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Review Article

A CRITICAL REVIEW ON URDHVA SHAKHAGAT KURCHASHIR MARMA WITH SPECIAL REFERENCE TO DE QUERVAIN'S DISEASE

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ABSTRACT

Background: *Marmas* being vital points of body should be treated with great precaution and with special attention towards protecting them. *De Quervain's* disease is a painful inflammation of tendons in the thumb that extend to the wrist (tenosynovitis). Incidence of *De Quervain's* disease (*tenosynovitis*) in young, active population is seen to be more according to National Centre for Biotechnology Information (NCBI-E pub 2008 Dec 10). There were 11,332 cases of *De Quervain's* disease (tenosynovitis) in the population at risk of 121, 17, 749 person-year (0.093%). *De Quervain's* disease being a disease of *Marma Sthana*. Same condition is seen in *Kurchashir Marma viddha lakshanas*. *Kurchashir Marma* is one of the *Rujakar Marma*, present in both *Urdhva Shakha* (upper limb) and both *Adho Shakha* (lower limb). This study will enlighten the *Marma* concept behind this disease. **Aim:** To study *Urdhva Shakhagat Kurchashir Marma* with special reference to *De Quervain's* disease. **Materials and methods:** All references regarding *Kurchashir Marma* and *De Quervain's* disease were collected from available literatures and reputed websites. **Conclusion:** The

anatomical structures involved in *De Quervain's* disease is related to the anatomical structures of the *Kurchashir Marma*.

Introduction

One of the valuable concepts of *Ayurveda* is *Marma Sharir*. The concept of *Marma* is a great contribution of Acharya Sushruta, who mentioned 107 vital points in various parts of the body. *Marma* is site of *Jivatma* or *Jivaadhar* or *Prana* (the soul). So the injury to the *Marma* makes symptoms like pain, deformity of the structures or may be sudden death. *Kurchashir Marma* is one of the *Rujakar Marma*, present in both *Urdhva Shakha* (upper limb) and both *Adho Shakha* (lower limb). In this article the main focus is on *Urdhva Shakhagat Kurchashir Marma*. In *Urdhva Shakha*, it is present below the *Manibhandha Sandhi* (Wrist joint) region or base of the thumb. Trauma to *Kurchashir Marma* result especially in *Ruja* (pain) and *Shoph* (Swelling) of affected part. Same condition is seen in *De Quervain's* disease. *De Quervain's* disease is a painful inflammation of tendons in the thumb that extend to the wrist (tenosynovitis). The swollen tendons and their coverings rub against the narrow tunnel through which they pass. The result is pain at the base of the thumb and extending into the lower arm. Incidence of *De Quervain's* disease (tenosynovitis) in young, active population is seen to be more according to National Centre for Biotechnology Information (NCBI-E pub 2008 Dec 10). There were 11,332 cases of *De Quervain's* disease (tenosynovitis) in the population at risk of 121, 17, 749 person-year (0.093%).

This review article will help to enlighten the anatomical co-relation of *Kurchashir Marma* behind this disease.

Aim

To study *Urdhva Shakhagat Kurchashir Marma* with special reference to *de quervain's* disease.

Objectives

- To study the *Kurchashir Marma Sharir* and *De Quervain's* disease.
- To establish co-relation in between *Kurchashir Marma Viddha Lakshanas* and *De Quervain's* disease.

MATERIALS AND METHODS

All references regarding *Kurchashir Marma* and *De Quervain's* disease were collected from available literatures and reputed websites.

Literature review

Concept of Marma: First and foremost literature of *Marma* is seen in *Brihatrayee* which is described in the sixth *Adhyaya* of *Sharir Sthana* "*Prathek Marma Nirdesh Sharir*" of *Sushruta Samhita*. *Marmas* are the vital areas on the human body, some of them if injured/traumatized, which can produce death or permanent deformity or extreme pain. According *Sharangdhar Samhita*, *Jivadhar* (site of *prana*) or *Marma Sthana* is

where *Sira*, *Snayu*, *Sandhi*, *Mansa* and *Sandhi* these five structures are usually lies in one region. *Marma* (vital spot) are one hundred and seven in number.

A review of *Kurchashir Marma* from available *Ayurvedic* literatures:

Kurchashir Marma is type of *Snayu Marma* according to *Rachana* or structure and also it is a type of *Rujakar Marma* according to *Parinam* or Effect.

Total number of *Kurchashir Marma* = 4 (Su.Sha. 6/14)

Site of *Kurchashir Marma*: *Kurchashir Marma* are one of the *Sakthi / Bahu / Shakhagat* (extremities) *Marma*. It is present in both *Shakhas* (extremities) i.e. *Urdhva Shakha* (upper extremity) and *Adho Shakha* (lower extremity). *Adho Shakhagat* (lower limb) *Kurchashir Marma* is present in right and left leg and it is situated below the *Gulpha Sandhi* (ankle joint). This *Kurchashir Marma* also considered in both *Urdhva Shakha* (upper limb). In *Urdhva Shakha* *Kurchashir Marma* is present in right and left hand and it is situated below the *Manibandha Sandhi* (wrist joint) near the base of thumb. It is placed above the *Kurcha Marma* that's why it is *Kurchashir* means Head of the *Kurcha*.

Dimension of *Kurchashir Marma*: 1 Angul

***Mahabhuta* of *Kurchashir Marma*:** According to Acharya Sushruta *Agni* and *Vayu Mahabhuta* are present in *Kurchashir (Rujakar) Marma*.

According to Dr. Ghanekar Tika - ulnar & radial collateral ligament involved at *Kurchashir Marma* region.

According to modern aspect– *Kurchashir Marma* can be co-related with the various anatomical modalities viz. structures like the muscles, arteries, veins and nerves as well as tendons, bones and joints involved in the anatomical formation of the thumb as per the definition of the term “*Marma*” as described below –

1. *Mansa / Various Muscles and Sheaths Related to Urdhva-Shakhagata Kurchashir Marma:*

- Opponens pollicis
- Flexor pollicis longus
- Flexor pollicis brevis
- Flexor carpi radialis
- Abductor pollicis longus
- Abductor pollicis brevis
- Extensor carpi radialis longus
- Extensor carpi radialis brevis
- Extensor pollicis longus
- Extensor pollicis brevis
- Adductor pollicis

2. Sira /channels or Srotas related to Urdhva-Shakhagata Kurchashir Marma:

- Artery supply – Branches of radial artery - Princeps pollicis artery, superficial palmar artery
- Vein supply – Dorsal venous network of hand
- Nerve supply – Dorsal digital nerves of radial nerve, proper palmar digital nerves of median nerve, anterior inter osseous nerve, Branch to muscles of thenar eminence
- Lymphatic supply: Infra clavicular lymph nodes

3. Snayu (ligament, tendon and apponeurosis) related to Urdhva-Shakhagata Kurchashir Marma:

- Radial collateral ligament – (According to Dr.Ghanekar Tika)
- Ulnar collateral ligament – (According to Dr.Ghanekar Tika)
- Medial and Lateral collateral ligament
- Tendon of flexor pollicis longus
- Tendon of flexor carpi radialis

4. Asthi (bones, cartilages) related to Urdhva-Shakhagata Kurchashir Marma:

- Scaphoid
- Trapezium, Trapezoid
- 1st Metacarpal, Proximal Phalanx, Distal Phalanx.

5. Sandhi (bony joints) related to Urdhva-Shakhagata Kurchashir Marma:

- 1st Carpometacarpal Joint
- Metacarpo-phalangeal Joints

Marmabhighat

Marmabhighat means injury or trauma to vital spot or *Marma sthana*. It is an important concept described by Acharya Sushrut and Acharya Vagbhata.

Kurchashir Marmabhighat/ Vidhya Lakshana

कूर्चशिरोनाम, तत्र रुजाशोफौ; ।

(सु.शा.6/24)

Marmabhighat or injury to *Kurchashir Marma* results especially in *Ruja* (pain) and *Shoph* (swelling) of affected part (thumb).

A review of *De quervain's* disease:

De Quervain's disease is named after the swiss surgeon Fritz *De Quervain* who first identified it in 1895. *De Quervain's* disease occurs when the tendons around the base of the thumb are irritated or constricted. It is steno sing tenosynovitis affecting the tendons of abductor pollicis longus and extensor pollicis brevis. Recurrent mild trauma to Thumb/wrist as in some occupations like typist, mechanics and pregnancy are known predisposing factors for it.

De Quervain's tenosynovitis involves the tendon sheaths of abductor pollicis longus and extensor pollicis brevis, and produces pain maximal over the radial aspect of the distal forearm and wrist. There is tenderness (with or without warmth, linear swelling and fine crepitus) over the distal radius and marked pain on forced ulnar deviation of the wrist with the thumb held across the patient's palm (Finkelstein's sign). It is usually caused by over-usage.

Causes

The inflammation may be caused by anything that causes swelling or thickening of the tendons. Repetitive trauma, overuse or inflammatory processes are likely causes, but frequently the cause is unknown.

Synonym:

- *Blackberry* thumb
- Gamer's thumb
- Washerwoman's sprain
- Radial styloid tenosynovitis
- *De Quervain's syndrome*
- De Quervain's tenosynovitis
- De Quervain's steno sing tenosynovitis
- De Quervain's tendinosis
- Mother's wrist or mommy thumb
- Radial styloiditis

Anatomy related *De Quervain's* disease

Passing over the back (or dorsal surface) of the wrist are the tendons that straighten the thumb, fingers and wrist. These tendons run through six tunnels (compartments) under a thick fibrous layer called the extensor retinaculum. *De Quervain's* steno sing tenosynovitis affects the tendons of the first dorsal compartment.

Two of the main tendons to the thumb pass through a tunnel or series of pulleys located on the thumb side of the wrist. Tendons are rope like structures that attach muscle to bone. Tendons are covered by a slippery thin soft tissue layer, called synovium. This layer allows the tendons to slide easily through a fibrous tunnel called a sheath.

Any swelling of the tendons or thickening of the sheath, results in increased friction and pain with certain thumb and wrist movements.

Pathology:

This varies with respect to these clinical entities:

- In *De Quervain's* disease, the primary pathologic observation is a reactive fibrosis and thickening of the sheath of the first wrist extensor compartment. Concurrent pathology involving the underlying synovial sheaths may be present.

- In *De Quervain's* tenosynovitis, pathologic changes involve the synovium of the APL (Abductor pollicis longus) and EPB (Extensor pollicis brevis) and may vary from inflammatory to fibrotic.

Clinical presentation: *De Quervain's* disease characterized by:

- localized dorsal radial wrist pain (that may radiate proximally and/or distally).
- localized tenderness and sometimes crepitus and/or swelling over the tendon structures contained within the first wrist extensor compartment.
- Pain on thumb during movement.

Finkelstein's test is used to diagnose *De Quervain's* disease in people who have wrist pain. To perform the test, the examining physician or therapist grasps the thumb and ulnar deviates the hand sharply. If sharp pain occurs along the distal radius; *De Quervain's* disease is likely.

DISCUSSION AND RESULT

Kurchashir Marmabhighat/Vidhya Lakshana

Marmabhighat is a concept that indicates injury or trauma to *Marma Sthana* or vital points due to *Agantuj* (external) or *Nija* (internal) *Hetus* (causes) like – *Aaghata* (trauma or shock) or repetitive/excess activity of that *Marma* region.

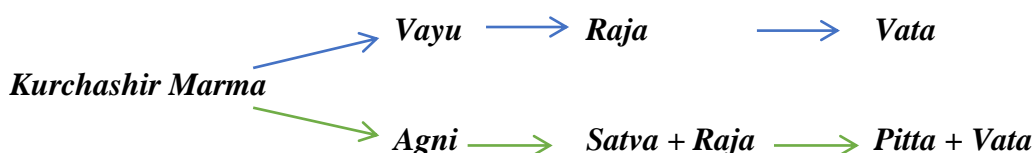
Kurchashir Marmabhighat Lakshanas (symptoms) are *Ruja* (pain) and *Shoph* (swelling) of affected part. Because it has place (site) of *Agni* (Pitta) and *Vayu* (*Vata*) *Mahabhuta* predominantly, both these are producers of these symptoms i.e. *Ruja* and *Shoph*.

रजोबहुलो वायुः सत्व रजो बहुलो अग्निः ॥

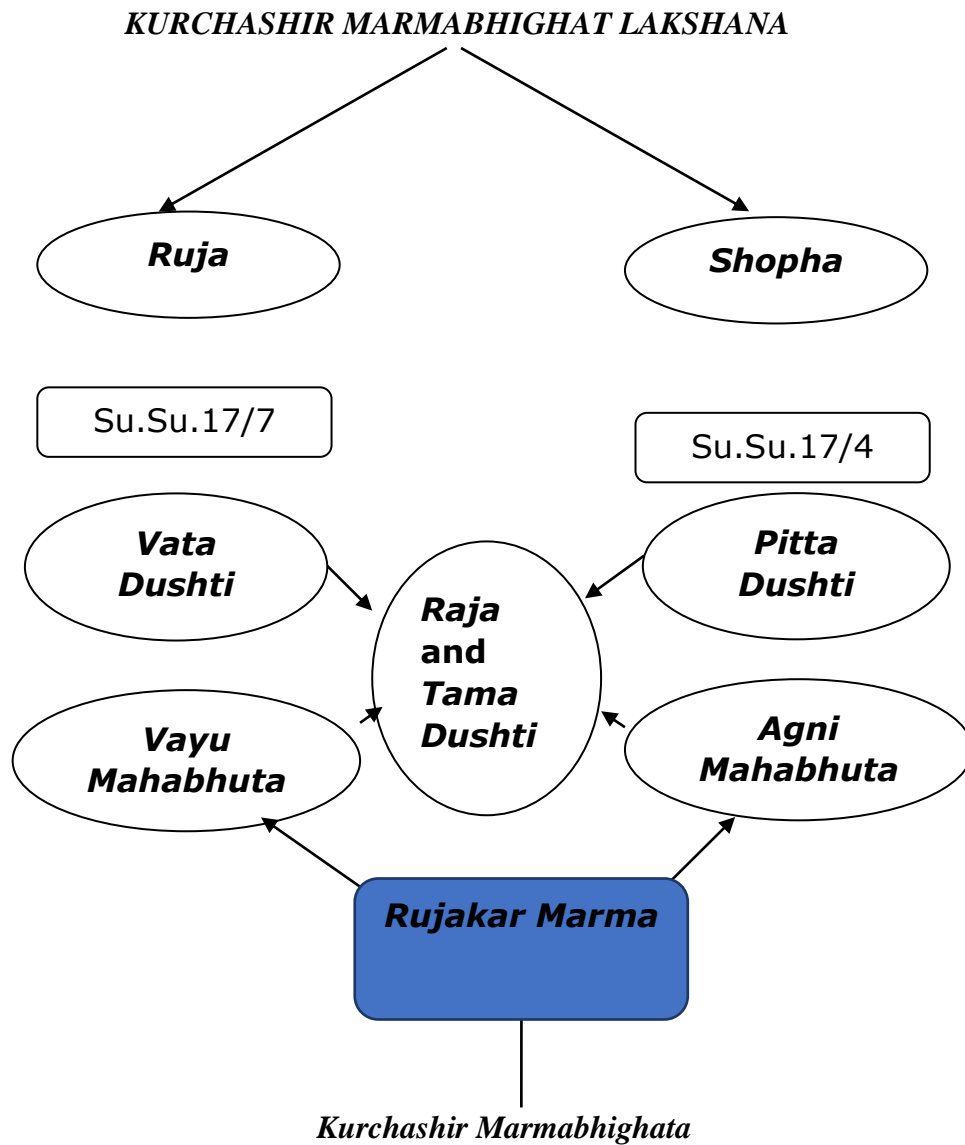
(सु. शा. 1/20)

पवनः रजो गुणमयः पित्तं सत्वगुणोत्तरान् कफः तमोगुणोधिकः ॥

(शा.सं.पु.5)



According to *Acharya Sushruta* (*Su.Su.17/7*) without the involvement of *Vata* there is no *Ruja* (no pain) and (*Su.Su.17/4*) *Agantuja* (produced by extraneous causes like blow, injury, insect bites, foreign bodies, poison etc.) *lakshanas* like *Shoph* (oedema) and *Aaraktata* (red colour) are due to *pitta* and *rakta*.



De Quervain's disease

De Quervain's disease is a common painful condition of the thumb that causes swelling of the tendon sheath or tendons they related to thumb. Due to the swelling and pain, movement of the thumb is restricted. This is not harmful, but it can be very painful.

Causes: Repetitive trauma, overuse, but frequently the cause is unknown.

Structure involvement in *De Quervain's* disease –

- Tendon sheaths of -
 - Abductor pollicis longus (APL)
 - Extensor pollicis brevis (EPB)

Table no. 01: Similarity between *Kurchashir Marmabhighat* & *De Quervain's* disease

Sr no.	Title	<i>Kurchashir Marmabhighata</i>	De Quervain's disease
1	Symptoms	<i>Ruja ,Shoph</i>	Pain, Inflammation, Tenderness
2	Sign	<i>Raja, Tama Dushti</i>	Irritation
3	Causes	<i>Marmabhighat</i>	Repetitive trauma, Overuse, but frequently Unknown
4	Anatomical Involved Structures	<i>Kurchashir Marma</i>	Thumb and Lateral aspect of wrist joint
5	Structure	<i>Snayu Marma</i>	Tendons of Abductor pollicis longus and Extensor pollicis brevis

CONCLUSION

- The anatomical structures involved in *De Quervain's* disease is related to the anatomical structures of the *Kurchashir Marma*.

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