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COMPARATIVE STUDY OF PESHI SHARIR AND MYOLOGY

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ABSTRACT –

According to Ayurved, Peshi is defined as the structure which is the main component of Mansa dhatu (Muscles) and which is present externally as well as internally related to organs also covers the bones, joints and can be individually identified as a separate structure. 500 peshis are present in human body distributed as 400 in shakha pradesh (extremities), 66 in Koshtha (Trunk) and 34 in above the Greeva (Head and Neck). Peshi (Muscles) covers Sira (Vessels), Snayu (Ligaments / Tendons), Asthiparvani (Bones with Appendages) and Sandhi (Joints). It also facilitates the easy movements of sandhi and provides protection to Asthi (Bones), Sira and Snayu. By covering all the above structures, it provides the Bala (strength) to the human body. A muscle is a "contractile organ" of the body. Muscles make up between 40 to 50 percent of our total body weight and work to help us move, maintain posture and produce heat. Muscles respond to stimuli, contract, extend and have elasticity to return to their original shape and length after contracting or extending. Each type of muscle has different characteristics and structures.

KEY WORDS - Peshi Sharir, Muscle, Myology, Contractile organ.

INTRODUCTION –

According to Sushrut Sharirsthan 4th chapter,

Peshi is defines as the structure which is the main component of Mansa dhatu (Muscles) and which is present externally as well as internally related to organs also covers the bones, joints and can be individually identified as a separate structure.

PESHI SANKHYA – NUMBER OF PESHI AS PER AYURVED –

According to Sushrut Sharirsthan 5th chapter,

500 peshis are present in human body distributed as 400 in shakha pradesh (extremities), 66 in Koshtha (Trunk) and 34 in above the Greeva (Head and Neck). In females, additional 20 peshis are present. These can be correlated as 05 each in Stana (Breasts – Lactiferous lobes and glandular tissue), 04 in Apatyapatha (Vagina – Vaginal Fornices and Sphincter) and 06 in Shukra - Artva Praveshani (Muscular layer of Uterus and Fallopian tube).

PESHI RACHANA - (STRUCTURE- CLASSIFICATION) –

According to Sushrut Sharirsthan 5th chapter,
Peshis are having following structure according to Ayurved, which comes in pairs as,

- Bahala (Large) x Pelava (Small)
- Sthoola (Thick) x Aanu (Thin)
- Pruthu (Flat, Broad) x Vrutta (Round, Dome shaped)
- Hraswa (Short) x Deergha (Long)
- Sthira (Firm) x Mrudu (Soft)
- Shlakshna (Smooth) x Khara (Rough)

TYPES OF PESHI - (PESHI PRAKAR) -

Mainly peshis are divided into 3 types as,

1. **Rajila / Vidheya / Aicchik / Paratantra Peshi** – Skeletal and Voluntary Muscles
2. **Arajila / Avidheya / Anaicchik / Swatantra Peshi** – Smooth and Involuntary Muscles
3. **Hardik Peshi** – Cardiac and Involuntary Muscles

SUBTYPES OF PESHI-

1. **Rajila Peshi** – Skeletal and Voluntary Muscles

- **Pattikakara peshi** – Long, flat muscles
e.g. – Sartorius, Gracilis muscles
 - **Chaturasra peshi** – Broad and Quadrangular muscles e.g. – Pronator quadratus, Quadratus femoris
 - **Yavaakar peshi** – Like Barley grain
e.g. – Semitendinosus, Semimembranosus
 - **Ekapunkhika peshi** – Muscle belly present on only one side of tendon e.g. – Flexor pollicis longus
 - **Dwipunkhika peshi** – Muscle belly present on both sides of tendon (Bipinnate) e.g. – Rectus femoris
 - **Bahupunkhika peshi** – Like Multipinnate muscle
e.g. – Deltoid, Subscapularis
 - **Taalvruttakara peshi** – Almost same like Bahupunkhika peshi
 - **Vivrutta peshi** – Folded or turned muscles
2. **Arajila Peshi** –
 - **Koshakar peshi** – Ring or bangle shapes muscles

e.g. – Muscularis mucosa of stomach

- **Nalakakar peshi** – Transverse or Horizontal muscular lining e.g. – Horizontal musculature in Large intestine
- **Sootrakar peshi** – Small and narrow musculature

e.g. – Musculature of Spleen

PESHI KARYA – FUNCTION OF PESHI -

According to Sushrut Sharirsthan 5th chapter,

Peshi (Muscles) covers Sira (Vessels), Snayu (Ligaments / Tendons), Asthiparvani (Bones with Appendages) and Sandhi (Joints). It also facilitates the easy movements of sandhi and provides protection to Asthi (Bones), Sira and Snayu. By covering all the above structures, it provides the Bala (strength) to the human body.^{1, 2 &3}

MYOLOGY –

A muscle is a "contractile organ" of the body. Muscles make up between 40 to 50 percent of our total body weight and work to help us move, maintain posture and produce heat. Muscles respond to stimuli, contract, extend and have elasticity to return to their original shape and length after contracting or extending. Each type of muscle has different characteristics and structures. Muscle tissue has four main properties: Excitability (ability to respond to stimuli), Contractibility (ability to contract), Extensibility (ability to be stretched without tearing) and Elasticity (ability to return to its normal shape). Based on certain structural and functional characteristics, muscle tissue is classified into three types: cardiac, smooth and skeletal.

TYPES AND STRUCTURE OF MUSCLES -

1. Skeletal Muscles -

Skeletal muscle tissue is named for its location - attached to bones. It is striated; the fibres (cells) contain alternating light and dark bands (striations). Skeletal muscle tissue can be made to contract or relax by conscious control (voluntary).

All skeletal muscle fibres are not alike in structure or function. For example, skeletal muscle fibres vary in colour depending on their content of myoglobin (myoglobin stores oxygen until needed by the mitochondria). Skeletal muscle fibres contract with different velocities, depending on their ability to split Adenosine Triphosphate (ATP).

2. Smooth Muscles -

Smooth muscle tissue is located in the walls of hollow internal structures such as blood vessels, the stomach, intestines, and urinary bladder. Smooth muscle fibres are usually involuntary (not under conscious control), and they are nonstriated (smooth). Smooth muscle tissue, like skeletal and cardiac muscle tissue, can undergo hypertrophy. They are made up of single, spindle-shaped cells and have thick and thin filaments that move against each other to make the cell contract. Smooth muscles are also influenced by other substances released in the body near it, like an allergen that causes a sneeze or cough, or by hormones in the blood, as when the signal to start childbirth causes contractions. Smooth muscles contract more slowly than cardiac or skeletal muscles.

3. Cardiac Muscles -

Cardiac muscle tissue forms the bulk of the wall of the heart. Like skeletal muscle tissue, it is striated (the muscle fibres contain alternating light and dark bands (striations)).Unlike skeletal muscle tissue, contraction is usually not under conscious control (involuntary).

Diagram – 1 – Muscles of the Body – Rajila Peshi - Skeletal Muscles -Anterior

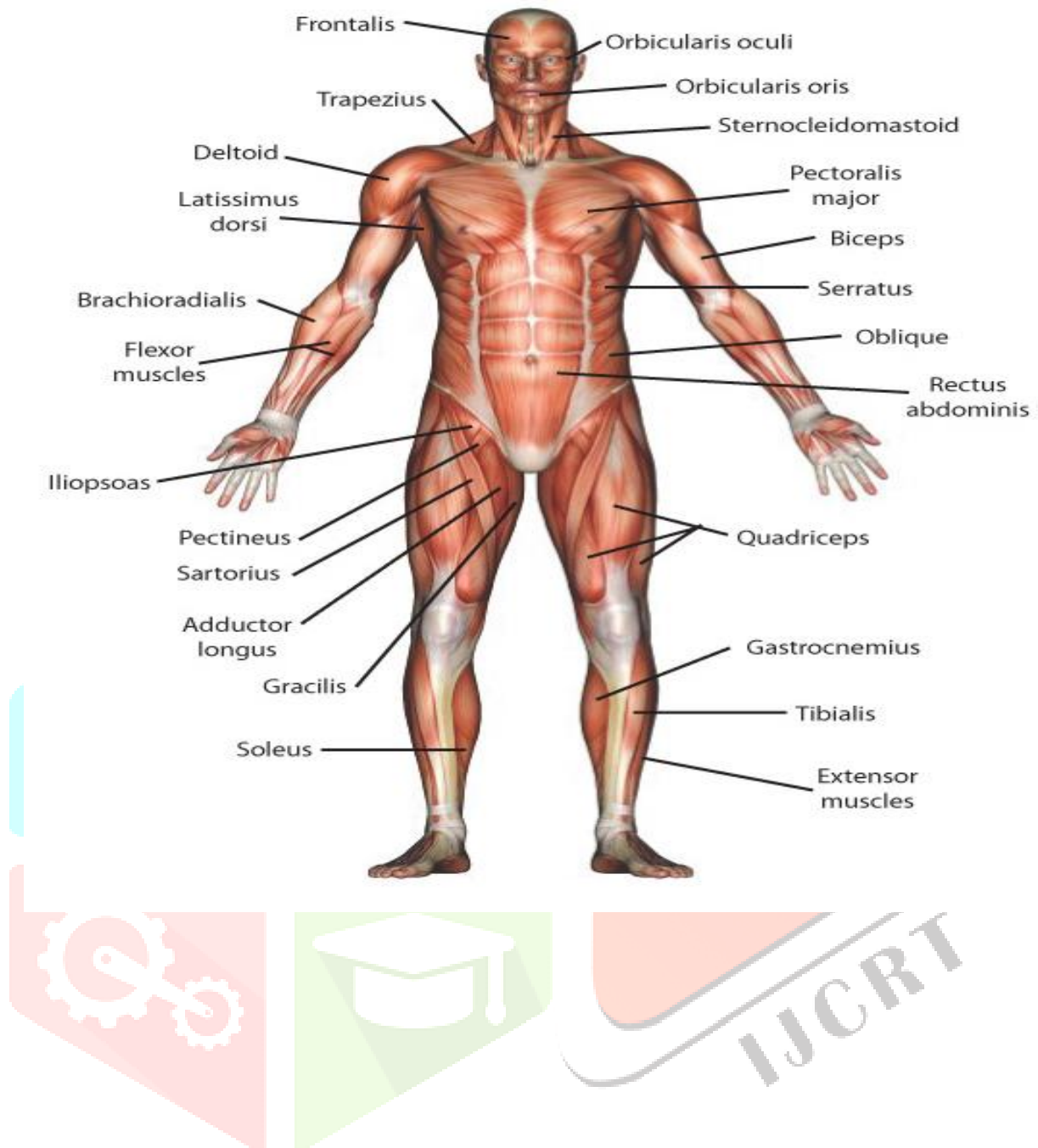


Diagram – 2 – Muscles of the Body – Rajila Peshi - Skeletal Muscles -Posterior

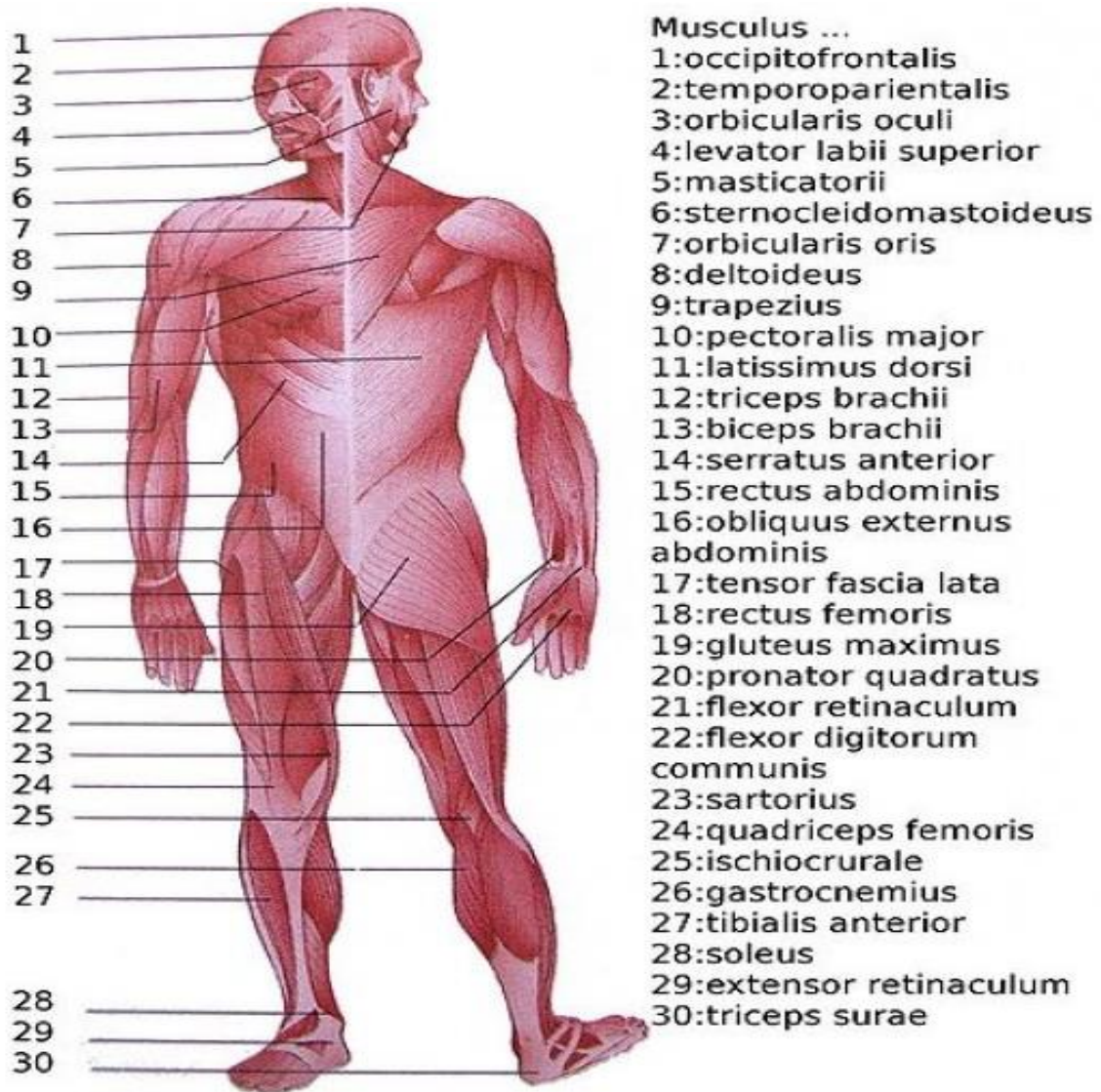


Diagram – 3- Muscles of the Body – Rajila Peshi - Skeletal Muscle Structure-

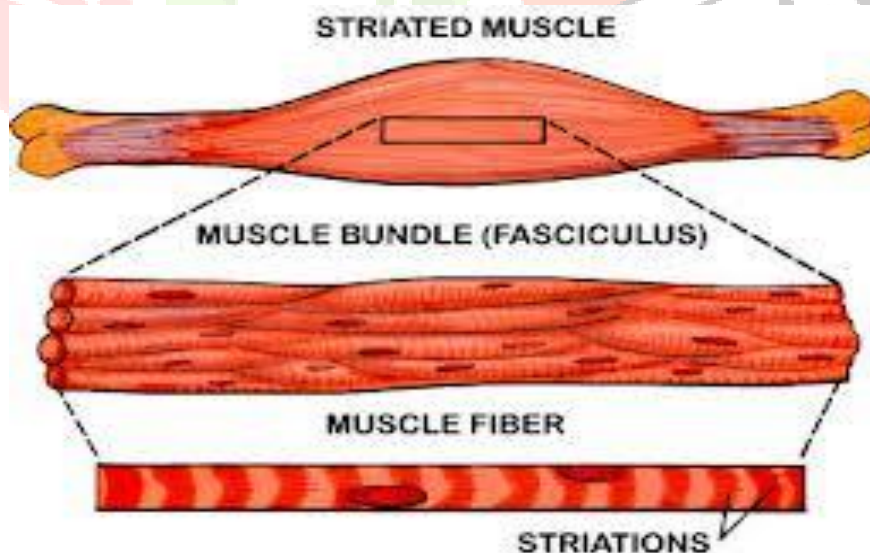
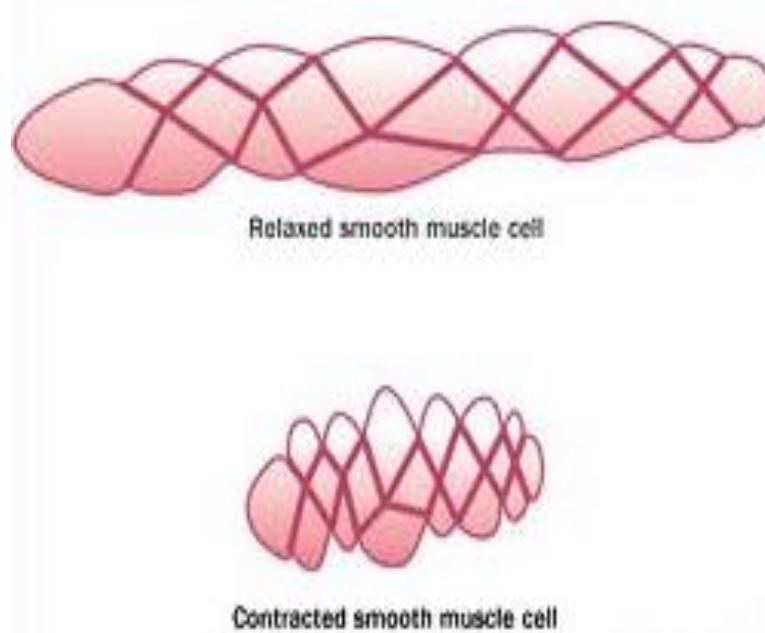
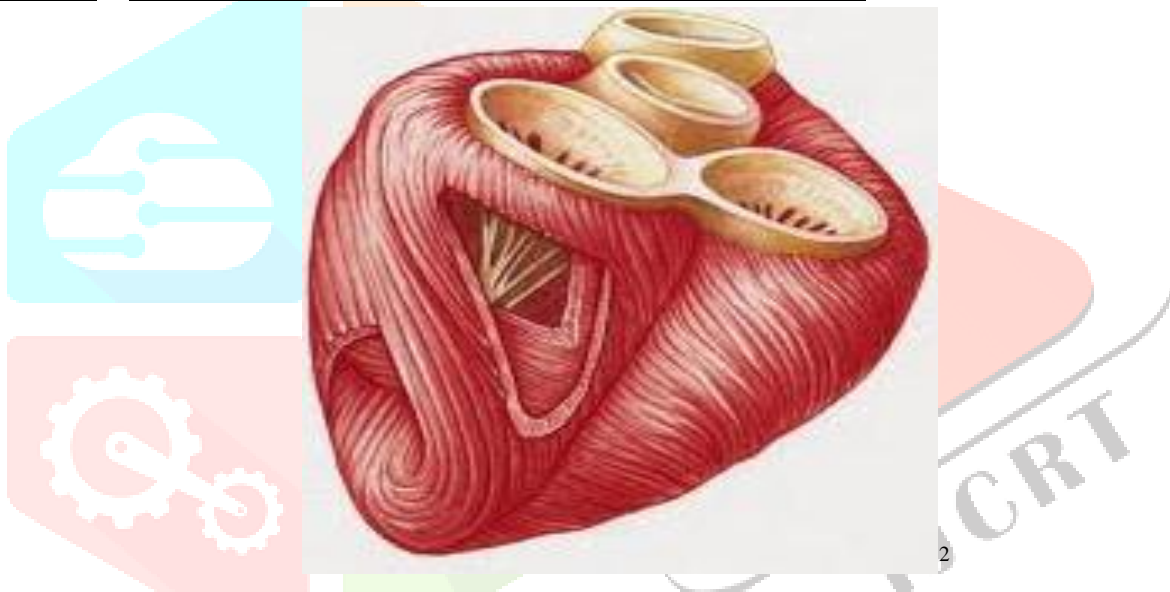


Diagram – 4- Muscles of the Body- Arajila Peshi - Smooth Muscle Structure-**Diagram – 5 – Muscles of the Body- Hardik Peshi- Cardiac muscles-****DISCUSSION –**

According to Sushrut Sharirasthan 4th chapter, Peshi is defined as the structure which is the main component of Mansa dhatu (Muscles) and which is present externally as well as internally related to organs also covers the bones, joints and can be individually identified as a separate structure. 500 peshis are present in human body distributed as 400 in shakha pradesh (extremities), 66 in Kosktha (Trunk) and 34 in above the Greeva (Head and Neck). In females, additional 20 peshis are present. Mainly peshis are divided into 3 types as, Rajila / Vidheya / Aicchik / Paratantra Peshi – Skeletal and Voluntary Muscles, Arajila / Avidheya / Anaicchik / Swatantra Peshi – Smooth and Involuntary Muscles, Hardik Peshi – Cardiac and Involuntary Muscles. A muscle is a "contractile organ" of the body. Muscles make up between 40 to 50 percent of our total body weight and work to help us move, maintain posture and produce heat. Muscles respond to stimuli, contract, extend and have elasticity to return to their original shape and length after contracting or extending. Based on certain structural and functional characteristics, muscle tissue is classified into three types: cardiac, smooth and skeletal. Ayurvediya concept of Peshi Sharir can be compared with the Myology or a Muscle.

CONCLUSION –

According to Sushrut Sharirsthan Peshi is defined as the structure which is the main component of Mansa dhatu (Muscles) and which is present externally as well as internally related to organs also covers the bones, joints and can be individually identified as a separate structure. A muscle is a "contractile organ" of the body. Muscles make up between 40 to 50 percent of our total body weight and work to help us move, maintain posture and produce heat. Muscles respond to stimuli, contract, extend and have elasticity to return to their original shape and length after contracting or extending. So, one can conclude that, Ayurvediya concept of Peshi Sharir can be compared with the Myology or a Muscle with their types and characteristics.

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