

Cardiac Activity and Its Link to Anahata Chakra and the Cardiac Plexus

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Abstract

Ayurveda is a complete science of life, where we get elaborated descriptions about prevention of disease in a healthy individual as well as the management of diseases. The *Chakra* has its own importance in Ayurveda. Traditional writings mention 40 *Chakras* which can be considered significant. The *Chakras* are thought to vitalize the physical body and to be associated with interactions of a physical, emotional and mental nature. The function of the *Chakras* is to spin and draw the universal life force energy to keep the spiritual, mental, emotional and physical health of the body in balance. There are six primary *Chakras* from lowest to highest they are *Muladhara Chakra*, *Svadhithana Chakra*, *Manipura Chakra*, *Anahata Chakra*, *Vishuddha Chakra* and *Ajna Chakra*. Each *Chakra* can be correlated to a neurological plexus on the basis of its location. *Anahata Chakra* can be correlated with the cardiac plexus. The main objective of this article is to see whether there are any similarities between *Anahata Chakra* and cardiac plexus and the role of *Anahata Chakra* and cardiac plexus on cardiac activity.

Keywords:

Anahata chakra, Cardiac plexus, Cardiac activity.

Introduction

Principles of Ayurveda which are interwoven with basic concept of life, having significant value in the life of modern era. It emphasizes the importance of preventive medicine along with curative procedures to give a holistic approach towards a healthy living. In Ayurveda *Sharir* means the one which undergoes disintegration at every moment.¹ The balanced state of *Dosha*, *Dhatu* and *Mala* is said to be *Sharir*.² *Sharir* is further divided as *Anga - Pratyanga* for detail study.³ One concept of *Ang- Pratyanga* is related to specific areas of body which are known as *Chakras* which are described in *Patanjal-Yog Darshan*. The word *Chakra* in Sanskrit is for “wheel”, which means they are constantly in a state of rotation. The *Chakras* are thought to vitalize the physical body and to be associated with interactions of a physical, emotional and mental nature.⁴ The six primary *Chakras* are *Muladhara Chakra*, *SvadhishthanaChakra*, *Manipura Chakra*, *Anahata Chakra*, *Vishuddha Chakra* and *AjnaChakra*.⁵ These are energy centres aligned along the spinal cord. They resemble funnel shaped blossoms each possessing a different number of petals. The petals of the blossoms represent *Nadis* or energy channels through which energy is able to flow⁶ into the *Chakra* where it is then conveyed to the subtle bodies. In Sanskrit, *Anahata* means sound without any break and its location is said to be *Hridaya*.⁷ According to modern, we can say that at the location of *Anahata chakra*, Cardiac plexuses are present. The location of cardiac plexus is said to be at the base of the heart.⁸ It has an innervation from both the sympathetic and parasympathetic nervous system.⁹ Each *Chakra* is the sum total of physical, mental, emotional and spiritual elements. That is why each *Chakra* is connected to a neurological plexus.

Aim

To study the correlation of *Anahata Chakra* and Cardiac plexus

Objectives

To study the literature on *Anahata Chakra* and cardiac plexus

To study whether there is any similarity in *Anahata Chakra* and cardiac plexus.

Discussion

The heart is a muscular organ in humans which pumps blood through the blood vessels of the circulatory system. The cardiovascular system is an organ system that permits blood to circulate and transport nutrients, oxygen, carbon dioxide, hormones and blood cells to and from the cells in the body to provide nourishment and help in fighting diseases, stabilize temperature and pH and maintain homeostasis. In this system, heart has the major role to play by pumping blood through the blood vessels of the circulatory system. The heart pumps blood with a rhythm determined by a group of pacemaking cells in the sinoatrial node. These generate a current through the

atrioventricular node and along the conduction system of the heart. Healthy heart have two audible heart sounds called S1 and S2. Abnormal heart sounds called heart murmurs can be either pathological or benign. Abnormalities in the normal sinus rhythm of the heart such as Atrial fibrillation, Ventricular fibrillation, Tachycardia, Bradycardia etc. can prevent the heart from effectively pumping blood. For this cardiac activity both *Anahata chakra* and cardiac plexus play a major role.

Literature On Anahata Chakra

Literary meaning of *Anahata* is “Sound without any break”. In *Sanskrit Anahata* means “unhurt”, “unbeaten” and “unstruck”. Location of the Chakra is mentioned as *Hridaya*. Colour of the Chakra is Green, Pink and Gold. Associated element of the *Chakra* is Air. Sensory organ is *Twak* and *Gyanendriya* is Touch. Motor organ is *Hasta*. *Bijavahak* or bearer is said to be Deer. *Granthisthana* is mentioned as Vishnu. Symbol of the *Chakra* is a 12 petalled Lotus i.e Dalas . Appearance of the *Chakra* is like a smoky region at the intersection of two triangles, creating a *Shatkona*. The *Shatkona* is a symbol used in Hindu *Yantra*, representing the union of male and female. Presiding God is *Rudra*. *Anahata Chakra* is associated with the following body parts Heart, upper back including the thorax and the thorax cavity, the lower area of lungs, the blood and the blood circulation and the skin. *Anahata Chakra* corresponds to the Cardiac plexus.¹⁰

Literature On Cardiac Plexus

The cardiac plexus is located at the base of the heart. It is divided into the superficial and deep cardiac plexus. Superficial cardiac plexus lies below the aortic arch and anterior to the right pulmonary artery. It is formed by the cardiac branch of the left superior cervical sympathetic ganglion and the lower of the two cervical cardiac branches of the left vagus. A small cardiac ganglion is usually present in this plexus immediately below the aortic arch, to the right of the ligamentum arteriosum. This part of the cardiac plexus connects with the deep part, the right coronary plexus and the left anterior pulmonary plexus. Deep cardiac plexus is anterior to the tracheal bifurcation, above the point of division of the pulmonary trunk and posterior to the aortic arch. It is formed by the cardiac branches of the cervical and upper thoracic sympathetic ganglia and of the vagus and recurrent laryngeal nerves. The only cardiac nerves which do not join it are those joining the superficial part of the plexus. Branches from the right half of the deep part of the cardiac plexus pass in front of and behind the right pulmonary artery; those anterior to it, the more numerous, supply a few filaments to the right anterior pulmonary plexus and continue on to form part of the right coronary plexus; those behind the pulmonary artery supply a few filaments to the right atrium and then continue into the left coronary plexus. The left half of the deep part of the cardiac plexus is connected with the superficial, supplying filaments to the left atrium and left anterior pulmonary plexus and then continuing to form much of the left coronary plexus.

The left coronary plexus, larger than the right, it is formed chiefly by the prolongation of the left half of the deep part of the cardiac plexus and a few fibres from the right, it accompanies the left coronary artery to supply the left atrium and ventricle. The right coronary plexus, formed from both superficial and deep parts of the cardiac plexus, accompanies the right coronary artery to supply the right atrium and ventricle. The atrial plexuses, are derivatives of the right and left continuations of the cardiac plexus along the coronary arteries. Their fibres are distributed to the corresponding atria, overlapping those from the coronary plexuses.

The anterior and posterior pulmonary plexus are the extensions from the cardiac plexus along the right and left pulmonary arteries. The anterior pulmonary plexus is formed by rami from vagal and cervical sympathetic cardiac nerves as well as direct branches from both sources. The posterior pulmonary plexus is formed by the rami of vagal cardiac branches from the second to fifth or sixth thoracic sympathetic ganglia, the left plexus also receiving branches from the left recurrent laryngeal nerve. The two plexuses are interconnected; from them nerves enter the lung as networks along branches of the bronchi and pulmonary and bronchial vessels extending as far as the visceral pleura. Near then hila they contain minute groups of postganglionic neurons, with which efferent vagal preganglionic fibres synapse.

All the cardiac branches of the vagus and sympathetic contain both afferent and efferent fibres, except the cardiac branch of the superior cervical sympathetic ganglion, which is purely efferent. The efferent preganglionic cardiac sympathetic fibres arise in the upper four or five thoracic spinal segments they pass by white rami communicantes to synapse in the upper thoracic sympathetic ganglia, though many ascend to synapse in the cervical ganglia. Postganglionic fibres from the thoracic and cervical ganglia form the sympathetic cardiac nerves, which accelerate

the heart and dilate the coronary arteries. Of the sympathetic fibres from the first four or five spinal segments, the upper pass to the ascending aorta, pulmonary trunk and ventricles, the lower to the atria. The efferent cardiac parasympathetic fibres from the dorsal vagal nucleus and neurons near the nucleus ambiguus run in vagal cardiac branches to synapse in the cardiac plexuses and atrial walls. These vagal fibres slow the heart and cause constriction of the coronary arteries.

Anahata Chakra, Cardiac Plexus And Cardiac Activity

Anahata means sound without any break, this indicates the relation of this *chakra* on heart, as Heart is an organ which pumps blood without any stoppage. The location of *Anahata Chakra* is said to be heart. As per *yog* texts, it has been stated as the *Anahata Chakra* has the role in governing the heart rate. *Anahata chakra* modulates the heart rate and cardiac output. *Anahata Chakra* is the centre of the entire system. It connects the 3 lower physical and emotional centres to the higher mental and spiritual centres. The fourth *Chakra* is assigned to the element air and to the sense of touch. This indicates the flexibility of the heart, the ability to establish contact and the willingness to be touched and at the same time be in touch with all things. A malfunctioning of *Anahata Chakra* may express in various ways. It can manifest itself as upper back and shoulder problems, asthma, heart conditions, shallow or rapid breathing and lung diseases.

The cardiac autonomic nervous system consists of 2 branches sympathetic and parasympathetic. This extrinsic control mechanism can dominate intrinsic regulatory mechanisms that modulate heart rate and cardiac output. Stimulation of the sympathetic branch exerts facilitatory effects on cardiac function by increasing the heart rate and myocardial contractility, whereas the stimulation of the parasympathetic branch exerts inhibitory effects that decrease heart rate and contractility. Alterations in autonomic function occur in several interrelated cardiac conditions including sudden cardiac death, congestive heart failure, diabetic neuropathy and myocardial infarction. From textual references we can state some similarities between *Anahata Chakra* and cardiac plexus, the location of both *Anahata chakra* and cardiac plexus is said to be Heart. The *Anahata Chakra* has 12 *Dalas* which can be compared to the 12 branches of the cardiac plexus on the basis of the numeration and structure of the *Chakra*. The 12 branches are Right deep cardiac, left deep cardiac, anterior pulmonary, posterior pulmonary, superficial cardiac, cardiac ganglion of wrisberg, Right coronary, Ventricular branch, Left coronary, Endocardiac, Remak and Bibder's ganglia.

Malfunctioning of *Anahata Chakra* can manifest heart problems, so to avoid these manifestations various *Asanas* have been described in the *Yoga* texts.¹³ Regular Practise of *Gomukhasana*, *Ushtrasana*, *Setu bandha sarvangasana*, *Urdhva mukha svanasana*, *Garudasana*, *Bhujangasana*, *Marjarasana*, *Matsyasana*, *Hastapadasana* and *kapalbhatti* can activate the *Anahata chakra* and help maintain the cardiac activity.

Conclusion

A *Chakra* is the centre of activity that assimilates and expresses life force energy. These *Chakras* serve as an energetic pathways of the nerve plexuses that function in the physical body. Each *Chakra* can be correlated to a neurological plexus on the basis of its location. The *Anahata chakra* may be correlated to the Cardiac plexus on the basis of its location which is said to be heart and on the basis of its numeration. The 12 *dalas* of the *Anahata Chakra* may be related to the branches of the cardiac plexus. The function of *Anahata chakra* is said to be control over the heart rate. Similarly cardiac plexus maintain the heart rate and the cardiac output. *Anahata chakra* and cardiac plexus both have a major role to play in maintaining the cardiac activity. Congestion in *Anahata chakra* manifests heart problems, so it is important to keep the *chakra* activated by practise of *Asanas* and *pranayama*.

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