

## A conceptual study of *Twacha Sharir*

<sup>1</sup> Dr. Gajendra Gurav, <sup>2</sup> Dr. Rajkumar Dhaked

<sup>1</sup> Reader, Dept. of Rachana Sharir, Govt. Akhandanand Ayurved College, Ahmedabad, Gujarat, India

<sup>2</sup> Lecturer, Dept. of Swasthavritta, Govt. Ayurved College, Junagadh, Gujarat, India

### Abstract

Ayurveda is real wealth of medical sciences which gives preference to prevention of health in healthy person and provides best treatment to diseased one. It believes in complete elimination of root cause of disorder rather than short-term relief. Skin is the largest and first site visible organ of body which acquires 1.5-2 square meter surface area of the body. It is not merely protecting covering but it is reflection of the internal system of the body.

In Ayurveda classical text *Twacha* is included under “*Pancha gyanendriya Adhithana*.” *Twacha* has various opinions regarding *its uttapati*, *Twacha Stara* and associated disorders. Several concepts about *Twacha* are also quite useful in diagnosis and treatment of many disorders. In Ayurveda several views and counter views regarding concepts of *Twacha* is existing. So today it is necessary to clarify the visionary of Acharyas. Therefore this study is undertaken to verify and reveals various mysterious concepts about *Twacha* which will be useful in diagnostic, prognosis and therapeutic purpose of various disorders and craft a pathway for future research work.

**Keywords:** *Twacha uttapati*, *Twacha Stara*, *Rog Adhithana*, diagnostic & prognostic tool

### Introduction

Skin is the general covering of entire external surface of body including external auditory meatus & outer surface of tympanic membrane, it also continuous as mucous membrane at the orifices of the body. Skin is thickest on the palms and soles of the feet (1.5 mm thick), while the thinnest skin is found on the eyelids and in the post auricular region (0.05 mm thick). Pigmentation of skin is determined by five pigments i.e. melanin, melanoid, carotene, haemoglobin & oxy haemoglobin present in different layers of skin. Skin is marked by three types of surface irregularities Tension lines, Flexure lines & Papillary or friction ridges [1].

Today whole world is familiar about most of the modern concepts about skin, but still many concepts about *Twacha* (*Skin*) mentioned in various Ayurvedic Text is yet to disclose. In this study an attempt is made to explore the hidden concept about *Twacha Sharir* such as formation and development of skin (*Twacha Uttapati*), skin layers with associated disorder (*Twacha Stara & Roga-adhithana*), Physiological aspect of skin (*Dosha, Dhatu & Mala Sambandha of Twacha*), Relation of skin with soul (*Atma*) and mind (*Mana*). *Twacha* as diagnostic tool in clinical aspects & *Twacha* serving as prognostic tool. All above mentioned concepts should be enlighten, So that Ayurveda's glory and respect in society will be revitalize by clarifying doubtful opinions and proving the principles described by our Maharishis.

### Aims and Objectives

1. To study concepts of *Twacha Sharir* (*Skin*) described in various Ayurvedic literatures and Modern sciences.
2. To establish importance of *Twacha* as diagnostic and prognostic tool in clinical aspects.

### Literary Review

#### Etymology of *Twacha*

In Ayurveda skin is stated as *Tvak* or *Twacha*. It is included under “*Panch Gyanendriya Adhithana*.” It is stated as “*Indriya Visheshha*” which covers the whole body since birth that encloses all the body component of body like *Meda*, *Shonita*...etc. It has great capacity of expansion and stretching. *Twacha* is *adhithana* of “*Pranadi Panch Vayu*” where *Vayu* resides and bring out its function. *Twacha* is specialised sense organs which acquire special sensory perception of pain, touch, pressure, heat and cold [2a & b].

#### Synonym for *Twacha*

*Twacha*, *Charma*, *Sparshan*, *Chavi*, *Chadani*, *Asrugdhara*, *Kruti*, *Ajin*, *Dehacharma*, *Romabhumi*, *Shariravaranam*, *Asrugvara*, *Shariravarakam Shastram* [3].

#### *Twacha Uttapati*

Formation and development of *Twacha* is took place during the “*Garbhanirmati*” i.e. Process of formation and development of *Garbha*. According to Charka *Garbha* is formed by the amalgamation of *Shukra*, *Shonita* and *Jiva* (soul) in mother's womb [4]. Along with above three elements *Ashta Prakruti and Shodsha Vikara* is also involved in *Garbhanirmana*. Sushruta depicts formation of *Twacha* from the metabolization of *Shukra & Shonita* by *Tridosha* [5]. For better understanding of *Twacha Uttapati* in *Brihatrayee* the whole process of formation of *Twacha* is compare with formation of creamy layer over the surface of milk, when it is boiled and allowed to cooled down, formation of thick layer of skim take place which is explained as “*Ksheerat –Santanaika* [6a-b-c-d]. Indu in his commentary “*Shashilekha*” explains the

appearance and arrangement of skin layers by giving an illustration of *Kadalidal* i.e. Stem of Banana, which has several layers that are arranged in systematic concentric manner. He states that *Twacha* is formed from the *Sara bhaaga (Prasaad)* of *Rakta dhatu*, shiny and lustrous appearance of skin is due to *Rakta dhatu*.<sup>6b</sup> Hemadri in his commentary “Ayurved Rasayan” depicts that whole body is “*Panchmahabhautik*” and *Twacha* is formed by metabolization of *Rakta dhatu* by its own *dhatwagni*, several layer of *Twacha* are formed over outer surface of embryo.<sup>6c</sup> According to Bhavaprakash *Twacha* is formed by *Pachan* that is metabolization of *Shukra* and *Rasa Dhatu* <sup>[6d]</sup>.

### **Twacha Uttapati Kala**

Charak describes *Bala-Varna-Upachaya* in sixth month of intrauterine life, As *Varna* complexion is the attribute of skin it is clear that *Twacha* is formed in sixth month of intrauterine life <sup>[7a]</sup>. According to Astang Sangraha & Hridya *Uttapati* of *Kesha, Roma, Nakha, Asthi, Snayu, Bala, Varna, Sira* and *Twacha* develops in sixth month of intrauterine of life <sup>[7b-c]</sup>. As per modern all layers of skin is formed in fourth month of intrauterine life.

### **Twacha Stara (Skin layers)**

In Ayurveda Samhita several layers of *Twacha* has been described on the basis of different names, associated skin disorders observed in *Twacha Stara (Skin Layers)* their variable thickness and functions performed by these layers. These skin layers are described from superficial to deep. Its thickness is measured on the parameter available in that era i.e. “*Vrihi*” that can be taken as thickness and size of paddy or barley.

There is different opinion about numbers of skin layers *Twacha Stara* is observed among *Atreya* and *Dhanwantri* denomination. In Sushruth samhita, Astanga Hridya, Bhavaprakash samhita and Sharangdhar samhita seven layers of *Twacha Stara* is mentioned <sup>[7a-c-d-e]</sup>, whereas in Charaka samhita, Bhel samhita & Astanga Sangrah six layers of *Twacha stara* is enumerated <sup>[8a-6b-8c]</sup>, this controversial opinion about number of skin layers is due to prospective vision of surgeon and physician.

### **First layer**

Acharya Sushruta called outermost *Twacha stara* as “*Avabhasini*” having thickness about 1/18<sup>th</sup> of *Vrihi* and it is *twak roga adhisthana* of *Sidhma* and *Padamkantka*. Dalhan mentioned that first layer is responsible for the exhibition of *Gaur, Shyamadi Varan* (complexion) and five types of *Prabha* (glory) and *Chaya* (shades) of the body with help of *Bhrajak Agni* present in this layer.

Maharishi Charak & Vriddha Vagbhat named first and outermost layer of *Twacha* as “*Udakdhara*” as name itself suggest it holds the *Udakdhatu*. Indu depicts that this layer carries *Udaka dhatu* and prevents outflow and maintain ‘Aradrata bhava’ i.e. moisture content of the *Twacha* on its outer surface. Laghu Vagbhat stated *Bhasini* as first layer having similar qualities mentioned in Astanga sangrah & Charak. <sup>[6a-b-c-d-e-8b]</sup>

As per Dr. Ghanekar commentary first *Twacha Stara* is responsible for exhibition of complexion, glory and different

shades of *Twacha* which depends on melanin pigments produced by melanocytes present in malphigian layer. As the layers above malphigi are opaque, exhibition of complexion is done by Stratum Corneum; hence Avabhasini may be correlated with Stratum Corneum.

### **Second layer**

Sushruta named second *Twacha stara* as ‘*Lohita*’ having thickness of 1/16<sup>th</sup> of *Vrihi*. And it is *twak roga adhisthana* of *Tilkalka, Nyacha & Vyanga*.

Charak & Vriddha Vagbhat called second *Twacha stara* as ‘*Asrugadhara*’. Indu explains that this layer as “*Rudhantva Asram*” i.e. it holds the blood and prevents outflow of *Rakta dhatu* from the body. Hemadri describes this layer as ‘*Lohini*’ <sup>[6a-b-c-d-e-8b]</sup>.

Ghanekar stated that as *Lohita* lies beneath the *Avabhasini* and it is constituted by transparent layer of three to five clear cells which placed deeply below the stratum corneum. Hence it may be compared with Stratum Lucidium.

### **Third layer**

Acharya Sushruta called third *Twacha stara* as “*Shweta*”, it seems to *Shweta varniya* in appearance, having thickness of 1/12<sup>th</sup> of *Vrihi* and it is *twak roga adhisthana* of *Charmadal, Ajagalika & Mashak*.

Charak & Vriddha Vagbhat mentioned third *Twacha stara* as prime location of *Sidhma & Kilas*. Astanga Hridya describes third *Twacha Stara* as site of *Sidhma Shivtra Adhisthana* <sup>[6a-b-c-d-e-8b]</sup>.

Ghanekar explained that *Shewta stara* lies exactly below the *Lohita*. So it may be compared with Stratum Granulosum; it is made up of two to three layers of granular cell, these cells are flat and are in transitional state that is lies between Stratum Corneum and Stratum Malphigi layer.

### **Fourth layer**

Acharya Sushruta describes the fourth layer of *Twacha* as “*Tamra*”. It lies beneath the *Shweta* and having thickness of 1/8<sup>th</sup> of *Vrihi*. It is *twak roga adhisthana* of *Kustha* and *Kilas*. Charak mentioned fourth *Twacha stara* as *Dadru kustha adhisthana*. In Astang Sangrah and Hridya fourth layer is stated as site for *Sarva kustha adhisthana*. Sharangdhara and Bhavaprakasha state the *Tamra* as site for *Kilas Shivtra* <sup>[6a-b-c-d-e-8b]</sup>.

Ghanekar in its commentary state that *Tamra* may be correlated with Stratum Malphigi, as etiopathogenesis *Kilas* (leucoderma) is mentioned in *Tamra stara*, which occur due to cessation of production of melanin that is produced by melanocytes present in Stratum Malphighi layer. Melanin pigment determines the complexion of an individual; hence we may correlate *Tamra* with Stratum Malphighi.

### **Fifth Layer**

Sushruth describes fifth *Twacha stara* as “*Vedini*”. As name suggest it is concerned with the perception of touch, pain, heat, and cold. It is about 1/5<sup>th</sup> of *Vrihi* in thickness & it is *twak roga adhisthana* of *Kustha* and *Visarpa*.

Maharishi Charak & Vagbhat describes fifth *Twacha Stara* as site for *Alaji & Vidradhi adhisthana*. Hemadri called this *Twacha Stara* as “*Tvagavedini*” as well as “*Rogkarini*”.

Sharangdhar and Bhavprakash describe these *Twacha stara* as site for *Sarvakustha & Visarpa* [6a-b-c-d-e-8b].

Ghanekar explained that *Vedini Stara* has function of perception of sensation as it is studded with too many corpuscles and nerve ending. In third degree burn injury to these layer leads to severe pain. *Kustha* and *Visarpa* mention in this layer also produces histopathological changes in papillary layer of dermis. Hence we may correlate *Vedini* as Papillary layer of dermis.

### Sixth Layer

Sushruta named sixth layer of *Twacha* as “*Rohini*” which is equal to one *Vrihi* in thickness. It is *twak roga adhisthana* of *Granthi, Apachi, Galganda, Arbuda, & Shleepada*. As name suggests it is concerned with wound healing process i.e. *Vrana Ropana Karma*.

Charak named these *Twacha stara* as *Arunshi adhisthana*. Chakrapani describe that sudden injury to this layer leads to “*Tamayati andha eva*” i.e. “*Tama Pravesha*” i.e. feeling of darkness in front of eye due to sudden loss of consciousness.

Acharya Vagbhat called sixth *Twacha stara* as “*Pranadhara*”. Indu state that any injury to this layer leads to life threatening condition *Tama Pravesha* i.e. feeling of blindness for short period, it is prime location of *Arunshi* i.e. small boils, blackish red in appearance commonly found in small joints and very difficult to treat [6a-b-c-d-e-8b].

Dr Ghanekar correlates *Rohini* with Reticular layer of dermis as it lies beneath the *Vedini*. *Rohini* name given to this layer is due to its function of wound healing process *Ropan Karma*, it play major role in formation of granulation tissue and helps in wound healing.

### Seventh layer

Acharya Shaushruta named seventh *Twacha Stara* as “*Mansadhara*”. It is thickest layer measuring about Two *Vrihi*. It is the *twak roga adhisthana* of *Bhagandara, Vidradhi & Arsha*.

Sharangdhara and Bhavprakash describes seventh layer as “*Sthula*”, having thickness of two *Vrihi*, it is the abode of *Vidradhi*. Adhamal mention *Sthula* along with *Vidradhi* it is also the site of *Bhagandara and Arsha* [6a-b-d-8b-6d].

Dr. Ghanekar denies the inclusion of *Mansadhara stara* under *Twacha*. He agreed with six layers theory of Charka. He suggest that *Mansadhara stara* explain by Sushruta may be correlated with subcutaneous layer of hypodermis as it is comprises of blood vessels, lymphatic and adipose tissue.

Dalhana describes the total thickness of *Twacha stara* is *Angust Udara Pramana* which is equal to *Shada Yava Pramana* that is the thickness of six barley together. The parameter of thickness is given for fleshy area not for runny area like *Sukshma Anguli* (little finger) and *lalaat* (forehead). The motive behind describing thickness of each *Twacha stara* is for performing various surgical procedures such as abdominal tapping should be done in *Angust Udar Pramana* by *Vrihimukha Yantra* in Ascitis.

Gannath Sen describe two layer of *Twacha Stara*; Outer layer is named as “*Tanvi*” which give rise to *Plosa and Pidika*, when it gets burned. Inner layer is called as *Sthula*, it is thick and provides protection to the body. It is responsible for “*Snehaadi Karshnam*” i.e. metabolization of locally applied

medicated *taila, sneha...* etc [8d].

## Discussion

### Dosha, Dhatu & Mala Sambandha of Twacha

Physiological aspect of *Twacha* is described in Ayurvediya text as *Dosha, Dhatu & Mala Sambandha of Twacha*.

**Twacha & Dosha sambandha:** In Ayurveda each and every cell is made up of Panchmahabhuta and Tridosha. But site of *Vata, Pitta, & Kapha* are mentioned as per unique function exhibits by them throughout the body.

Vagabhat describes *Pakvashya, Kati, Sakthi, Shotra, Asthi, Sparshanendriya & Pakavadhana* as a *vata sthanani* site of *Vata* predominance [9a].

*Nabhi, Amashaya, Sweda, Lasika, Rudhir, Rakta, Druk, Sparshan* as a common site of *Pitta* predominance [9a].

*Amashaya, Hridya, Urah, Shir, Sandhi*, as common site of *Kapha* predominance. While describing five types of *Kapha*, *Tarpak Kapha* resides in *Masthiska* (Brain), which is responsible for *Tarpan* i.e. nourishment of all Gyanendriya including *Twacha* [9a].

After considering all above fact it is clear that *Sparshanendriya* i.e. *Twacha* is one of the site of *Vata & Pitta* predominance. Whereas *Tarpak Kapha* is related with nourishment of *Twacha*.

*Doshas Vriddhi & Kshaya lakshana* exhibits by *Twacha* is also quite helpful for diagnosis and treatment of various disorders. Sushrut describes *Vata-Vriddhi lakshan* as *VakaParushya* (Hoarseness of voice), *Karshya* (weakness), *Karshnya* (Hyper pigmentation of skin), *Gatra Sphuran* (Tremors in the body), *Ushna Kamita* (desire to eat hot food stuff), *Nidranasha* (Insomnia), *Alpa bala, Gada Varcha* (constipation). From above it is clear one can recognize *Vata vriddhi* by inspection of *Twacha* [9b].

Acharya Sushruta & Vagbhat mentioned *Pitta Vriddhi Lakshan* as *Pittaavabhasta* (Pallor), *Santap* (rise in body temperature), *Shita kamitva* (willingness of eating cold food stuff), *Alpa Nidrata* (short span of sleep), *Murcha, Indriya-daurbalya, Pitavita-mutra-netra-tvak* (Yellowish discoloration of stool, urine, eyes, skin) [9b].

*Pitta Kshaya Lakshan* is described as *Manda agni* (loss of appetite), *Shita-Prabha haani* (Loss of glory & coldness of skin). Here by simple inspection of *Twacha* one can access the *Pitta Vriddhi & Kshaya Lakshna* [9c].

Acharya Sushruta & Vagbhat describes *Kapha Vriddhi* as *Shauklya* (whitish appearance of skin, nail, & eyes), *Shaitya* (Coldness of *Twacha*), *Sthairya* (less movement of body), *Gaurvam* (Heaviness of body), *Avasaad* (depression), *Tandra-Nidra* (excessive sleep), *Sandya-asthi vishlesha* (looseness of bones & joints) [9b].

While in *Kapha Kshaya* there is *Rukshata* (dryness of skin), *Antar -Daha* (burning sensation), *Shlesmashaya-Shunyata* (feeling of emptiness at *kapha sthanani*), *Sandhi Shathilya* (joints get easily dislocated), *Trushna* (excessive thirst), *Daurbalya* (weakness), *Prajagran* (insomnia) [9c].

From above it is clear that *Twacha* has intimate relation with the *Tridoshas*, as *Kshaya & Vriddhi lakshana* of all three *Doshas* are exhibits by *Twacha* in terms of various sign and symptoms.

### **Twacha & Sapta Dhatu Sambandha**

In Ayurvediya classical text *Twacha and Rasa Dhatu* are quite used as synonym of each other. While describing *Dhatu Saratva Lakshana*, Charak & Vagbhat mentioned *Tvaksara Purush lakshana* instead of *Rasa Sara Purush*, its feature depends on health & appearance of Twacha such as *Snigdha, Shalakhshna, Mrudu, Prasana, Sukshma, alpa, sukumar loma* [10a].

Charak describes *Bahaya, Madhyam, Abhayantara* as three *Roga marga*, while describing *Bahaya Roga marga* he replaces *Rasa dhatu* by *Twacha*. Here it comes to notice that whenever there is variation in *Rasa dhatu*, *lakshana* are observed in *Twacha* such as whitish appearance of *Twacha*, *Nakha*, and coldness of skin are seen in *Rasa vridhi* & dryness of *Twacha* in *Rasa Kshaya* [10b].

Charak quoted the intimate relationship of *Twacha* and *Rakta dhatu* while describing features of *Visuddh Rakta Purush* as person having perfect glow on skin, All *Indriyas* are performing well and in healthy condition, having proper digestion & excretion. And well maintained body physique.<sup>10c</sup> *Rakta dhatu* functions such as *Varna Prasad, Mansa Pusthi, & Jeevan Karma* mentioned by Sushruta are responsible for healthy and general appearance of *Twacha* [10d]. Therefore whenever there is vitiation of *Rakta dhatu* it leads to skin disorders such as *Visarpa, Kustha, Vyanga...*etc, while in *Rakta Kshaya* there is dryness & hardness of *Twacha* is observed [10b].

While explaining the relationship between *Twacha* and *Mansa dhatu*, Charak describes *Vasa* and six layers of *Twacha* as *Updhatu of Mansa dhatu* [11a]. Vagbhat state that *Meda dhatu*, six layers of *Twacha* and *Vasa* are yielded from *Sara Bhaga* of *Mansa dhatu* whereas *Mala* of *Karna, Akshi, Nasika, Mukha, Romkupa & Prajanan mala* are produced from *Kita Bhaga* of *Mansa dhatu* [11b]. Charak describes *Snayu* and *Tvak* as *moolsthana* of *Mansavaha strotas*. Sharangdhar mention the structure of *Vasa* seems to yellowish in appearance as cow ghee which lies beneath the skin and help to maintain the changes in body temperature [11c].

Vagbhat while describing *Twacha and Meda dhatu sambandha* state that *Asthi, Snayu, & Sandhi* are yielded from *Prasad bhaga of Meda dhatu* whereas *Sweda* is produced from *Kita Bhaga* [11b]. Charak describes *Sweda* as *mala* of *Meda dhatu* [11a]. *Twacha* performs function of sweating (*Sweda*) by which it regulates the body temperature and excretes the waste products out of body.

While mentioning the intimate relationship of *Twacha* and *Asthi dhatu*, Charak states that *Kesha, Nakha & Loma* are derived from *Kita bhaga* of *Asthi dhatu* whereas *Majja* from *Prasad bhaga* [11a]. Modern science also describes Hairs, nail as appendages of skin which are associated with skin for providing protection to the body. Vagbhat mentioned that whenever there is vitiation of *Asthi dhatu signs* are observed in *Kesha, Nakha, & Loma* [11b-10b]. it is noted that *Asthi dhatu* depletion leads to brittleness of hairs, hair fall & distal oncolysis is observed.

Charak & Vagbhat while describing *Twacha* and *Majja dhatu sambandha* states that *Akshi, Vitta & Twacha sneha* as *Mala* of *Majja dhatu* which is derived from *Kita bhaga* and *Shukra dhatu* is derived from *Prasad bhaga* of *Majja dhatu* [11a-b]. Here *Twacha sneha* is secretion of sebaceous gland i.e. sebum

which provides shiny lustrous appearance to skin, help skin to fight against bacteria, keeps skin moist and help to maintain the tone and elasticity of skin.

Acharya Sushruta mentioned *Shukradhara kala* which is spread throughout body [11d]. Sharangdhara describes *Snigdhatata* over face and *Pitika* (Acne) as a *Mala* of *Shukra dhatu* [11e].

### **Twacha & Mala Sambandha**

*Sweda, Mutra & Purisha* is stated as three *Malas*. It is also observed that whenever there is excessive loose motion in which severe dehydration take places, it leads to loss of skin tone, and wrinkles are observed in *Twacha*. Whenever there is retention of urine, it causes edema over feet. So we can say any variation in *Mutra* and *Purisha* leads changes in appearance of *Twacha*.

Sharangdhar describes *Sweda* as salty secretion from *Twacha* which expels waste product out of body (*Kleda vahanam*), it maintains moisture content, skin tone elasticity & smoothness of *Twacha* (*Tvak sukaumarya*), and it also performs function of *Romadharan* [11c-12a-10d]. The intimate relationship between *Twacha* and *Sweda* can be better understood by observing *Sweda Vriddhi & Kshaya lakshana*. In *Sweda vriddhi* there is excessive sweating which leads to foul smelling and pruritus. Whereas in *Sweda Kshaya* due to lack of sweating *Romakupa* get blocked which leads to dryness, cracks in *Twacha* and alteration of sensation [10b-d].

### **Twacha and its Relation with Mana & Atma**

Charak quoted *Vyapktvam of Sparshanendriya* he state that sense of sparsh alone pervades all the senses. There is *Samvaya Sambandha* of *Twacha* with *Mana*. *Mana* has *Anupraman*, it stays with *Sparshanendriya* (*Twacha*) and helps to get collaborated with other *Indriyas* in pursuing knowledge. *Manas* get associated with *Indriya* and *Vishaya* and motivate them to accept *Indriyarth*. So we can state that due to linking of *Mana & Indriya* the process of pursuing knowledge is completed [12b-c-d].

The intimate relation between *Twacha* and *Atma* is quoted by Charak while answering question that when *Atma* is pervasive in world, why it is not familiar about pain sensation of everyone. In this matter charak mentioned that *Atma* is responsible for gaining knowledge, but it cannot experience the same kind of pain in all human beings because *Atma* is not associated with every individual *Sparshanendriya*. It come to notice only to those person whose *Sparshnendriya* is associated with its *Atma*. This is reason why two persons cannot experience same kind of pain sensation at a particular time [12d]. Charak describe the characteristic feature of *Atma* i.e. *Indriyantara Sanchar*, *Atma* motivates the *Mana* so that *Mana* get united with other *Indriyas* one after the other in order to pursuing knowledge [12d].

### **Twacha as diagnostic tool in clinical examination**

WHO defined health as condition of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. WHO also agree with definition of *Swastha purusha* explained by Ayurveda, Sushruta defined *Swastha purusha* as a person having balanced status of *Dosha, Dhatu & Mala* and all metabolic activities are carried out by

*Agni* in proper manner, along with having cheerful status of *Atma, Mana & Indriya* that is all are performing their function properly <sup>[10d]</sup>. As *Twacha* is included in *indriya*. Normal functioning *Twacha* is one of the essential attribute of *Swasthapurusha*.

In *Brittrayee* three basic tools are described for clinical examination these are *Darshan* (inspection) *Sparshan* (Palpation & Percussion) & *Prashan* (Interrogation by history taking) <sup>[13a-b]</sup>. Out of the entire three tools for clinical examination *Darshan & Sparshan parikshan* is done by examining the appearance of *Twacha* and sensory perception of patient. *Twacha* is the reflection of internal body system as only by examining the skin one can effectively make diagnosis. As earlier mentioned that we can recognize *Dosha, Dhātu and Mala Vriddhi-Kshaya* only by *Darshan* and *Sparshan parikshan*. Such as hyper pigmentation of skin in *Vata Vriddhi*, Yellowishness of skin in *Pitta vriddhi*, *Shitta sparsha* & hypopigmentation of skin in *Kapha Vriddhi*, Redness of skin in *Rakta Vriddhi*, Foul smelling of *Twacha* in *Sweda Vriddhi*. Similarly loss in glory of skin & *Shita sparsha* in *Pitta Kshaya*. Dryness of skin in *Rasa Kshaya*, *Shaithilyata* (loosness) & *Rukshata* (dryness) is seen in *Rakta Kshaya*. Falling of *Kesha* and *Nakha* are observed in *Asthi Kshaya*. Cracks in *Twacha* & loss or Destruction of *Roma* are noted in *Sweda Kshaya*. In *Ayurveda* pathogenesis of diseases is depends on status of *Dosha, Dhātu & Mala*, so one can effectively make diagnosis only by examining status of *Twacha*.

Modern science also emphasize on importance of skin as diagnostic tool, as many diagnosis is made by examination of following features of skin:

**Colour & Pigmentation:** following changes in skin color indicates few systemic conditions.

1. Pallor: Anemia, Hemorrhage & Shock
2. Pale: Hypopituitarism, Hypogonadism
3. Albinism: Congenital Absence of Haemosiderin pigment.
4. Cyanosis: Bluish discoloration of skin appears due to lack of oxygen supply to blood corpuscles such as in Congestive Cardiac Failure & Valvular Septal Defect.

Jaundice: Yellowish Discoloration of skin, nail, & sclera.

**Skin lesions and Eruption:** Several skin lesions are observed in various dermatological disorders such as: Vesicles, plaques, scales, papules, nodules, papules & patches.

**Hair & Nails:** Clubbing of nails, oncolysis of nails, yellowish discoloration of nail are indication of Congenital cardiac disorders, Anemia, Psoriatic nail...etc. Hair fall and toothed hair roots are observed in Alopecia Aerata, patient on chemotherapy ....etc.

#### **Skin lesions in Sexually Transmitted diseases**

Chancres in syphilis, Blisters in Herpes Zoster & Simplex, Candidial Infection in HIV.

#### **Drug Hypersensitivity**

Hypersensitivity reactions are notice after administering certain drugs such as:

Penicillin causes Urticaria, Methyl dopa & Phenyl butazone

leads to eczema like rashes, Sulphonyl urea, Indomethacin, Allopurinol causes Exfoliative dermatitis, Prednisone leads to Acne.

#### **Diagnostic test**

Patch test done in Urticaria, Sensitivity test is done to rule out any drug hypersensitivity before its administration for example penicillin & Anti Snake Venom. Montaux test for confirming Tuberculosis.

#### **Twacha as Rogmarga**

In *Ayurvediya* Text three *Roga marga* are described these are:

**Bahaya Roga marga:** *Shakha, Raktaadi Sapta dhatu & Twak* are included under these *Rog marga*.

**Madhyam Roga marga:** *Marma, Basti, Hridya, Murdha, Asthi, Snayu, Kandra* are included in these *Rog marga*.

**Abhayantara Roga Marga:** *Kostha i.e. Mahastrotas, Sharir Madhaya & Pakvashaya* is mentioned in these *Rog marga*.

*Twacha* is included in *Bahaya Rog marga*, it is one of the mode by means of which disease exhibits itself.<sup>13c</sup> so brief attention should be given towards *Twacha* while performing clinical examination.

#### **Twacha as Vrana Vastu**

Acharya Sushruta mentions eight *Vrana Vastu* these are *Twacha, Mansa, Shira, Snayu, Asthi, Sandhi, Kostha & Marma*. *Vrana Vastu* means the structure or place where *Vrana* (wound) harbor itself. Sushruta state that *Vrana* limited to *Twacha* is fast healing and easy to treat.<sup>13d</sup> So we can say that *twacha* is an important diagnostic tool in medicinal and surgical point of view.

#### **Twacha as Prognostic Tool**

In *Ayurvediya Samhita* prognosis of patient is mentioned on the basis of altered sensory perception which is quotes as *Arishta Lakshana* in *Indriya sthana* of *Charak samhita*. *Charak* stated that *Arishta lakshana* are also reflected by skin which can be analyzed by *Darshan* and *Sparshan parikshan* of patient, He explain that when the perception of sensation get altered in patient such as hot-cold, rough-smooth, soft-hard and patient is unable to differentiate between the characteristic of sensation, hence physician come to know that patient will be unable to survive for long <sup>[13e]</sup>.

Acharya Vagbhat describe *Arishta lakshana* of *Twak* as *Supta Twacha* i.e. loss of sensation, cracks, tremors, swelling & pain in *Twacha* is due to *vayu* and is one of the sign which indicates that patient may not survive for long, also when an injury arise on *Twacha* doesn't heal instead of it increases in size is a bad prognostic sign <sup>[14a]</sup>. So Physician can effectively diagnose and speculate prognosis of patient by performing clinical examination of *Twacha*.

#### **Conclusion**

After detailed study of various concepts about *Twacha Sharir* from various *Ayurvedic* literatures and modern science. We can state that *Twacha* is well established tool in clinical examination, diagnostic & prognostic aspect in medical

science. This study is an effort to bring autocracy about various doubtful concept of *Twacha Stara*, which may be useful for scholars, teachers & physicians for the purpose of people's interest. We can correlate *Ayurvedokta Twacha Stara* with Modern sciences as per mentioned by Ghanekar, which are as follows <sup>[14b]</sup>:

Table 1

Sr.no	Ayurvedokta Twacha Stara	Correlatmed with Modern Skin Layer	
1	Avabhasini	Stratum Corneum	Epideris
2	Lohita	Stratum Lucidium	
3	Shweta	Stratum Granulosum	
4	Tamra	Stratum Malphighi	
5	Vedini	Papillary Layer	Dermis
6	Rohini	Reticular layer	Dermis
7	Mansadhara	Subcutaneous tissue	Hypodermis

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