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Anatomical Perspective of Ancient Ayurveda: A Comparative Review Amongst Ayurveda *Samhita's*

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ABSTRACT

Anatomy is one of the oldest modality of medical system and enough facts are available in ancient India regarding the practice and knowledge of anatomical science. It is believed that the ancient Indian scientist explored important and essential knowledge of practical anatomy. The concept of surface anatomy came in practice from the knowledge of cave paintings of animals presented with critical area of animal body. The *Rigveda* is one of the *Vedas* along with three others; *Yajur, Sama* and *Atharva* encompass knowledge about lungs, heart, stomach and kidneys. The *Atharva Veda* described about medicinal herbs and plants, *Atharva Veda* also refers about *Dhamanis* as ducts equivalent to arteries and *Siras* as ducts equivalent to veins. Similarly other ayurveda or ancient texts provides great knowledge about the human anatomy and physiology. Present article summarizes ayurveda perspective on traditional Indian knowledge about the human body.

Keywords: *Ayurveda, Samhita, Anatomy and Physiology.*

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Introduction

The historical development of Indian medical system can be divided into three periods: *Vedic* period around 1500–500 BCE, *Brahmanic* period around 600 BCE–1000 CE and recent one *Mughal* period 1000 CE to 18th century. *Vedic* period is considered as one of the oldest systems of medicine which transfer some knowledge about the diseases & their treatment to the next generation. *Sarira-sthaka* mainly described various aspects related to the anatomy, embryology and dissection techniques. Initially anatomical knowledge was derived from the animals sacrifice, observations of buried bodies and patient's examinations [1-5].

Charaka-samhita is comprehensive text of ancient Indian medical system and it is believed that *Charaka* flourished around BCE (2nd century). *Charaka* cover various aspects related to the medicine including all logical reasoning related to the use of specific approaches in particular conditions. *Śarīra Vicaya* is Ayurveda term that resembles both Anatomy and Physiology of human body; *Charaka* emphasizes knowledge of human body for restoration of disease free normal health status [2-6].

Susruta Samhita and *Charaka Samhita* are the main texts that described various aspects of diseases and their treatment. *Susruta Samhita* was written in 6th century BCE by the great physician named "*Susruta*" he scientifically described knowledge about anatomical structure and function of human body. *Susruta* advocated human dissection and he mentioned systematic approaches for the dissection of cadaver. *Susruta's* believed that knowledge of anatomy is very essential to be a good physician and he emphasizes study of human anatomy by careful observation and dissection of dead body. The ancient ayurveda texts mentioned that dissection of cadaver should be done for anatomical knowledge only when cadaver consisted all body parts, person not died due to poisoning, dead person should not suffered from chronic disease before death and not very elderly. Cadaver should be dissected slowly by rubbing with brushes made of *Usira*, hair and *Balvaja*. *Susruta Samhita* mentioned that the person has lack of surgical knowledge should not involve in surgical treatment of diseases. *Susruta* mentioned that one should learn dissection of human cadavers after practicing cuts of *Puspaphala*, *Alavu* and *Ervaruka*.

The *Sharira-sthana* ayurveda texts dealt with anatomy and embryology concepts, with regards embryology ayurveda presented concept of *Garbha Sharira* as combined resultant of *Sukra* and *Sonita*. The *Vayu* divides as vital forces and contributed towards the *Dosha, DhatuI* and *Mala,* etc. The *Teja* imparts metabolic functionality of tissues, *Apa* maintain liquidity of fetus, *Kshiti* embodied shape of species, *Akasha* contributes towards the growth & development. As per ayurveda fully developed fetus having all body parts only considered as *Garbha Sharira* [6-10].

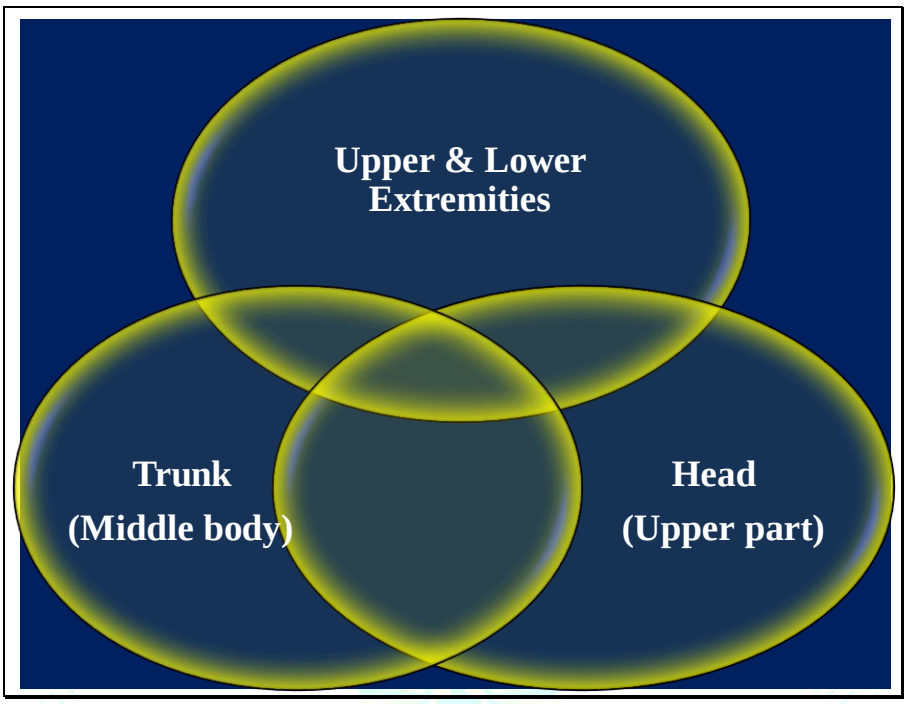

Figure 1: Three major body parts as per anatomist

The major body parts depicted in **Figure 1** as upper & lower extremities, trunk (middle body) and head (upper part). These main divisions of body further contain other *Pratyangas* (parts) of body including navel, forehead, nose, chin, throat, ears, eyes, nostrils, shoulders, breasts, bladder, testes, buttocks, thighs, knee, fingers, toes and nail, etc.

Historical Descriptions of Human Anatomy as per Ayurveda:

The *Upanishadic* period from 800 B.C. is considered as valuable time for the evaluation of anatomical perspective as per ayurveda. The ancient literature of ayurveda "*Sarira sthana*" explored information dedicated to the anatomical aspects of human body including embryology and histology. This period witnessed about the some knowledge on human dissection and initially anatomists described six parts specific parts of human body i.e. four extremities, neck as one part and trunk as another one.

The Indian anatomy first emphasizes bones then muscles followed by ligaments and joints. The Indian anatomists during *Atreya-Charaka* period counted 360 bones while 300 bones counted by scholar belongings from *Susruta's* school. Teeth, cartilages, nails and bony prominences were considered as separate bones.

Charaka's said that there are 500 muscles in body while *Susruta* elaborated more in terms of number and distribution of muscles. *Susruta* mentioned that out of 500 muscles 400 are distributed in four extremities, 66 are in trunk while 34 belong from region above the clavicles.

Charaka follows descriptions given in *Atharva Veda* related to the heart and its vessels; moreover he explained number of *Dhamanis* and *Siras* as 200 and 700 respectively. *Susruta* emphasizes umbilicus origin of *Dhamanis* and *Siras*, furthermore he mentioned *Rasa* as flowing liquid of ducts. *Susruta* also emphasizes on *Srotas* and their number as minute channels of body.

The information related to the brain is not available up to the mark in ancient Indian literature. *Bhela samhita* considered brain as *Manas* centre, *Susruta* explained four pairs of cranial nerves including *Nila* and *Manya* as one pair (located either side of larynx), one pair of *Vidhura* (behind ears), one pair of *Phana* (inside nose) and a pair of *Apanga* (below eyes).

The concept of viscera also described by *Charaka* and *Substrata,* however both uses different terminology *Charaka* gave word *Kloma* and *Susruta* used term *Pupphusa* for lungs.

Charaka and *Susruta* were also explored anatomical aspects related to the stomach and intestine; rectum described as *Gudam* by *Susruta* along with its length and he also mentioned presence of three spiral grooves. Furthermore *Susruta* explained urinary bladder, *Garbha-saya* and vas deferens along with shape of the uterus.

The concept of *Marmas* also described in *Susruta Samhita* as joining places of two or more body structures. Joining of *Mamsa*, *Sira*, *Snayu*, ligaments and *Asthi*, etc. defined as *Marmas* that is place where injury can lead fatal effects.

Susruta Thus in India the science of Anatomy has valiantly climbed the steps of time having been taught and practised from the pre-Vedic period to the present era of online education on computers and it is sure to go on and achieve greater strides in future.

There are sixteen *Kandaras* mentioned in ayurveda literatures out of that four in neck, four in hands, four in legs

and four in the back region. *Kandaras* in limbs extends to the roots of fingers, toes and nails. The *Kandaras* of neck connected to the heart and *Kandaras* at back region extended to the *Vimba*.

The four kinds of *Jala* or plexuses described in various ayurveda texts including vascular plexuses, muscular plexuses, ligamentous plexuses and bony plexuses. Plexuses are found at *Manibandda* and *Gulfa*; plexuses are cross to one another in the form of network.

The *Asthi-Sanghatas* described as a collection of bones fourteen in number, found in ankles, knees, groins region, wrists, axillas and elbows.

The *Snayu* described as ligaments of human body occur in four extremities, in trunk and in the neck region. Ligaments also situated in *Tala*, *Gulpha*, *Kurcha, Jangha*, *Janu* and *Udara*.

Conclusion

The different parts of body elaborated in various ayurveda *Samhitas* and ayurveda texts. Ancient ayurveda physician emphasizes knowledge of anatomy as an essential part of health restoration. Ayurveda emphasizes that one can acquire anatomical information by dissecting dead body, clinical observation and literature study. The Ayurveda *Samhitas; Susruta* and *Charaka* transform diversified information related to the human anatomy and physiology however there are some deviations in both *Samhitas;* but in nut shell both ancient ayurveda literatures presented very useful knowledge related to the human anatomy and physiology.

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