Dhatu is considered as nourishing and supporting matter of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. An individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). Appropriate muscular constitution is necessary for overall physical, immunological and endocrinal metabolism. Mamsadhata 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. Mamsakshaya is very similar to balakshaya. Hence effect of ojas fall on mamsadhata and vice versa. When an individual suffer from any chronic disease from prolonged period, other dhatu also reduced along with mamsadhata. Abhyanga might help improve the muscle strength to a certain extent. Nutritional need to be taken care according to pathyaapathya and Rasayana therapy. In Ayurveda, there is a need to elaborate clinical aspects of peshi and search new possibilities for conceptual understanding along with clinical practice. The exact therapy for particular disease such as shastra (surgery), kashar application or agnikarma which are chief therapies for mamsadhata.

**KEYWORDS:** bala, mamsa, muscle, peshi.

**INTRODUCTION**

In Ayurvedic classical text, dhatu is considered as nourishing and supporting matter of body. It undergoes various metabolic changes, leading various byproducts and nourish the body providing support throughout the life. Peshi is dense form of mamsadhata which is arranged in various patterns separated from each other performing lepan karma of mamsadhata along with strengthening the body. There are various patterns of peshi differentiated according to maintaining support and movement of body viz. bahala, pelava, sthula, anu, prithu, vritta, hrishwa, dirgha, sthira, mridu, slakshna, karkasa etc. are interpreted. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body.

Mamsadhata and peshi are principle binder of sira, snayu, asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body. Peshi is dense form of mamsadhata performing lepan karma of mamsadhata along with strengthening the body. In body sira, snayu (ligaments), asthi (bones), asthi-parva (joints of bones) and sandhi (other joints) of body are covered by peshi being strength of particular organ. Peshi is supposed to be part and parcel of mamsadhata, as updhatu, sira, snayu, asthi, various joints and marma of body are packed with peshi. Acharya charak has stated that an individual with balanced proportions of muscles, compactness, and firmness is considered a balwan-parusha (physically healthy). These individuals are of balanced proportions of body.
Mamsvahasrotomula

Mamsvahasrotomula is mentioned as snayu, twacha and raktwahi-dhammi. In this context snayu relate to nerves, as the nerve innervate the myotome, the blood vessels are the supplies of protein, calcium and other nutrients to muscles, whereas skin gives support and protects the skeletal muscles. Therefore, these three structures are directly related to development, nourishment and maintenance of muscles. In certain congenital disorders like neuromuscular disorders, myasthenia gravis there is involvement of vessels and nerves which can be considered as the involvement of mamsvahasrotas.

PESHISWAROOPA/ TYPES

Peshi are twelve in number on the basis of shape. Bahala are all muscles which are broad and large. These can be correlated with diaphragm, rectus abdominis etc. commentator Dalhana elaborates bahala is bahutara means muscles with multiple layers such as muscles of thoracic wall (external, intermediate and internal muscles). Pelava are considered as small sized muscles also commentator Dalhan elaborates pelava as alpa i.e. little muscles viz. pyramidalis, anconae etc. Shhula can be understood as heavy and big muscles of body such as gluteus maximus, pectoralis major, diaphragm etc. Anu are very small. Dalhana elaborates anu as sukshma indicating very small muscles such as stapedius, subclavius etc. Prithu is considered as flat muscles. Commentator Dalhana elaborates prithu as vistirma means spread over large area. Prithu can be understood as flat and broad muscles covering a large area such as occipito-frontalis, latissimusdorsi, trapezius, external oblique etc. Vritha is round in shape. Commentator Dalhana has considered vrita as vartula, indicates round shape (tares) muscles of the body viz. teres major, teres minor etc. Hrswa is short. Commentator Dalhana elaborates hrswa as adirgha means muscles which are not much long. All the short muscles (brevis) can be considered here viz. adductor brevis, extensor hallucis brevis etc. Dirgha is considered as long muscles. Commentator Dalhana elaborates dirgha as ayata means rectangular in shapes such as longuscolli, longuscapitis, Sartorius (Longest muscle of body). Sthira considered as firm. Commentator Dalhana considers sthira as kathina. Both concepts indicate all the firm and stable muscles like deltoid, rectus femoris, Coccyegeus etc. Mridu is soft in constitution. Commentator Dalhana considers mridu as komala indicating all soft muscles such as visceral muscles like cardiac muscles, muscles of bladder etc. can be considered in this regard. Slaksna is smooth in texture. Commentator Dalhana considers slaksna as sparsasukha indicating mucosal and sub mucosal membranes of viscera. Definition indicate the functional aspect of muscles which are rich in blood supply as well as nerve supply such as muscles of lip and labial muscles, Intrinsic muscle of eye etc. Karkasha is rough in texture. Commentator Dalhana considered karkasha as opposite to slaksna i.e. rough can be considered as muscles having serrated and irregular border such as serratus anterior, lumbricals etc.

Table 1: Number of peshi

<table>
<thead>
<tr>
<th>Acharya Sushruta</th>
<th>Vagbhata</th>
<th>Bhavpraksha</th>
<th>Male – 500</th>
<th>Female – 520</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acharya charka</td>
<td>500</td>
<td>400</td>
<td>500</td>
<td>520</td>
</tr>
</tbody>
</table>

According to Ayurveda, there are 500 peshi in Male among them 400 are in extremities (Shakha), 66 in trunk region (kostha) and 34 are in neck region (griva). While in female there is twenty peshi are more than males. They are five (5x2) in each breast, four peshi in apatayapatha (two sphincter vaginae and two muscular layer of vagina canal), three peshi in garbhachidra (Utero-sacral, cardinal and pubo-cervical ligaments), three peshi in sakra-arthaapraivesini (cervix and fallopian tubes). Breasts or even

- Acharya charka has stated that formation of peshi do occur during second month of intrauterine life which get differentiated at later stages into various organ system.
- Acharya Gananatha Sena has elaborated morphologically that peshi are mostly like structure as of a rope being thick at center and thin at end parts. Some are also of different structure like koshakara, nalakakara, sutakakara, rajvakakara, talavmtakara and sharapunkhakara. These rajvakakara, talavmtakara and sharapunkhakara have two ends. These ends may be snayumaya.
- Word “Pesi” in Ayurveda has been used to denote fascia, muscle and ligament etc. in different contents.

Formation

- Acharya Susruta mentioned that vayu (vata) combined with usma (pitta) for the same purpose, creates the srotas (channels) entering into the muscle tissue, the vayu and pitta divide the muscle into peshi (individual muscle).
- Commentator Dalhana mentioned that firstly vayu along with usma i.e. pita form the new srotas and then get into muscle and differentiate it into peshi.
- According to Acharya Kashyap asthi and mams of embryo are developed from sukra which later differentiated into snayu during fetal development.
- Acharya Charaka tells the formation of mams i.e. Rakdhatu is fluid which reaches mamsvahsrotus and is acted upon by mamsvahwagni along with vayu, jala and tejas stabilize fluid rakdthathu into solid mamsdhathu.
- Vatadosha divides mamsadhatu into smaller parts called peshi.

Panch-bhautic Constitution

Though every substance is made of all five mahabhuta i.e. akasha, vayu, agni, jala, prithvi. Commentator Chakrapani has elaborated that mamsa is predominant of prthivi mahabhutah. Acharya Charaka in formation of mamsa mentioned the role of vayu, jala and tejas mahabhutah. The solid and compact structure such as muscle fibers, nerves and other structural protein can assumed as attributes of prthivi mahabhuta. Liquid protein present inside the cell i.e. intra-cellular fluid, secretion from intra cellular structures can be considered as jala mahabhuta. Agni mahabhuta can be considered as neurotransmitters, ionic variations, ATP etc. necessary for initiation and continuation of muscle contraction. Process of thin and thick filaments, movement of ions, nerve signals, and function of regulatory protein can be considered as vayu mahabhuta. Space present inside various organs and various channels present for secretions can be attributed to akasha mahabhuta.

Mams dharakala is first kala explained by acharya is out of seven kala. Kala function for support and for morphologically differentiation of dhatu. Dhatu production is sequence for serial nourishment of dhatu. Rasa-rakta-mamsa it is sequence of nourishment; whereas kala is meant for dharma-karma i.e. for support and thereafter the sequence is different it is start from mams instead of rasa. Mamsadhathu is first imobile dhatu. Support can be given with shhira or firm subjects. Hence mams dharakala supposed to be first one to support developing fetus. So first is mams dharakala which is present inside the muscle and which allow the siras (vein), snayu (ligament) and dhammi (arteries) to spread their branches inside the muscle. Histologically mams dharakala can be understood along with inter-muscular septum, as well as epimysium, endomysium which are covering of a muscle, fasciculi and individual muscle fiber respectively.
It is difficult to explain ten Pesi of breasts. One peshi present in lakshna (penis) and musaka (scrotum) in men, they only are present in women covering phala (ovaries).29

![Table 1.1: Urdhva and Adha-Shakha (Upper and Lower Limbs) - 400](image)

<table>
<thead>
<tr>
<th>Limb</th>
<th>In one</th>
<th>In Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pada-anguli (fingers)</td>
<td>1(3×5)/15</td>
<td>60</td>
</tr>
<tr>
<td>Prapada (foot post)</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Near kurcha (brush like structures/aponeurosis)</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Gulfa tala (soles)</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Between Janu and Gulpha (anterior, medial, lateral and posterior region of legs)</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Janu (popliteal fossa)</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Utri-Pradash (anterior, posterior and medial thigh)</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Vanksan (groin region)</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>400</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Mamsadhaptu is main component of peshi. Peshi also have contribution of raktavahrasotas (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 mamsadhaptu. Hence effect of ojas fall on mamsadhaptu and vice versa. When an individual suffers from any chronic disease from prolonged period, other dhatu also reduced along with mamsadhaptu. 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 mamsadhaptu. Loss of protein manifests as mamsakshaya. According to Ayurveda, mamsavittavata or mamsagatavata clearly can understood by bala. Vitation of bala are of three types’ viz’. vyapada, vyapadashya and vishrampsha.Vyapada is first stage of bala depletion characterized by sandhi-vishlesha (joint dislocation) gatrasada (numbness), dosh-chaityavaram, kriya-sanniroda (loss of movement). Similarly in muscular hypertrophy or dystrophy gradually results in loss of function. Vishrampsha is a stage characterized by stavadh-guruntagrata stiffness and heaviness of body vatashopah and varnabhedha (discoloration) glani (tiredness), tandra (drowsiness) and nidra (sleepiness). 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 on sarvada-sarva-bhanam-samayam-vrddhi-karnam is not applicable for genetic disorders. Disuse atrophy may improve with regular exercise as if not associated with neurogenic origin. If wasting develops from nutritional deficiencies it can be easily cured with supplementation of mamsa such as marasmus, kwashiorkor. Many neuropathies affect muscle debilities in hypertrophy and dystrophy only approach is panca-karma therapy. 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. Nutritional need to be taken care according to pitha-aphalya. Rasayana therapy also have a great hand in ojas debilities should also have same importance in muscular disorders at early stages.

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