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A Critical Review on *Stanyashaya* (Breast)

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ABSTRACT

The term *Stana* has been frequently used in Ayurveda. *Stana* has been studied as an anatomical structure which is related to *Stanya* (breast milk). The *Stan*as are present in female child but the modification of *Stana* occurs during puberty and pregnancy in female. Here the *Stana* which will be reviewed is the human anatomical structure or *Stanyashaya* (mammary gland) by its classical and modern concepts.

Key Words *Aashaya, Stanyashaya, Stana, Breast, Mammary gland*

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INTRODUCTION

The term “*Aashaya*” is one of the basic concepts of *Rachana Sharira* which has been explained in *Sutra* form in the ancient literature. The word *Aashaya* indicates *Adhishtana*¹, that can be taken as specific space in the body for some particular substance/entity. The detailed explanation about “*Saptaashaya*” i.e. *Vatashaya, Pittashaya, Shleshmashaya, Raktashaya, Aamashaya, Pakwashaya* and *Mutrashaya* is available in *Susruta Samhita*² and *Ashtanga Hridaya*³. The description regarding pathophysiology and treatment of some specific *Aashaya* other than this *Saptaashaya* has also been found in ancient literature i.e. *Krimi Aashaya*⁴, *Vranashaya*⁵, *Sukrashaya*⁶, *Stanyashaya*⁷ etc. The specific knowledge and detail studies related with anatomy and physiology of these *Anukta*

Aashaya is necessary and are yet to be understood completely.

Hence, it is the time to explore such facts which requires a prompt effort. As the diseases related to mammary gland are increasing and is of great concern, the study of “*Stanyashaya*” with modern literature is the demand of present scenario.

REVIEW OF STANYASHAYA

The description regarding “*Stanyashaya*” is available in ancient classics but, it's in scattered manner and not much focused on its clinical importance. Hence, the collection and critical review of information regarding *Stanyashaya* becomes significant to unravel and accumulate the hidden scientific information about *Stanyashaya* in different sources.

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Acharya Sharangdhara has mentioned about *Stanyashaya* in “*Kaladikaakhyana Adhyaya*”⁸ In *Bhavaprakasha Purva Khanda*, 3rd chapter “*Garbhaprakaranam Adhyaya*” description of *Saptashaya* along with *Stanyashaya*⁹. The word *Stanyashaya* consists of two words, *Stanya* and *Aashaya*. The meaning of word *Aashaya* can consider as *Adhishtana* (Place)². So, *Stanyashaya* can be understood as the *Adhishtana* of *Stanya*.

In the context of *Aashaya*, Acharya Ghanekar commenting on Sharangdhara’s opinion on *Stanyashaya* mentions that *Stana* is available in both male and female, but it is termed as *Stanyashaya* only in female, because modification of *Stana* occurs during puberty and pregnancy in female and during this period, there will be enlargement of lactiferous ducts also.

Paryaya (Synonyms)

In *Raja Nighantu*, the various synonyms of *Stana* have been given like *Urasija*, *Vakshoja*, *Payodhara*, *Kucha* and also given the synonyms of *Agra bhaga* (nipple) of *Stana* as *Chuchuka*, *Vrutha*, *Sikha*, *Stanamukha*¹⁰. The *Gudhartha Deepika* commentary on *Sharangdhara Samhita*, had mentioned *Dugdha aadhara* as the synonym¹¹.

Sankhya (Number)

In the context of *Aashaya*, *Deepika* commentary on *Sharangdhara Samhita* states that *Stana* are two in number and it is also termed as *Ksheerashaya*¹¹. *Bhavamishra* while describing the *Angas* and *Upangas*, he opines that chest as one of the main *Anga* and two *Stana* as the *Upangas*¹². *Acharya Susruta*¹³ and *Charaka*¹⁴

mentioned *Stana* as the *Pratyanga* and two in number.

Sthana (Location)

As per *Bhavamishra* *Stana* is a *Upanga* present in the *Ura pradasha* (Thorax). *Acharya Susruta* while describing the *Vaksha Marmas*, he explained *Stanamoola*, *Stanarohita* and *Hridaya Marmas* in relation to *Stana*¹⁵. With these references the location of the *Stana* can be fixed as its located two *Angula* above *Stanamoola*, on either side of *Hridaya* Marma and *Stana Chuchuka* is present two *Angula* below *Stanarohita Marma*.

Parts

In *Susruta Samhita*, it is told that *Stanarohita Marmas are above the Stana Chuchuka*¹⁵. *Acharya Charaka* when quoted about *Stansampata*, he mentioned the word *Pipalakau* and *Acharya Chakrapani* commented that it is also known as *Stanavrunto*¹⁶. In *Vyaktagarbha Stree* around the *Chuchuka* there is a black discolouration which is known as *Stanmandala*¹⁷. It is also called *Stanparyanta*¹⁸. The channels which carry *Stanya* towards the *Chuchuka* is mentioned as *Stanyavaha Sira*¹⁹, *Stanyavahini Sira*²⁰, *Ksheervaha Sira*²¹ and *Dugdharini*²². In the context of *Randhra* Acharya Sharangdhara mentioned about *Stanarandhra* which are opens into *Chuchuka*²³.

Peshi

Acharya Susruta has explained 10 *Peshi* in *Stana* region, 5 in each, while describing extra twenty additional *Peshi* in female²⁴.

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Dhamani

While explaining *Dhamani Vibhaga*, and especially in *Urdhvaga Dhamani Acharya Susruta* explains about two *Dhamanis* carrying *Sthanya* in the *stana* region²⁵.

Srotas

The *Stana* has two *Bahirmukha Srotas* which are known as *Stanyavaha Srotas* which expel *Stanya*²⁶. According to *Acharya Susruta*²⁷ and *Acharya Vagbhaṭa*²⁸ *Sukravaha Srotas* are two in number and *Stana* is one of the moola of *Sukravaha Srotas*. *Acharya Vagbhaṭa* opines that *Sukra* pervades the entire body but specifically *Majja*, *Muska* and *Stana*²⁹.

Marma

Marma is said to be the site of *Jeeva* or it is also called as *Jeevagara*. There are two *Marmas* “*Stanamoola*” and “*Stanarohita*” which are located in the vicinity of *Stana*¹⁵.

Pramana

The *Stana Mandala* measures 2 *Angula* and the distance between two nipples is 12 *Angula*¹⁸. According to *Srimat Tantrasar Samgraha* breasts are *Suvruta* in appearance³⁰. The diameter of breast is 12 *Angula* and the distance between two nipples is 12 *Angula* as per the *Pratima Mana Laksanam*³¹.

Development of Stana

In *Astanga Samgraha Samhita*, it is told that there is presence of *Beejabhaga avayava* of *Stana* in female child but it is not visible until puberty³².

Stana poshan and vrudhi

Acharya susruta quoted that *Sukra* is manifested with the maturity of age in females. It is characterized by the menarche, appearance of line of hair (secondary sexual characters) as well as development of *Stana*, *Garbhashaya* and *Yoni*³³.

Stana Sampata

The detail and scientific description of “*Stana Sampata*” is available in *Charaka Samhita*. The *Stana* which is not highly positioned, not having too much length, should have proper plumpness, nipples should be in appropriate location and with this only baby is able to suck the *Stanya*. So, such *Stana* is said to be as excellent³⁴.

Stana in pregnancy

During the explanation of *Apara Nirmana*, *Acharya Susruta* has mentioned about *Payodhara*. It is quoted that, the *Aartava* does not visible in female after conception as it gets block in the downward path, thus it moves upwards and forms *Apara*. The remaining *Aartava* will move further upwards and takes *Adhishtana* in *Payodhara* or *Stanyashaya*. Due to this, *Stanyashaya* gets enlarged in pregnant women³⁵.

While explaining the *Vyakta Garbha Stree Lakshana*, *Acharya Susruta* mentioned about the changes occurs in *Stana*. There will be blackish discolouration of *Stana* especially *Stanamandala* region³⁶. *Acharya Charaka*¹⁷ and *Acharya Kasyapa*³⁷ has same opinion on this and explained that it is due to the presence of *Stanya* in *Stana*. *Acharya Vagbhata* opines the same in

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addition with the *Pushti* of *Stana* and blackish discolouration of *Stan Chuchuka*³⁸.

Stana Roga

Acharya Susruta has elaborately described about the causative factor for the *Stana Roga* in the *Nidana sthana*. In women who have never conceived and in young girls the *Stanagata Dhamanis* are constricted. So cannot allow the spread of *Doshas*, so the breast disorders do not occur in this group of women. Due to natural dilatation of orifices of the *Dhamanis* of breast in pregnant or puerperal women the *Doshas* are facilitated to move through them susceptible to breast disorders³⁹.

The vitiated *Doshas* due to their specific causes or causes described under abscess in general, reach to *Stana* region of lactating or non-lactating women and vitiate the *Rakta* as well as *Mamsa* and produce hard swelling characterized with their special features of five types of external abscesses i.e. *Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja* and *Raktaja*. *Dalhana* has commented on it that, if the breast milk does not squeezed out properly from engorged mammary gland, then these *Doshas* would get vitiated by this milk and produce *Stana Rogas*⁴⁰.

The detail explanation of *Stanavidradhi* is available in *Ashtanga Samgraha* and *Hridaya*. According to them, the *Stanavidradhi* might appears in pregnant and lactating mother, due to accumulation of vitiated *Doshas* in enlarged *Siras* of *Stana* region. It can be either in lactating or pregnant women, but it won't occur in

adolescent girls due to minute channels⁴¹. *Yogaratanakara* also opines the same⁴².

Bhavaprakasha opines that, vitiated *Doshas* affect the *Stana* region and will cause the *Dushti* of *Rakta* and *Mamsa* resulting in five types of *Stana Rogas* such as *Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja* and *Aganthuja*. He explains *Aganthuja* as any *Abhighata* or any *Shalya* residing in *Stana* region may cause disease⁴³.

Acharya Kasyapa has mentioned about one specific disease termed as *Stana Kilaka*. If a mother ingests *Vajra* (grass, insect, grains, fly, hair, bone) unknowingly with the food, this remains undigested and propelled by *Vayu*, get mixed with *Rasa* and reaches to the *Stanyavaha Sira*. As a result of this the *Stanyavaha Sira* gets dilated in lactating women and cause disease having clinical features such as stiffness, pain, burning sensation and tenderness in breast region along with discharge, enlarged & inflamed *Siras* in that region. If *Stana kilaka* is with the predominance of *Vata*, *Pitta* and *Kapha* would results in fast curing, suppuration-rupture and troubles for longer time period respectively⁴⁴.

While discussing about *Stana Roga Chikitsa* *Acharya Susruta* told, during *Sama Pachyamanavastha*, *Upnaha* should be avoided as it damages the *Mrudu Mamsa* of *Stana*. In *Pakwavastha*, *Vidarana* should be done using *Shastra*. During *Vidarana* one should avoid injury to *Dugdhaharini nadi*, *Krishna* and *Chuchuka*²².

Mammary gland anatomy

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The detailed and scientific explanation regarding anatomy and physiology of breast along with its pathological conditions and its clinical management is available in modern literature. The breast is two in number and most important structure present in pectoral region, which is well developed in female after puberty. It forms an important accessory organ of female reproductive system and provides nutrition through its milk to the new born⁴⁵.

Situation

The shape and size of breast depends upon genetic, racial, dietary factors, age, parity and menopausal status of an individual⁴⁶.

It lies in the superficial fascia of the pectoral region. A small extension called the axillary tail of Spence, pierces the deep fascia and lies in the axilla⁴⁷.

Structure⁴⁸

1. **Skin** - A conical projection called the nipple is present below the centre of the breast which is pierced by 15 to 20 lactiferous ducts. It has a few modified sweat and sebaceous glands. The pigmented skin surrounding the base of nipple is called the areola, which is rich in modified sebaceous glands. These become enlarged during pregnancy and lactation to form raised tubercles of Montgomery. Oily secretions of these glands lubricate the nipple and areola. Apart from sebaceous glands the areola also contains some sweat glands and accessory mammary glands.

2. **Parenchyma (mammary gland)** - It is made up of glandular tissue which secretes milk.

It is a modified sweat gland consists of 15 to 20 lobes. Each lobe is a cluster of alveoli, and is drained by a lactiferous duct. The lactiferous duct converges towards the nipple and open on it. Near its termination each duct has a dilatation called a lactiferous sinus.

3. **Stroma** - It forms the supporting framework of the gland. It is partly fibrous and partly fatty. The fibrous stroma forms septa, known as the suspensory ligaments of Cooper which anchor the skin and gland to the pectoral fascia. The fatty stroma forms the main bulk of the gland. It is distributed all over the breast, except beneath the areola and nipple.

Blood supply⁴⁸

The mammary gland is extremely vascular. It is supplied by internal thoracic artery, the lateral thoracic, superior thoracic and acromio thoracic branches of the axillary artery and lateral branches of the posterior intercostal arteries.

The veins follow the arteries. The superficial veins drain into the internal thoracic vein and the superficial veins of lower part of the neck. The deep veins drain into the internal thoracic, axillary and posterior intercostal veins.

Lymphatic drainage⁴⁹

Lymphatic drainage of the breast assumes great importance to the surgeon because carcinoma of the breast spreads mostly along lymphatics to the regional lymph nodes.

Lymph node: About 75% of the lymph drains into the axillary nodes, 20% into the internal mammary nodes and 5% into the posterior intercostal nodes.

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Lymphatic vessels: The superficial lymphatics drain the skin over the breast except for the nipple and areola. The deep lymphatics drain the parenchyma of the breast and also drain the nipple and areola.

Nerve supply⁴⁸

The breast is supplied by the anterior and lateral cutaneous branches of the 4th to 6th intercostal nerves. Secretion of milk is controlled by the hormone prolactin secreted by the hypophysis cerebri, do not control by the nerves.

Development of breast⁵⁰

Mammary gland develops from ectoderm which appear during 7th week of intrauterine life extending from mid-axillary to mid-inguinal points known as mammary line or ridge. The persisting part of this line in the pectoral region is to form thickened mass as primary bud or mammary pit. From this mammary pit 16-20 solid outgrowths arise, and grow into the underlying dermis as secondary bud. These buds divide and subdivide to form lobes and the secretory elements (alveoli) which are first solid but in later canalised. The proximal end of each outgrowth forms one lactiferous duct which is open into a pit. It becomes elevated above the surface and forms the nipple by the time of birth. Growth of the mammary glands at puberty is caused by oestrogens and development of secretory alveoli is stimulated by progesterone. Developmental anomalies are amastia, macromastia, micromastia, polymastia, athelia, polythelia, inverted or crater nipple, size

variation. Now a days mastitis, carcinoma of breast is very common diseases.

Histology of breast⁵¹

The microstructure of breast tissue varies with age, time in the menstrual cycle, pregnancy and lactation. The following description relates to lactating mammary gland. Parenchyma of mammary gland is in the form of lobules containing compound tubulo-alveolar glands lined by simple columnar epithelium. Surface epithelium of the glands are large and branched with an eosinophilic (milk) secretion in its lumen. In lactating phase duct systems are not well developed. On contraction of numerous myoepitheliocytes seen surrounding the glands ejaculation of milk take place. Stroma is made up of loose areolar connective tissue rich in adipocytes and fibres which are significantly decreased in lactating phase.

DISCUSSION

A thorough review of the Ayurveda and modern literatures suggests the similarity in description of *stana* in both the system, both states that *Stana* are two in number and located in the pectoral region. We will also get the reference of *Stana chuchuka* as nipple, *Stana mandala* as aerola and *Stanyavahini sira* as lactiferous duct. Description about *Stana sampata* which is similar to normal breast, mentioned in modern anatomy. In *Stana sampata*, it is explained that the *Stana* should not be too lean or too plumpy, which can be compared with the developmental anomalies like

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micromastia and macromastia explained in modern anatomy. As anatomical limitation is not exactly mentioned, it can be taken or compared with the mammary alveoli. Where the milk is produced and stored in the alveolar units. In Samhitas, mentioned about blackish discolouration of *Stana mandala*, enlargement of *Stana* and *Stana chuchuka* in *Vyaktha Garbha Stree Laksana*. It is similar to changes of breast in pregnant women in modern anatomy. This is because there will be more blood formation in this area during pregnancy as well after delivery. This modification is necessary for the proper production of *Stanya*. In samhitas it is told that there is a presence of *Beejbhaga Avayava* to form the *Stana* in female at birth but it develops at the stage of puberty same mentioned as modern anatomy. It is due to the secretion of oestrogen and progesterone. Ayurvedic literatures have mentioned about the *Stanavidradhi* and *Stana kilaka*. These conditions can be included with the diseases of modern like mastitis or abscess condition. So, in such cases, we should consider the mammary alveoli, duct and breast. So, for the treatment procedure, we should consider the breast region as all these structures are seen here. And as *Stanya* is produced from *Stana*, the *Stanyashaya* should be considered as site of treatment.

CONCLUSION

Stanyashaya is one of the important *Aashya* which is mentioned by *Acharya Sarangadhara*

and *Bhavprakasha*. *Urasija*, *Vakshoja*, *Payodhara*, *Kucha*, *Dugdha aadhara*, *kshreerashaya* are the synonyms of *Stana* and *Chuchuka*, *Vrutha*, *Sikha*, *Stanamukha* are the synonyms of *Agrabhaga* of *Stana(nipple)*. It is located in *Ura Pradesha* (thorax) in relation to *Stanamoola*, *Stanarohita* and *Hridaya Marmas*. There are many references about the parts of the *Stana* like *Stana Chuchuka*, *Pipalakau*, *Stanavrunto*, *Stanmandala*, *Stanparyanta*, *Stanyavaha Sira*, *Stanyavahini Sira*, *Ksheervaha Sira*, *Dugdharini* and *Stanrandhra*. The *Stana Mandala* measures 2 *Angula* and the distance between two nipples is 12 *Angula*. There is presence of *Beejbhaga Avayava* of *Stana* in female child but it appears during puberty. Enlargement of *Stana* in pregnant women due to blockage of *Aartava* in downward path. Some diseases condition mentioned in *Samhita* related to *Stana* like *Stanavidradhi* and *Stana kilaka*.

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