

Kriyatmak Adhyayan of Twacha 'Ksheerasya Eva Santanika'

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Abstract:

Ayurveda, the “Science of Life”, is a real wealth of medical sciences. In Ayurvedic oldest text Sushruta Samhita- *Shareer Sthana*, Acharya Sushruta has mentioned five sensory organs i.e. *Gyanendriyas*. *Sparshanendriya* is one of them whose *Adhishthana* is *Twacha* (skin). As we know, skin is the largest sense organ of the body which sense touch, pain, pressure, temperature etc. It is also known as “The First Line of Defence”. This article describes *Twacha* in all respects of *Kriya Sharir*, i.e. *Twacha* as an *Indriya* and its role in sensation of touch, understanding the concept of ‘*Dyanan Graham Prakriya*’. *Twacha* related *Dosha* and their functions, *Vruddha* and *Ksheena Dosha* effects on *Twacha*, *Twacha* as *Updhatu* of *Mamsa*, *Twacha* –as one of the *Moola Sthana* of *Mamsavaha Strotas*, *Sapta Twacha* and its modern co-relation with skin and *Twak Saar Purush Laxanas*. At the end, it was also important to mention *Twakpariksha* as a tool in *Ashta Vidha Rogi Pariksha* “a boon of Ayurveda to mankind.

Keyword: *Twacha*, *Updhatu*, *Ksheena Dosha* effects, *Mamsavaha Strotas*, *Sapta Twacha*, *Twak Saar Purush Laxanas*, *Twakpariksha*, *Ashta Vidha Rogi Pariksha*

I. INTRODUCTION

According to Ayurveda, *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.

The skin, also known as the cutaneous membrane is the largest organ of the body, with a total area of about 20 square feet and weighs 4.5-5kg, about 7% of total body weight. Skin is known as “The First Line of Defence” as it protects us from microbes and other invading elements. It is a part of integumentary system that contributes to homeostasis by protecting the body and helping regulate body temperature. It also allows us to sense pleasurable, painful and other stimuli in the external environment. *Acharya Charaka* defines skin as the structure covering the whole body.¹ *Acharya Sushruta* has stated that the thickness of *Twacha* is different in different sites of body as in *Mamsalsthaana* and *Lalaat* the *Twacha Pramaan* varies² Modern science also stated the same concept that skin is thickest on palms and soles of feet while thinnest on eyelids and in post auricular region.³ We know well about the skin but the details of *Twacha* mentioned in various Ayurvedic Texts are yet to be explained. The knowledge of *Rachnatmaka* and *Kriyatmaka* aspect of *Twacha* is of great importance as *Twacha* is the seat for various *Rogas*.

II. MATERIALS AND METHODS

Textual references are used for the study from classics of *Ayurveda* like *Charaka Samhita*, *Sushruta Samhita* and *Ashtang Hridaya*.

III. REVIEW OF LITERATURE

➤ *Twacha Utpatti* – formation

Charak has described skin as a structure covering the entire body.

Sarva Shariram Aachakshanat.....! Sharire Shata Twacha....!

Ch. Sh. 7/4.p.919

Sushruta 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*.

Shukra Shonitasyaabhi Pachyamaanasya Kshirasya Eva Santanikah Sapta Twacho Bhavanti!

Su. Sh. 4/4.p.125

Vagbhata described *Twacha* as formed due to the *Paka* of *Rakta Dhatu* by its *Dhatvagni* in the foetus. After *Paka*, it dries up to form *Twacha*, just like the deposition of cream over the surface of boiled milk.

Tatra Sapta Twacho Asrujah Pachyamaanat Prajaayante Kshiraat Santanika Iva!

A. Hr. Sh. 3/8.p.133

According to all *Acharyas* *Twacha* is formed as the *Updhatu* of *Mamsa Dhatu*.

➤ *Sparshanendriya* and physiology of perception of touch and pain as per *Ayurveda*

Ayurveda explains sensory perceptions with the help of a tool named '*Indriya Panchapanchak*'. This tool includes, sensory receptor (*Indriya*), the principal element (*Indriya Dravya*), anatomical area (*Indriya Adhishthan*), subject of perception (*Indriyarth*), and control centre (*Indriya Buddhi*). So for the sensory perception of touch and pain, we can have the *Indriya Panchapanchak* as follows,

<i>Indriya Panchapanchak</i> ⁴		Modern Co-relation	
<i>Indriya</i>	<i>Sparshan</i>	Sensory receptors	Touch and Pain receptors
<i>Indriya Dravya</i>	<i>Vayu</i>	Principle element	Nerve conduction
<i>Indriya Adhishthan</i>	<i>Twak</i>	Anatomical area	Skin
<i>Indriyarth</i>	<i>Sparsha</i>	Subject of Perception	Touch and Pain message
<i>Indriya Buddhi</i>	<i>SparshanBuddhi</i>	Control centre	Brain stem and Thalamus

Charaka had explained the physiology of perception of senses as;

Aatmendriya Mano Arthanaam Sannikarshaat Pravartate!

Vyakta Tadatwe Ya Buddhi Pratkshyam Sa Niruchyate!!

Ch. Su.11/20 p.231

The mutual connectivity of *Aatma*, *Indriya*, *Mana* and *Indriyarth*a generates knowledge (*Buddhi*) which is of direct comprehension known as *Pratkshya*.

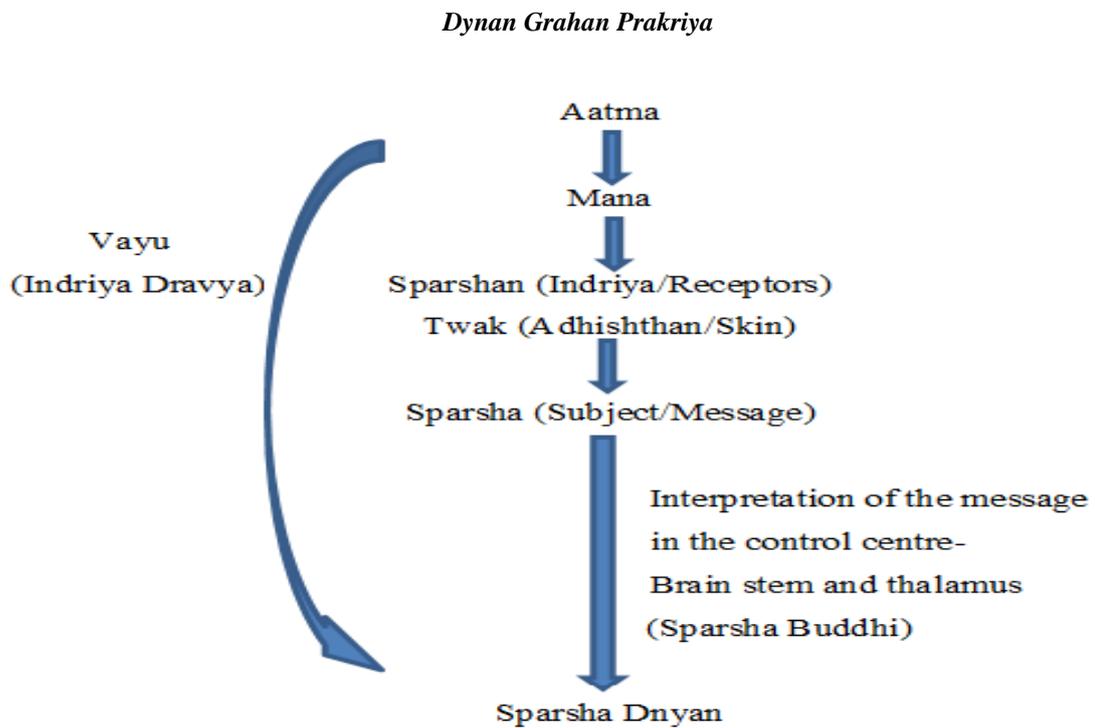
In Tarka Sangraha the exact pathway of the physiology is explained as;

'Aatma Manasa Sanyujyate Manasa Indriyena Indriyam Arthena Tatah Pratyaksham'

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- Indriyarth*a.

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



Vyapakatva of Sparshanendriya by TarkaSamgraha,

'Sparshan Vyapte Vyapakamapi Cha Cheta'

T.S

As per Ayurveda, out of all *Dyanendriyas*, *Sparshanendriya* is described as to be '*Vyapaka*' i.e, widespread. It is so because *Sparshanendriya* is present over all the body and *Mana* is similarly present in every part or inch of the body. *Mana* and *Sparshanendriya* are having inseparable relation known as *Samvaya Sambandha*. Hence both are extensively spread around the whole body.

➤ Twacha related Dosha and their Physiological functions

Kriya Sharir is the part of *Ayurveda* dealing with the concepts of *Dosha Dhatu* and *Mala*. So, study of any topic in *Ayurveda* begins with the relation of *Dosha Dhatu* and *Mala*.

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

1. *Dosha* and *Twacha*

<i>Dosha</i>	Functional Relation
<i>Vata (Udana)</i>	<i>Varna</i> (Maintains skin complexion)
<i>Pitta (Bhrajak)</i>	<i>Prabha</i> (Glow of Skin) and <i>Bhrajishnuta</i> (Brightness of skin)
<i>Kapha</i>	<i>Snigdhatta</i> (Smooth and soft texture of Skin)

Udana Vayu 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 *Vikrut Chaaya*.

*Chaaya*⁵ (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 found 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* or 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* (Principal elements)

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

*Prabha*⁶

Prabha is *Tejo Mahabhuta* 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)

Difference⁷ 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.

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

Charaka has mentioned that, persons of *Kaphapradhana Prakriti* are attractive⁸, which indicates that *Kapha* is mainly responsible for lustre and texture of the skin.

2. *Dhatu* and *Twacha*

<i>Dhatu</i>	Relation
<i>Rasa</i>	<i>Twaka Sarata</i> is described for <i>Rasa Dhatu</i>
<i>Mamsa</i>	<i>Twak</i> is <i>Upadhatu</i> of <i>Mamsa</i>
<i>Majja</i>	<i>Twak Sneha</i> as <i>Mala</i> of <i>Majja Dhatu</i> by Charak and Vagbhat

Twaka is 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 *Twakasarpurusha*. *Twacha* is described as formed as *Updhatu* of *Mamsa*.

3. *Mala* and *Twacha*

<i>Mala</i>	Relation
<i>Sthula Mala</i>	----
<i>Dhatu mala</i>	<i>Twak Sneha</i> as <i>Mala</i> of <i>Majja Dhatu</i> by Charak and Vagbhat

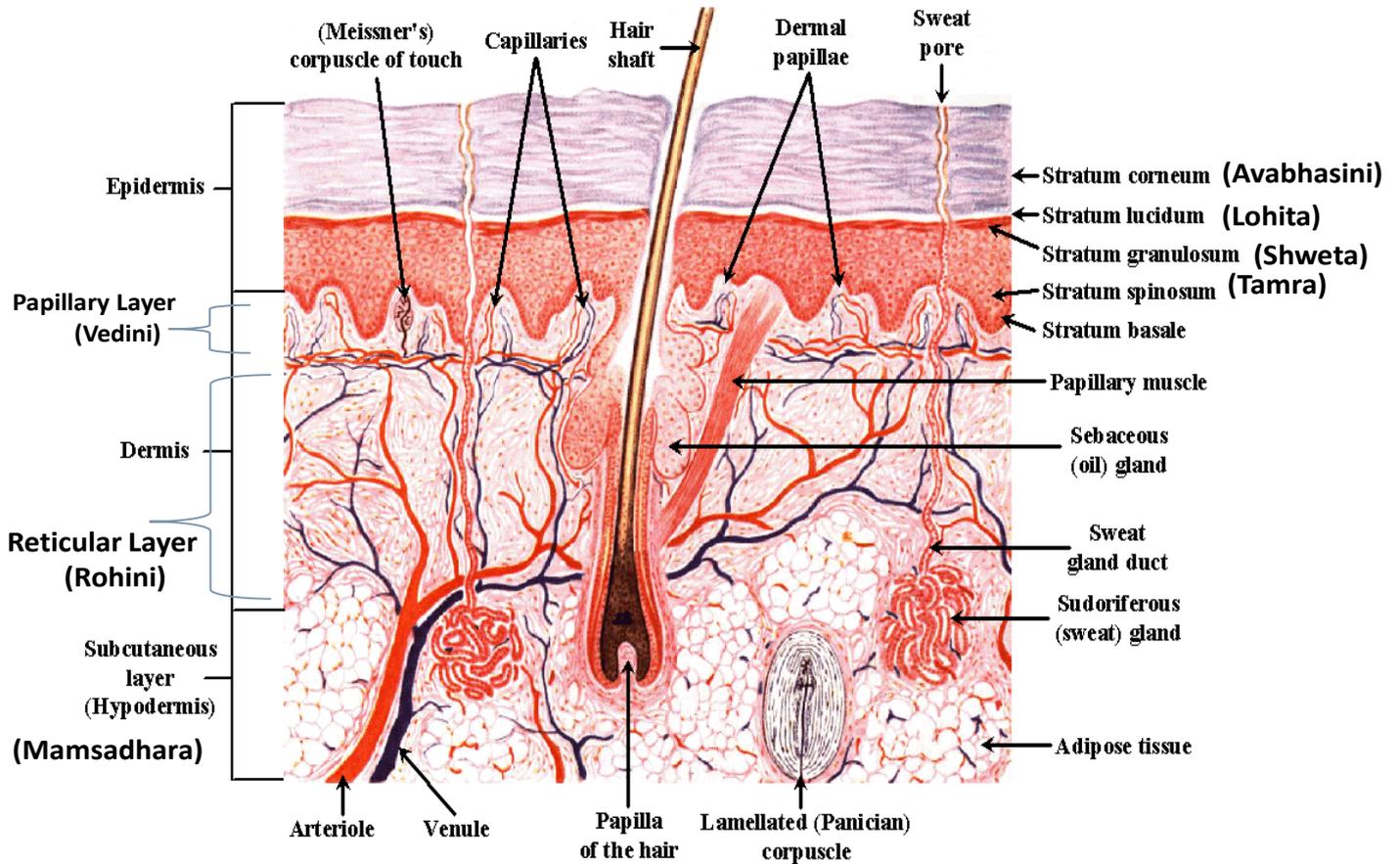
Only a clean body can properly utilize the nutrients it receives, likewise, only an open mind free to enjoy the world. *Sweda* is one of the *Trimalas* which maintains lustre & turgidity of the skin. *Sneha* of *Twacha* (moisture and lustre) is *mala* of *Majjadhatu* as described by Charak in *Grahanidoshachikitsa Adhyaya*⁹.

4. *Vruddhi Kshaya effects of Dosha and Dhatu on Twacha*¹⁰

Dosha	Vruddhi Effect	Kshaya Effect
Vata	Karshnya, Ushna Kamana	Kapha Vruddhi Saman
Pitta	Peeta varnata, Daha	Sheetata, Prabha hani
Kapha	Shvaiyta, Shaitya	---
Dhatu	Vruddhi Effect	Kshaya Effect
Rasa	----	Roukshyam
Rakta	Visarpa, Vidradhi, Kushta, Raktapitta, Kamala, Vyanga, Rakta Twacha	Rukshata

➤ *Sapta Twacha* and its modern co-relation with Skin

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



Correlation of *Sapta Twacha* and respective diseases with modern skin layers

<i>Sapta Twacha</i> ¹¹	Modern Co-relation	Diseases
<i>Avabhasini</i>	Stratum Corneum	<i>Sidhma, Padmakantaka</i>
<i>Lohita</i>	Stratum Lucidum	<i>Tilakalaka, Nyachchha, Vyanga</i>
<i>Shweta</i>	Stratum Granulosum	<i>Charmadala, MashakaAjagallika</i>
<i>Tamra</i>	Malpighian Layer	<i>Kilasa, Kushtha</i>
<i>Vedini</i>	Papillary Layer	<i>Kushtha, Visarpa</i>
<i>Rohini</i>	Reticular Layer	<i>Granthi, Arbuda, Apachi</i>
<i>Mamsadhara</i>	Subcutaneous tissue and Muscular layer	<i>Bhagandara, Vidradhi, Arsha</i>

➤ *Twak - Mamsavaha Strotas Moola Sthana*

'Mamsavahanaam Cha StrotasaamSnayurmoolam 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 Shlakshna Mrudu Prasanna Sookshmaalpa Gambhira Sukumaar Loma Saprrabheva Cha Twak Saaranam!'

Sa Saarata Sukha Soubhagya Aishvarya Upabhoga Buddhi Vidhya Aarogya Praharshanaanyam Aayushyatvam Cha Achaste!!'

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*

Ayurvedaa 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 low¹¹. 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 Ati 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 Shabdham Sparsham Drugaakruti!!'

Yogratnakar

Ayurveda 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.

Twacha is 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 *Chaaya* and *Prabha* of the Skin.

IV. DISCUSSIONS

In Samhitas, *Twak/Twacha* is described as outermost protective layer of body as well as largest sensory organ of body. Acharya Sushruta and Acharya Charaka very minutely described its layers according to their functions and also diseases which are related to those layers. In Ayurvedic classics, various opinion regarding *Twacha Uttapati*, *Twacha Sthan* and associated disorders are mentioned. Our skin is our largest organ." Acharya Sushruta has mentioned five sensory organs i.e. Gyanendriyas. Sparshanendriya is one of them whose Adhishtana is *Twacha* (skin). As we know, skin is the largest sense organ of the body which sense touch, pain, pressure, temperature etc.

The outer most layer, *Avabhasini*, is responsible for pigmentation and the five forms of shadows, i.e. *Prabha*, and it is the location of psoriasis, pimples, and acne. It corresponds with the *Horne* layer of the epidermis. *Lohita* is the second layer that supports the outer most layer and is the location of moles, dark, circles, and black pigmentations. It corresponds with the *Stratum Lucidum* layer of the epidermis. Atopic dermatitis, boils or blisters, moles, and the connection between the third layer, *Shweta*, and the *Stratum Granulosum* layer of the epidermis are all found here.

This layer also balances skin colour. Leprosy develops in the fourth layer *Tamra*, which connects to the dermis's *Malpighian* layer and supports the immune system. Leprosy and herpes are located in the fifth layer *Vedini*, which corresponds to the *Papillary* layer of the dermis. It is a centre for sensation transformation. The *dermal Reticular* layer links with the sixth layer, or *Rohini*, which promotes healing and regeneration and is the site of goitres, elephantiasis, cancer, tumours, scrofula/lymphadenopathy, cysts, and lymphadenopathies. *Mamsdhara*, the seventh innermost layer, correlates with subcutaneous tissue and muscles and serves as the basis for the stability and hardness of the skin. It is also the location of fistulas, abscesses, and haemorrhoids. Touch is perceived by *Vata Dosha* through the skin. The skin is coloured with *Bhrajakapitt*

III. CONCLUSION

1. *Twacha* is the *Indriya Adhishtan* 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* is 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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