

DETAIL STUDY OF Peshi SHARIR & APPLIED ANATOMY OF Peshi

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ABSTRACT

Every concept of Ayurveda has its own importance. There are many concepts mentioned in the classics are scientific and worth understanding in modern words. Among these concepts Acharya Sushruta mentioned Sapta Kalas in the body. While considering upon the Ashaya they had also thought of the linings making internal walls of the Ashaya, designating them as Kala. They presented it in a very silent way. Among the Sapta Kala, Mamsadhara Kala is one described by Sushruta and other Acharyas. There are 3 layers of connective tissue which extended from the deep fascia and protects and give strength to the skeletal muscle. They are epimysium, perimysium and endomysium, they may extend beyond the muscle fiber to form tendons. So by this we can understand. The Mamsadhara Kala in gross anatomy, i.e. fascia or deep fascia and in the histological level it can be taken as Endomysium. So the collection and comprehensive review of information regarding Mamsadhara Kala becomes significant. Hence to unravel and accumulate the hidden scientific information about Mamsadhara Kala, in different resources and its structure and function on common parlance, presents intended research work has been undertaken and planned to carry out.

KEYWORDS: Peshi, Kala, Mamsadhara Kala, Muscle, Connective tissue etc.

INTRODUCTION

Ayurveda is a human science, which is based on practical results obtained through different experimentation & studies on almost everything which effects life. It even provides the knowledge & understanding of the structural & functional constitution of human body (Shareera). Although Shadangatvam is an explanation of bodies main six regions, the pratyangas are explained as sub divisions of Shadangatvam. While explaining the pratyangas, some of the structures like-Srotas, Peshis & Ashayas, anatomy & physiological concepts are different in both sexes & there are some differences in their numbers & structures, such as Peshi numbers are different in males & females. Peshi, the component part of the human body is derived from the Mamsa dhatu. It wraps the body like a sleeve, covers the sira, snayu, asthi & sandhi thus provides the smooth contour to the body. Muscle refers to a group of muscle fibers bound together by connective tissue. Muscle generates force & movements used in the regulation of the internal environment. By controlling the activity of these muscles the human mind ultimately expresses itself. The muscular system is responsible for the movement of the human body. Attached to the bones of the skeletal system are about 800 named muscles that make up roughly half of a person's body weight. Muscle

tissue is also found inside of the heart, digestive organs, and blood vessels. In these organs, muscles serve to move substances throughout the body.

Definition

मांसवयवसंघातः परस्परं विभक्तः पेशीत्युच्यते | (सु.शा. – 5/38)

Mamsa in general term described under sapta dhatu in compact form but when this differentiates get separated from each other is called as Peshi (Dalhan).

Importance

सिरा स्नायु अस्थि पर्वाणि संधय च शरीरिणां।

पेशेभिः संवृतान्यत्र बलवन्ति भवन्त्यतः॥ (सु.शा- 5/37)

Since Sira, Snayu, asthi, asthi-sandhi of the body are covered by peshi. So they are more strong and supported. This means peshi is responsible to provide strength and protection while covering them. Muscle is the tissue of the body which primarily functions as a source of power. There are three types of muscle in the body. Muscle which is responsible for moving extremities and external areas of the body is called "skeletal muscle." Heart

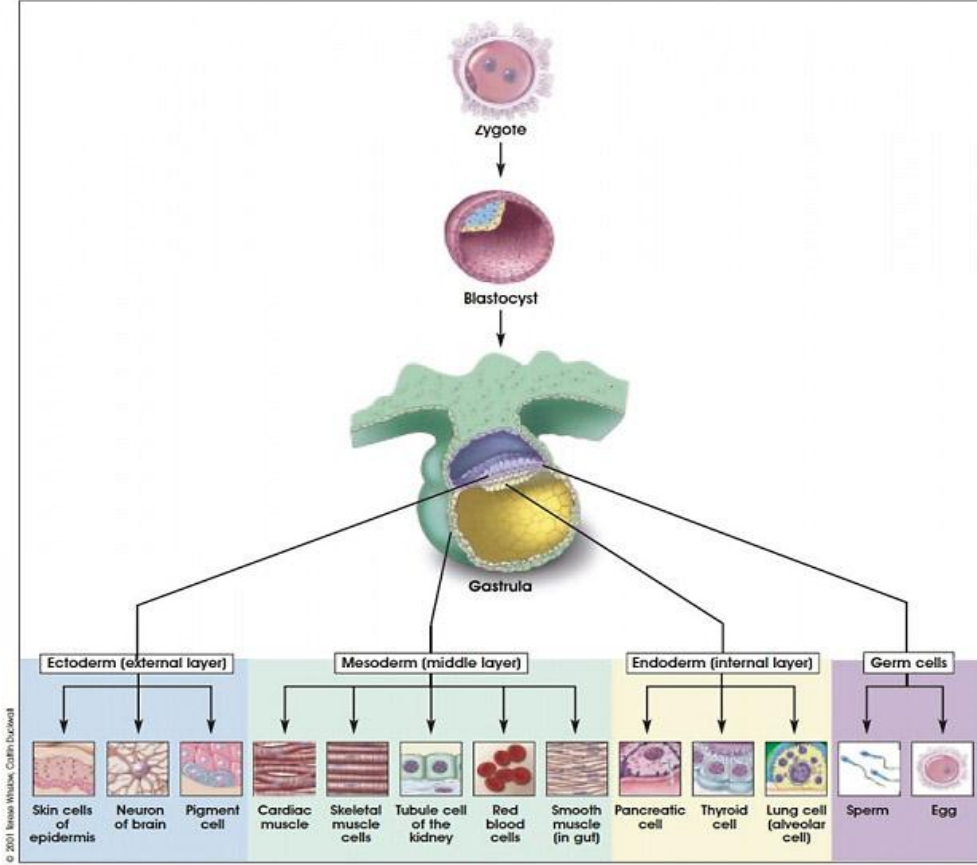
muscle is called "cardiac muscle." Muscle that is in the walls of arteries and bowel is called "smooth muscle."

Development

यथार्थ उश्माना युक्तो वायुः स्रोतंसी दारयेत॥ (सु.शा.४/२७)

अनुप्रविष्य पिशितं पेशीः विभजते तथाः ॥ (सु.शा.४/२८)

At the time of development the vayu mahabhoota along with ushma guna helps to open the srotas and also enters Mamsa and helps to develop peshi. Helping agent of peshi –“Pitta + Vayu”.



Peshi Swaroop/ Types

तासांबहलपेलवस्धूलाणुपृधुवृत्तहस्वदीर्घस्थिरमृदुसलक्षण।

कर्कश भाताः सन्ध्यस्थि सिरा स्नायु प्रचदका यथाप्रदेशं स्वभावत एव भवन्ति।। (सु.शा. -5/40)

Number of peshi

Male

पञ्च पेशी शतानि, तासां चत्वारि शतानि शाखासु,

कोष्ठे षट्षष्टिः ग्रीवां प्रत्युर्ध्वं चतुस्त्रिंशत् ।। (सु. शा. 5/37)

In Male body there are 500 peshi

Shakha – 400 (extremities)

Kostha – 66 (Trunk/Madhya Sharir)

Griva – urdha (Neck/above the clavicle)-34

Female

स्त्रीणां तु विशंतिरधिकादश तासां स्तनयोः एकैकस्मिन्

पञ्चपञ्चेति, यौवने तासां परिवृद्धिः अपत्यपथे चतस्रः।

तासां प्रसूते अभ्यन्तरतो द्वे, मुखाश्रिते बाहये च वृत्ते द्वे, गर्भच्छिसंश्रितास्तिस्त्रः, शुक्रार्तव प्रवेशिन्यस्तिस्त्रः एव।। (सु.शा.- 5/ 39)

In female along with 500 peshi there are 20 more Peshi. There are 5 in each breast thus 10 in total, 4 peshi in apatyapatha, 3 peshi are attached to garbhachidra, 3 peshi in Sukra- artava pravesini.

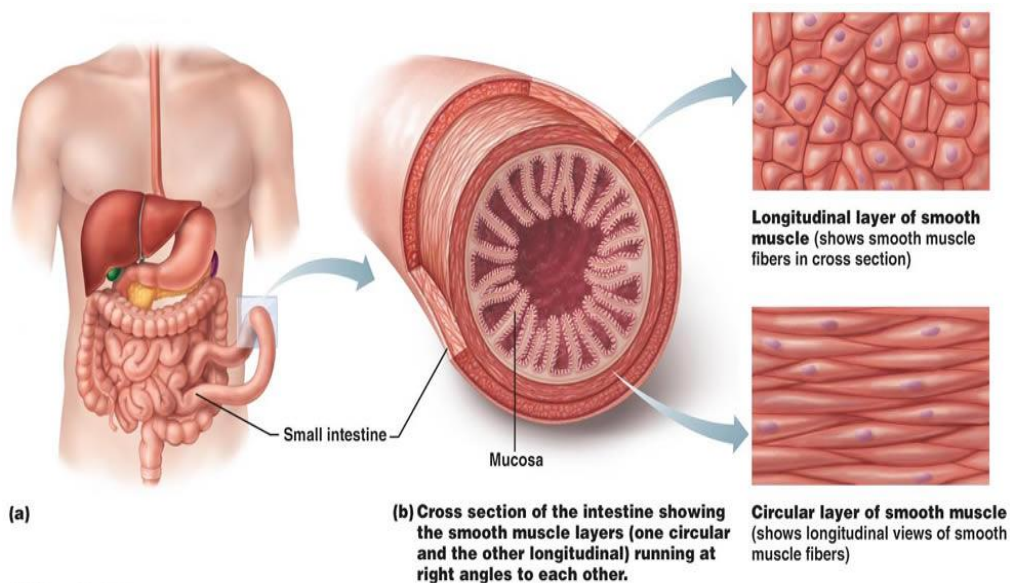
Modern Corelation of Peshi

Visceral Muscle

Visceral muscle is found inside of organs like the stomach, intestines, and blood vessels. The weakest of all muscle tissues, visceral muscle makes organs contract to move substances through the organ. Because visceral muscle is controlled by the unconscious part of the brain, it is known as involuntary muscle it cannot be directly controlled by the conscious mind.

The term “smooth muscle” is often used to describe visceral muscle because it has a very smooth, uniform

appearance when viewed under a microscope. This smooth appearance starkly contrasts with the banded appearance of cardiac and skeletal muscles.

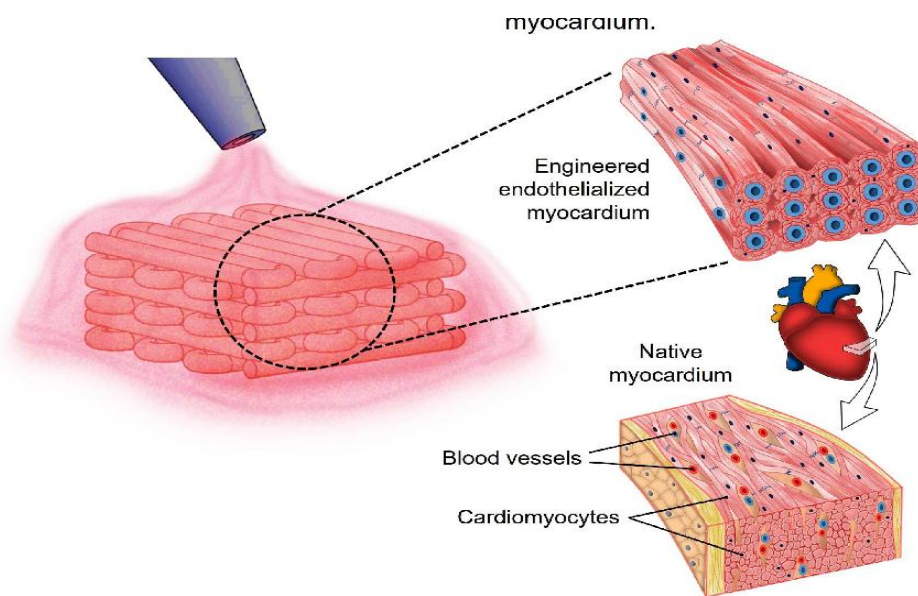


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Cardiac Muscle (Involuntary Muscle)

Cardiac muscle tissue, or myocardium, is a specialized type of muscle tissue that forms the heart. This muscle tissue, which contracts and releases involuntarily, is responsible for keeping the heart pumping blood around the body. Muscle is fibrous tissue that contracts to produce movement. There are three types of muscle

tissue in the body: skeletal, smooth, and cardiac. Cardiac muscle is highly organized and contains many types of cell, including fibroblasts, smooth muscle cells, and cardiomyocytes. Cardiac muscle only exists in the heart. It contains cardiac muscle cells, which perform highly coordinated actions that keep the heart pumping and blood circulating throughout the body.



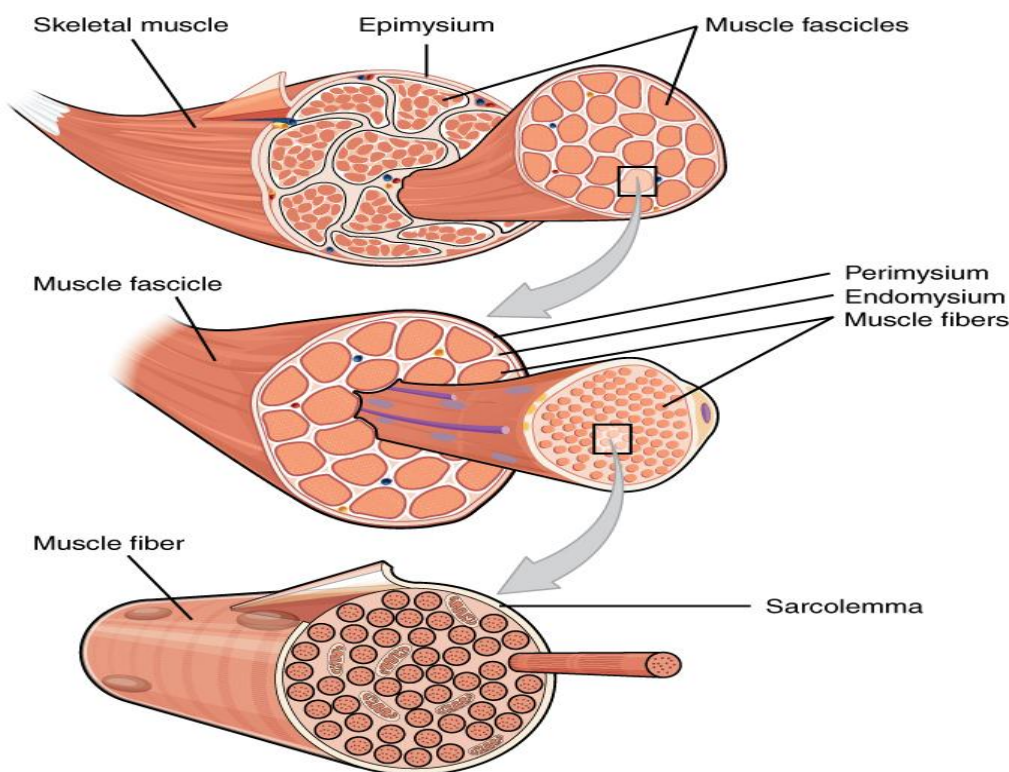
Skeletal Muscle (Voluntary Muscle)

Skeletal muscle is the only voluntary muscle tissue in the human body it is controlled consciously. Every physical action that a person consciously performs (e.g. speaking, walking, or writing) requires skeletal muscle. The function of skeletal muscle is to contract to move parts of

the body closer to the bone that the muscle is attached to. Most skeletal muscles are attached to two bones across a joint, so the muscle serves to move parts of those bones closer to each other. Skeletal muscle cells form when many smaller progenitor cells lump themselves together to form long, straight, multinucleated fibers. Striated just

like cardiac muscle, these skeletal muscle fibers are very strong. Skeletal muscle derives its name from the fact

that these muscles always connect to the skeleton in at least one place.



Applied Aspect of Peshi and Muscles

Acharya Charak has also described 'Gurubhojanam Durvipakakaranam' Guru Ahara also leads Dusti of Mamsavaha. Srotas Characterizes by general body swelling, appearance of stable nodules, pricking pain and cracking of skin. (Ch. Viman stana-5)

Paralysis (Pakshakhaat)

Loss of motor power (power of movements) in muscles is called paralysis. This causes inability of the muscles to contract. The root cause of paralysis can be of two types; Damage to motor neural pathways Inherent disease of muscles, In the type of paralysis caused by damage to motor neural pathways, either the upper or lower motor neuron might be the exact point of damage. In the case of upper motor neuron, spastic paralysis is caused which is accompanied by exaggerated tendon jerks. In the case of lower motor neurons, flaccid paralysis is caused in which there are no tendon jerks.

Atrophy/Marasmus and Hypertrophy/Stabdhagurugatrata

As the nerves innervate the myotome, the blood vessels are the suppliers of protein, calcium, and other nutrients to the muscles, whereas the skins gives supports and protects the skeletal muscles. Therefore these three development, nourishment and maintenance of the muscles. The muscles which are not used for long times become thin and weak This is called disuse atrophy. Conversely, adequate or excessive use of particular muscles causes their better development, or even

hypertrophy Muscular 'wasting' (reduction in size) is a feature of lower motor neuron paralysis and generalized debility.

Myasthenia Gravis / Mamsakshaya Evam Balakshaya

Myasthenia gravis is an autoimmune disease of muscle of unknown origin. Antibodies are produced that bind to acetylcholine receptor and block it. The potentiated state of the immunity fomented by the surplus of deficient Ojas, and the radical loss of somatic "intelligence" on the cellular level brought about by the admixtures of vitiated doshas (likely to include tarpak kapha, sadhak pitta, and vyan and pran vayu, inter alia), aam and tissues at the site of reception (khavaigunya) give rise to the syndrome categorized by Western biomedicine as Myasthenia Gravis, which essentially is an autoimmune attack on the postsynaptic acetylcholine receptors of the neuromuscular junction.

Polymyositis (Rheumatism)/Aamvat

Polymyositis is a disease of muscle characterized by inflammation of the muscle fibers. It starts when white blood cells (immune cells of inflammation) spontaneously invade the muscle.

Muscles close to trunk or torso are mostly affected by polymyositis that results in severe weakness. Polymyositis associated with skin rash is referred to as "dermamyositis".

Fibromyalgia/Amavata/Vatarakta

Fibromyalgia is clinical condition comparable to the Amavata, Vatarakta, Mansagata vata, Rasagata samata etc. A careful analysis of the above conditions have revealed involvement of Ama as a common factor in all clinical syndromes. Ayurved believes that Mandagni plays an important role in the manifestation of most of the diseases and its sluggishness result in the production of the Ama.

DISCUSSION

Mamsadhatu is main component of peshi, Peshi also have contribution of raktavahasrotas (capillaries), ligaments and nerve fibers. Snayu, peshi, kandaras etc, also pertain to muscle. These all structures have significant role directly or indirectly in the samprapti and chikitsa of musculoskeletal disorders. However muscular wasting or hypertrophy may be associated with chronic illnesses, nutritional deficiencies or neuromuscular disorders. Many neuropathies also affect muscle debilities. Muscular dystrophy or wasting is due to neuromuscular disorder. Myasthenia gravis is a disease in which acetylcholine secretion is affected. Mamsakshaya is very similar to balakshaya. This clarifies direct relationship with ojas. Ojas is regarded as sara or essence of all dhatu including mamsadhatu. Hence effect of ojas fall on mamsadhatu and vice versa. When an individual suffers from any chronic disease from prolonged period, other dhatu also reduced along with mamsadhatu. Balakshaya also appears.

Bala is stated to be assessed on the basis of vyayam shakti. Vyayam shakti is associated with strength, stamina and normalcy of mamsadhatu. Loss of protein manifests as mamsakshaya. According to Ayurveda, mamsavrittavata or mamsagatavata clearly can understood by bala. Vitiation of bala are of three types' viz;. vyapad, vishransh and kshaya. Vyapada is first stage of bala depletion characterized by sandhi-vishlesha (joint dislocation) gatrāsada (numbness), dosha-chayvanam, kriyasannirodha (loss of movement).

Third stage is kshaya leading to death. All three stages resemble muscular atrophy. Myopathy is neuro-muscular disorder characterized by progressive skeletal muscle weakness defect in muscle protein and death of muscle cell. Muscular dystrophy do not develop due to nutritional deficiency so these cannot be cured by consuming the products of similar qualities of meat. The concept based of sarvada-sarva-bhavanam-samanyamvridhhi-karnam is not applicable for genetic disorders. The exact karma should be selected as it varies from case to case according to state of aam, agni, srotas and vayadhi. Abhyanga might help improve the muscle strength to a certain extent. In certain congenital disorders like neuromuscular disorder, myasthenia gravis, there is involvement of vessels and nerves which can be considered as the involvement of mamsavaha srotas.

CONCLUSION

According to modern science, the basis for the nomenclature of muscles suggests the following parameters- shape, size, number of heads of origin, action, position, depth & location. These parameters are almost similar to the parameters described in Ayurveda. Hence, it can be concluded that the basic concept for the study & classification of myology was given by Ayurveda. Appropriate muscular constitution is necessary for overall physical, immunological and endocrinal health of body. Mamsadhatu is synonyms with muscular tissue, structure which is responsible for chesta and voluntary movements. Their function is prasaran (relaxation) and akunchan (contraction). Peshi also have contribution of raktavahasrotas (capillaries), ligaments and nerve fibers. Snayu, peshi, kandaras etc, also pertain to muscle. These all structures have significant role directly or indirectly in the samprapti and chikitsa of musculo-skeletal disorders. In Ayurveda concept whatever disease found in peshi, these all are as muscles disease. So here we can say that the concept of peshi sharir in Ayurveda can be corelated with the modern concept of muscle.

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