

## A CRITICAL REVIEW OF LOHITAKSHA MARMA IN LOWER LIMB WITH SPECIAL REFERENCE TO SIGNIFICANCE OF VAIKALYAKARA MARMA

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### ABSTRACT

Concept of *marma* (vital point) is one element of the divine *Ayurvedic* system of medicine. It is not much developed in modern science. But, *Acharya Sushruta* and *Vagbhata* have elaborated it in detail in *Sharirasthana* of their respective *Samhitas* (Ancient books). They have explained 107 such vital points, injury to which results either in death or some dangerous deformity. One among them is *Lohitakshamarma* present in each limb. In the lower limb, it is present at the root of thigh. After collecting information from various ancient texts and detailed dissection on cadaver, the structures present at the site of *Lohitaksha* can be understood as femoral vessels and nerve, superficial inguinal lymph nodes and two muscles- Psoas major and Pectineus. As per the ancient texts, it comes under the variety of *Vaikalyakaramarma* resulting in paralysis of the respected limb. But, if the injury is very severe or deep, it can also lead to *Pranaharana* (death) of the person because of excess blood loss.

**KEY WORDS:** *Ayurveda, Marma, Lohitakshamarma, Vaikalyakaramarma, Dissection*

### INTRODUCTION

*Ayurveda* forms the most ancient part of preventive and curative system of medicines. One element from this divine system of knowledge is *Marma-shareera*. Knowledge of *marmas* exists from very ancient time of *vedas* (Holy books). But its development took place from Indus valley civilisation to the time period of *Acharya Charaka, Sushruta and Vagbhata*.

*Marma* is defined as an anatomical site where five structures i.e. *Mamsa* (muscles), *Sira* (conducting system), *Snayu* (ligaments and supporting structures), *Asthi* (bones) and *Sandhi* (joints) meet together in which particularly *Prana* (life) stays by nature<sup>1, 2</sup>. In an individual, generally *Soma* (*Kapha*), *Maruta* (*Vayu*), *Tejas* (*Pitta*) and *Satva, Raja, Tama* along

with *Aatma* stay in *marmas*. If the *marmas* are injured, they either can result into death or can cause various disease or deformities which are difficult to cure. There are 107 such vital points in our body (11 in each limb, 26 in trunk and 37 in region of head and neck)<sup>3, 4</sup>. *Acharya Sushruta* and *Vagbhata* have mentioned various types of *marmas* depending upon their position, constitution, number, dimensions and prognosis of injury to it. Depending upon after-effect of injury to *marmas*, there are five types as *Sadhyo-pranahara, Kalantarapranahara, Vishalyaghna, Vaikalyakara* and *Rujakara*<sup>5, 6</sup>.

Out of them, *Vaikalyakaramarmas* are the points where injury causes structural or functional deformity<sup>7</sup>. They are total 44 in number<sup>8</sup>. *Lohitakshamarma* is



explained as *Vaikalyakara*<sup>9</sup> (Based on prognosis of injury) *Sira* (based on constitution) *marma*<sup>10</sup>, total 4 in number- 1 in each limb<sup>11</sup>. The word *Lohitaksha* means Red colour or a type of Snake or Cuckoo Bird or Lord Vishnu<sup>12, 13</sup>. It is related to *Rasavahasrotas*<sup>14</sup>

The concept of *marma* is not well developed in modern system of medicines. It can grossly be co-related with traumatology. But no detailed description is available. Clinicians of old times have collected detailed information regarding injuries and their prognosis on every vital part of body and have presented that theory in a very concise form known as *marma-shareera*. There is need to understand this ancient science in modern ways as in today's world, incidences of traumas in the form of road accidents, natural calamities, wars etc. have increased. The science of *marma* is very vast. Out of all the vital points explained, a point in lower limb- *Lohitaksha* is selected. Its prognosis after injury is given in books as *pakshavadha* (paralysis) or *lohitakshayenmaranam* (death due to blood loss) or atrophy<sup>15</sup> which is the common condition seen today specially in road accidents. An effort is taken to elaborate it with the help of available literature and cadaveric dissection to understand the structure present at its site and prognosis of injury to it.

#### MATERIALS AND METHODOLOGY

##### Materials

1. Available literature regarding *marmas*- Ayurvedic and modern material
2. Two cadavers- one male, one female
3. Dissection kit

##### methodology

Study type:- Observational study

1. Literature study:- Collection of information regarding *Lohitakshamarma* from

ancient texts like *Sushruta Samhita*, *Ash-tang Hridayam* is done in detail.

2. Cadaveric study:- Dissection of two cadavers (one male, one female) is done in dissection hall of department of anatomy- YAC PGT & RC, Kodoli. At first markings are done on cadaver regarding the position of *Lohitakshamarma* in lower limb explained in Ayurvedic texts. Lower limb is dissected as per the guidelines given in Cunningham's manual of practical anatomy<sup>16</sup> and Human anatomy by B. D. Chaurasia<sup>17</sup>. Superficial and deep dissection is done carefully to study the structures present at the marked site.
3. The information collected from literature is co-related to the findings from dissection and conclusion is drawn.

#### OBSERVATIONS

The site of *Lohitakshamarma* is given in *Sushruta Samhita* as- It is above *Urvi-marma*, below *VankshanaSandhi* (hip joint) at the root of thigh<sup>18</sup>. By considering all these points, a region is marked on cadaver in the upper part of thigh 2 inches lateral to pubic symphysis. On the detailed dissection of the marked region following structures are seen-

1. Femoral vein with tributaries
2. Femoral artery
3. Femoral nerve
4. Superficial inguinal lymph nodes
5. Two muscles- Psoas major and Pectineous.

#### DISCUSSION

The study is carried out in two parts- literature study and cadaveric study.

The points to be understood regarding *Lohitakshamarma* from literature study are-

1. They are total 4 in number- 1 in each limb
2. Based on predominance of anatomical structure, it is *Siramarma*



3. Based on prognosis of injury to it, it is *Vaikalyakaramarma (Jala dominant)*
4. Each *Lohitakshamarma* measures  $\frac{1}{2}$  *anguli* (finger breadth) in dimensions
5. It is above *Urvimarma*, below *VankshanaSandhi* (hip joint) at the root of thigh.
6. The word *Lohitaksha* means Red colour or A type of Snake or Cuckoo Bird or Lord Vishnu

The structural study of *Lohitakshamarma* with the help of cadaveric dissection shows that there is aggregation of femoral vessels and femoral nerve along with some superficial inguinal lymph nodes and two muscles- Psoas major and Pectineus. Depending upon the dominance of anatomical structure present in that site, it termed as *siramarma*. So, injury to this region can result into damage of any of these structures, specially blood vessels or nerves.

An injury to the femoral nerve leads to stoppage of conduction of nerve-impulses to the muscles innervated by it, resulting in paralysis. An injury to lymphatic system including superficial inguinal lymph nodes leads to inflammation and oedema of leg with severe pain. An injury to the blood vessels- femoral vein or artery can result in blood loss in greater amount ultimately leading to death of the person.

#### CONCLUSION

The *Lohitakshamarma* is present in the upper part of thigh 2 inches lateral to pubic symphysis. The structures that are present in the region of *Lohitakshamarma* are-

1. Femoral vein with tributaries
2. Femoral artery
3. Femoral nerve
4. Superficial inguinal lymph nodes
5. Two muscles- Psoas major and Pectineous

*Lohitakshamarma* can be termed as *Vaikalyakaramarma* as trauma to it results into disability like paralysis or oedema of leg. But, if the injury is deep and severe and the femoral vessels are damaged then it can result in death of person if there is uncontrolled blood loss i.e. although it is *Vaikalyakara*, it can lead to *Pranaharana* (death) in severe injuries.

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