A CRITICAL REVIEW OF Hridaya Marma With Special Reference to Significance of Sadhya Pranahara Marma

Patil Amrutraj Ashok
PG Department of Sharir Rachana, ADAMC, Ashta, Maharashtra, India.

ABSTRACT

The direct understanding of the word Marma in ancient science was evident, but there were no sufficient techniques to make out their original structural aspects involved in the particular Marma Sthanas. It was confined to the war in the earlier age where the warrior used to achieve their target by destroying the vulnerable points - Marmas of the enemies. So its knowledge was limited to surgery and war medicine. But later on its application has been extended to clinical field which is evident from the close observation of the classics of Ayurveda. Ancient Acharyas have mentioned 107 susceptible vital points on the surface of the body and labeled as Marmas. These Marma points are the seats of Prana. If trauma is inflicted on these Marma points, the Prana is disturbed producing disease leading to deformity or death. Hridaya, one among the Trimarma is said to be the Chetanasthana. It is a Koshtanga, which is the seat of Para ojus, Moola of Rasa and Pranavaha Srotas, and these of Trigunas. Its position, size, shape, structure and function are mentioned indifferent Ayurvedic classics. It is a Matrujaavayava, is one among the Dasha Pranayatana. One among them is Hridayapresent in Thoracic region. After collecting information from various ancient texts and detailed dissection on cadaver, the structures present at the site Hridayacan be understood as heart and its related structures. As per ancient texts, it comes under the variety of Sadhya Pranahara Marmare resulting in death of the patient.

Key words: Marma, Trimarma, Hridaya, Koshtanga, Chetanasthana, Dasha Pranayatana,

INTRODUCTION

Ayurveda is the outcome of the knowledge and vast experiences of Indian scientists and philosophers of ancient India. The description of Marmais speciality 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 Vagbhta. Marmais 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 nature1,2. In an individual, generally Soma (Kapha), Maruta (Vayu), Tejas (Pitta) and Satva, Raja, Tama along with Aatmasthanay 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)\textsuperscript{3,4}. Acharya Sushruta and Vagbhata have mentioned various types of marmas depending upon their position, constitution, number, dimensions and prognosis of injury to marmas. There are five types as Sadhya-pranahara, Kalantara-pranahara, Vishalyaghna, Vaikalyakara and Rajakara\textsuperscript{5,6}.

Out of them, Sadhya-pranaharamarmas are the points where injury causes death or marana immediately or within a span of 7 days. These marmas are predominant of agneyabhavas. They are total 19 in number\textsuperscript{7,8}. Hridayamarma is explained as Sadhya-pranahara\textsuperscript{9} (based on prognosis of injury) and Sira (based on constitution) marma\textsuperscript{10}, total 1 in number\textsuperscript{11}. It is related to Pranvahasrotomoola and Rasavahasrotomoolasthanas\textsuperscript{12,13}. The term Hridaya is formed by applying Kayanato HriDhatu. HriDhatu is used for taking something. ‘Da’ means to give and ‘Ya’ means that which always functioning. So it is meant that Hridaya is an organ that takes and gives something\textsuperscript{14}.

The concept of marma is not well developed in modern system of medicines. Clinicians of old times have collected detailed information regarding injuries and their prognosis on every vital part of body and presented that theory in very concise form known as marma – shareera. There is need to understand this ancient science in modern ways as in today’s world, incidence of traumas have increased. The science of marma is very vast. Out of all the vital points explained, a point in thorax-Hridayais selected. Charaka explains the Hridaya as the ChetanaadhishtanaAvayava. Sushruta and Sharangadara mention it as the ChetanaSthana. This Chetanais perceptible through the automatic and self-controlled pulsation of Hridaya. And thus Hridaya Marma if injured or disordered than it results in the stopping of the chain of Chetana (ChetanaamurittiAyu), resulting in death\textsuperscript{15,16}. 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

Material –
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 Hridayamarma from ancient texts like Sushrut Samhita, Ash-tangHridayam is done in detail.
2. Cadaveric study - Dissection of two cadavers (one male, one female) is done in dissection hall of department of anatomy – ADAMC, Ashta. At first markings are done on cadaver regarding the position of Hridayamarmain thoracic region explained in Ayurvedic texts. Thorax is dissected as per the guidelines given in the Cunningham’s manual of practical anatomy\textsuperscript{17} and Human anatomy by B. D. Chaurasia\textsuperscript{18}. 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 Hridayamarmais given in Sushrut Samhita as – it is situated between two breasts and is at the Amashayadwara\textsuperscript{19}. Ash-
tangaHridayakara opines the same that the Satvadidhamahridaya is situated in the Madhya bhaga of Stana, Ura and Koshta. Acharya Gananath Sen also agrees with Acharya Ghanekar, has given an elaborate description regarding Hridaya in PratyakshaSharira. He explains Hridaya along with its covering sheath pericardium is situated in the middle mediastinum just behind the sternum. He elaborated the relations too, i.e., lungs are present in both sides of Hridaya along with the principle bronchus. Annanali (esophagus) in its posterior aspect. By considering all these points, a region is marked on cadaver. The heart is demarcated by
- A point 9cm to the left of the midsternal line (apex of the heart).
- The seventh right sternocostal articulation.
- The upper border of the third right costal cartilage 1cm from the right sternal line.
- The lower border of the second left costal cartilage 2.5cm from the left lateral sternal line.

On the detailed dissection of the marked region following structures are seen –
1. Fibrous skeleton of the heart
2. 4 chambered structure – 2 atria and 2 ventricles
3. Ascending aorta, arch of aorta and its branches, Superior vena cava and inferior vena cava, pulmonary vein and pulmonary artery.
4. Coronary arteries and coronary veins
DISCUSSION
The study is carried out in two parts – literature study and cadaveric study.

The points to be understood regarding Hridayamarma from literature study are –
1. Total number is 1 only
2. Based on the predominance of anatomical structure, it is Siramarma.
3. Based on prognosis of injury to it, it is Sadhyo-pranahara (injury causes death or marana immediately or within a span of 7 days.)
4. Hridayamarma measures Swa – Panitala or Chaturangula (one’s own fist) in dimensions.
5. It is situated between two breasts and is at the Amashayadwara (near cardiac orifice).
6. Hridaya is formed by applying Kayana to HriDhatu. HriDhatu is used for taking something. ‘Da’ means to give and ‘Ya’ means that which always functioning. So it is meant that Hridaya is an organ that takes and gives something.

The structural study of Hridayamarmawith the help of cadaveric dissection shows that Fibrous skeleton of the heart, 4 chambered structure – 2 atria and 2 ventricles, Ascending aorta, arch of aorta and its branches, Superior vena cava and inferior vena cava, pulmonary vein and pulmonary artery, Coronary arteries and coronary veins. Depending the dominance of anatomical structure present in that site, is termed as Siramarma. Chetana is perceptible through the automatic and self-controlled pulsation of Hridaya. And thus Hridayamarma if injured or disordered than it results in the stopping of the chain of Chetana (Chetna-nuvrittAyus), resulting in death. An injury to the blood vessels – coronary veins or arteries (atherosclerosis or arteriosclerosis resulting in thrombus formation) leads to myocardial infarction ultimately in death of the person.

CONCLUSION
The Hridayamarma is present in the thoracic region between two breasts, posterior to the sternum. The structures that are present in the region of Hridayamarma are
1. Mamsa – Hridayais a muscular bag or a structure made up of muscles. The myocardium can be considered as the Mamsa Bhaga.
2. Sira– means blood vessels. The single organ to which, the entire main blood vessels of the body are attached is to the Hridaya.
3. Snayu – ligaments attached to the heart. There are multiple tendinous structure called Chordae Tendinae. They are present in the chambers. These can be compared to Snayus.
4. Asthi – fibrous skeleton of the heart can be considered as the AsthiBhaga.
5. Sandhi – it is explained in Samhita as that, Mandala Sandhi is present in the heart. They are ring like structures. The attachment of Valves to the heart can be compared to Mandala Sandhis.
6. *DashaDhaamanis* – can be compared to the main vessels related to the heart
   - Aorta
   - Pulmonary trunk
   - Four Pulmonary Veins
   - Superior Vena Cava
   - Inferior Vena Cava
   - Right Coronary Artery
   - Left Coronary Artery

*Hridayamarma* can be termed as *Sadhyopra-naharamma* as trauma results in death of the person immediately or within period of 7 days (fatal period).

**REFERENCES**

1. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no.22, Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no. 186.
2. KavirajAtridevGupt, AshtangHridayam (VidhyotiniTika), Sharirasthana, Chapter 4, Citation no.38, Reprint, 2009,ChaukhambhaPrakasahn Varanasi, Page no.269
3. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 02-04, Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no. 183-184
4. KavirajAtridevGupt, AshtangHridayam (VidhyotiniTika), Sharirasthana, Chapter 4, Citation no.1-2, Reprint, 2009, ChaukhambhaPrakasahn Varanasi, Page no.265
5. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no.14, Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no. 185
6. KavirajAtridevGupt, AshtangHridayam (VidhyotiniTika),Sharirasthana, Chapter
4, Citation no.52-59, Reprint, 2009,ChaukhambhaPrakashan Varanasi, Page no.270-271
9. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 15 Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no.185
10. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 10 Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no.185
11. BhaskarGovindGhanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 15 Reprint, Nov.2008, MeharchandLachhmandas Publications, Page no.185
12. Vaidya YadhavjiTrikamji Acharya, editor. CharakaSamhitha (Vimanstha-na),Chapter 5, Citation no. 8,Revisedby Charaka and Dridhabala with Sri ChakrapanidattaAyurvedadipika, Reprint 2013, ChoukambhaPrakashan, Publications, Page no. 250
13. KavirajAmbikaduttaShastri, Sushruta Samhita, Ayurved Tattvasandipika, (Sharirsthana), Chapter 9, Citation no. 12 Reprint 2012,Chaukhambha Sanskrit Sansthan Publications, Page no. 96

15. Bhaskar Govind Ghanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 33 Reprint, Nov. 2008, Meharchand Lachhmandas Publications, Page no. 126

16. Bhaskar Govind Ghanekar, Sushrut Samhita (Sharirsthana), Chapter 6, Citation no. 34 Reprint, Nov. 2008, Meharchand Lachhmandas Publications, Page no. 126


19. Bhaskar Govind Ghanekar, Sushrut Samhita (Sharirsthana), Chapter 4, Citation no. 33, Reprint, Nov. 2008, Meharchand Lachhmandas Publications, Page no. 126

20. Kaviraj Atridev Gupta, Ashtang Hridayam (Vidhyotini Tika), Sharirasthana, Chapter 4, Citation no. 38, Reprint, 2009, Chaukambha Prakashan Varanasi, Page no. 269


CORRESPONDING AUTHOR
Dr. Patil Amrutraj Ashok,
PG Department of Sharir Rachana, ADAMC, Ashta, Maharashtra, India.
Email: dr.amrutrajpatil@gmail.com

Source of support: Nil
Conflict of interest: None Declared