INTRODUCTION

According to Ayurved, Twacha is the Updhatu of Mamsa Dhatu. Skin is believed to be formed by the metabolism of Rakhta Dhatu; a phenomenon similar to the formation of cream over milk, when it is made to cool after heating: ‘Ksheerasya Eva Santanika’. Skin (Twacha) is the largest organ of the body and has a great cosmetic value. This article describes Twacha in all respects of KriyaSharir, i.e, Twacha-as an Indriya and its role in sensation of touch, understanding the concept of ‘Dynan Graham Prakriya’. Twacha related Dosha and their functions, Vrudda and KsheenaDosha effects on Twacha, Twacha as Updhatu of Mamsa, Twacha —as one of the MoolaSthana of MamsavahaStrotas, SaptaTwacha and its modern co-relation with skin and Twak Saar PurushLaxanas. At the end, it was also important to mention Twak pariksha as a tool in AshtaVidha Rogi Pariksha boon of Ayurved to mankind.

Keywords: Mamsa, Twacha, Dhatu, Indriya

MATERIALS AND METHODS

Textual references are used for the study from classics of Ayurved like Charak Samhita, Sushruta Samhita and Ashtang Hridaya.

REVIEW OF LITERATURE

➢ TwachaUtpatti – formation

Charak has described skin as a structure covering the entire body. SarvaShariramAachakshanat……!
SharireShataTwacha….! Ch. Sh. 7/4.p.919
Sushtura described that after fertilization of ovum Twacha develops just like a cream on the surface of milk during the course of development of Garbha. Differentiation of the layers of the skin takes place and is produced by all three Doshas, particularly by the Pitta. ShukraShonitasyaabhiPachyamaanasyaK shirasya Eva Santanikah SaptaTwachoBhavanti! Su. Sh. 4/4.p.125
Vagbhata described Twachaas formed due to the Paka of RaktaDhatuby its Dhatvagniin the foetus. After Paka, it dries up to form Twacha, just like the deposition of cream over the surface of boiled milk. TatraSaptaTwacho Asrujah Pachyamaana t Prajaayante Kshiraat Santanika Iva! A. Hr. Sh. 3/8.p.133

According to all Acharyas Twacha is formed as the Updhatu of MamsaDhatu.

➢ Sparshendriya and physiology of perception of touch and pain as per Ayurved

Ayurved explains sensory perceptions with the help of a tool named ‘IndriyaPanchapanchak’. This tool includes, sensory receptor (Indriya), principle element (IndriyaDravya), anatomical area (Indriya Adhishthan), subject of perception (Indriyarth), and control centre (IndriyaBuddhi). So for the sensory perception of touch and pain, we can have the IndriyaPanchapanchak as follows,

<table>
<thead>
<tr>
<th>Indriya Panchapanchak</th>
<th>Modern Co-relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indriya Sparshan</td>
<td>Sensory receptors</td>
</tr>
<tr>
<td>IndriyaDravya Vayu</td>
<td>Principle element</td>
</tr>
<tr>
<td>IndriyaAdhishthan Twak</td>
<td>Anatomical area</td>
</tr>
<tr>
<td>Indriyarth Sparsha</td>
<td>Subject of Perception</td>
</tr>
<tr>
<td>IndriyaBuddhi SparshanBuddhi</td>
<td>Control centre</td>
</tr>
<tr>
<td></td>
<td>Touch and Pain message</td>
</tr>
<tr>
<td></td>
<td>Brain stem and Thalamus</td>
</tr>
</tbody>
</table>
Charak had explained the physiology of perception of senses as;

\textit{Aatmendriya Mano ArthanaamSannikarshaatPravartate! VyaktaTadatweYaBuddhiPratkshyamSaN iruchyate!!}

Ch. Su.11/20 p.231

The mutual connectivity of Aatma, Indriya, Mana and Indriyartha generates knowledge (Buddhi) which is of direct comprehension known as Pratiksha.

In Tarka Sangraha the exact pathway of the physiology is explained as;

\textit{‘AatmaManasaSanyujyateManasaIndriye naIndriyamArthenaTatahPratyaksham’! T.S}

According to Tarka Sangraha, direct comprehensive knowledge is obtained only when Aatma etc mutually connect with each other in a specific order which is, Aatma- Mana- Indriya- Indriyartha.

So by following the above points of Acharyas, the physiological pathway of touch and pain sensation can be traced as follows,

\textit{DynanGrahanPrakriya}

\begin{itemize}
  \item \textit{Vyapakatva of Sprashanendriya by TarkaSamgraha, ‘SparshanVyapteVyapakamapi Cha Cheta’! T.S}
  \item As per Ayurved, out of all Dyanendriyas, Sparshanendriyais described as to be ‘Vyapaka’ i.e, widespread. It is so because Sparshanendriyais present over all the body and Mana is similarly present in every part or inch of the body. Mana and Sparshanendriyaare having inseparable relation known as SamvayaSambandha. Hence both are
\end{itemize}
extensively spread around the whole body.

- **Twacha related Dosha and their Physiological functions**

*KriyaSharir* is the part of *Ayurved* dealing with the concepts of *DoshaDhatu* and *Mala*. So, study of any topic in Ayurved begins with the relation of *DoshaDhatu* and *Mala*.

In physiology of *Twacha*, we have the following relations

1. **Dosha and Twacha**

<table>
<thead>
<tr>
<th>Dosha (Part)</th>
<th>Functional Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vata (Udana)</td>
<td>Varna(^7) (Maintains skin complexion)</td>
</tr>
<tr>
<td>Pitta (Bhrajak)</td>
<td>Prabha(^7) (Glow of Skin) and Bhrajishnuta(^4) (Brightness of skin)</td>
</tr>
<tr>
<td>Kapha</td>
<td>Snigdhata(^5) (Smooth and soft texture of Skin)</td>
</tr>
</tbody>
</table>

*UdanaVayu* and *Bhrajak* Pitta are responsible in maintaining the *Varna* and *Prabha* of the skin i.e, *Chaaya*. Thus all the skin diseases with change in *Varna* and *Prabha*, of the skin gives a pathological image of the skin in the form of *VikrutChaaya*.

*Chaaya*\(^6\) (Reflection of Skin)

Ayurveda gives prime importance to the lustre of skin in case of deciding the diagnosis and the prognosis of any disorder. *Chaaya* is assimilated into the *Varna* (colour) and *Prabha* of the skin. As per Charak synonyms of *Chaaya* are *Sansthana* and *Akruti*.(Which are also the synonyms of *Lakshana* signs of diseases). *Chaaya* is believed to be the reflection of the skin. The same *Chaaya* when reflected via mirror or light is known as *Pratichaaya*.

*Chaaya* is of 5 types as per *Panchamahabhutas* (Principle elements)

- **Nabhiya** - Blue coloured mild and *Sneha* + *Prabha*
- **Vaya** - Black/Aruna mixed colour, dry, destroyed colour (Worst type)
- **Agneya** - Red and *Shuddha*, pure as well as presentable *Prabha*.
- **Jaliya** - Shuddha Cats eye gemstone, *Snigdha*
- **Parthiva** - *Sthira*, *Snigdha*, *Ghana*, *Shlakshana*, *Krushna/ Shvetavarna*.

*Prabha*\(^7\)

*Prabha* is *TejoMahabhuta* predominant and it exemplifies the *Varna* of *Twacha* and thus gives the 7 different *Prabha* as;
• Hareet (Green),
• Peeta (Yellow),
• Shweta (White),
• Krushna (Black),
• Pandura (Whitish),
• Shyaava (Greyish Black)

Difference between Chaaya and Prabha
• Chaaya reflects over Varna and Prabha exemplifies the Varna of the skin.
• Chaaya can be observed from near distance and Prabha is highlighted even from far away.
• Chaaya depends on Varna and Prabha whereas, Prabha is independent of all.

Bhrajak Pitta digests the medicine applied over the skin i.e., Abhyanga, Parisheka, Avgahana and Lepana. It enlightens the skin with brightness, which is its main function.

Snigdhta- The normal physiological role of Kapha Dosha is explained to as providing oiliness (Snigdhta) to the skin. This function can be assumed as maintaining the texture of skin as smooth and soft.

Charakhas mentioned that, persons of Kaphapradhana Prakriti are attractive, which indicates that Kapha is mainly responsible for lustre and texture of the skin.

2. Dhatu and Twacha

<table>
<thead>
<tr>
<th>Dhatu</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasa</td>
<td>Twaka Sarata is described for Rasa Dhatu</td>
</tr>
<tr>
<td>Mamsa</td>
<td>Twak is Upadhatu of Mamsa</td>
</tr>
<tr>
<td>Majja</td>
<td>Twak Sneha as Mala of Majja Dhatu by Charak and Vagbhat</td>
</tr>
</tbody>
</table>

Twakais a seat of Rasa Dhatu. So it must be an important role of Rasa Dhatu in the formation of colour and complexion of the skin. It is best explained by the qualities of the Twakasarapurusha.

Twacha is described as formed as Upadhatu of Mamsa.

3. Mala and Twacha

<table>
<thead>
<tr>
<th>Mala</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sthula</td>
<td>----</td>
</tr>
<tr>
<td>Mala</td>
<td></td>
</tr>
<tr>
<td>Dhatu mala</td>
<td>Twak Sneha as Mala of Majja Dhatu by Charak and Vagbhat</td>
</tr>
</tbody>
</table>

Only a clean body can properly utilize the nutrients it receives, likewise, only an open mind free to enjoy the world.
Swedais one of the Trimalas which maintains lustre & turgidity of the skin. Snehaof twacha (moisture and lustre) is mala of Majjadhatuas described by Charakin Grahaniadoschachiktsa adhyaya10.

4. VruddhiKshaya effects of Dosha and Dhatu on Twacha2

<table>
<thead>
<tr>
<th>Dosha</th>
<th>Vruddhi Effect</th>
<th>Kshaya Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vata</td>
<td>Karshnya, UshnaKamana</td>
<td>KaphaVruddhiSaman</td>
</tr>
<tr>
<td>Pitta</td>
<td>Peetavarnata, Daha</td>
<td>Sheetata, Prabahani</td>
</tr>
<tr>
<td>Kapha</td>
<td>Shvaiyta, Shaitya</td>
<td>---</td>
</tr>
<tr>
<td>Dhatu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rasa</td>
<td>---</td>
<td>Roukshyam</td>
</tr>
<tr>
<td>Rakta</td>
<td>Visarpa, Vidradhi, Kushta, Raktapitta, Kamala, Vyanga, Raktatwacha</td>
<td>Rukshata</td>
</tr>
</tbody>
</table>

➢ SaptaTwacha and its modern co-relation with Skin

Layers of skin are narrated by various Acharyas but Sushrutahas mentioned more correctly. Dr. Ghanekar has correlated the layers of skin mentioned by Sushrutawith the latest anatomy of skin as follows and diseases according to layers of Skin.

Correlation of SaptaTwacha and respective diseases with modern skin layers
<table>
<thead>
<tr>
<th>Sapta Twacha¹¹</th>
<th>Modern Co-relation</th>
<th>Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avabhasini</td>
<td>Stratum Corneum</td>
<td>Sidhma, Padmakantaka</td>
</tr>
<tr>
<td>Lohita</td>
<td>Stratum Lucidum</td>
<td>Tilakalaka, Nyachchha, Vyanga</td>
</tr>
<tr>
<td>Shweta</td>
<td>Stratum Granulosum</td>
<td>Charmadala, Mashaka Ajagallika</td>
</tr>
<tr>
<td>Tamra</td>
<td>Malpighian Layer</td>
<td>Kilasa, Kushtha</td>
</tr>
<tr>
<td>Vedini</td>
<td>Papillary Layer</td>
<td>Kushtha, Visarpa</td>
</tr>
<tr>
<td>Rohini</td>
<td>Reticular Layer</td>
<td>Granthi, Arbuda, Apachi</td>
</tr>
<tr>
<td>Mamsadhara</td>
<td>Subcutaneous tissue and Muscular layer</td>
<td>Bhagandara, Vidradhi, Arsha</td>
</tr>
</tbody>
</table>

- **Twak**
  - **Mamsavaha Strotas Moola Sthana**
    - ‘Mamsavahanaam Cha Strotasaam Snayurmoolam Twak Cha!’
    - Ch. Vi. 5/7. p.696
  - Twacha is said to be one of the Mool Sthan of Mamsavaha Strotas. As Upadhatu it nourishes the Mamsa Dhatu via these channels.

- **Twak Saar Purush Laxanani**
  - ‘Tatra Snigdha Slakshna Mrudu Prasann a Sookshma alpa Gambhira Sukumaar Loma Saprrabheva Cha Twak Saaranam! Sa Saarata Sukha Soubhayga Aishvarya Up abhoga Buddhi Vidhya Aarogya Prahars hanaanyam Aayushyatvam Cha Aachaste!!’
  - Ch. Vi. 8/103. p.763

Skin of the Tvakasarapurusha is Snigdha, Shlakshana, Komal, Prasanna, Sukshama and Prabhayukta. It exhibits the Prabha of the skin. These individuals are said to be lucky, wealthy, and luxurious. They are described as intelligent, knowledgeable, healthy, jovial with good longevity of life.

- **Agni**
  - **Ayurveda** has unique concept of Agni. It has the power to digest food well, making all nutrients available to the tissues. It also cleans toxins and excess waste from the systems. It is responsible to create all disease if power of digestion becomes low. Keeping the digestive tract cleans and the outer body fresh and glowing. Hence healthy and balanced Agni is necessary to keep the body and mind balanced and healthy.
MANA AND ITS EFFECT ON TWACHA

Acharya Charak has explained Strotas in detail in Vimanasthan. Here he gave the reason for Rasavaha Strotas Dushti as ‘Achintyanaam Cha Ait Chintanaat’12. This means excess amount of thinking over unnecessary things is the main reason for vitiation of Rasavaha Strotas Dushti. ‘Chintan karma’ or ‘thinking’ is the function of Mind. But when Mind is subjected to over thinking on unwanted subjects it can become the leading cause of Rasavaha Strotas Dushti.

TWAK – ASHTA VIDHA ROGI PARIKSHA13

‘Rogakrantasya Dehasya Sthaananyashtou Pariksheta! Naadim Mootram Malam Jivham Shabdam Sparsham Drugaakruti!!’

Yogratnakar

Ayurved has described various tools for examination of the diseased as well as healthy individual. One of these is the Ashta Vidha Rogi Pariksha mechanism.

This mechanism involves 8 tools of examining the whole body of the diseased. These tools are nothing but area of the body which depicts the health of an individual.

Twachais one amongst the tools. Thus by examining the Twacha we can have a fair idea of the disease. As explained earlier, Twacha can be examined by observing the Chaayaand Prabha of the Skin.

CONCLUSION

1. Twacha is the Indriya Adhishthan of Sparsha Gyaan.
2. It has inseparable relation with Mana and hence said to be Vyapaka.
3. It exhibits the image of the physiological and pathological imbalances of the body’s internal environment.
4. Indriya Panchapanchak and factors causing Pratyaksha Dynan can be used as a tool to understand the physiology of Dynan Grahan Prakriya of any sense organ.
5. Rasavaha Strotas mainly vitiated because of abnormal functioning of Mana and so Mana has direct effect on Twacha. This makes Mana a leading cause in Twacha Vikara.

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