

Anatomical and Physiological Aspect of Twak Sharir

Dr. Tripti Sahu, Dr. Dileep Singh, Dr. Kuldeep Kumar

Final year PG Scholar, Department of Rachana Sharira, Shri Narayan Prasad Awasthi Government
Ayurveda College, Raipur (C.G.)

Lecturer, Department of Rachana Sharira, Shri Narayan Prasad Awasthi Government Ayurved College, Raipur
(C.G.)

Lecturer, Department of Rachana Sharira, Shri Narayan Prasad Awasthi Government Ayurved College, Raipur
(C.G.)

Submitted: 05-02-2023

Accepted: 15-02-2023

ABSTRACT

Ayurveda is the science of life. In Samhitas Twak is described as outermost protective layer of the body. Maharshi Sushruta has explained seven layers of Twak while Acharya Charak has explained six layers. Modern science describe skin in detail according to division of cell. The article comprises of anatomical and physiological aspect of Twak which will be useful in diagnostic, prognosis and therapeutic purpose of various disorders. In this article comparative study of skin is done as per Ayurveda and Modern science.

KEYWORDS: Twak, Twacha, Gyanendriya, Adhithana.

I. INTRODUCTION

Sensory organs are the organs which receive knowledge through their location (adhithan). Twak (skin), Jivha (tongue), Nasa (nose), Akshi (eye), Karna (ear) are the five sensory organs. Skin is one of the sensory organ which regulate the touch sensation. It is the largest organ of the body about 7% of total body weight. It is also called as the "First Line of Defence" as it shields us from microbes¹. It is also a site of sweat glands.²

II. MATERIAL

In Samhitas, Skin is called as Twak or Twacha. It comes under "Panch Gyanendriya Adhithana." The fusion of shukra and shonita in garbhashaya undergoes rapid changes, and form seven layer of skin during embryonic period.³ In Modern Texts, it has been declare that the development of skin begins at about 4th week after conception.⁴

III. AYURVEDIC REVIEW

Maharshi Sushruta has decribed sapta Twacha in Sharira sthana 4th chapter Garbha Vyakarana.

Avabhasini - The first layer which expresses all the colour, illumines the five types of complexions. It is of eighteen parts of vrihi in thickness and is the seat of Sidhma and Padmakantaka.

Lohita - The second layer is sixteen parts of a rice grain. It is the seat of Tilakalak, Nyaccha and Vyang.

Sweta - The third layer is twelve part of a rice grain in thickness. It is the seat of Charmadala, Ajagallika and Masak.

Tamra - The fourth layer is eight part of a rice grain in thickness. It is the seat of many types of Kilasa and Kustha.

Vedini - The fifth layer is eight part of a rice grain in thickness. It is the seat of Kustha and Visarpa.

Rohini - The sixth layer is equal to one grain of paddy in thickness. It is the seat of Granthi, Apachi, Arbuda, Slipada and Galagand.

Mamasadhara - The seventh layer is equal to two grains of paddy in thickness. It is the seat of Bhagandara, Vidradhi and Arsa.

Acharya Charaka has decribed six layers of Twak in Shareera Sthana.

1) **Udakadhara** - It is the most superficial layer.

2) **Asrikdhara** - It is the second layer.

3) **Tritiya** - It is the third layer and is the seat of Sidhama and Kilasa.

4) **Chaturthi** - It is the fourth layer and is the seat of Dadru and Kushtha.

5) **Panchami** - It is the fifth layer and is the seat of Alaji and Vidradhi.

6) **Shasthi** - It is the sixth layer and is the seat of Arunshika.⁵

In order to know physiology of skin we will have to examine the role of skin and evaluate the outcome of dosha, dhatu and mala. Bhrajaka pitta is

responsible for complexion of skin⁶. The Pittadosha vriddhi results in yellowish discoloration of skin⁷. Vatadosha vriddhi results in hyperpigmentation of skin and Kapha vriddhi causes whitish discoloration and coldness of skin.⁸ Twak is the mulasthana of Mamsavahasrotas^{9a} and updhātu of Mamsadhātu^{9b}. Sweda maintains the lusture and humidity of skin. Sweda vriddhi results in pruritus according to Panchapanchaka, Twak is the seat of Sparshanendriya. According to Acharya Charaka Bahya, Madhyam and Abhayantara are three Rogmargas. Twak is included in Bahya Rogmarga as it is outermost layer of first line of defense.

IV. MODERN REVIEW

Skin consists of two layers. Superficial layer called as epidermis is made up of stratified squamous epithelium. Deeper layer called as dermis is made up of connective tissue.

Layers of Epidermis:-

1. **Stratum corneum**- The most superficial layer of epidermis also called as horny layer which mostly contain keratin and helps in protecting deeper layer from injury and microbial invasion.
2. **Stratum lucidum**- Due to its homogeneous appearance it is called as lucidum which is present only in thick skin of fingertips, palms and soles. It contains large amount of keratin and thickened plasma membrane.
3. **Stratum granulosum**- It contain keratohyalin protein which marks the transition between deeper metabolically active strata and the dead cells of the more superficial strata.
4. **Stratum spinosum** - It consist layers of polyhedral keratinocytes connected to each other by intercellular bridges.
5. **Stratum basale** - It is deepest or basal layer made up of single layer of columnar cells that rest on a basal lamina which contain stem cells.

Dermis:- Made up of connective tissue and collagen fibers, fibroblasts and histocytes. It is divided into two layers.

Papillary layer --It is the superficial layer of dermis which includes dense connective tissue of dermal papillae. It contains blood vessels, lymphatics and nerve fibers.

Reticular layer - It is made up of elastic fibers which are found around hair bulbs, sweat glands and sebaceous glands.

Functions -

- It protect underlying tissues.
- It provide physical barrier against micro organisms and other substances.
- It regulate water and electrolyte balance.
- It store fat, water, chloride, sugar and blood by dilataion of blood veesels.
- It secrete sweat through sweat glands and sebum through sebaceous glands
- It excrete small quantity of waste material like urea, salts and fatty substances.
- It protect tissue from harmful ultraviolet light.
- It regulates body temperature.

V. DISCUSSION

Classical texts and modern texts have different belief about skin. But they both narrate the layers, pigments and thickness of skin. Beside this, classical text explains the diseases which occurred in particular layer of skin.

Hence to know abnormalities of skin one must have knowledge about normal state of its structure and function of skin must be studied in detail.

The details regarding the layer of skin according to Ayurveda and modern science is still difficult but correlation of Ayurvedokta Twacha stara with modern science as per mentioned by Ghanekar ,the commentator of Sushruta Samhita shareersthana which is as follows:-

Avabhasini - Stratum corneum

Lohita – Stratum lucidum

Shweta - Stratum granulosum

Tamra - Malpighian layer

Vedini - Papillary layer

Rohini - Reticular layer

Mamsadhara –Subcutaneous tissue

VI. CONCLUSUON

This article is the detailed study of Twak Sharir in Ayurveda and modern aspect which provides well established concept of Twak in medical science. To know about the normal structure of skin it is necessary to know about the normal physiology of skin as they both are interrelated with each other.

REFERENCES

- [1]. Anatomy & Physiology 2015 Indian edition by Gerard J. Tortora & Bryan Derrickson Wiley India Pvt. Ltd. 4435

- 36/7, Ansari road, Daryaganj, New Delhi-110002, Reprint: 2016,125.
- [2]. Ib singh, Text book of Human Histology, Health Science Publishers, New Delhi, Edition 7. Chapter 12 page 191.
- [3]. Vd. Ambikadutta Shastri, Sushrut Samhita Part 1, Chaukhambha Sanskrit Sansthan Varanasi, Edition 12, 2001, Saharir Sthan, Chapter 4, page 28-23,vers.4.
- [4]. Anatomy & Physiology 2015 Indian edition by Gerard J. Tortora & Bryan Derrickson Wiley India Pvt. Ltd., 435 36/7, Ansari Road, Daryaganj, New Delhi-110002, Reprint 2016,140.
- [5]. Charak Samhita - Vidyotini hindi Commentary by p. Kashinath Shastri & Dr. Gorakhnath Chaturvedi, published by Chaukhambha Sanskrit Sansthan, Varanasi Charak Sharirsthana Ch.7(4) Pg no.-910
- [6]. Ashtanga Hridayam of Vagbhata Sutra Sthana, Kaviraja Atrideva Gupta. Chaukhamba Prakashan, Varansi, Edition, Reprint 2015,122
- [7]. Asthanga Hridayam of Vagbhata Sutra Sthana, Kaviraja Atridev Gupta, Chaukhamba Prakashana, Varanasi, Edition: reprint 2015, 115.
- [8]. Sushruta Samhita Ayurveda Tatva Sandeepika hindi commentary Author: Kaviraj Ambikadatta Shastri Published by Chaukhambha Sanskrit Sansthan by Varanasi reprint Edition 2010 Sushruta Samhita Nidansthana ch.15(18)78.
- [9]. A) Charaka Samhita Vimana Sthanam, Prof. P.V.Sharma, Chaukhambha Orientalia, Varanasi, 9th Edition, 2005, 330.
- [10]. B) Charaka Samhita Vidyotini hindi commentary by P.Kashinath Shastri & Dr. Gorakhnath Chaturvedi, published by Chaukhambha Chikitsasthana ch. 2007, 15:16-17-18-19,456.