurveda-Tattva-Sandipika, Shushrut Samhita Part 1, Sharir Sthana chapter 6 verse 24.; ISBN :978-81-89798-19-2.
4. Krishna Garg (2010). B D Chaurasia's Human Anatomy- Regional And Applied Dissection and Clinical Ed Fifth, Vol 1; 978-81-239-1863-1.
5. Susan Standring (2008), Gray's Anatomy- The Anatomical Basis of Clinical Practice 40<sup>th</sup> Edition, ISBN: 978-0-8089-2371-8.
6. Krishna Garg (2010). B D Chaurasia's Human Anatomy- Regional and Applied Dissection and Clinical Ed Fifth, Vol 1; ISBN 978-81-239-1863-1.
7. Moore, Keith L.; Arthur F. (2006), Clinically Oriented Anatomy, 5<sup>th</sup> Edition.
8. Sudha Seshayam (2016), Inder Bir Singh's Textbook Of Anatomy, Vol 1, 6<sup>th</sup> Edition; ISBN 978-93-5152-963-7.