

ANATOMICAL STUDY OF KAKSHADHRUKA MARMA WITH SPECIAL REFERENCE TO VAGHBHATA SAMHITA

Amrutraj Ashok Patil¹, Pramod Appasaheb Budruk²

¹PG Scholar, ²Professor Department of Rachana Sharir, ADAMC, Ashta, Sangali, Maharashtra, India

ABSTRACT

Ayurveda is one of the most reliable and complete ancient medical science which have proved for more than 5000 years. Even though the modern science is changing from time to time *ayurveda* has maintained its special place till death. Firm unions of *Mamsa*, *Sira*, *Snayu*, *Asthi*, *Sandhi* and *Dhamani* are called as *marma*; which naturally and specifically form the seats of life (Vital parts). Detail knowledge of *marma* is important from surgical point view; surgical procedures like *Agnikarma*, *Ksharkarma* and *Shastrakarma* are used as part of surgery. While conducting these surgical procedures, the knowledge of *marma sthana* is required. With proper knowledge of *marma sthana* we may perform the procedures without any complications. The incidence of trauma takes place in road accidents of two wheeler and four wheelers. Pedestrians also gets injured. From the surgical point of view there is need to study through knowledge of *Kakshadhruka marma*. The surgical procedures should be redesigned according to knowledge of / or detail study of *marma*. The *Kakshadhruka marma* is one among the *Urdhva-shakhagata marma*. It is the *Vaikalyakara marma* as per prognostic classification and *Sira marma* as per structural classification according to *Vaghbhata samhita*. It is present between *Kaksha* and *Aksha*. Trauma to *Kakshadhruka marma* leads to *Kunitva*. After collecting information from various ancient texts and detailed dissection on cadaver, the structures present at the site *Kakshadhruka* can be understood as the axilla region. As per ancient texts, it comes under the variety of *Vaikalyakara marma* resulting in disability or deformity.

Keywords: *Marma, Kakshadhruka, Urdhva-shakhagata marma, Vaikalyakara marma, Sira marma, Kunitva.*

INTRODUCTION

Marma Vigyana was developed as science of war. There are so many references from *Vedas* regarding attack on *marma sthana* of enemies and protecting one's *marmas* by wearing protectants. Even in today's fast life, it is very important to protect our *marma sthanas* because of heavy road traffic which results in accidents causing injury to *Marmas*. Developing science invents new military armaments increasing severity of injury during war.

The description of *Marma* is specialty of *Ayurveda*. This is a part of *Ayurveda Sharir Shastra*. Such a description is not seen in any of the Medical System. Knowledge of *marmas* exists from very ancient time of *Vedas* (Holy books). But its development took place from Indus valley civilization to the time period of *Acharya Charaka, Sushruta and Vaghbhata*. *Acharya* mentioned the total number of *Marmas* are 107. *Acharya Sushruta* classified *marma* as *Mamsa*

marma, *Sira marma*, *Snayu marma*, *Asthi marma* and *Sandhi marma*. Acharya Vagbhata added one or more classification as *Dhamani marma* respectively. Acharya Vagbhata described the *marma sharir* in 4th chapter of *Sharirsthan* of *Ashtang Hridaya*. *Marma* is that place which has unusual throbbing's and pain on touch¹. The *marmas* (vital spots) are so called because they cause death; and they are meeting place of *mamsa* (muscles), *asthi* (bones), *snayu* (tendons), *dhamani* (arteries), *sira* (veins) and *sandhi* (joints)². They are indicated by the predominant structure found in them³. There are five types as *Sadhyo-pranahara*, *Kalantara-pranahara*, *Vishalyaghna*, *Vaikalyakara* and *Rujakara*. Out of them, *Vaikalyakara marmas* are the points where injury causes deformity. The *Kakshadhruka marma* is situated in *Urdhva Shakha*⁴. It is explained as *Sira* (based on the constitution) *marma*⁵ and *Vaikalyakara* (based on prognosis of injury)⁶, total two in number⁷. It is located in between *Kaksha* (Axilla) and *Aksha* (collar bone). Injury to *Kakshadhruka marma* results in *Kunitva* (distortion of arm)⁸. According to *Amarkosha*, the meaning of *Kaksha* word is *Bahumoola* (origin of the *Bahu*) & depicted the number of *Kaksha* is two⁹. Near to the side of the thoracic region, under the armpit, ribs can be counted¹⁰. According to Monier William's Sanskrit – English dictionary, *Kaksha* is the part where the upper arm is connected with the shoulder. *Bahumoola* means the arm root or root of the arm (armpit). In *Parishadyam Shabdartha Sharirama*, the *Kaksha* is considered as axilla¹¹. As per *Parishadyam Shabdartha Sharirama*, *Aksha* considered collar bone or clavicle¹². In *Prayeksha Sharira*, *Aksha* (*Akshaka*), the long bone present between the *Amsamoola* (scapula) and *Urahmoola*

(sternum), which is slightly curved¹³. An injury to *Kakshadhruka marma* results in deformity in *Bahu* (arm), *Pani* (hand), and *Anguli* (fingers)¹⁴. An effort is taken to elaborate it with the help of available literature and cadaveric dissection to understand the structures present at its site & 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 *Kakshadhruka marma* from ancient texts like *Ashtang Hridaya*, *Amarkosha* is done in detail.
2. Cadaveric study – dissection of two cadavers (one male and one female) is done in dissection hall of department of *Sharira Rachana*, ADMAC Ashta. At first markings are done on cadaver regarding the position of *Kakshadhruka marma* in between axilla (*Kaksha*) and clavicle (*Aksha*) explained in *ayurvedic* texts. Axilla and pectoral region is dissected as per the guidelines given in the Cunningham's manual of practical anatomy¹⁵ and Human anatomy by B. D. Chaurasia¹⁶. Superficial and deep dissection is done carefully to study the structures present at the marked site.
3. The information collected from literature is correlated to the findings from dissection and conclusion is drawn.

OBSERVATIONS

The site of *Kakshadhruka marma* is given in *Vagbhata samhita* as – it is situated between axilla and clavicle.

Following observations were obtained during the study.

Table 1 - Observations obtained from literature study of Kakshadhruka marma

Sr. No.	Features	Vagbhata
1	Numbers	02 (01 in each upper limb)
2	Type	<i>Sira Marma</i> <i>Vaikalyakara Marma</i>
3	Position	Located in between <i>Kaksha</i> and <i>Aksha</i>
4	Dimension	01 <i>Angula</i>
5	<i>Viddha Lakshana</i> (Prognosis of injury)	<i>Kunitva</i> (Distortion of arm) Deformity in <i>Bahu</i> (arm), <i>Pani</i> (hand) and <i>Anguli</i> (fingers)

Table 2 – Anatomical correlation of Marma Rachana with modern anatomy

Sr. No.	Marma Rachana	Modern correlation
1	<i>Mamsa</i>	Muscles
2	<i>Asthi</i>	Bones
3	<i>Snayu</i>	Ligaments
4	<i>Dhamani</i>	Arteries
5	<i>Sira</i>	Veins, Nerves
6	<i>Sandhi</i>	Joints

Table 3 – Anatomical structures seen at the site of Kakshadhruka Marma

Sr. No.	Marma Rachana	Modern correlation
1	<i>Mamsa</i>	Clavicular part of the Pectoralis major, part of the Pectoralis minor, part of the Subclavius, Clavipectoral fascia
2	<i>Asthi</i>	Clavicle
3	<i>Snayu</i>	No direct observation regarding <i>Snayu</i> was obtained
4	<i>Dhamani</i>	1 st part of the Axillary artery
5	<i>Sira</i>	Axillary vein and its tributaries, with the cords of the Brachial plexus including lateral, medial and posterior cords.
6	<i>Sandhi</i>	No direct observation regarding <i>Sandhi</i> was obtained

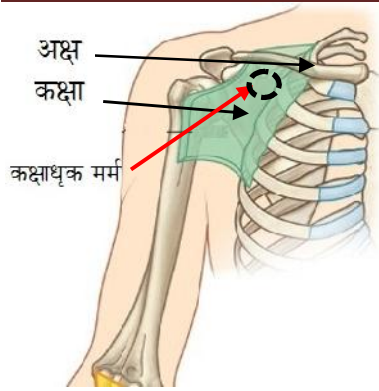


Figure 1 – showing location of *Kakshadhruka marma*



Dissection photo 1 – showing location of *Kakshadhruka marma* on Cadaver

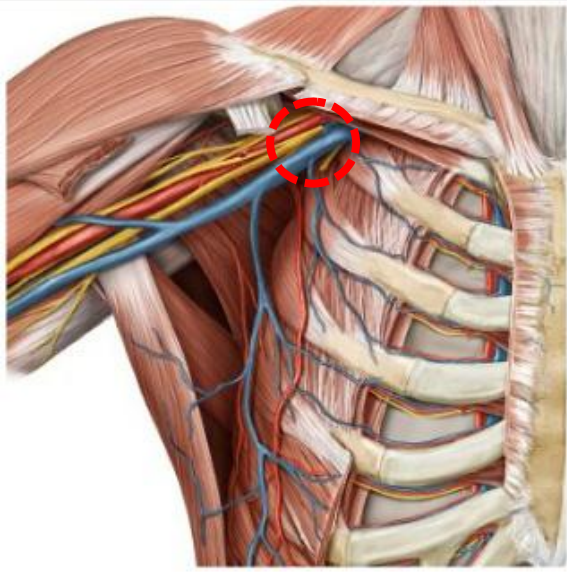
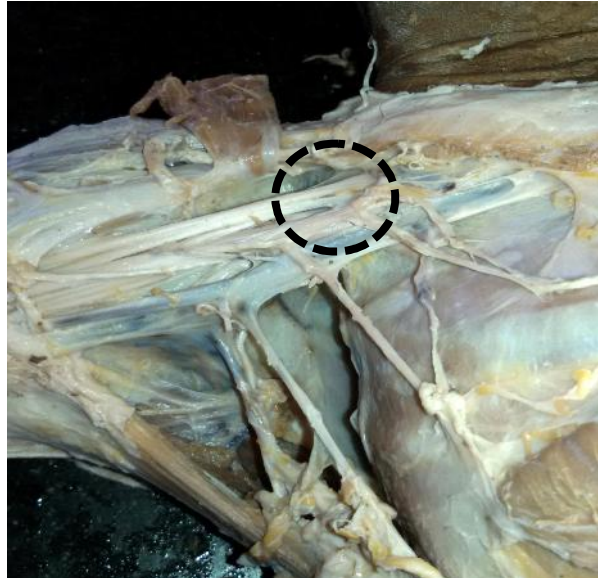
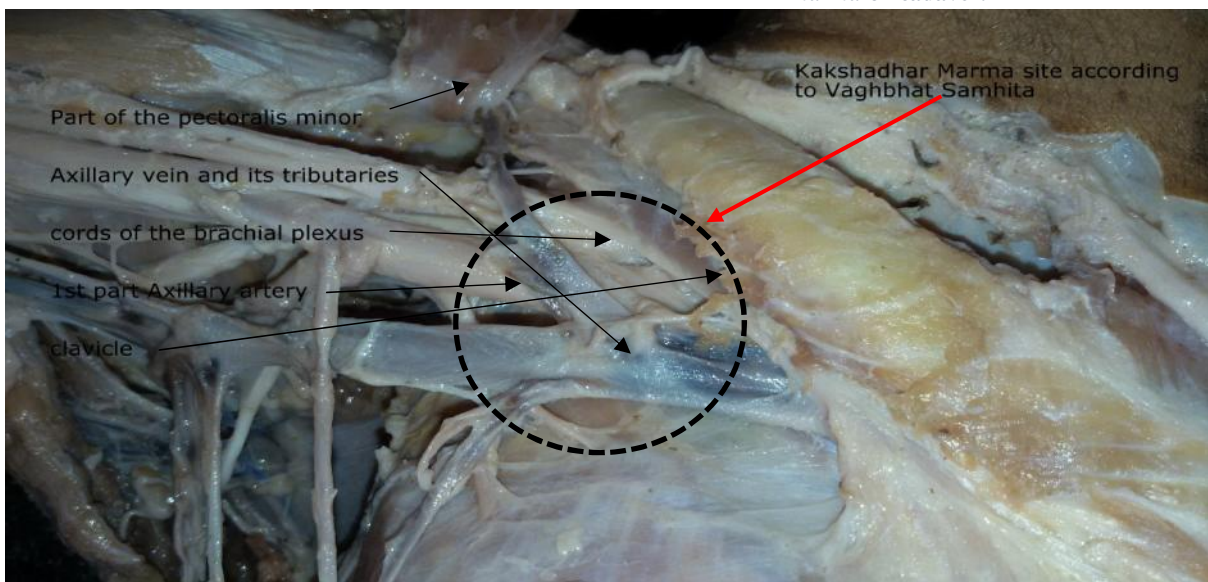


Figure 2 – showing location of *Kakshadhruka marma*



Dissection photo 2 – showing location of *Kakshadhruka marma* on cadaver.



Dissection photo 3 – showing location of *Kakshadhruka marma* with its correlating structures.

DISCUSSION

Marmas are the vital points in our body where structures i.e. *Mamsa*, *Asthi*, *Snayu*, *Dhamani*, *Sira* and *Sandhi* meet together. Although it is said that at a time there is simultaneous presence of all structures, sometimes some of the structures are seen to be recessive. Based on the above criteria, the *Marmas* are placed in different groups and given some special names. The prognosis of injury depends upon the site of injury, depth of injury, force at which the injury is caused etc. Based on prognosis of injury at the site of *Marma*, they are classified under five headings as *Sadhyo-Pranahara*, *Kalantara-pranahara*, *Vishalyaghna*, *Vaikalyakara* and *Rujakara*. Each of these words has got a specific meaning indicating the prognosis.

The word '*Vaikalyakara*' is derived from '*Vaikalya*' which means deprived of some part or abnormality or deformity or disability to do something. Thus, the *Vaikalyakara Marmas* are those points in the human body, injury to which can result in structural or functional deformity. As per the dominant anatomical structure involved, the prognosis of injury varies from distortion of arm to paralysis or sometimes even death.

In case of *Kakshadhruka marma*, the structures that were seen are –

1. *Mamsa* (muscles and fasciae) – Clavicular part of the Pectoralis major, part of the Pectoralis minor, part of the Subclavius, Clavipectoral fascia.
2. *Asthi* (bone) – Clavicle
3. *Snayu* (ligament) – No direct observation regarding *Snayu* was obtained.
4. *Dhamani* (artery) – 1st part of the Axillary artery.
5. *Sira* (veins and nerves) - Axillary vein and its tributaries, with the cords of the

Brachial plexus including lateral, medial and posterior cords.

6. *Sandhi* (Joints) - No direct observation regarding *Sandhi* was obtained.

From above these considerations, it can be said that the dominant structures at this site – *Sira* should be considered as Axillary vein, its tributaries and Brachial plexus with its cords i.e. lateral, medial and posterior. *Kakshadhruka marma* included in *Vaikalyakara group*. As per the *Vagbhata*, '*Kunitva*' occurs after *marma abhigata*. As per modern science injury to nerve or nerve plexuses results in having some kind of deformity. Erb's paralysis, Klumpke's Paralysis, Shoulder dislocation results in inability of abduction of shoulder. As nerves are supplied to muscles and joints. So injury to nerves result in dysfunction of muscles or joints results in deformity.

CONCLUSION

Following conclusions has been drawn from the observations obtained during the conceptual and cadaveric study of *Kakshadhruka marma*.

- *Kakshadhruka marma sthana* (location) found in between the *Kaksha* (axilla) and *Aksha* (clavicle), as per *Vagbhata samhita*.
- Based on the structural classification, it is of *Sira marma*.
- Dominant structure at the site of *Kakshadhruka marma* is brachial plexus and can be correlated as *Sira*.
- Injury to *Kakshadhruka marma* results in *Kunitva* i.e. deformity or disability of arm due to damage of the brachial plexus.
- *Kakshadhruka marma* is 1 *Angula* in dimension.

REFERENCES

1. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 37, Reprint 2003, Chowkhamba Press, Page no. 427
2. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 38, Reprint 2003, Chowkhamba Press, Page no. 427
3. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 39, Reprint 2003, Chowkhamba Press, Page no. 427
4. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 8-9, Reprint 2003, Chowkhamba Press, Page no. 423
5. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 45, Reprint 2003, Chowkhamba Press, Page no. 428
6. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 57-58, Reprint 2003, Chowkhamba Press, Page no. 430
7. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 43, Reprint 2003, Chowkhamba Press, Page no. 428
8. K. R. Srikantha Murthy, Ashtang Hridayam (Sharirasthana), Chapter 4, Citation no. 9, Reprint 2003, Chowkhamba Press, Page no. 423
9. Pt. Haragovinda Sastri, Amarkosa of Amarasimha with the Ramasami (Vyakhyasudha) Commentary of Bhanuji Diksita, Dwitiya Kand / Manushyavarga, Reprint 2012, Chaukhamba Sanskrit Sansthan, Page no. 296
10. Pt. Haragovinda Sastri, Amarkosa of Amarasimha with the Ramasami (Vyakhyasudha) Commentary of Bhanuji Diksita, Dwitiya Kand / Manushyavarga, Reprint 2012, Chaukhamba Sanskrit Sansthan, Page no. 296
11. Pt. Damodarsharma Gauda, Paarishaydyam Shabdārtha Sharirama, Reprint 1979, Shri. Baidyanath Ayurved Bahvan Limited, Page no. 196
12. Pt. Damodarsharma Gauda, Paarishaydyam Shabdārtha Sharirama, Reprint 1979, Shri. Baidyanath Ayurved Bahvan Limited, Page no. 15
13. Gananath Sen, Hindi Pratyaksha Shareera, Vol-1, Edition 1994, Chowkhamba Press Publications, Page no. 52
14. Hari Sadasiva Sastri Paradakara Bhisagacarya, Ashtang Hrudaya with Sarvangasundara of Arunadatta and Ayurvedarasayana of Hemadri, Chapter no. 5, Citation no. 9, Reprint 2007, Choukhamba Surbharathi Publications, Page no. 410
15. G. J. Romanes, Cunningham's Manual of Practical Anatomy, Vol. 1, 15th edition, Reprint, 2012, Oxford University press, Publications, Page no. 20-34
16. B. D. Chaurasia, Human Anatomy, Vol. 1, Reprint, 2009, CBC Publication, Delhi, Page no. 37-60

CORRESPONDING AUTHOR

Dr. Amrutraj Ashok Patil

Matruchhya Building Main Road Ogalewadi,
Karad, Satara, Maharashtra, India

Email: dr.amrutrajpatil@gmail.com

Source of support: Nil
Conflict of interest: None Declared