

Review of Anatomical & applied aspect of Talahridya Marma

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Abstract -

Marma is an ancient concept first described way back in vedic literatures and was described in many literatures afterwards .i.e in upnishads, epics like mahabharat, ramayan, literatures of Ayurveda, etc. Most references highlights marma as fatal parts of body that should be protected from injury during warfare or surgery while few references are there which laid emphasis on these marma as vital region of the body which may be utilized for treatment of organic diseases & are even of psychological and spiritual importance. This review is of objective to get clearer insight regarding Talahridya marma & its applied aspects. \

Keywords - Talahridaya, Marma, Prana, Anatomy

Introduction -

The description of Marma can be traced way back in Vedas to present modern literatures. It has always been a subject of interest because of its applied aspects. In ancient literatures it has been considered as a science of vital parts of body that must be protected in all conditions, if one has pursuit for survival.

In literature of Ayurveda the concept of “marma” was described by both the school of medicine and surgery .i.e. by both Acarya Charak and Acarya Sushruta & is quite widespread and detailed. In charak samhita the description of marma are limited to three marma while in sushruta samhita there is elaborate description of all 107 marma.¹ To have clearer insight, the description in both literatures must be analyzed keenly in light of present modern knowledge.

Marmas are given utmost importance by all Acharyas but Acharya Susruta had described it in great detail as he belongs to school of surgeons & the knowledge of Marma becomes mandatory for surgery & also for the management of wounds. In comparison to an elaborate & tedious description of all structures of the body, knowledge of regional anatomy finds its better scope in management of the injuries involving the Marmas. A thorough knowledge of Marma lead the Acharyas to a excellence of surgery even though details of anatomical approaches in the field of Marma was not given so much importance.

Talahridya marma is one of the important marma described by Acarya Sushruta in both upper limb and lower limb.

Talahridya Marma of lower limb are described in classics with following details² –

Anatomical site /surface anatomy: It is situated in the mid of the sole of the foot & can be located at the centre of the sole of the foot on a straight line drawn from the root of the madhiama anguli (middle toe). On injury to this marma there is extreme pain & may leads to death in long run and is included in category of *kalantara pranahara marma*.

This marma is better palpable in persons lying over bed or comfortably sitting over with stretched legs. Make an imaginary straight line drawn vertically from the base of the middle finger to heel. Both thumbs

can be simultaneously used to probe to locate the marma in sole. One should carefully locate the point of slight tenderness on deep palpation, above the aponeurosis of palm and soles. It falls just above the arch of anastomosis of blood vessels.

Injury results: the cause of death is the extreme pain on injury to this marma. Injury may cause impairment of the function of flexion and extension of phalanges and adduction of the great toe. Severe bleeding may occur due to injury to plantar arch.

Regional anatomy³

Underlying important anatomical structures & their applied anatomy: corresponding to above description, the anatomical structures likely to fall under the area of this marma would be

1. Muscles in the sole of the foot (from below upwards),
 - a) flexor digitorum brevis, b) quadratus plantae, c) oblique head of the adductor hallucis
2. Planter aponeurosis, 3. Plantar arch of arteries, 4. Long plantar ligament, 5. Deep branch of lateral plantar nerve (accompanies the plantar arch).

Discussion:

If these above structures are worked out in the light of the nature of the anatomical structures found in the area, it clearly shows the involvement of muscles, blood vessels and the nerve situated over there.

When tala hridaya marma is precisely worked out, the lateral plantar arch and medial plantar nerve are two important anatomical structures which can be seen. Though these important structures lie by the side of a long plantar ligament but if it is injured it profusely bleeds and the death takes place. The death occurs just like a tree which dries away when it is cut at the root.

Briefly, it can be stated that the plantar aponeurosis, plantar ligament, the flexor digitorum muscle, interosseous or lumbricals along with the blood vessels and the nerves may be probably anatomical structure situated in the area of the marma. A cut injury or trauma to this area, if get infected, may result profused bleeding and abscess formation which may ultimately endangers the life, if left unmanaged.

Talahridya Marma of upper limb are described in classics with following details² –

Anatomical site /surface anatomy : This marma is situated in the mid of the palm at joining the line along with the middle finger. Talahridaya marma is situated in the centre of the sole of the foot in a straight line drawn from the root of the madhyama anguli (middle toe).

To locate this marma on should make an imaginary straight line drawn vertically from the base of the middle finger to base of the palm. The talahridaya can be easily palpable with one thumb in palms. .

Injury results: the cause of death is the extreme pain on injury to this marma. Injury may cause loss of functions of flexion and extension of 2nd, 3rd, and 4th fingers and adduction of 2nd, 3rd and 4th metacarpals. Severe bleeding may lead to severe pain, shock or gangrene of the fingers.

Underlying important anatomical structures & their applied anatomy⁴: corresponding to above description, the anatomical structures likely to fall under the area of this marma would be

1. Intermediate part of the palmar aponeurosis,

2. Superficial volar arch
3. Deep palmar arch
4. Adductor pollicis
5. Flexor pollicis brevis
6. Interosseus lumbricals

Discussion:

A medial fibrous septum extends deeply from the medial border of the palmar aponeurosis to the fifth metacarpal. Medial to this septum is the medial or hypothenar compartment containing the hypothenar muscles. Similarly, a lateral fibrous septum extends deeply from the lateral border of the palmar aponeurosis to the third metacarpal. Lateral to this septum is the lateral or thenar compartment containing the thenar muscles. Between the hypothenar and the thenar compartments is the central compartment containing the flexor tendons and their sheaths, the lumbricals, the superficial palmar arterial arch, and the digital vessels and nerves. The deepest muscular plane of the palm is the adductor compartment containing the adductor pollicis.

Between the flexor tendons and the fascia covering the deep palmar muscles are two potential spaces, the thenar space and the midpalmar space. The spaces are bounded by fibrous septa passing from the edges of the palmar aponeurosis to the metacarpals. Between the two spaces is the especially strong lateral fibrous septum, which is attached to the third metacarpal. Although most fascial compartments end at the joints, the midpalmar space is continuous with the anterior compartment of the forearm via the carpal tunnel.

The deep palmar arch is formed by anastomosis of the end of the radial artery with the deep palmar branch of the ulnar artery. It crosses the bases of the metacarpal bones and interossei, covered by the oblique head of adductor pollicis, the digital flexor tendons and lumbricals. In its concavity, running laterally, is the deep branch of the ulnar nerve. Rarely the arch is incomplete. There are variations in the size of contribution from the ulnar artery. Bleeding is usually profuse when the palmar (arterial) arches are traumatised. It may not be sufficient to ligate only one forearm artery when the arches are lacerated, because these vessels usually have numerous communications in the forearm and hand and thus bleed from both ends. For treating complicated hand injuries, it may be necessary to compress the brachial artery and its branches proximal to the elbow (e.g., using a pneumatic tourniquet).

If these above structures are worked out in the light of the nature of the anatomical structures found in the area, it clearly shows the involvement of muscles, blood vessels and the nerve situated over there. Injury to this area is always painful and an infection it leads to pus formation, cellulites and finally severe pain leading to death at later stages, if left unmanaged.

Applied aspect of Talahridya marma –

Marmas are not superficial landmarks on the body surface but these are deep-seated important physic-anatomical structures which are assumed to be important seats of *prana*⁵ or psycho-neuro-endocrine- immunological pathways⁶ which may be influenced in order to regulate the physical, mental and spiritual functions and has proved beneficial in many diseases⁷.

Talahridya marma is the marma that can be stimulated to get effect on cardiovascular system especially on blood pressure⁸ & it may utilized to treat hypertension in initial stages & this therapy may emerge as non-invasive, safe, cost effective option for treatment of hypertension & will open a newer vistas for application of this therapy in various dimension of human life.

Conclusion -

This may be concluded that thenar and mid thenar palmar spaces along with the deep palmar arch should be taken as the prominent contents of the tala hridaya marma in upper limb while in lower limb It can be stated that the plantar aponeurosis, plantar ligament, the flexor digitorum muscle, interosseous uscle along with the blood vessels and the nerves may be probably anatomical structure situated in the area of the marma. A proper scientific exploration in need of time to assess the potential, efficacy and safety of talahridya marma therapy for treatment of hypertension and related cardiovascular diseases as it may emerge as non-invasive, safe, cost effective option for treatment of hypertension.

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