INTRODUCTION

One who knows Shareer (i.e. anatomy and physiology of human body) in detail, only he can know and understand Ayurveda which can bring happiness to the universe.

In Sushruta Samhita, Acharya Sushruta has described the structures of human body in detail. He studied the human body by the technique of human body preservation and dissection which is very much different from today’s method, Acharya Sushruta was the first to dissect human body. In Shareersthana of Sushruta Samhita, detail knowledge of human body is present. In Garbhavyakarana adhyaya, a detail description of Twacha Shareer is present.

Twacha reflects Varna of an individual. Twacha is one the gyanendriyas which is Vayaviya in nature. Its abode is Sparshanendriya which is responsible for the touch sensation. In all Indriyas, Sparshanendriya is an entity that occupies all other Indriyas also. Mana is intimately related to Twacha as it's is also all encompassing. Skin is the outermost covering of the body. It is composed of sweat glands, sebaceous glands, hairs, nails and numerous openings. It is divided into two layers outer epidermis and inner dermis. Epidermis is divided into 5 layers and populated by 4 types of cells. Dermis is also divided into 2 layers. Skin is supplied by sebaceous glands which keep the skin surface oily and sweat glands which excrete waste materials of the body through sweat.
Skin is having protective functions helps in general sensation helps in excretion of waste products of metabolism synthesize Vitamin – D maintains water balance and stores fats, water and salts.

AIMS AND OBJECTIVES
- Critical review of literature of twaka sharir WSR To Ayurveda samhitsa
- Comparative study of twak sharir with modern and ayurvedic view.

AYURVEDIC LITERATURE
Acharya Sushruta has described all the structures of human body by doing dissection. His method of dissection was very unique and much different from today’s method. After stating how an ideal dead body should be and technique of preservation and decomposition of the dead body, he tells to start dissection from outermost covering of the body i.e. skin. After full decomposition of the dead body Sushruta tells to separate layers of skin one by one go deep and visualize structures underneath the skin. From this, it is crystal clear that skin is the outermost covering of the body. It can be confirmed by description of various parts of the body commencing skin furnished so far can not be obtained apart from Shalya gnyana.

Definition: The external covering of the body is called Twak or Twacha9. A type of Indriya which envelops the body is called Twagindriya or Sparshanendriya10. As per Charaka. Twacha enwraps shadanga Shareer.

Etymology of twacha: Twag + Kwip = Twacha

Synonyms
- Twacha: This word is derived as ‘Twacha Samvarane’ which means covering of the body.
- Charma: This word is derived from ‘Chara’ which means movement i.e. nature of moving. According to modern science, cells of epidermis are continuously being produced, remain for some period and become dead and they are replaced by newly produced cells. This mechanism can be correlated to Ayurveda ‘Shiryate tat shareeram’ law in this way “Charma” is related to movement so the name has given.
- Chhavi: It means to illuminate the complexion, Twacha enlightens colour of a person.
- Chhadani: It means to cover Twacha envelops all organs of the body.
- Sparshan: To give tactile sensation. Twacha plays main role in perception of tactile sensation.
Asrukdhara: It means to hold the blood inside the body. Thus Twacha prevents bleeding tendency.

**TWACHA UTPATTI**

Acharya Sushruta has a good sense of observation of nature and application of that observation to explain many laws, principles and structures of human body. This application is called Drushtanta. While explaining genesis of Twacha Sushruta has also given a simple and accurate Drushtanta of Santanika i.e. cream on mild surface. During the Paka of Shukra and Shonita by Agni or Pitta dosha, seven types of Twacha appear on the surface of body of Garbha just like while heating milk cream appears on its surface.

Acharya Vagbhata quoted that from the Paka of Raktadhatu seven types of skin appear just like cream on milk. Acharya Charaka has not given any description regarding genesis of Twacha

**ORIGIN OF TWACHA**

Acharya Charaka has described that every structure of the body develops from Shadbhavas in that twacha is matruja bhava. Acharya Vagbhata stated that Twacha develops from Vayu mahabhoota.

**NUMBER OF TWACHA**

There is a great controversy in various Ayurvedic texts regarding number of Twacha. After studying above lines we come to the conclusion that Acharya Charaka, Vriddhavagbhata, Bhela and Kashyapa have stated 6 types of Twacha. While Acharya Sushruta and Bhavaprakasha have stated seven types of Twacha

**DIFFERENT TYPES OF TWACHA IN BRIHATRAYI AND LAGHUTRAYI**

In Brihatrayi

A) **Charaka Samhita**: In Shareersankhya Shareer Adhyaya of Shareersthana, Acharya Charaka has described six types of Twacha. According to Charaka 6 types of Twacha:

i. Udakadhara: It is an outermost layer of Twacha. As per the name it holds Rasadhatu and Lasika inside the body and prevents their loss from the body.

ii. Asrukdhara: It is the layer next to Udakadhara which has supplied by numerous blood vessels and it holds blood inside the body itself. Acharya Charaka has given names only
to first two layers of Twacha. He described next layers of Twacha on the basis of Vyadhis occurring in them.

iii. The third layer is the seat of manifestation of Sidhma and Kilasa.

iv. The fourth layer is the seat of manifestation of Dadru and Kushtha.

v. The fifth layer is the seat of manifestation of Alaji and Vidradhi.

vi. The sixth layer is one on excision of which causes loss of consciousness.

B) Sushruta Samhita: In Garbhavyakarana Adhyaya of Shareersthana. Acharya Sushruta has described seven types of Twacha their thickness and diseases occurring in each layer. These seven types of Twacha are as follows

i. The first and an outermost layer of Twacha is Avabhasini which reflects all sort of complexions also brighten five types of shades. It is the seat of Sidhma and Padmakantaka

ii. The second layer is called as Lohita and it is the seat of Tilakalaka Nyachha and Vyanga

iii. The third layer is Shweta and it is the seat of Charmadala Ajagallika and Mashaka

iv. The forth layer is called tamra which is the seat of various types of Kilasa and Kushtha

v. The fifth layer is Vedini which is the seat of Kushtha and Visarpa

vi. The sixth layer is Rohini which is the seat of Granthi Apachi Arbuda Shlipada and Galaganda

vii. The innermost and seventh layer is Mamsadhara which is the seat of Bhagandara. Vidradhi and Arsha.

C) Astanga Sangraha: In Anga Vibhaga Shareer Adhyaya of Shareersthana. Vriddha Vagbhata has described seven layers of Twacha. Acharya Vagbhata has given description of Twacha more or less similar to Charaka. According to him.

i. First layer is Udakadhara.

ii. Second layer is Asrukdhara.

iii. Third layer is the seat of Sidhma and Kilasa.

iv. Fourth layer is the seat of all types of Kushtha.

v. Fifth layer is the seat of Alaji and Vidradhi.

vi. Sixth layer is Pranadhara

D) Ashtanga Hridaya: Acharya Vagbhata has not given any details of twacha except the genesis of Twacha.
IN LAGHUTRAYI

E) Sharangadhara Samhita: In Kaladikakhyana Adhyaya of Prathama Khanda Sharangadhara described seven Twachas.

According to Sharangadhara:
1. First layer is Avabhasini seat of Sidhma.
2. Second is Lohita seat of Tilakalaka.
3. Third is Shweta seat of Charmadala.
4. Fourth is Tamara seat of Kilasa and Shwitra.
5. Fifth is Vedini seat of all Kushtha.
6. Sixth is Rohini seat of Granthi ganda and Apachi.
7. Seventh is Sthoola the seat of Vidradhi and it is thick equal to two Vrihi.

F) Madhava Nidana: There is no description regarding Twacha in Madhavanidana.

G) Bhavaprakasha: According to Bhavaprakasha there are seven types of Twacha
1. The first is Avabhasini which is the seat of Sidhma.
2. The second is Lohita seat of Tilakalaka.
3. The third is Shweta seat of Charmadala.
4. Fourth is Tamara seat of Kilasa and Shwitra.
5. Fifth is Vedini which is the seat of all Kushtha.
6. Sixth is Rohini which is the seat of Granthi, Ganda and Apachi.
7. Seventh is Sthoola, the seat of Vidradhi.

THICKNESS OF TWACHA

In various Ayurvedic texts, there is a description of Twacha, its layers and diseases occurring in each layer of Twacha. Sushruta Samhita is unique for the description of Thickness of twacha.

Here, Sushruta describes thickness of Twacha in the measurement of Vrihi Pramana. (Vrihi – Rice Grain) So, Avabhasini Twacha is thick = 1/18th part of 1 Vrihi and likewise about other layers of Twacha. But this measurement of Twacha is not throughout same for all the body parts. It differs according to various body parts. The measurement of thickness of Twacha mentioned above is applicable for only thick skin on muscular parts of the body. It is not applicable for forehead and small fingers. According to Dalhana, a commentator of Sushruta
Samhita twenty parts of 1 rice grain should be done and then thickness of Twacha should be determined e.g. Avabhasini Twacha is thick = 18/20 parts of 1 Vrihi.

Table No. 1: Showing the comparison of thickness of Twacha according to Sushruta and Dalhana.

<table>
<thead>
<tr>
<th>TWACHA</th>
<th>SUSHRUTA</th>
<th>MODERN MEASUREMENT</th>
<th>DALHANA</th>
<th>MODERN MEASUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avabhasini</td>
<td>1/18</td>
<td>0.055</td>
<td>18/20</td>
<td>0.90</td>
</tr>
<tr>
<td>Lohita</td>
<td>1/16</td>
<td>0.062</td>
<td>16/20</td>
<td>0.80</td>
</tr>
<tr>
<td>Shweta</td>
<td>1/12</td>
<td>0.083</td>
<td>12/20</td>
<td>0.60</td>
</tr>
<tr>
<td>Tamra</td>
<td>1/8</td>
<td>0.125</td>
<td>8/20</td>
<td>0.40</td>
</tr>
<tr>
<td>Vedini</td>
<td>1/5</td>
<td>0.200</td>
<td>5/20</td>
<td>0.20</td>
</tr>
<tr>
<td>Rohini</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mamsadhara</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>-</strong></td>
<td><strong>3.525</strong></td>
<td><strong>Total – 5.9</strong></td>
<td></td>
</tr>
</tbody>
</table>

So, according to Sushruta and Dalhana, there is a great controversy regarding thickness or Twacha.

- Sushruta : 3.5 Vrihi
- Dalhana : Appr. 6 Vrihi

If practically observed and thickness of 1 vrihi is measured it becomes average 1mm. So, the thickness of twacha told by Sushruta and Dalhana expressed in modern measured will be:

- Sushruta : 3.5 mm
- Dalhana : Appr. 6 mm

If we want to compare this measurement with modern measurement (skin thickness = 1.5 to 4 mm), then Sushruta seems to be perfect and more accurate in telling thickness of skin. Because according to Dalhana, it becomes 6mm which is highly impossible.

**TWACHA & TRIDOSHA RELATION**

**Vata Dosha:** While describing abodes of Doshas, Vagbhata says Twacha is one of the abode of Vatadosha. Out of 5 types or Vata, especially Prana and Udana are directly related to Twacha. Pranavayu is responsible for the tactile sensation. Twacha is able to perceive sensations like cold, heat, roughness, smoothness with the help of Pranavayu itself. The other type of Vata i.e. Udana Vayu produces varna and if it gets vitiated then there is discouloration of skin.
**Pitta Dosha**: Besides Vatadosha. Twacha is an abode of Pittadosha also Nabhi, Amashaya, Sweda, Lasika, Rakta, Rasa, Druk(Drushti) and Sparshana (Twacha) are the abodes of Pitta. Out of five types of Pitta. Bhrajaka Pitta is mainly related to Twacha. Bhrajaka Pitta is situated in the skin and its main function is Bhrajana of Twacha (i.e. to maintain the Teja of Twacha). The Pitta in the skin is known as Bhrajaka pitta, which is responsible for absorption of drugs externally in the form of massage, bath, dipping, paste etc. and also illuminates various shades of complexion.

**Kapha Dosha**: One of the Gunas of Kapha is Snigdha due to this Guna of Kapha oily nature of Twacha is maintained. If Kshaya of Kapha dhatu happens, then Snigdha guna decreases and due to this Twacha becomes dry and cracky in nature.

**TWACHA & SAPTADHATU RELATION**: There is a very close relation between Saptadhatus and Twacha.
1. Rasa: Twacha is a huge structure and it requires nourishment of Rasadhatus for its well beings.
2. Rakta: Raktadhatu is present in raktavahi Dhamnis. Twacha is richly supplied by Raktadhatu and also called as Asrukdhara.
3. Mamsa: Twacha is theMoolasthana of Mamsavaha Srotasa. Vasa and shat Twacha are generated from the mamsa itself. So that mamsa dhatu and Twacha are intimately related to each other.
4. Meda: The mala of meda dhatu is Sweda and Sweda is expelled out of the body through Twacha and in this way these two are related.
5. Asthi: The kitta of Asthi are Kesha and Loma which emerge out from Twacha.

**TWACHA & MALA RELATION**: Twacha is mainly related to Sweda. Twacha is having innumerable Bahirmukha srotamsi through which Sweda is excreted out of the body. Thus Twacha acts as biggest Malayana of body. Decrease in amount of Sweda causes hair loss, loss of sensation and cracks in the skin.
Table No. 2: Showing comparison between twak shareera with ayurvedic and modern view.

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>According to Sushruta</th>
<th>According to Charaka &amp; Vagbhata</th>
<th>Modern term</th>
<th>Layer of skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Avabhasini</td>
<td>Udakdhara</td>
<td>Stratum Corneum</td>
<td>Epidermis</td>
</tr>
<tr>
<td>2</td>
<td>Lohita</td>
<td>Asrukdharas</td>
<td>Stratum Lucidum</td>
<td>Epidermis</td>
</tr>
<tr>
<td>3</td>
<td>Shweta</td>
<td>Sidhma, kilasa</td>
<td>Stratum Granulosum</td>
<td>Epidermis</td>
</tr>
<tr>
<td>4</td>
<td>Tamra</td>
<td>Dadru, kushtha</td>
<td>Malpighian layer</td>
<td>Epidermis</td>
</tr>
<tr>
<td>5</td>
<td>Vedini</td>
<td>Alaji, vidradhi</td>
<td>Papillary Layer</td>
<td>Dermis</td>
</tr>
<tr>
<td>6</td>
<td>Rohini</td>
<td>Blindness</td>
<td>Reticular Layer</td>
<td>Dermis</td>
</tr>
<tr>
<td>7</td>
<td>Mamsadhara</td>
<td>----</td>
<td>Subcutaneous tissue and Muscular layer</td>
<td>Hypodermis</td>
</tr>
</tbody>
</table>

DISCUSSION AND CONCLUSION

Twacha is the external covering of the body. It is also called “sparshanendriya or twagndriya” which envelops the body. It plays a great role in perception of sensations like touch, pain, heat, cold. The organ genesis of twacha occur during paka of Shukra and Shonita by Agni, seven types of Twacha gets formed on the surface of Garbha just like while heating milk cream is formed on its surface. Twacha is a Matruja Bhava and it is having predominance of Vayu mahabhoota and sparsha Vishishta guna.

There is some controversy regarding number of Twacha in various texts. Acharya Sushruta tells seven types of Twacha while Charaka and Vagbhata tell six types. Also regarding Vyadhis occurring in different layers there is variation in opinion of Acahryas e.g. Sushruta tells Kitibha occur in fourth and fifth layer of twacha while Charaka and Vagbhata tells it in fourth layer.

Thickness of Twacha told by Sushruta and Dalhana is having great difference. Sushruta seems to be more accurate in telling thickness of Twacha which is more or less same to the thickness quoted in modern textbooks of Anatomy. Considering relation of Doshas with Twacha, Vata dosha especially Prana and Udana have close relation with Twacha. Pranavayu is responsible for the perception of touch sensation. Udanavayu produces Varna and if its gets vitiated then there will be discolouration of the skin. If pitta dosha is considered. Bhrajaka Pitta is situated in Twacha which maintains Teja of Twacha. It is responsible for absorption of drugs externally in the form of massage, oils, paste etc. kapha dosha is having Snigdha guna. If Snigdha guna decreases then Twacha will be dry and cracky in nature.
Considering relation of dhatus with Twacha. Rasa dhatu is present in Twacha and it gives nourishment to it for its well being. Twacha is supplied by numerous Raktavahi dhamanis and Raktadhatu is present in these Dhamanis. Also there is relation of Twacha with other Dhatus. Twacha is mainly related to Swedamala which is excreted through innumerable openings on it.

REFERENCES
10. A Textbook of Dermatology: Moschella and Hurley, 2nd edition part (1) and (2).