

“A review on anatomical aspect of *kurpara marma* as *vaikalyakara marma* with special reference to tennis elbow”

Divya Deepak Varma*¹, Manisha Kishanrao Dawre², Sangeeta Gorakshanath Kanade³

¹PG Scholar, ²Associate Professor, ³PG Scholar,

Department of Rachana Sharir,

Govt. Ayurved College Osmanabad, Maharashtra, India

***Corresponding author:** dvarma2493@gmail.com

ABSTRACT:

Acharya Sushruta has described 107 *marmas*. *Marma* is constituted as combination of *Mamsa* (muscle), *Sira* (vessels), *Snayu* (nerve, tendon, ligament), *Asthi* (bone) and *Sandhi* (joints). This five tissue participate to play vital role in any injury that occur to any of the *marma*. *Kurpara marma* is located at the junction of *bahu* (arm) and *prabahu* (forearm) i.e exactly at the elbow joint in both the upper limbs. *Kurpara marma* is one of the *Vaikalyakara marma* (loss of function). *Vaikalyakara marma* means the *marma* which causes deformity on getting injured.. An injury to this *marma* causes deformity, pain and swelling. The articulating surfaces that form the elbow joint occurs between the trochlea and capitulum of humerus and trochlear notch of the ulna and head of radius. Elbow joint is responsible of flexion and extension of the upper limb. Tennis elbow is one of the common disease that occur on lateral side of the elbow due to Sprain of radial collateral ligament and

tearing of fibres of the extensor carpi radialis brevis. It causes pain and restricted moment of the hand. Preventive measures can be used to reduce the symptoms and lessen the pain.

Keywords: *Kurpara marma*, *Vaikalyakara marma*, Tennis elbow

INTRODUCTION:

Ayurveda is an ancient science. It has given many unique concepts to the world of medicine in the age where there was no existence of anything called modern science. It has given a vast knowledge of medicine as well as surgery. Surgery and anatomy are just like the side of two coins.

Ayurveda has been evolved with the knowledge and contribution of lot of *acharyas* such as *acharya charaka*, *acharya sushruta* and many more. *Sushruta* is called as ‘father of surgery’. *Sushruta* has also contributed a lot towards anatomical knowledge.

‘*Sharir sthana*’ of *sushruta samhita* can be referred as best reference of anatomy. It has detail knowledge about embryology, study of bones & joints ,

study of blood vessels and nerves, visceral study and many more. Among many concepts contributed by *Ayurveda*, *Sushruta* has given a very important and unique concept of '*Marma Sharir*' in its *Sharir sthana*. *Marma Sharir* is also known as 'Science of vital' points. Along with *acharyas Sushruta* many *acharyas* such as *Charaka*, *Vagbhata* and their commenters have also given their contribution to put light on *marma* and its significance in the body.

According to *charya Daalhana*, *marma* is a spot of body where if there occurs any injury may cause death. *Sushruta* defines *marma* as meeting place of five elements of body namely *mamsa* (muscle), *sira* (blood vessels), *snayu* (ligaments, tendons), *asthi* (bones) and *sandhi* (joints)^[1]. These elements are seat of *pranas* in the body^[2]. So, any injury to *marma* leads to various deformities depending on structure involved in the *marma*.

There are 107 *marmas* on the human body^[3]. These 107 *marmas* are classified by *Shusruta* on the basis of composition as *mamsamarma*, *siramarma*, *sy anumarma*, *asthimarma* and *sandhimarma*.^[4] Also on the basis of effect of injury i.e. according to *parinama* they can be classified as *sadyopranahar* (immediate death), *kalantar marma* (death after some time), *vaikalyakar marma* (deformity), *visalyaghna* (death due to removal of foreign body) and *rujakar* (painful)^[5].

Kurpara marma is present at the joint of arm and forearm. It can be compared with elbow joint as both of them has a lot of anatomical and structural similarities. *Vaikalyakara marma* means the *marma* which causes deformity on getting injured. *Kurpara*

marma is one of the *vaikalyakara marma* as its injury may also lead to deformity or stiffness in upper limb.

Tennis elbow is a common disease which is caused due to repetitive wrist and arm motion. It is also called as lateral *epicondylitis*. It involves partial tearing or degeneration of the origin of superficial extensor muscles from the lateral epicondyle of humerus. The muscle which is involved mostly is extensor *carpi radialis brevis*. Tennis elbow can occur both in tennis as well as non tennis player. Symptoms include pain and restricted movement of forearm. The pain increases with the activity of the forearm. More than 1 million cases occur in India of tennis elbow. It usually affects individuals more than 40 years of age. Preventive measures should be taken in order to prevent the disease to be worse.

VAIKALYAKAR MARMA:

There are 44 *vaikalyakara marma* present in the body^[6]. They are called as *vaikalyakara* as any injury to them can cause *vaikalyatvam* i.e. disability in the body^[7]. These *marma* have *soma* (water) *mahabhuta* in them. *Soma* due to its coldness and firmness sustain life^[8]. If injury occur to these *marmas* they can cause deformity in the body but if it is treated by efficient physician the injured part can become active.

KURPARA MARMA:

Kurpara marma is located at the junction of *bahu* (arm) and *prabahu* (forearm) i.e. exactly at the elbow joint in both the upper limbs. In lower limb, this *marma* is represented by *janu marma* or *marma* at knee joint. They are 2 in number, 1 in each limb at the elbow joint. As it is located in limb it is

classified under *shaakhagata marma*. Structurally, it is a *sandhi marma*. It is present in between *prakoshta* (humerus), *praganda* (radius and ulna) *asthi* ^[9]. It also contains other structures such as *sira*, *snayu* and *mamsa* similarly as in the elbow joint. So, it can be compared with the elbow joint. *Kurpara marma* on getting injured causes *vaikalya* or deformity of the structures so it comes under type of *vaikalyakara marma* ^[10]. Measurement of this *marma* is 3 *anguli* ^[11].

ANATOMY OF ELBOW JOINT:

Elbow Joint is a joint in between lower end of humerus and upper end of radius and ulna. It is a compound synovial joint as there are two articulations in the joint ^[12]. Its complexity is increased by continuity with the superior radioulnar joint. It is also a hinge type of joint as it allows movement only in one plane.

Proximal Articular Surfaces:

The articular surfaces are the humeral trochlea and capitulum, and the ulnar trochlear notch and radial head ^[13].

1. Trochlea – It is a pulley like structure on medial aspect of distal end of the humerus. It forms Ulno-Trochlear joint with trochlear notch of ulna.
2. Capitulum – The capitulum and the head of the radius are reciprocally curved and the closest contact occurs with a semiflexed radius in midpronation. The rim of the head, more prominent medially, fits the groove between humeral capitulum and trochlea to form Radio-Capitellar joint.

Proximal Radio –Ulnar joint:

1. It is a joint present in between the head of the radius and a fibrous

ring formed by the radial groove of the ulna and the annular ligament that holds the head of radius in this groove.

2. The proximal radioulnar joint is functionally a pivot joint, allowing a rotational movement of the radius on the ulna.

The elbow joint is continuous with the proximal radioulnar joint. The humeroradial, the humeroulnar and the proximal radioulnar joints are together known as Cubital Articulations.

Fibrous Capsule :

A) Anteriorly-It is broad and thin.

- Proximally: Is attached to the front of medial epicondyle and humerus above the coronoid and radial fossae.
- Distally: Is attached to the edge of the ulnar coronoid process and annular ligament, being continuous at its side with the ulnar and radial collateral ligament.

B) Posteriorly- It is thin.

- Attached to the humerus along the upper edge of the olecranon process and back of the medial epicondyle.
- The capsule passes just below the annular ligament to attach to the posterior and inferior margins of the neck of radius.

The capsule allows the full range of motion of the elbow joint.

Synovial Membrane :

It extends from the humeral articular margins, lines the coronoid, radial and olecranon fossae, the flat medial trochlear surface, the capsule's

deep and the lower part of annular ligament.

Triangular synovial fold :

Projecting between the radius and ulna from behind is a crescentic synovial fold, partly dividing the joint into humeroradial and humeroulnar parts. It is irregularly triangular and contains extra synovial fat. Between the capsule and synovial membrane there are three other pads of fat. It varies from 1-4mm in thickness and 9-51mm in length.

Ligaments:

Most of the hinge joint in the body have collateral ligaments, including elbow joint. Collateral ligaments are located on the medial and lateral side of the joint. They are known as Medial (*Ulnar*) and Lateral (*Radial*) collateral joint.

1) *Ulnar* collateral ligament/Medial collateral ligament:

It is a triangular band, with anterior, posterior and inferior parts united by a thin region and attached to medial epicondyle of *humerus*^[14].

A) Anterior medial collateral ligament: It is the strongest and stiffest part of *ulnar* collateral ligament^[15].

- Attachment – Attached by its apex to the front of the medial *epicondyle* and by its broad distal base to the proximal tubercle on the medial coronoid margin.

It is overlaid by the Flexor carpi ulnaris, pronator teres, flexor *digitorum superficialis*.

- Function – It restrains the *valgus* stress from 20 to 120 degree of elbow flexion.

B) Posterior medial collateral ligament: It is triangular^[16].

- Attachment – It extends from the posterior margin of medial *epicondyle* of *humerus* to medial margin of olecranon process.
- Function – It limits elbow extension. It plays less role in providing *valgus* stability for the elbow.

C) Transverse collateral ligament: It is often weak.

- Attachment – It extends between the *olecranon* and *coronoid* process.
- Function – It provides less *valgus* stability.

It may help to keep the joint surface in approximation.

The gap between anterior band and posterior band is filled by intermediate fibres which are descending downward and get attached to the inferior band. Ulnar nerve forms close relation to ulnar collateral ligament. The anterior band is taut throughout most of the range of flexion, while the posterior band becomes taut between half and full flexion. The ulnar collateral ligament is critical in providing medial support to prevent elbow from abducting when stretched in physical activity.

2) Radial collateral ligament/ Lateral collateral ligament:

It is a fan-shaped band.

- Attachment – It is attached low on the lateral epicondyle

and to the annular ligament, some of its posterior fibres cross the ligament to the proximal end of the ulna's supinator crest.

It is intimately blended with attachment of supinator and extensor carpi radialis brevis. It is taut throughout most of the range of flexion.

- Function – It provides lateral stability and is rarely injured.

3) Annular ligament :

It wraps around the radial head and provides a sling effect around radial head for stability.

Muscles related to joint:

Muscles which are related to elbow joint are^[17]:

- Anteriorly – Brachialis, tendon of biceps brachii.

Also median nerve and brachial artery passes through it.

- Posteriorly – Triceps brachii and anconeus
- Medially – Flexor carpi ulnaris and other common flexors

Ulnar nerve passes over it.

- Laterally – Supinator, Extensor carpi radialis brevis and other common extensors.

Bursae related to joint:

- Subtendinous olecranon bursa:**
Lies between triceps tendon and upper surface of olecranon process.
- Subcutaneous olecranon bursa:**
Lies on posterior surface of olecranon.

- Bicipitoradius bursa :** A small bursae separating biceps tendon from radial tuberosity.

Blood supply of elbow joint:

- Arterial blood supply** – It is by arterial anastomosis around the elbow formed by branches of brachial, radial and ulnar artery.
- Venous blood supply** – Is by cephalic vein, basilic vein and by median cubital vein.

Nerve supply of elbow joint:

The joint receives branches from the following nerves-

- Ulnar nerve
- Median nerve
- Radial nerve
- Musculocutaneous nerve through its branch to the brachialis

Movements of elbow joint:

- Flexion :** Muscles involved are-

- Brachialis
- Biceps brachii
- Brachioradialis

- Extension:** Muscles involved are-

- Triceps brachii
- Anconeus

Carrying Angle:

The transverse axis of elbow joint is directed medially and downwards. Because of this the extended forearm is not in straight line with the arm, but makes an angle of about 13° with it. It is known as carrying angle^[18]. The normal carrying angle in male is 11° and in females is 14° away from body. It helps the arm to swing without hitting the hips while walking. In injuries of elbow this angle may increase or decrease.

TENNIS ELBOW:

Tennis elbow is an inflammation, soreness or pain on the lateral side of the

upper arm near the elbow. The pain can also be seen on medial and posterior side of the elbow. It is more common in men than women and is believed to be a degenerative disorder^[19]. It is also called as lateral epicondylitis.

Causes: It may occur possibly due to ^[20]-

- a) Sprain of radial collateral ligament
- b) Tearing of fibres of the extensor carpi radialis brevis.

Location of pain in tennis elbow^[21]:

- Lateral epicondyle – 75%
- Lateral muscle mass – 17%
- Medial epicondyle – 10%
- Posterior – 8%

Etiology:

- 1) In tennis player- Seen in more than 1/3rd tennis players all over the world and common age is more than 35 yrs and it is basically due to faulty playing techniques^[22].
- 2) Non tennis player – It is more common in nontennis player. This group includes housewives, carpenters, miners, drill workers etc.
- 3) Indian housewives – This the the third largest group suffering from tennis elbow^[23]. The household chores like washing, brooming, cooking etc causes repeated extension of the elbow leading to tennis elbow.

As per Ayurvedic concept, tennis elbow is a condition which can be caused with the vitiation of *vata* with *anubandha* of *kapha dosha* which are important factors for *shoth* (inflammation) and *shoola* (pain) at the site affected.

Symptoms :

Various symptoms can be seen in tennis elbow such as –

- 1) Pain on the outer aspect of the elbow and has difficulty in gripping objects and lifting them. The pain may also radiate into upper or lower arm.
- 2) Sports person will have difficulty in extending the elbow.

Clinical tests:

- 1) Local tenderness on the outer side of the elbow at the common extensor origin with aching pain in the back of the forearm.
- 2) Cozen's test: Painful resisted extension of the wrist with elbow in full extension evokes pain at the lateral elbow^[24].
- 3) Maudsley's test: Resisted extension of the middle finger evokes pain at the lateral epicondyle due to disease in extensor digitorum communis^[25].

Ayurvedic treatment:

Agnikarma is very useful for the patients of tennis elbow as it help to pacify the vitiated *vata* and *kapha dosha*. *Agnikarma* can help to reduce the *shoth* and *shoola* present over the injured part.

Complications of tennis elbow:

If tennis elbow is not treated it can cause various complications such as-

- 1) The most serious complication which can be seen is complete tendon rupture, which results in weakness on attempted wrist extension.
- 2) Recurrence of injury with overuse.

Preventive measures for tennis elbow:

- 1) Avoid repetitive tasks
- 2) Do forearm exercises
- 3) Regular exercise & proper form when lifting heavy weight.

- 4) Take rest and physiotherapy
- 5) For tennis players, exercise, light racket, smaller grip, elbow strap etc are helpful.

CONCLUSION:

We have understood that all the 107 *marmas* in the body are very important as any injury to them may cause either deformity or death. *Kurpura marmas* is also one of them. It is located in between arm and forearm. It can be correlated with elbow joint as both are very similar anatomically. Elbow joint is a compound joint as it is made up by articulation of lower end of humerus with the radius and ulna. It is made up of three joints namely humeroulnar, humeroradial and proximal radioulnar joint. The stability of joint produced by the wrench shaped articular surface of the olecranon and the pulley shaped trochlea of the humerus. In spite of this anatomical structure it is vulnerable to the traumatic effect of these region produce pain and inflammation and loss of function. Blunt trauma produces permanent disability. According to *ayurvedic* point of view *kurpara marma abhigata* leads to deformity of elbow, produces swinging of arm, stiffness of arm, painful restricted movement of upper limb etc. Because of this disability our *acharyas* have mentions that *kurpara marma* is *vaikalyakara marma*. In day to day life, various sports activity, improper use of forearm and arm, any nerve injury, muscle weakness, will hamper the function of elbow joint. Tennis elbow is also a disease caused on lateral side due to tear or inflammation of tendon of extensor muscle mainly extensor carpi radialis brevis. It may occur in tennis players as well as non tennis players due to repetitive moments of the

forearm. It causes pain and restricted moment. In order to prevent the joint from injury we should take proper measures and proper strengthening should be given for proper functioning to avoid *vaikalyatha*.

REFERENCES:

1. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika Hindi commentary* Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 16, pg no 69, 2015.
2. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika Hindi commentary* Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 16, pg no 69, 2015.
3. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika Hindi commentary* Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 3, Page no 67, 2015.
4. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika Hindi commentary* Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 3, Page no 67, 2015.
5. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika Hindi commentary* Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 8, Page no 68, 2015.
6. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with

- Ayurveda Tattva Sandipika* Hindi commentary Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 8, Page no 68, 2015.
7. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika* Hindi commentary Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 8, Page no 68, 2015.
 8. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika* Hindi commentary Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 17, Page no 70, 2015.
 9. Priyavat Sharma, Susrutha samhitha, sharirasthan 6/24 published by Choukhambha visvabharati Oriental publishers & distributors. varanasi. reprint 2005.
 10. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika* Hindi commentary Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 12-13, Page no 69, 2015.
 11. Ambikadatta Shashtri, Susruta Samhita of Maharshi Susruta with *Ayurveda Tattva Sandipika* Hindi commentary Varanasi: Chaukhamba Prakashana (vol 1), Sharirasthan, Chapter 6, verse no 29, Page no 76, 2015.
 12. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 640, 2000.
 13. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 640, 2000.
 14. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 641, 2000.
 15. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 641, 2000.
 16. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 641, 2000.
 17. Churchill Livingstone, Gray's Anatomy – the anatomical basis of medicine & surgery, Harcourt Publishers Limited, Elbow joint, Page no 641, 2000.
 18. B.D Chaurasia's Human Anatomy Regional and applied dissection and clinical volume 1 Upper limb and thorax, 5th edition 2010, chapter no 10, Joints of upper limb, Elbow joint Pg.no 145.
 19. John Ebneza, Textbook of orthopedics, Jaypee Brothers medical publishers (P)Ltd, 4th edition, Regional conditions of upper limb, Tennis elbow, Page no 385, 2010
 20. B.D Chaurasia's Human Anatomy Regional and applied dissection and clinical volume 1 Upper limb and thorax, 5th edition 2010, chapter no 10, Joints of upper limb, Elbow joint Pg.no 154.
 21. John Ebneza, Textbook of orthopedics, Jaypee Brothers medical

- | | |
|--|---|
| <p>publishers (P)Ltd, 4th edition ,
Regional conditions of upper limb,
Tennis elbow, Page no 385, 2010</p> <p>22. John Ebneza, Textbook of
orthopedics, Jaypee Brothers medical
publishers (P)Ltd, 4th edition ,
Regional conditions of upper limb,
Tennis elbow, Page no 386, 2010</p> <p>23. John Ebneza, Textbook of
orthopedics, Jaypee Brothers medical
publishers (P)Ltd, 4th edition ,</p> | <p>Regional conditions of upper limb,
Tennis elbow, Page no 386, 2010</p> <p>24. John Ebneza, Textbook of
orthopedics, Jaypee Brothers medical
publishers (P)Ltd, 4th edition ,
Regional conditions of upper limb,
Tennis elbow, Page no 386, 2010</p> <p>25. John Ebneza, Textbook of
orthopedics, Jaypee Brothers medical
publishers (P)Ltd, 4th edition ,
Regional conditions of upper limb,
Tennis elbow, Page no 387, 2010</p> |
|--|---|

DOI:**Conflict of Interest:**<https://doi.org/10.52482/ayurline.v5i03.557>

Non

Source of**funding:** Nil**Cite this article:**

*"A review on anatomical aspect of kurpara marma as vaikalyakara marma with
special reference to tennis elbow "*

Divya Deepak Varma, Manisha Kishanrao Dawre, Sangeeta Gorakshanath Kanade

Ayurline: International Journal of Research In Indian Medicine 2021; 5(4):01-9