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A CADAVERIC STUDY ON MYOLOGY WITH SPECIAL REFERENCE TO PESHI SWAROOP

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ABSTRACT
Peshi are component of body mainly composed of *mamsa dhatu*. During fetal development *vata dosha* enters the *mamsa dhatu* and divides it into *peshi. Peshi* are thick or thin, big or minute, stout/thick or round/circular, short or long, fix/stable, hard or soft, smooth or rough; they cover the *sandhi*, *asthi*, *sira* and *snayu*, in their places naturally. The morphology of *peshi* differs according to their locations and functions. Skeletal muscle, also called striated muscle, is a dense, fibrous contractile tissue which exists throughout the body, and functions to allow body movements by applying force to bones and joints, via contraction. In human, there are approximately 640 muscles and almost all are symmetrically distributed between the left and right sides of the body. Size and shape of different muscles are highly variable depending on their functions throughout the body.

KEYWORDS: *Peshi*, Muscle, Morphology, *Peshi Swaroop*

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.

Acharya Sushruta, says that the body should be dissected after keeping in water, within a time span of seven days. He described about various structures of the human body in detail, which can be seen after dissection. Thus, he is known as the Father of Ancient Surgery.

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.[1]

During fetal development *vata dosha* enters the *mamsa dhatu* and divides it into *peshi*. *Peshi* are thick or thin, big or minute, stout/thick or round/circular, short or long, fix/stable, hard or soft, smooth or rough; they cover the *sandhi*, *asthi*, *sira* and *snayu*, in their places naturally.

The number of *peshis*, their location, distribution & function has been explained in Samhitas. In males there are 500 numbers of *peshis* & in females 520. The 20 extra *peshis* are said to be located in the region of *sthana* (breast) & yoni & *garbhashaya* (vagina & uterus). As per modern anatomy, there are approximately 640 muscles and almost all are symmetrically distributed between the left and right sides of the body. Size and shape of different muscles are highly variable depending on their functions throughout the body.

Acharya Sushrut has classified all the muscles of human body into 12 types of *peshi swaroop*. Some of which indicate the structural entities of *peshi*, while the others indicate the properties of the *peshi*, which creates confusion.

Also, Classifications like Unipennate, Bipennate, Multipennate etc are mentioned in modern Anatomy,

which cannot be correlated with any of the types mentioned by *Acharya Sushrut*.

Hence, to clear these doubts & to form a correlation, the present work has been carried out so that the muscles of the human body can be classified as per the *Peshi Swaroop* classification mentioned by *Acharya Sushrut* in *Sushruta Samhita*.

METHODOLOGY

Current study was carried out in three phases- 1. Literary study 2. Cadaveric study 3. Observational study.

1st Phase of Study

First phase of the study included Literary Study.
In this phase, the *Laghutrayi* , *Bruhatrayi* and various other ayurvedic treatises were analysed to search different terms related to *peshi* & to understand the meaning of each *peshi swaroop*.

2nd Phase of Study

Second phase included the Cadaveric Dissection.
In this phase, region wise cadaveric dissection of muscles of the human body, was carried out on 04 cadavers (02 Male cadavers, & 02 Female Cadavers), in the Department of Rachana Sharir (Anatomy), Parul Institute of Ayurved, Parul University, Vadodara (Gujarat), as per the guidelines mentioned in the "Cunningham's Manual of Dissection".
The, dissection procedure was performed layer by layer, and the muscles were observed & studied thoroughly..

3rd Phase of Study

Third phase included the Observational Study.
In this phase, the photographs & measurements (taken with Measuring Tape & Vernier Caliper), of the dissected muscles which were taken during the cadaveric dissection; were documented & analysed thoroughly.

OBSERVATION

(Table No. 01) Dimensions Of Muscles Observed During Dissection.

SR NO.	MUSCLE NAME	CADAVER – 1 (155 cm)			CADAVER – 2 (159cm)			CADAVER – 3 (166 cm)			CADAVER – 4 (168 cm)		
		Length	Breadth	Thickness	Length	Breadth	Thickness	Length	Breadth	Thickness	Length	Breadth	Thickness
1	Abductor Digiti Minimi (Foot)	10	0.9	0.3	10.5	1	0.4	11.7	1.4	0.4	12	1.5	0.5
2	Abductor Digiti Minimi (Hand)	8	2	0.3	9	3	0.3	10.2	3.5	0.4	10.3	3.6	0.5
3	Abductor Hallucis	7.5	0.6	0.3	8	0.8	0.4	9	1	0.5	9.2	1.2	0.6
4	Abductor Pollicis Brevis	8	2	0.3	9	3	0.4	10	3.7	0.5	10.3	3.9	0.6
5	Abductor Pollicis Longus	19	1.5	0.3	20	2	0.3	21.2	3	0.4	21.4	3	0.5
6	Adductor Brevis	14	5	0.4	14.5	5.5	0.5	15	6	0.6	15.3	6.3	0.7
7	Adductor Hallucis	6.8	0.9	0.3	7	1	0.4	8	1.5	0.5	8.3	1.7	0.6
8	Adductor Longus	20	4	0.5	20.5	4.5	0.6	21.5	5	0.7	21.7	5.3	0.8
9	Adductor Magnus	27	11	0.5	27.5	11.3	0.6	28.4	12	0.7	28.5	12.2	0.8
10	Adductor Pollicis	5.5	2	0.3	6	2	0.3	7	3	0.4	7.2	3.2	0.5
11	Anconeus	8	3.5	0.2	8	3.5	0.3	9	4	0.4	9.2	4.2	0.5
13	Articularis Genu	4	1.5	0.2	4.5	1.7	0.3	5.5	2.5	0.4	5.7	2.6	0.5
16	Auricularis	7	10	0.2	7.5	10.2	0.2	8.5	11.2	0.4	8.6	11.4	0.5
17	Biceps Brachii	26	6.5	1	27	6.5	1.2	28	7	2	28.2	7.3	2.2
18	Biceps Femoris	37	5	0.4	37.4	5.3	0.5	38.5	6.4	0.6	38.7	6.5	0.7
19	Brachialis	19	5	1	20	5	1	21.5	6	1.9	21.7	6.2	2
20	Brachioradialis	29	2.5	0.3	29.5	3	0.3	30.5	4	0.4	30.7	4.2	0.5
21	Buccinator	3.2	2.8	0.3	3.3	2.9	0.3	4.4	3.5	0.4	4.5	3.6	0.5
22	Bulbospongiosus	0	0	0	0	0	0	1.9	1.1	0.2	2	1.2	0.2
23	Constrictor Of Pharynx -Inferior	2.5	1	0.2	2.5	1.2	0.2	3.3	2	0.4	3.5	2.2	0.5
24	Constrictor Of Pharynx -Middle	2.2	0.6	0.2	2.3	0.6	0.3	3.2	1.2	0.4	3.4	1.3	0.5
25	Constrictor Of Pharynx -Superior	2	1	0.2	2.2	1.2	0.3	3.3	2.1	0.4	3.5	2.3	0.5
26	Coracobrachialis	16	2.5	0.3	17	3	0.3	18.2	4	0.5	18.4	4.3	0.6
27	Corrugator Supercilii	2.6	1.2	0.3	2.7	1.3	0.3	3.5	2.2	0.4	3.7	2.4	0.5
28	Cremaster	0	0	0	0	0	0	2.8	1.8	0.2	2.8	1.9	0.2
29	Cricothyroid	3.2	2.2	0.2	3.3	2.2	0.3	4.4	3	0.4	4.5	3.1	0.5
30	Dartos	0	0	0	0	0	0	2.4	1.6	0.2	2.6	1.8	0.2
31	Deep Transverse Perinei	2.8	0.8	0.2	2.9	0.9	0.2	4	2	0.4	4.2	2.2	0.5
32	Deltoid	21	16	1	22	16.5	1	23	17.3	1.7	23.2	17.5	1.9
33	Depressor Anguli Oris	3	2	0.3	3.2	2.3	0.4	4.2	3.2	0.5	4.4	3.3	0.6
34	Depressor Labii Inferioris	2.7	1.4	0.2	2.8	1.5	0.2	4	2.5	0.4	4.2	2.7	0.5
35	Diaphragm	32	16	0.2	32.6	16.5	0.3	33.8	17.4	0.4	34	17.5	0.5
36	Digastric	4.5	2.3	0.2	5	2.6	0.3	6	3.4	0.4	6.2	3.5	0.5
37	Dorsal Interossei	6	1.5	0.2	6.5	2	0.2	7.5	3	0.4	7.7	3.2	0.5
38	Erector Spinae - Spinalis	39	1.7	0.2	40	1.8	0.3	41.5	2.5	0.4	41.7	2.6	0.5
39	Erector Spinae - Iliocostalis	41	1.8	0.2	41.5	2	0.3	43	2.9	0.4	43.2	3.1	0.5
40	Erector Spinae - Longissimus	43	1.7	0.2	43.4	1.9	0.3	44.8	2.7	0.5	45	2.8	0.6
41	Extensor Carpi Radialis Brevis	28	4	0.3	28	4	0.3	29.4	5	0.5	29.5	5.2	0.6
42	Extensor Carpi Radialis Longus	30	4	0.3	31	4	0.3	32.2	5	0.4	32.4	5.2	0.5
43	Extensor Carpi Ulnaris	36	2.5	0.3	36.5	3	0.4	38	4	0.5	38.2	4.2	0.6
44	Extensor Digiti Minimi (Hand)	37	1.5	0.3	38	2	0.4	39	2.9	0.5	39.2	3	0.6
45	Extensor Digitorum (Hand)	40	4	0.3	41	4	0.3	42	5	0.4	42.3	5.2	0.5
46	Extensor Digitorum Brevis (Foot)	14	2	0.3	15	2.4	0.4	16	3	0.5	16.2	3.2	0.6
47	Extensor Digitorum Longus (Foot)	42	1.8	0.2	43	2	0.3	44	3	0.4	44.2	3.2	0.5

48	Extensor Hallucis Longus	34	1.6	0.3	34.5	1.9	0.4	35.8	3	0.5	36	3.2	0.6
49	Extensor Indicis	28	1.5	0.2	29	2	0.3	30	3	0.4	30.2	3.2	0.5
50	Extensor Pollicis Brevis	17	2	0.3	18	2	0.4	19	3	0.5	19.2	3.2	0.6
51	Extensor Pollicis Longus	20	2	0.3	20.5	2.5	0.3	21.8	3.3	0.4	22	3.5	0.5
52	External Oblique Abdominis	32	13	0.2	33	13.7	0.3	34	14.7	0.4	34.2	15	0.5
53	Flexor Carpi Radialis	27	3.5	0.3	27.5	4	0.4	28.6	5	0.5	28.9	5.2	0.6
54	Flexor Carpi Ulnaris	26	3	0.3	27	3.5	0.3	28	4.4	0.4	4.5	0.5	0.5
55	Flexor Digiti Minimi Brevis (Foot)	3.6	1	0.2	3.8	1.2	0.3	5	2	0.4	5.2	2.2	0.5
56	Flexor Digiti Minimi Brevis (Hand)	7.5	2	0.4	8	2	0.4	9	3	0.5	9.2	3.3	0.6
57	Flexor Digitorum Brevis	7.8	5.5	0.3	7.9	5.7	0.3	9	6.7	0.4	9.2	6.9	0.5
58	Flexor Digitorum Longus (Foot)	32	5.6	0.3	32.3	5.8	0.4	33.2	6.7	0.5	33.4	6.9	0.6
59	Flexor Digitorum Profundus	42	6	0.3	43	6	0.4	44	7	0.5	44.2	7.2	0.6
60	Flexor Digitorum Superficialis	40	5.5	0.6	41	6	0.6	42	7	0.7	42.2	7.2	0.8
61	Flexor Hallucis Brevis	4.5	1.7	0.2	4.7	1.8	0.3	6	2.8	0.4	6.2	3	0.5
62	Flexor Hallucis Longus	26	4	0.2	26.4	4.4	0.3	27.3	5.4	0.4	27.5	5.6	0.5
63	Flexor Pollicis Brevis	7	1	0.3	7.5	1.5	0.4	8.6	2.4	0.5	8.8	2.6	0.6
64	Flexor Pollicis Longus	32	5	0.3	33	5.5	0.4	34	6.4	0.5	34.2	6.5	0.6
65	Frontalis	3.8	2.4	0.2	3.9	2.6	0.3	5	3.2	0.4	5.2	3.4	0.5
66	Gastrocnemius	44	5.5	0.7	44.5	6	0.8	45.4	7	0.9	45.5	7.2	1
67	Gemellus Inferior	4	0.9	0.2	4.3	1	0.3	5.2	1.9	0.4	5.4	2	0.5
68	Gemellus Superior	5	0.8	0.2	5.2	0.9	0.3	6.2	1.8	0.4	6.4	2	0.5
69	Genioglossus	6.5	4	0.3	6.7	4.2	0.4	7.6	5.2	0.5	7.8	5.4	0.6
70	Geniohyoid	3	1.4	0.3	3.1	1.5	0.3	4.2	2.3	0.4	4.4	2.4	0.5
71	Gluteus Maximus	18	26	4	18.5	26.7	4.3	19.6	27.5	4.8	19.8	27.7	5
72	Gluteus Medius	12	11	2	12.6	11.4	2.5	13.6	12.3	3	13.8	12.5	3.2
73	Gluteus Minimus	9	6	0.7	9.5	6.3	0.8	10.4	7.2	1	10.6	7.4	1.2
74	Gracilis	33	5	0.6	33.5	5.5	0.7	34.7	6.3	0.9	35	6.5	1
75	Hyoglossus	2.7	1.5	0.4	2.8	1.6	0.4	4	2.4	0.5	4.2	2.6	0.6
76	Iliacus	16	13	0.7	16.4	13.6	0.8	17.4	14.4	0.9	17.6	14.6	1
77	Inferior Oblique	1.7	0.8	0.2	1.8	0.8	0.2	3	2	0.4	3.2	2.2	0.5
78	Inferior Rectus	2.8	0.9	0.2	2.9	1	0.2	4	2	0.4	4.2	2.2	0.5
79	Infraspinatus	17	7.5	0.3	18	8	0.4	19.1	9	0.6	19.4	9.2	0.7
80	Intercostals External	16	1.2	0.3	16	1.3	0.3	17.2	2.3	0.5	17.4	2.5	0.6
81	Intercostals Innermost	16.2	1.2	0.3	16.3	1.3	0.3	17.4	2.1	0.5	17.6	2.3	0.6
82	Intercostals Internal	16.4	1.2	0.3	16.5	1.3	0.4	17.7	2.2	0.6	17.9	2.4	0.7
83	Internal Oblique Abdominis	22	10	0.2	22.6	10.3	0.3	23.8	11.2	0.5	24	11.4	0.6
87	Interossei - Plantar Of Foot	5	0.8	0.3	5.1	0.9	0.3	6.2	2	0.5	6.4	2.2	0.6
88	Interspinales	1.2	0.6	0.3	1.3	0.6	0.3	2.1	1.3	0.4	2.3	1.5	0.6
89	Intertransversarii	2	1	0.4	2.1	1.2	0.4	3.2	2.2	0.6	3.5	2.4	0.7
90	Intrinsic Muscles Of Tongue	4.9	3.2	0.4	5	3.3	0.5	6.1	4.2	0.8	6.3	4.4	1
91	Ishiocavernosus	2.6	0.4	0.2	2.7	0.4	0.2	3.9	1.2	0.4	4.2	1.4	0.5
92	Lateral Cricoarytenoid	1.8	1	0.2	1.9	1	0.2	3	2	0.4	3.2	2.2	0.5
93	Lateral Pterygoid	2.4	1.8	0.3	2.4	1.9	0.4	3.5	2.8	0.6	3.7	3	0.7
94	Lateral Rectus	2	0.9	0.3	2	1	0.9	3.1	2.7	1.3	3.3	2.9	1.5
95	Latissimus Dorsi	17	20	0.2	18	20.5	0.3	19.2	21.4	0.5	19.4	21.6	0.6
96	Levator Anguli Oris	2	0.9	0.3	2.1	1	0.3	3.3	2	0.5	3.5	2.2	0.7
97	Levator Ani-Coccygeus	2.5	1	0.3	2.6	1.1	0.3	3.7	2.1	0.5	3.9	2.3	0.6
98	Levator Ani - Iliococcygeus	6.3	4.9	0.3	6.4	5	0.3	7.6	6	0.5	7.8	6.2	6
99	Levator Ani-Pubococcygeus	11	2.5	0.3	11.3	2.6	0.4	12.4	3.5	0.6	12.6	3.7	0.7

100	Levator Ani-Puborectalis	1.8	0.6	0.3	1.9	0.6	0.3	3	1.5	0.5	3.2	1.7	0.7
101	Levator Ani-Pubovaginalis	1.7	0.5	0.3	1.8	0.6	0.3	3	1.3	0.5	3.2	1.5	0.6
103	Levator Labii Superioris	1.9	1.1	0.3	2	1.3	0.4	3	2.2	0.6	3.2	2.4	0.8
104	Alaeque Nasi	1.1	0.5	0.2	1.2	0.5	0.2	2.3	1.3	0.4	1.5	1.5	0.6
105	Levator Palpebrae Superioris	3	0.9	0.3	3.1	1	0.3	4.2	2	0.5	4.4	2.2	0.6
106	Levator Scapulae	10	2.5	0.4	11	3	0.4	12	4	0.6	12.2	4.2	0.7
107	Levator Veli Palatini	1	1	0.2	1.1	1.1	0.2	2.1	2	0.4	2.3	2.1	0.5
108	Levatores Costarum	18	2.2	0.3	18.1	2.2	0.3	19	3	0.5	19.2	3.2	0.6
109	Longus Capitis	5.8	1.2	0.3	5.9	1.3	0.4	7	2.1	0.6	7.2	2.3	0.7
110	Longus Colli	3.8	1.4	0.3	3.9	1.5	0.4	5	2.3	0.6	5.2	2.5	0.7
111	Lumbricals Of Foot (4)	5	3	0.3	5	3.2	0.4	6.1	4.1	0.6	6.3	4.3	0.8
112	Lumbricals Of Hand	4	0.6	0.3	4.5	0.6	0.3	5.7	1.4	0.5	5.9	1.6	0.6
113	Masseter	3.5	2.6	0.3	3.5	2.7	0.3	4.4	3.5	0.5	4.6	3.7	0.7
114	Medial Pterygoid	1.8	0.9	0.2	1.9	1	0.2	3	2	0.4	3.2	2.2	0.5
115	Medial Rectus	2.8	1	0.4	2.9	1.1	0.4	4	2.1	0.6	4.2	2.3	0.7
116	Mentalis	2	1.6	0.3	2.1	1.7	0.4	3.1	2.5	0.6	3.3	2.7	0.7
117	M. Uvulae	1.6	0.4	0.3	1.7	0.6	0.4	2.6	1.3	0.5	2.8	1.5	0.6
118	Mylohyoid	4.8	3	0.3	4.9	3	0.3	6	4	0.5	6.2	4.2	0.7
119	Nasalis	2.4	1.6	0.2	2.5	1.7	0.3	3.2	2.2	0.5	3.3	2.4	0.6
120	Oblique Arytenoid	2.3	1.1	0.2	2.4	1.2	0.2	3.4	2.1	0.4	3.6	2.3	0.5
121	Obliquus Capitis Inferior	2	1.1	0.2	2.1	1.2	0.3	3.2	2.1	0.5	3.3	2.2	0.6
122	Obliquus Capitis Superior	2.1	2	0.3	2.2	2.1	0.3	3.1	3	0.5	3.3	3.1	0.6
123	Obturator Externus	3.9	0.8	0.2	4.2	0.9	0.3	5.1	1.7	0.5	5.3	1.9	0.5
124	Obturator Internus	4	1	0.2	4.3	1.2	0.3	5.2	2.1	0.5	5.4	2.3	0.7
126	Omohyoid	15	2.1	0.3	15.2	2.2	0.4	16.1	3.1	0.6	16.3	3.3	0.7
127	Opponens Digiti Minimi (Hand)	5	2	0.2	5.5	2.5	0.3	6.4	3.3	0.5	6.6	3.5	0.7
128	Opponens Pollicis	5	3.5	0.2	5.5	4	0.3	6.2	5	0.5	6.4	5.2	0.6
129	Orbicularis Oculi	2.7	2.7	0.3	2.8	2.8	0.4	4	3.7	0.6	4.2	3.9	0.7
130	Orbicularis Oris	5	4.2	0.3	5.1	4.3	0.3	6	5.1	0.5	6.2	5.3	0.6
131	Palatoglossus	4.3	3	0.3	4.4	3	0.4	5.3	4	0.6	5.5	4	0.7
132	Palatopharyngeus	1.7	0.4	0.2	1.7	0.5	0.2	2.7	1.2	0.4	2.9	1.4	0.5
133	Palmaris Brevis	3.5	2	0.2	4	2.5	0.3	5	3.3	0.5	5.3	3.5	0.6
134	Palmar Interossei	4.5	1	0.2	5	1.5	0.3	6	2.2	0.5	6.2	2.4	0.6
134	Palmaris Longus	28	1.5	0.3	29	2	0.4	30.1	3	0.6	30.3	3.2	0.7
135	Pectineus	15	2.5	0.4	15.5	3	0.5	16.3	4	0.7	16.5	4.2	0.8
136	Pectoralis Major	17	14	0.5	17.5	14	0.5	18.3	15	0.7	18.5	15.2	0.8
137	Pectoralis Minor	14	10	0.4	14.5	10.5	0.4	15.4	11.2	0.6	15.5	11.4	0.7
138	Peroneus Brevis	36	5	0.7	36.5	5	0.8	37.4	6	1	30.6	6.2	1.2
139	Peroneus Longus	40	6	0.7	40.5	6	0.8	41.5	6.9	1	41.7	7	1.1
140	Peroneus Tertius	16	1.2	0.3	16.3	1.3	0.4	17.2	2.1	0.5	17.4	2.3	0.6
141	Piriformis	6	1.5	0.2	6.3	1.6	0.3	7.2	2.4	0.5	7.4	2.5	0.6
143	Plantaris	44	2	0.2	44.6	2.3	0.2	45.5	3.1	0.4	45.7	3.3	0.5
144	Platysma	14	6.5	0.3	14.3	6.6	0.4	15.2	7.3	0.6	15.4	7.4	0.7
145	Popliteus	4.7	4.5	0.4	4.7	4.6	0.5	5.8	5.3	0.6	5.9	5.4	0.7
146	Posterior Cricoarytenoid	1.7	0.5	0.2	1.8	0.6	0.3	2.8	1.6	0.5	2.9	1.8	0.6
147	Procerus	1.1	0.4	0.2	1.1	0.4	0.3	2.1	1.3	0.5	2.3	1.5	0.6
148	Pronator Quadratus	5	4	0.4	5.5	4	0.4	6.2	5	0.6	6.4	5.2	0.7
149	Pronator Teres	17	2.5	0.9	17	3	0.9	18	3.8	1.2	18.2	4	1.4
150	Psoas Major	28	9	0.7	28.3	9.2	0.8	29.2	10	1	29.4	10.2	1.2

151	Psoas Minor	24	3	0.4	24.2	3.2	0.5	25	4	0.7	25.2	4.2	0.8
152	Pyramidalis	1.8	1	0.3	1.9	1.1	0.3	3	2	0.5	3.2	2.2	0.6
153	Quadratus Femoris	5	4.5	0.4	5.3	4.7	0.5	6.4	5.4	0.7	6.6	5.6	0.8
154	Quadratus Lumborum	12	5.5	0.7	12.2	5.6	0.8	13.1	6.3	1	13.3	6.5	1.2
155	Quadratus Plantae	5	2.5	0.4	5.1	2.6	0.4	6	3.2	0.6	6.2	3.4	0.7
156	Rectus Abdominis	24	8	0.3	24.5	8.3	0.4	25.4	9.1	0.6	25.6	9.3	0.7
157	Rectus Capitus Anterior	1	0.4	0.3	1.1	0.4	0.3	2	1.3	0.5	2.2	1.5	0.6
158	Rectus Capitus Lateralis	1	0.3	0.3	1.1	0.3	0.3	2	1.2	0.5	2.1	1.4	0.6
159	Rectus Capitus Posterior Major	2.6	0.7	0.3	2.7	0.7	0.3	5.5	1.6	0.5	5.7	1.8	0.6
160	Rectus Capitus Posterior Minor	1.2	0.4	0.2	1.3	0.4	0.2	2.2	1.3	0.4	2.4	1.5	0.5
161	Rectus Femoris	41	4	0.3	42	5	0.4	43	6	0.6	43.2	6.2	0.7
162	Rhomboid Major	8	5	0.3	8.5	5	0.4	9.3	6	0.6	9.5	6.2	0.7
163	Rhomboid Minor	7	2	0.3	7.5	2.5	0.4	8.3	3.4	0.6	8.5	3.6	0.7
164	Risorius	2.5	0.8	0.2	2.6	0.9	0.3	3.4	2.8	0.5	3.6	2.9	0.6
165	Salpingopharyngeus	2.6	0.6	0.3	2.7	0.7	0.4	3.5	1.6	0.6	3	1.8	0.7
166	Sartorius	46	3	0.4	48	3.5	0.4	49	4.4	0.6	49.3	4.6	0.7
167	Scalenus Anterior	2.8	1	0.4	2.8	1.1	0.4	3.7	2	0.6	3.9	2.2	0.7
168	Scalenus Medius	3	1.2	0.4	3	1.3	0.4	4	2.1	0.6	4.2	2.3	0.7
169	Scalenus Minimus	2.3	0.8	0.3	2.4	0.9	0.3	3.3	1.8	0.5	3.4	2	0.6
170	Scalenus Posterior	3.2	1.3	0.4	3.2	1.4	0.4	4	2.3	0.5	4.2	2.5	0.6
171	Semimembranosus	32	5	0.4	32.4	5	0.4	33.3	6	0.6	33.5	6.1	0.7
172	Semitendinosus	36	6.5	0.4	36.7	6.7	0.4	37.6	7.5	0.6	37.8	7.7	0.7
173	Serratus Anterior	32	12	0.2	32.5	12	0.2	33.4	12.9	0.4	33.5	13	0.5
174	Serratus Posterior Inferior	5.8	4.7	0.6	5.9	4.8	0.7	7	5.5	0.9	7.1	5.7	1.1
175	Serratus Posterior Superior	5.6	4.5	0.5	5.7	4.6	0.6	6.5	5.4	0.8	6.7	5.6	1
176	Soleus	38	11	0.7	38.5	11	0.8	39.4	11.9	1	39.6	12	1.2
179	Splenius Capitis	5	3	0.3	5.2	3.1	0.4	6	4	0.6	6.2	4.1	0.7
180	Splenius Cervicis	5	2.4	0.3	5.2	2.5	0.4	6	3.2	0.6	6.2	3.4	0.7
181	Stapedius (approx)	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
182	Sternocleidomastoid	10	3	0.7	10.2	3.1	0.8	11	4	1	11.2	4.2	1.2
183	Sternohyoid	3.4	1	0.3	3.5	1.1	0.4	4.4	2	0.6	4.6	2.2	0.7
184	Sternothyroid	3.4	1.2	0.3	3.5	1.3	0.4	4.3	2.1	0.6	4.5	2.3	0.7
185	Styloglossus	2.4	0.4	0.2	2.5	0.5	0.3	3.4	1.3	0.5	3.6	1.5	0.6
186	Stylohyoid	1.7	0.5	0.2	1.7	0.6	0.2	2.6	1.5	0.4	2.7	1.6	0.5
187	Stylohyoid (Anterior View)	1.6	0.5	0.2	1.6	0.6	0.2	2.4	1.4	0.4	2.6	1.6	0.5
188	Stylopharyngeus	1.4	0.4	0.2	1.5	0.5	0.3	2.4	1.3	0.5	2.6	1.5	0.6
189	Subclavius	4	1	0.2	4.5	1.5	0.3	5.3	2.3	0.5	5.5	2.5	0.7
190	Subcostalis	3	1	0.2	3.2	1.2	0.3	4	2	0.5	4.2	2.2	0.6
191	Subscapularis	16	8	0.3	16	8.5	0.3	17	9.2	0.5	17.2	9.4	0.6
192	Superficial Transverse	3.3	0.8	0.3	3.3	0.9	0.3	4.2	2.6	0.5	4.4	2.8	0.6
194	Superior Oblique	2.9	1	0.3	3	1.1	0.4	4	2	0.6	4.2	2.2	0.7
195	Superior Rectus	3.2	1.2	0.4	3.3	1.3	0.4	4.1	2	0.6	4.3	2.2	0.7
196	Supinator	10	4	0.3	10.5	4.5	0.4	11.4	5.3	0.6	11.6	5.5	0.7
197	Supraspinatus	11	5	0.3	11.5	5.5	0.4	12.4	6.4	0.6	12.6	6.6	0.7
198	Temporalis	10	8	0.2	10.5	8.4	0.3	11.4	9.2	0.5	11.6	9.4	0.6
199	Temporoparietalis	10.2	8.4	0.2	10.4	8.7	0.3	11.2	9.2	0.5	11.4	9.4	0.6
200	Tensor Fasciae Lata	15	3	0.5	15.5	3.5	0.6	16.3	4.2	0.8	16.5	4.4	1
201	Tensor Tympani	2.4	0.4	0.2	2.6	0.5	0.3	3.4	1.3	0.5	3.6	1.5	0.6
202	Tensor Veli Palatini	4.2	1.8	0.2	4.5	2	0.3	5.3	3	0.5	5.5	3.2	0.6

203	Teres Major	14	5	0.3	14.5	5	0.4	15.4	5.8	0.6	15.6	6	0.7
204	Teres Minor	7	5	0.3	7.5	5.5	0.4	8.4	6.2	0.6	8.6	6.4	0.7
205	Thyro-Arytenoid & Vocalis	0.9	0.4	0.2	1	0.5	0.3	2	1.2	0.5	2.2	1.4	0.6
206	Thyro-Epiglotticus	1	0.6	0.2	1.4	0.7	0.3	2.3	1.4	0.5	2.5	1.6	0.6
207	Thyrohyoid	3	2	0.2	3.4	2.3	0.3	4.2	3	0.5	4.4	3.2	0.6
208	Tibialis Anterior	28	6	0.3	28.7	6.4	0.4	29.5	7.2	0.6	29.7	7.4	0.7
209	Tibialis Posterior	26	5	0.3	26.6	5.5	0.4	27.4	6.2	0.6	27.6	6.4	0.7
210	Transverse Arytenoid	3.5	1.5	0.2	3.7	1.7	0.3	4.4	2.4	0.5	4.6	2.6	0.6
211	Transversospinalis -Multifidus	32	2	0.2	32.4	2.4	0.3	33.3	3.1	0.5	33.5	3.3	0.6
212	Transversospinalis -Rotatores	33.2	1.9	0.2	33.4	2	0.3	34.2	2.7	0.5	34.4	2.9	0.6
213	Transversospinalis -Semispinalis	34	1.6	0.2	34.4	1.8	0.3	35.3	2.5	0.5	35.5	2.7	0.6
214	Transversus Abdominis	21	10	0.2	21.6	10.4	0.3	22.3	11.1	0.5	22.5	11.3	0.7
215	Transversus Thoracis	8	5	0.2	8.4	5.5	0.3	9.3	6.2	0.5	9.5	6.4	0.6
216	Trapezius	30	21	0.2	30	21.5	0.3	30.9	22.4	0.5	31	22.6	0.6
217	Triceps	22	6	1	22.5	6.5	1	23.5	7.2	1.3	23.7	7.4	1.5
218	Vastus Intermedius	36	8	2	37	8.5	2.2	38	9.3	2.4	38.2	9.5	2.5
219	Vastus Lateralis	37	6.5	1.5	38	7	1.7	38.9	8	1.9	39	8.2	2
220	Vastus Medialis	30	7	1.7	31	7.5	1.9	32	8.3	2.2	32.2	8.5	2.4
221	Zygomaticus Major	6	1	0.2	6.5	1.4	0.3	7.3	2.2	0.5	7.5	2.4	0.6
222	Zygomaticus Minor	5	0.7	0.2	5.4	0.8	0.3	6.3	1.6	0.5	6.5	1.8	0.6

(Table No. 02) REGION WISE CLASSIFICATION OF MUSCLES ACCORDING TO THE TYPE OF PESHI SWAROOP.

			1	2	3	4	5	6	7	8	9	10	11	12
SR. NO.	**Region**	**Muscle name**	**Bahala**	**Pelav**	**Sthula**	**Anu**	**Pruthu**	**Vritta**	**Hrasva**	**Dirgha**	**Sthira**	**Mrudu**	**Shlakshna**	**Karkasha**
BAHU (UPPER LIMB)														
1	BA	Abductor Digiti Minimi (Foot)	·	·	·	·	·	·	✓	·	·	·	·	·
2	BA	Abductor Digiti Minimi (Hand)	·	·	·	·	·	·	✓	·	·	·	·	·
3	BA	Abductor Pollicis Brevis	·	·	·	·	·	·	✓	·	·	·	·	·
4	BA	Adductor Pollicis	·	✓	·	·	·	·	✓	·	·	·	·	·
5	BA	Anconeus	·	·	·	·	·	·	✓	·	·	·	·	·
6	BA	Adductor Longus	·	·	·	·	·	·	·	✓	·	·	·	·
7	BA	Biceps Brachii	✓	·	·	·	·	·	·	✓	·	✓	·	·
8	BA	Brachialis	·	·	✓	·	·	·	·	✓	·	·	·	·
9	BA	Brachioradialis	·	·	·	·	·	·	·	✓	·	·	·	·
10	BA	Coracobrachialis	·	·	·	·	·	·	✓	·	·	·	·	·
11	BA	Deltoid	✓	·	✓	·	·	·	·	·	·	·	·	·
12	BA	Dorsal Interossei	·	·	·	✓	·	·	✓	·	·	·	·	·
13	BA	Extensor Carpi Radialis Brevis	·	·	·	·	·	·	·	✓	·	·	·	·
14	BA	Extensor Carpi Radialis Longus	·	·	·	·	·	·	·	✓	·	·	·	·
15	BA	Extensor Carpi Ulnaris	·	·	·	·	·	·	·	✓	·	·	·	·
16	BA	Extensor Digiti Minimi (Hand)	·	·	·	·	·	·	·	✓	·	·	·	·
17	BA	Extensor Digitorum (Hand)	✓	·	·	·	·	·	·	✓	·	·	·	·
18	BA	Extensor Indicis	·	✓	·	·	·	·	·	✓	·	·	·	·
19	BA	Extensor Pollicis Brevis	·	✓	·	·	·	·	·	✓	·	·	·	·
20	BA	Extensor Pollicis Longus	·	✓	·	·	·	·	·	✓	·	·	·	·

21	BA	Flexor Carpi Radialis	·	✓	·	·	·	·	·	✓	·	·	·	·
22	BA	Flexor Carpi Ulnaris	·	✓	·	·	·	·	·	✓	·	·	·	·
23	BA	Flexor Digiti Minimi Brevis (Hand)	·	·	·	·	·	·	✓	·	·	·	·	·
24	BA	Flexor Digitorum Profundus	✓	·	·	·	·	·	·	✓	·	·	·	·
25	BA	Flexor Digitorum Superficialis	·	·	·	·	·	·	·	✓	·	·	·	·
26	BA	Flexor Pollicis Brevis	·	·	·	·	·	·	✓	·	·	·	·	·
27	BA	Flexor Pollicis Longus	·	·	·	·	·	·	·	✓	·	·	·	·
28	BA	Lumbricals Of Hand	·	·	·	✓	·	·	✓	·	·	·	·	·
29	BA	Opponens Digiti Minimi (Hand)	·	·	·	·	·	·	✓	·	·	·	·	·
30	BA	Opponens Pollicis	·	·	·	·	·	·	✓	·	·	·	·	·
31	BA	Palmaris Brevis	·	✓	·	·	·	·	·	·	·	·	·	·
32	BA	Palmar Interossei	·	·	·	✓	·	·	✓	·	·	·	·	·
34	BA	Palmaris Longus	·	·	·	·	·	·	·	·	✓	·	·	·
35	BA	Pronator Quadratus	·	·	·	·	✓	·	·	·	·	·	·	·
36	BA	Pronator Teres	·	·	·	·	·	·	✓	·	·	·	·	·
37	BA	Supinator	·	·	·	·	·	·	✓	·	·	·	·	·
38	BA	Triceps	✓	·	·	·	·	·	·	✓	·	✓	·	·
39	BA	Abductor Pollicis Longus	·	·	·	·	·	·	·	✓	·	·	·	·
SAKTHI (LOWER LIMB)														
40	SA	Abductor Hallucis	·	·	·	·	·	·	✓	·	·	·	·	·
41	SA	Adductor Brevis	·	·	·	·	·	·	✓	·	·	·	·	·
42	SA	Adductor Hallucis	·	·	·	·	·	·	✓	·	·	·	·	·
43	SA	Adductor Magnus	✓	·	·	·	·	·	·	✓	·	·	·	·
44	SA	Biceps Femoris	✓	·	·	·	·	·	·	✓	·	·	·	·
45	SA	Bulbospongiosus	·	·	·	·	·	✓	·	·	·	·	·	·
46	SA	Extensor Digitorum Brevis (Foot)	·	·	·	·	·	·	✓	·	·	·	·	·
47	SA	Extensor Digitorum Longus (Foot)	·	·	·	·	·	·	·	✓	·	·	·	·
48	SA	Extensor Hallucis Longus	·	·	·	·	·	·	·	✓	·	·	·	·
49	SA	Deep Transverse Perinei	·	✓	·	·	·	·	✓	·	·	·	·	·
50	SA	Flexor Digiti Minimi Brevis (Foot)	·	·	·	·	·	·	✓	·	·	·	·	·
51	SA	Flexor Digitorum Brevis	·	·	·	·	·	·	✓	·	·	·	·	·
52	SA	Flexor Digitorum Longus (Foot)	✓	·	·	·	·	·	·	✓	·	·	·	·
53	SA	Flexor Hallucis Brevis	·	·	·	·	·	·	✓	·	·	·	·	·
54	SA	Flexor Hallucis Longus	·	·	·	·	·	·	·	✓	·	·	·	·
55	SA	Gastrocnemius	✓	·	✓	·	·	·	·	✓	·	✓	·	·
56	SA	Gemellus Inferior	·	·	·	·	·	·	✓	·	·	·	·	·
57	SA	Gemellus Superior	·	·	·	·	·	·	✓	·	·	·	·	·
58	SA	Gluteus Maximus	✓	·	✓	·	·	·	·	·	·	✓	·	·
59	SA	Gluteus Medius	✓	·	·	·	·	·	·	·	·	✓	·	·
60	SA	Gluteus Minimus	✓	·	·	·	·	·	·	·	·	✓	·	·
61	SA	Gracilis	·	✓	·	·	·	·	·	✓	·	·	·	·
62	SA	Iliacus	✓	·	·	·	·	·	·	·	·	·	·	·
63	SA	Ishiocavernosus	·	✓	·	·	·	·	·	·	·	·	·	·

64	SA	Levator Ani-Coccygeus	·	·	·	·	✓	·	·	·	·	·	·	·
65	SA	Levator Ani - Iliococcygeus	·	·	·	·	✓	·	·	·	·	·	·	·
66	SA	Levator Ani-Pubococcygeus	·	·	·	·	✓	·	·	·	·	·	·	·
67	SA	Levator Ani-Puborectalis	·	·	·	·	✓	·	·	·	·	·	·	·
68	SA	Levator Ani-Pubovaginalis	·	·	·	·	✓	·	·	·	·	·	·	·
69	SA	Interossei - Plantar Of Foot	·	·	·	·	✓	·	✓	·	·	·	·	·
70	SA	Lumbricals Of Foot (4)	·	·	·	✓	·	·	✓	·	·	·	·	·
71	SA	Obturator Externus	·	✓	·	·	·	·	·	·	·	·	·	·
72	SA	Obturator Internus	·	·	·	·	✓	·	·	·	·	·	·	·
73	SA	Pectineus	·	·	·	·	·	·	✓	·	·	·	·	·
74	SA	Peroneus Brevis	·	·	·	·	·	·	·	✓	·	·	·	·
75	SA	Peroneus Longus	·	·	·	·	·	·	·	✓	·	·	·	·
76	SA	Peroneus Tertius	·	·	·	·	·	·	✓	·	·	·	·	·
77	SA	Piriformis	·	·	·	·	·	·	✓	·	·	·	·	·
78	SA	Plantaris	·	·	·	·	·	·	·	·	✓	·	·	·
79	SA	Quadratus Femoris	·	·	✓	·	✓	·	·	✓	·	·	·	·
80	SA	Quadratus Plantae	·	·	·	·	✓	·	·	·	·	·	·	·
81	SA	Popliteus	·	·	·	·	✓	·	·	·	·	·	·	·
82	SA	Sartorius	·	·	·	·	·	·	·	✓	·	·	·	·
83	SA	Semimembranosus	·	·	·	·	·	·	·	✓	·	·	·	·
84	SA	Semitendinosus	·	·	·	·	·	·	·	✓	·	·	·	·
85	SA	Superficial Transverse	·	·	·	·	·	·	✓	·	·	·	·	·
86	SA	Tensor Fasciae Lata	·	·	·	·	·	·	✓	·	·	·	·	·
87	SA	Tibialis Anterior	·	·	·	·	·	·	·	✓	·	·	·	·
88	SA	Tibialis Posterior	·	·	·	·	·	·	·	✓	·	·	·	·
89	SA	Vastus Intermedius	✓	·	·	·	·	·	·	·	·	·	·	·
90	SA	Vastus Lateralis	✓	·	·	·	·	·	·	·	·	·	·	·
91	SA	Vastus Medialis	✓	·	·	·	·	·	·	·	·	·	·	·
92	SA	Soleus	✓	·	·	·	·	·	·	✓	·	✓	·	·
93	SA	Articularis Genu	·	✓	·	·	·	·	✓	·	·	·	·	·
SHIRO GREEVA (HEAD & NECK)														
94	SG	Auricularis	·	·	·	·	·	·	✓	·	·	·	✓	·
95	SG	Buccinator	·	✓	·	·	·	·	·	·	·	·	·	·
96	SG	Constrictor Of Pharynx -Inferior	·	✓	·	·	·	·	·	·	·	·	·	✓
97	SG	Constrictor Of Pharynx -Middle	·	✓	·	·	·	·	·	·	·	·	·	✓
98	SG	Constrictor Of Pharynx -Superior	·	✓	·	·	·	·	·	·	·	·	·	✓
99	SG	Corrugator Supercilii	·	·	·	·	·	·	✓	·	·	·	✓	·
100	SG	Cricothyroid	·	·	·	·	·	·	✓	·	·	·	·	·
101	SG	Depressor Anguli Oris	·	✓	·	·	·	·	·	·	·	·	✓	·
102	SG	Depressor Labii Inferioris	·	✓	·	·	·	·	·	·	·	·	✓	·
103	SG	Frontalis	·	·	·	·	·	·	·	·	·	·	✓	·
104	SG	Genioglossus	·	·	·	·	·	·	✓	·	·	·	·	·
105	SG	Geniohyoid	·	·	·	·	·	·	✓	·	·	·	·	·

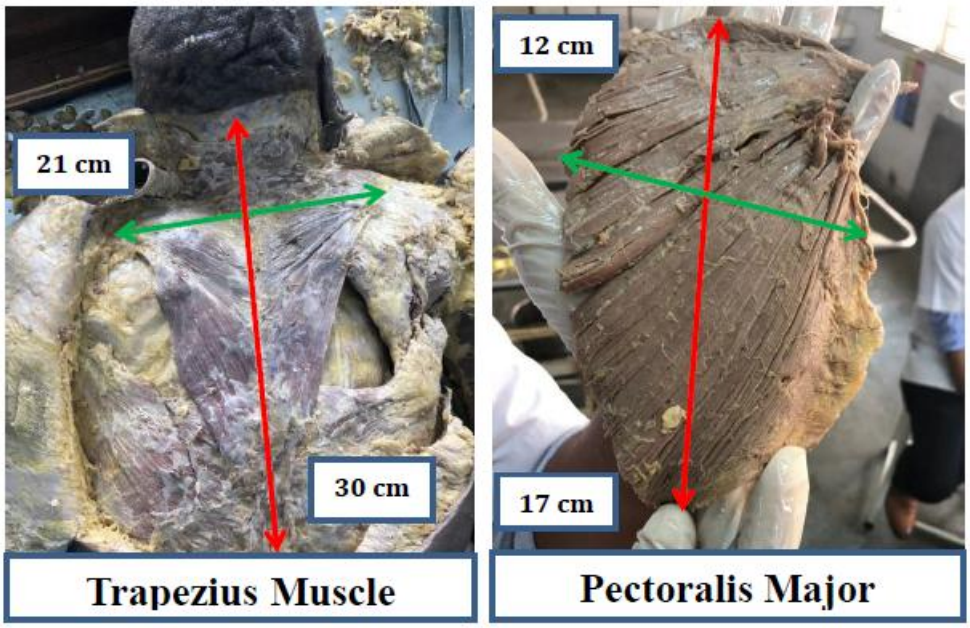
106	SG	Hyoglossus	·	·	·	·	·	·	✓	·	·	·	·	·
107	SG	Inferior Oblique	·	·	·	✓	·	·	✓	·	·	·	·	·
108	SG	Intrinsic Muscles Of Tongue	·	·	·	·	·	·	·	·	·	·	·	·
109	SG	Lateral Cricoarytenoid	·	·	·	·	·	·	✓	·	·	·	·	·
110	SG	Lateral Pterygoid	·	·	·	·	·	·	✓	·	·	·	·	·
111	SG	Lateral Rectus	·	·	·	·	✓	·	✓	·	·	·	·	·
112	SG	Levator Anguli Oris	·	✓	·	·	·	·	·	·	·	·	✓	·
113	SG	Levator Labii Superioris	·	·	·	·	·	·	✓	·	·	·	✓	·
114	SG	Alaeque Nasi	·	·	·	·	·	·	✓	·	·	·	·	·
115	SG	Levator Palpebrae Superioris	·	·	·	✓	·	·	✓	·	·	·	·	·
116	SG	Masseter	·	·	·	·	·	·	✓	·	·	·	·	·
117	SG	Medial Pterygoid	·	·	·	·	·	·	✓	·	·	·	·	·
118	SG	Medial Rectus	·	·	·	✓	·	·	✓	·	·	·	·	·
119	SG	Mentalis	·	·	·	·	·	·	✓	·	·	·	✓	·
120	SG	M. Uvulae	·	✓	·	·	·	·	✓	·	·	·	·	·
121	SG	Mylohyoid	·	·	·	·	·	·	✓	·	·	·	·	·
122	SG	Nasalis	·	·	·	·	·	·	✓	·	·	·	✓	·
123	SG	Oblique Arytenoid	·	·	·	·	·	·	✓	·	·	·	·	·
124	SG	Obliquus Capitis Inferior	·	·	·	·	·	·	✓	·	·	·	·	·
125	SG	Obliquus Capitis Superior	·	·	·	·	·	·	✓	·	·	·	·	·
126	SG	Omohyoid	·	·	·	·	·	·	✓	·	·	·	·	·
127	SG	Levator Veli Palatini	·	✓	·	·	·	·	✓	·	·	·	·	·
128	SG	Longus Capitis	·	·	·	·	·	·	✓	·	·	·	·	·
129	SG	Orbicularis Oculi	·	·	·	·	·	✓	·	·	·	·	·	·
130	SG	Orbicularis Oris	·	·	·	·	·	✓	·	·	·	·	·	·
131	SG	Palatoglossus	·	✓	·	·	·	·	✓	·	·	·	·	·
132	SG	Palatopharyngeus	·	✓	·	·	·	·	✓	·	·	·	·	·
133	SG	Longus Colli	·	·	·	·	·	·	✓	·	·	·	·	·
134	SG	Platysma	·	✓	·	·	✓	·	·	·	·	·	✓	·
135	SG	Posterior Cricoarytenoid	·	·	·	·	·	·	✓	·	·	·	·	·
136	SG	Procerus	·	·	·	✓	·	·	✓	·	·	·	·	·
137	SG	Rectus Capitus Anterior	·	·	·	✓	·	·	✓	·	·	·	·	·
138	SG	Rectus Capitus Lateralis	·	·	·	✓	·	·	✓	·	·	·	·	·
139	SG	Rectus Capitus Posterior Major	·	·	·	·	·	·	✓	·	·	·	·	·
140	SG	Rectus Capitus Posterior Minor	·	·	·	·	·	·	✓	·	·	·	·	·
141	SG	Risorius	·	·	·	✓	·	·	✓	·	·	·	·	·
142	SG	Salpingopharyngeus	·	·	·	·	·	·	✓	·	·	·	·	·
143	SG	Splenius Capitis	·	·	·	·	✓	·	✓	·	·	·	·	·
144	SG	Splenius Cervicis	·	·	·	·	✓	·	✓	·	·	·	·	·
145	SG	Stapedius (approx)	·	·	·	✓	·	·	·	·	·	·	·	·
146	SG	Sternocleidomastoid	✓	·	·	·	·	·	·	·	·	·	·	·
147	SG	Sternothyroid	·	·	·	·	·	·	✓	·	·	·	·	·
148	SG	Styloglossus	·	·	·	·	·	·	✓	·	·	·	·	·

149	SG	Stylohyoid	·	·	·	·	·	·	✓	·	·	·	·	·
150	SG	Stylohyoid (Anterior View)	·	·	·	✓	·	·	✓	·	·	·	·	·
151	SG	Stylopharyngeus	·	·	·	·	·	·	✓	·	·	·	·	·
152	SG	Superior Oblique	·	·	·	✓	·	·	✓	·	·	·	·	·
153	SG	Superior Rectus	·	·	·	✓	·	·	✓	·	·	·	·	·
154	SG	Temporalis	·	·	·	·	✓	·	·	·	·	·	✓	·
155	SG	Temporoparietalis	·	·	·	·	·	·	·	·	·	·	✓	·
156	SG	Tensor Tympani	·	·	·	✓	·	·	·	·	·	·	·	·
157	SG	Tensor Veli Palatini	·	✓	·	·	·	·	✓	·	·	·	·	·
158	SG	Thyro-Arytenoid & Vocalis	·	·	·	·	·	·	✓	·	·	·	·	·
159	SG	Thyro-Epiglotticus	·	·	·	✓	·	·	✓	·	·	·	·	·
160	SG	Thyrohyoid	·	·	·	·	·	·	✓	·	·	·	·	·
161	SG	Zygomaticus Major	·	·	·	·	·	·	✓	·	·	·	✓	·
162	SG	Zygomaticus Minor	·	·	·	·	·	·	✓	·	·	·	✓	·
163	SG	Transverse Arytenoid	·	·	·	·	·	·	✓	·	·	·	·	·
164	SG	Digastric	·	·	·	·	·	·	✓	·	·	·	·	·
ANTARADHI (THORAX & BACK)														
165	AN	Diaphragm	·	✓	·	·	✓	·	·	·	·	✓	·	·
166	AN	Dartos	·	✓	·	·	·	·	·	·	·	·	✓	·
167	AN	Cremaster	·	✓	·	·	·	·	·	·	·	·	✓	·
168	AN	Erector Spinae - Spinalis	·	·	·	·	·	·	·	·	·	·	·	✓
169	AN	Erector Spinae - Iliocostalis	·	·	·	·	·	·	·	·	·	·	·	✓
170	AN	Erector Spinae - Longissimus	·	·	·	·	·	·	·	·	·	·	·	✓
171	AN	External Oblique Abdominis	·	·	·	·	✓	·	·	·	·	·	✓	·
172	AN	Inferior Rectus	·	·	·	✓	·	·	✓	·	·	·	·	·
173	AN	Infraspinatus	·	·	·	·	·	·	✓	·	·	·	·	·
174	AN	Intercostals External	·	✓	·	·	·	·	✓	·	·	·	·	✓
175	AN	Intercostals Innermost	·	✓	·	·	·	·	✓	·	·	·	·	✓
176	AN	Intercostals Internal	·	✓	·	·	·	·	✓	·	·	·	·	✓
177	AN	Internal Oblique Abdominis	·	·	·	·	✓	·	·	·	·	·	✓	·
178	AN	Interspinales	·	·	·	·	·	·	·	·	·	·	·	✓
179	AN	Intertransversarii	·	·	·	·	·	·	·	·	·	·	·	✓
180	AN	Latissimus Dorsi	✓	·	·	·	✓	·	·	·	·	✓	·	·
181	AN	Levatores Costarum	✓	·	·	·	·	·	·	✓	·	·	·	·
182	AN	Pectoralis Major	✓	·	✓	·	✓	·	·	·	·	✓	·	·
183	AN	Pectoralis Minor	✓	·	✓	·	✓	·	·	·	·	✓	·	·
184	AN	Psoas Major	✓	·	·	·	·	·	·	✓	·	·	·	·
185	AN	Psoas Minor	✓	·	·	·	·	·	·	✓	·	·	·	·
186	AN	Pyramidalis	·	·	·	·	·	·	✓	·	·	·	·	·
187	AN	Quadratus Lumborum	·	·	·	·	✓	·	·	·	·	·	·	·
188	AN	Rectus Abdominis	·	✓	·	·	·	·	·	✓	·	·	·	·
189	AN	Rectus Femoris	·	·	✓	·	·	·	·	✓	·	·	·	·
190	AN	Rhomboid Major	·	·	·	·	✓	·	✓	·	·	·	·	·

191	AN	Rhomboid Minor	·	·	·	·	·	·	✓	·	·	·	·	·
192	AN	Scalenus Anterior	·	✓	·	·	·	·	✓	·	·	·	·	·
193	AN	Scalenus Medius	·	✓	·	·	·	·	✓	·	·	·	·	·
194	AN	Scalenus Minimus	·	✓	·	·	·	·	✓	·	·	·	·	·
195	AN	Scalenus Posterior	·	✓	·	·	·	·	✓	·	·	·	·	·
196	AN	Serratus Anterior	·	✓	·	·	✓	·	✓	·	·	·	·	✓
197	AN	Serratus Posterior Inferior	·	✓	·	·	✓	·	✓	·	·	·	·	·
198	AN	Serratus Posterior Superior	·	✓	·	·	✓	·	✓	·	·	·	·	·
199	AN	Sternohyoid	·	·	·	·	·	·	✓	·	·	·	·	·
200	AN	Subclavius	·	·	·	·	·	·	✓	·	·	·	·	·
201	AN	Subcostalis	·	·	·	·	·	·	·	·	·	·	·	·
202	AN	Supraspinatus	·	·	·	·	·	·	✓	·	·	·	·	·
203	AN	Subscapularis	·	·	·	·	·	·	·	·	·	·	·	·
204	AN	Teres Major	·	·	·	·	·	·	✓	·	·	·	·	·
205	AN	Teres Minor	·	·	·	·	·	·	✓	·	·	·	·	·
206	AN	Levator Scapulae	·	·	·	·	·	·	✓	·	·	·	·	·
207	AN	Transversospinalis -Multifidus	·	·	·	✓	·	·	✓	·	·	·	·	·
208	AN	Transversospinalis -Rotatores	·	·	·	✓	·	·	✓	·	·	·	·	·
209	AN	Transversospinalis -Semispinalis	·	·	·	·	·	·	✓	·	·	·	·	✓
210	AN	Transversus Abdominis	·	·	·	·	✓	·	·	·	·	·	✓	·
211	AN	Transversus Thoracis	·	·	·	·	·	·	✓	·	·	·	·	✓
212	AN	Trapezius	✓	·	·	·	✓	·	·	·	·	·	·	·

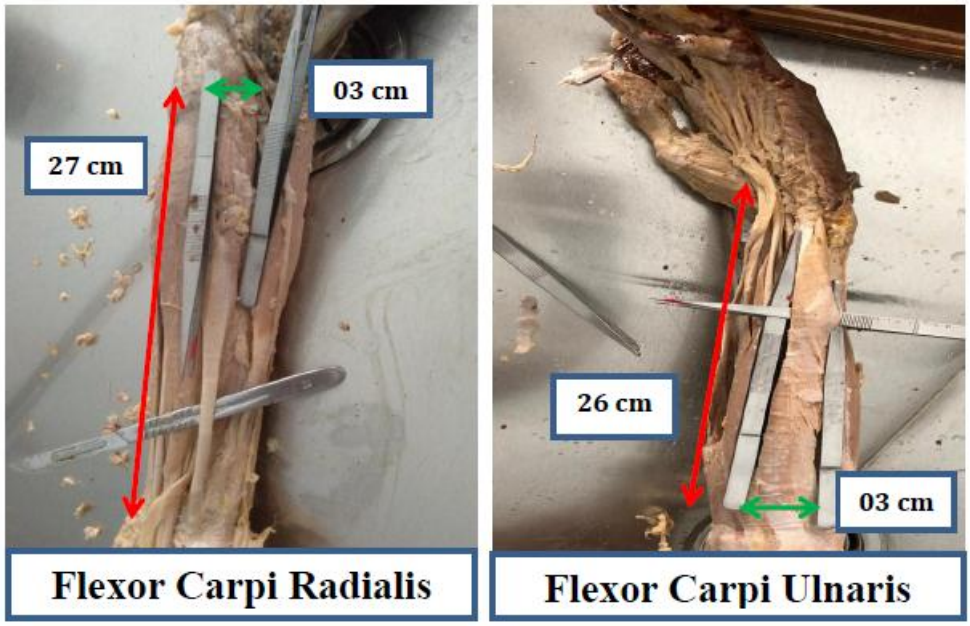
BAHALA

[Fig. No. 01]



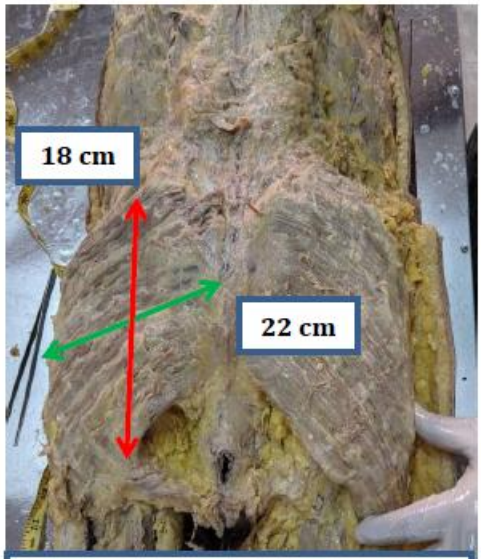
PELAV

[Fig. No. 02]



STHULA

[Fig. No. 03]



Gluteus Maximus

Gluteus Maximus (Thickness)

ANU

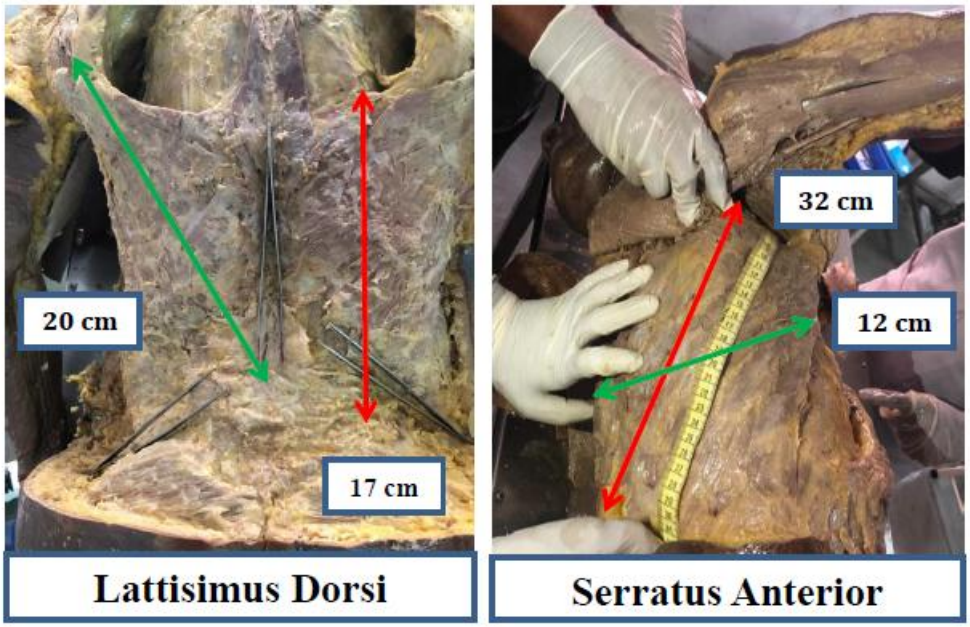
[Fig. No. 04]

Lumbricals

Piriformis]

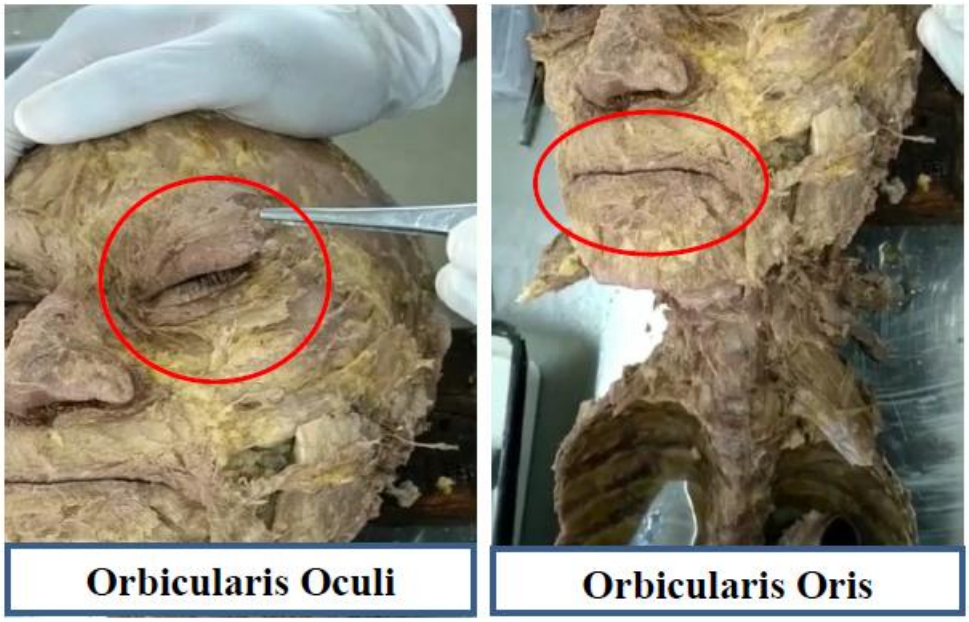
PRUTHU

[Fig. No. 05]



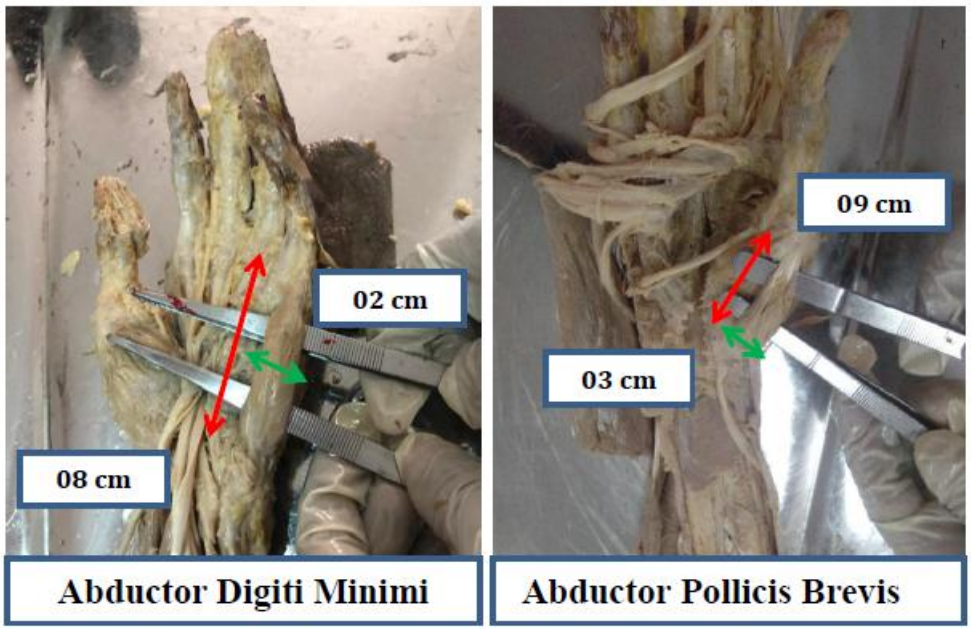
VRITTA

[Fig. No. 06]



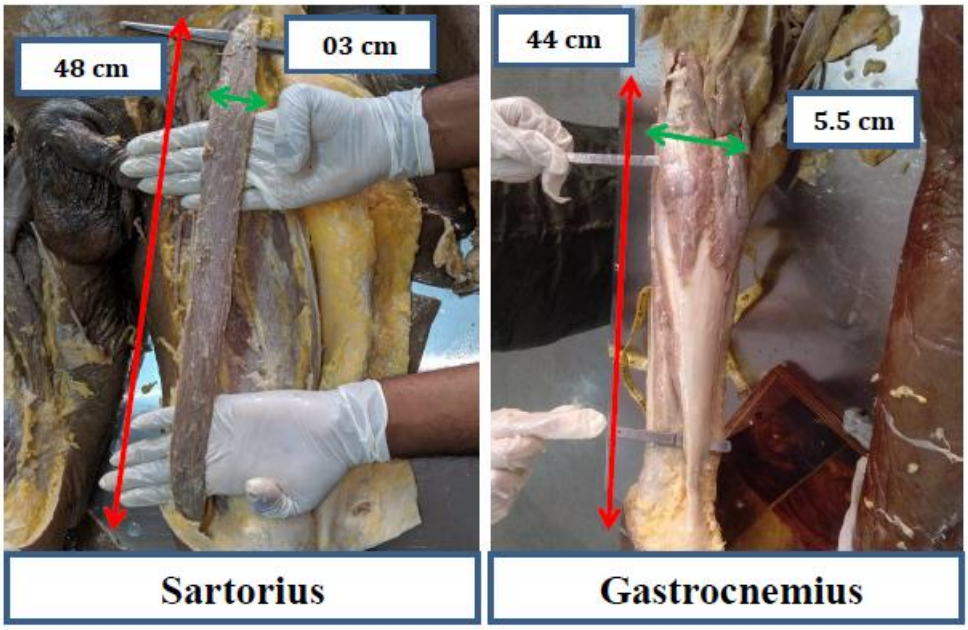
HRSWA

[Fig. No. 07]



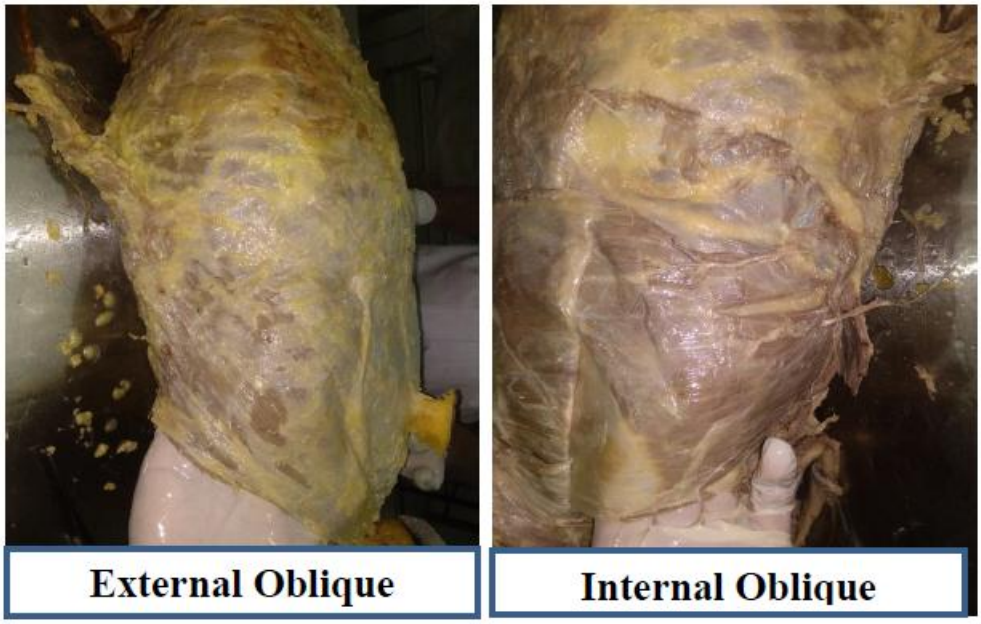
DIRGHA

[Fig. No. 08]



SHLAKSHNA

[Fig. No. 11]



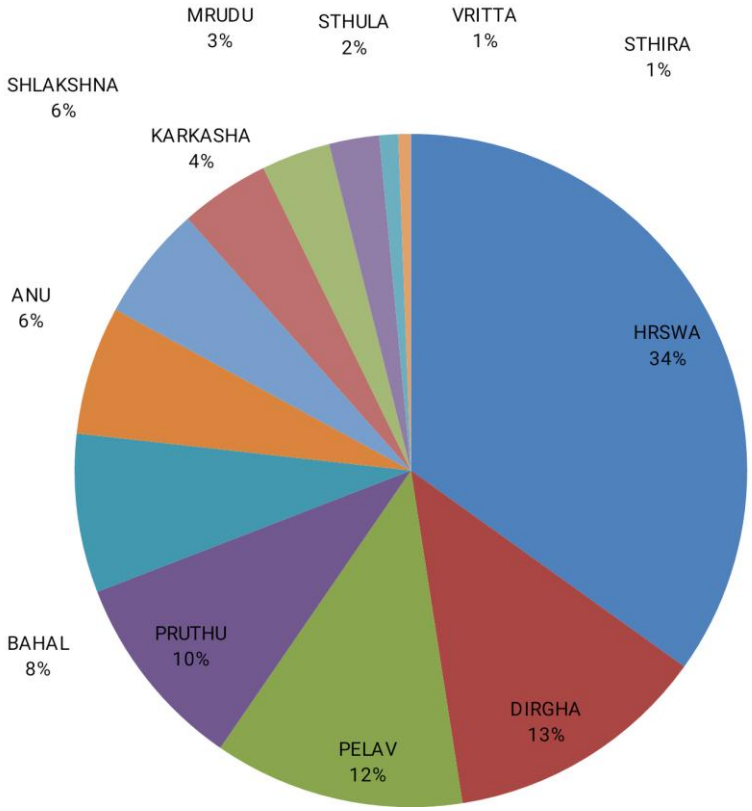
External Oblique | Internal Oblique

KARKASHA

[Fig. No. 12]

Serratus Anterior | Intercostal Muscles

THE DISTRIBUTION MUSCLES OF HUMAN BODY ACCORDING TO VARIOUS TYPES OF *PESHI SWAROOP*



DISCUSSION

CONCEPTUAL DISCUSSION

- According to the ayurvedic literature, the term *peshi* has always been a subject of discourse. But, the characterstics of *Peshi*, which are described in the ayurvedic texts fully, satisfy the term 'Muscle' mentioned in the modern medical science.
- *Acharya sushruta, Bhavaprakash & Sharangadhar* explained that the formation of *peshis* occur during the developmental period; the Vayu along with the *Usma guna* enters into the *mamsa dhatu* & devides the *mamsa* into *peshi*.
- The term '*Mamsa'* explains the general sense of muscular components in the body.
- Various *acharyas* have differences in opinion regarding the total number of *peshis* in the human body & also the number of *peshis* that are present in each region. For example- *Acharya Sushruta & Ashtanga Sangraha* opines that there are 500 peshis in the human body. On the contrary, *Acharya Charak* suggests that total numbers of *peshis* in the human body are 400.[2,3,4]
- There is no specific enumeration available in the modern medical science regarding the total number of muscles in the human body. Recent data suggests that there could be around 600 to 850 muscles in the body, but most authors believe that the total numbers of muscles are approximately 640.
- Other than this, *Acharya Sushruta* also suggested a gender wise distribution for the total number of *peshis*. Wherein, he mentioned that *peshis* in males are 500, & in females are 520. Compared to males, females have 20 extra *peshis* which are said to be situated in the *Stana* (breast) & *Yoni pradesh* (vagina).
- Their distribution is as follows – 05 peshis in each breast, thus makes it a total of 10 in the *stana*; & the other 10 peshis are situated in the *yoni pradesh*.

The distribution of *peshis* in '*Stana'*

03 *peshis* at the main Periphery of breast, as three layers of concentric rings from inside out, with the nipple in centre, 4th *peshi* as the Tail of Spence & 5th peshi as the Nipple itself.[5]

The distribution of peshis in '*Yoni Pradesh'*

- *Apathyapatha* (vaginal tract) – 04 *peshis*, *Grabhachiddra sanshrita* (vaginal opening) – 03 *peshis*, *Sukhra arthava Praveshini* – 03 *peshis*
- There is also a vast difference in the ancient & modern views in relation to the number of *peshis*, based on their distribution on *sadangas* (six regions of the body).
- According to modern medical science, the basis for the nomenclature of muscles suggests the following parameters-

1. **Shape –** suggests the shape of the muscle. For ex- Deltoid & Orbicularis Oris

2. **Size –** suggests the size of the muscle, like- Major (big), Minor (small), Longus (long) & Brevis (short). For ex – Pectoralis Major & Palmaris Brevis
3. **Number Of Heads Of Origin –** suggests the number of heads of origin. For ex – Biceps Brachii & Triceps Brachii.
4. **Action –** suggests the locomotive action performed by the muscle, like- Extensor, Flexor, adductor, Abductor, etc. For ex – Extensor Carpi Radialis & Adductor Magnus.
5. **Position –** suggests the position where the muscle is placed, like- Anterior (front), Posterior (back), Supra (above) & Infra (below). For ex – Tibialis Posterior & Supraspinatus
6. **Depth –** suggests the depth at which the muscle is present, like- Superficialis (superficial), Profundus (deep), Externus (external) & Internus (internal). For ex – Flexor digitorum superficialis & External Oblique
7. **Location –** suggests the location of the muscle. For ex– Temporalis & Supraspinatus.

DISCUSSION ON OBSERVATION

Before starting the dissection, the total body length (height) of all the 04 cadavers were measured & documented. Since, the length of each muscle of the body is dependent on the total length of the body. These measurements are mentioned above the table. The length, breadth & thickness were specifically taken, so that the *peshis* can be classified under the 12 types of *peshi swaroop*.

- Some of the types mentioned in the *peshi swaroop* indicate the structural entities of *peshi*, while the others indicate the properties of the *peshi*. Hence, some of the classifications are made on the basis of measurements taken during the dissection; while, others are made by looking at the shape of the muscles or feeling the touch of the muscle.

CRITERIA FOR CLASSIFICATION OF *PESHIS* UNDER THE TYPES OF *PESHI SWAROOP*

- As mentioned earlier, there are 12 types of *Peshi Swaroop* described by *Acharya Sushruta*.
- Meaning of each type of *peshi swaroop* was evaluated from *Dalhana*, *Ghanekara* & M. Monier Williams Dictionary.
- All the *peshi swaroop* described are not structural entities, which can be measured; some of them indicate properties of the *peshi*, which can only be interpreted on the basis of the sense of touch.
- While framing the basis for classification of *peshi*, it was encountered that *Acharya Sushruta* was well versed with the knowledge of "Kinesiology", which he utilised to develop the parameters for classification of *peshis*.
- Due to which, the actions of muscles were also taken into consideration to form the criteria for the classification of *peshis*.
- Along with this, Shape of the muscles is also considered in this study.

Thus, all these factors form the criteria for the classification of *peshi* under the types of *peshi swaroop*.

1. BAHALA

- After referring *Dalhana*, *Ghanekara* & M. Monier Williams Dictionary- the meaning of *Bahala* can be considered to be muscles which are 'Thick in Density'.[6]
- Only the length & breadth of the muscles are considered in this category.
- Muscles that fall under this category are those which are moderately long in length & breadth.
- For example- Biceps Brachii muscle can be considered under this type of peshi swaroop.
  - Average Length= 27.3 cm
  - Average Breadth= 06.82 cm
- Actions of Biceps Brachii muscle include Flexion & Abduction of the arm.
- Due to involvement of 02 joints (Shoulder & Elbow joint), the movements of this muscle requires strength.
- Hence, these factors help in classifying such muscles under the category of *Bahala*.

2. PELAVA

- In context of *peshi swaroop*, the meaning of *Pelava* can be taken as- Muscles which are 'thin in density'.[7]
- *Pelava* category is opposite to *Bahal*.
- The difference between *bahala* & *pelava* is that, the muscles included in this category are comparatively smaller in length & breadth, & other than the *bahala* type they require to move only one joint, which requires relatively lesser amount of strength to perform various actions.
- For example- Flexor Carpi Radialis Muscle.
  - Average Length= 28 cm
  - Average Breadth= 04.42 cm
  - Actions- Flexion & Abduction of the wrist joint.
- Thus, these factors help in classifying *peshis* under the *pelava* type.

3. STHULA

- The meaning of *sthula* can be taken as 'Thick'.[8]
- Thickness is the main criteria for classification of *peshis* under this category.
- For example- Gluteus Maximus Muscle
  - Average Thickness= 04.52 cm
  - Action- External Rotation & Extension of the hip.
- Muscles of this category require heavy strength to perform these actions.
- Thus, these factors help in classifying *peshis* under the category of *sthula*.

4. ANU

- The meaning of *Anu* can be taken as 'small, tiny or minute'.[9]

- Length, breadth & thickness are the parameters which are considered to place a muscle under this category.
- But, rather than considering these dimensions individually, the whole volume of the muscle is considered in this category.
- The muscles with lowest volume are placed under this category.
- For example- 'Stapedius Muscle', with its volume around 0.1 cm – 0.2 cm can be considered in *anu* category.
- Actions of these muscles are not taken into account while framing this category.
- Thus, these factors help in classifying *peshis* under the category of *Anu*.

5. *PRUTHU*

- The meaning of *pruthu* can be taken as 'broad, wide or extend in large area'.[10]
- Length & breadth are considered in this category.
- For example- Lattisimus Dorsi
  - Average Length= 18.4 cm
  - Average Breadth= 20.8 cm
- Muscles in this category bare less strength, hence their actions are not considered as criteria to form the parameter of *peshi swaroop*.
- Only the wide spread area occupied by these muscles become a criteria for their classification as *Pruthu*.

6. *VRITTA*

- The meaning of *vritta* can be taken as circular (or) dome shaped.[11]
- This category is only based on the shape of the muscle, which in this case is circular.
- For example- Orbicularis Oris & Orbicularis Oculi muscle both are circular in shape.
- Thus, this factor helps in forming the basis of classification of *peshis* in *vritta* category.

7. *HRSWA*

- The meaning of *hrswa* can be taken as short.[12]
- Length of the muscle is the only criteria considered in this.
- For example- Abductor Digit Minimi
  - Average Length= 09.3 cm
- These muscles are short because they require lesser amount of strength to perform their actions.
- Thus, the above mentioned factor helps in classifying *peshis* under the category of *hrswa*.

8. *DIRGHA*

- This category is exactly opposite to *hrswa* category.[13]
- Meaning of *dirgha* can be taken as 'long'.
- Length of the muscle is the only criteria considered in this.
- For example- Sartorius
  - Average Length= 48.07 cm
- These muscles are long because they require strength to perform their actions.
- Thus, the above mentioned factors help in classifying *peshis* under the category of *dirgha*.

9. *STHIRA*

- In *Sthira* category, we consider muscles which have long tendineous part and short belly part.[14]
- This criteria is purely based on the length of the muscle.
- For example:- Plantaris muscle
  - Average length = 44.95 cms
  - Average length of tendon =40.2 cms
  - Average length of belly= 4.3 cms
- These muscles remain stretched in the body from end to end, thus remains almost intact at a place, hence considered in *sthira* category.

10. *MRUDU*

- In *Mrudu* category, we consider muscles which have shorter tendon and long belly mass.[15]
- This criteria is purely based on the length & thickness of the muscle.
- For example:- Biceps Brachii muscle
  - Average length = 27.3 cms
  - Average Breadth =6.82 cms
  - Average Thickness= 1.6 cms
- Due to thickness of the muscle, it can be considered soft or tender and also due to shorter tendon, because tendon provides strength to the muscle.

11. *SHLAKSHNA*

- The meaning of *shlakshana* can be considered as those muscles which have smooth origin and insertion.[16]
- This *peshi swaroopa* is not a measurable entity rather it denotes the property of the muscle in this category.
- For example:- Platysma muscle
- This muscle is smooth to touch due to its underlying structures, hence considered in this category.

12. *KARKASHA*

- The meaning of the *karkasha* can be considered as those muscles which have rough origin & insertion.[17]
- This category is exactly opposite of *Shlakshan* category.
- This category of *peshi swaroopa* is not a measurable entity rather it denotes the property of the muscle in this category.
- For example: - Serratus Anterior muscle
- This muscle feels rough to touch due to the underlying structure (ribs), hence considered in this category.

CONCLUSION

From the detailed conceptual compilation, dissection, observation & discussion; the following conclusion are evolved –

- The number of *peshis* may increase, if its parts or components are considered separately & it may decrease if they are taken jointly.
- The controversies in the difference of number of *peshis* can be understood at certain places where the muscles of one region is counted in another region, based on their origin & insertion.
- Almost all the *peshis* are symmetrically distributed between the left & right sides of the body & their size & shape are highly variable depending upon their functions throughout the body.
- Due to the minute size of certain *peshis*, *Acharya Sushruta* might not have considered them while framing the classification parameters for *peshi* swaroop, like- Stapedius muscle, Arrector pilli muscle etc. Though, as per the explaination available regarding each type of the *peshi swaroop*, such *peshis* can be included in the '*Anu'* category of the *peshi swaroop*.
- During the classification of *peshis* according to the *peshi swaroop* under which they fall, it was noted that almost every muscle can be included in more than one *Peshi Swaroop*, as no muscle can be specifically placed in one particular type of *peshi swaroop*.

The parameter for the classification of *peshis* (named as '*Peshi Swaroop'*) classifies the peshis on the basis of their size, shape, action & their feeling of touch, like- thin, thick, long or short on the basis of their size; wide, round or circular on the basis of their structure; fix or movable on the basis of their movement; & hard, soft, smooth or rough on the basis of their perception of touch.

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*.

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