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EXPLORATION OF TEN PESHI OF STANA (BREAST) IN FEMALE AS DESCRIBED IN SUSHRUTA SAMHITA

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ABSTRACT

Peshi are nothing but the *samghata bheda* of *mamsa dhatu*. *Sushruta* mentioned number of *peshi* and gave the development, distribution, function and types of *peshi*. He also gave the twenty extra female *peshi*, among them ten are in *stana* and ten are related to *yoni*. But none of the *acharya* has given the detail analysis of these extra *peshi*. In modern anatomy also classification and distribution of muscles has been given but description about these extra *peshi* in females is not found anywhere in the literature. It is very important to note that no author or commentators of *Ayurveda* literature have given a satisfactory explanation of extra *peshi*.

KEYWORDS: *Peshi*, ten extra *peshi* in female *stana*.

INTRODUCTION

The masses of flesh that are separated from one another are called *peshi* according to *Ayurvedic samhitas* are five hundred *peshi* in human body. In females, there are twenty more *peshi* in their body, thus the total number of *peshi* in females is five hundred twenty. Out of these twenty *peshi*, five are present in each *stana* which gets develop during puberty.[1] Word *peshi* in *Ayurveda* has been used to denote fascia, muscle, tendon and ligament etc. in

different review of modern literature. There are 20 extra *peshi* in women, among them ten are in *stana* and ten are related to Apathya path (yoni).

Anatomical correlation of Stana / female breast[2]

The areola is placed about the center of the breast and is pigmented. There are numerous sebaceous glands over it. It contains few involuntary muscles. The nipple is a muscular projection covered and surrounded by un striped muscles which make it erectile. It accommodates 15-20 lactiferous ducts and their openings. The whole breast is embedded in the subcutaneous fat. The fat is however absent beneath the nipple and areola. The breast tissue consists of following.

Each breast is divided into 15-20 lobes by fibrous tissue septa which radiate from the centre. Each lobe consists mainly of fibro-fatty tissue. The glandular tissue consists mainly of duct system in non lactating breast. One lactiferous duct drains a lobe. The lining epithelium of the duct is cubical, becomes stratified squamous near the openings. Each duct divides and subdivides and ultimately ends in alveoli, the total number being 10-100. Each alveolus is lined by columnar epithelium where milk secretion occurs. A network of branching longitudinal striated cells called myoepithelial cells surrounds the alveoli and the smaller ducts. There is a dense network of capillaries surrounding the alveoli. These are situated between the basement membranes and epithelial lining. Contraction of these cells squeezes the alveoli and ejects the milk into the larger ducts. Behind the nipple, the main duct or lactiferous duct dilates to form ampulla where the milk is stored. At places the fibro-fatty connective tissue extends from the skin down to the deep fascia in between the lobes. These bands are called suspensory ligaments of cooper.

The nipple is covered by keratinized stratified squamous epithelium. It consists of dense connective tissue and smooth muscles arranged circularly and longitudinally. The pigmented skin around the nipple is called areola. The skin of areola lacks hair follicles. Circular smooth muscle is present in the dermis of the areola. Contraction of this muscle causes erection of nipple.

AIM AND OBJECTIVES

a. Discussion about the correlation of anatomically present extra 10 *peshi* in female *stana*.
b. Extended peripheral (regional / location / surface marking) consideration of *stana* or breast region on the basis of neurovascular anatomy.

c. Structures found in regional anatomy of specific breast region in female according to various authors.
d. List of neurovascular anatomical structure found in the *vaksha pradesha* on the basis of *Samhitas* and commentators.
e. Clinical consideration of each neurovascular anatomical structure (one by one).

DISCUSSION

Sushruta and *Vagbhata* both have described that there are ten extra *peshi* in female *stana* i.e. five in each *stana*. After this reference any commentary or explanation about these ten *peshi* was not made.

During the dissection of female breast, place traction only fat lobes and lactiferous ducts. Smooth muscles which are along with nipple, areola and lactiferous ducts, are not seen in dissection view. In the light of histology, to explore five *peshi* in one breast.

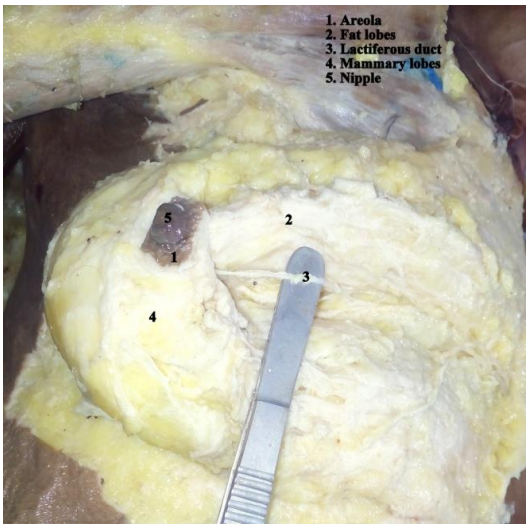

Figure 1: Dissection of female breast.

According to journals & textbooks “Nipples are the milk access points for infants. Due to its intensive sensory innervations, it may provide induction of milk ejection reflex and sexual arousal. Additionally, it is specialized forms that have the characteristic of being erected with cold, sexual arousal, breast-feeding or other tactile stimulations. The most remarkable characteristic of the nipple is its erection. It enables breast-feeding with this function. According to the data available, there are smooth muscles in the structure of the nipple-areola complex. It was observed that muscle fibres in the nipple-areola complex extended vertically (longitudinal) or horizontally to the nipple base, in the form of thin, fusiform fibers or

bundles. It was found that muscle fibres may branch or change the direction during their progress and that longitudinal and horizontal muscles may extend separately just as they may be found intermixed. While some of the muscle fibres oriented vertically to the epidermis with one of their edges, some of them extended sub epidermal and parallel to the epidermis. Mainly, longitudinal muscles were placed in the nipple while horizontal muscles were placed in the areola. While especially in the proximal of ducts, longitudinal muscles extending parallel to them were found, in the distal, sphincter-like horizontal muscles were located. It was observed that smooth muscles were also closely associated with blood vessel and some of the smooth muscles extended so as to surround the blood vessels. Sinusoidal spaces with endothelial layers surrounded by smooth muscles. Similar to the studies of Giacometti and Montagna (1962) and Montagna (1970) and Montagna and Macpherson (1974), muscle fibres investigated in the present study placed vertically (longitudinal) or horizontally in relation to nipple-areola complex base direction. Similarly, it was observed that longitudinal and horizontal muscles were placed separately or intermixed during their progress and that some smooth muscles were closely associated with ducts and extended parallel to them; yet, there were sphincter-like horizontal muscles in the distal of ducts. Similar to Gairns and Garven (1949) findings, it was observed that smooth muscles can be found in the form of thin and fusiform fibres or bundles and that some the muscle fibres branch or changed their direction during their progress. Some of the muscle fibres, as reported by Montagna (1970), oriented vertically towards the epidermis with one of their edges while some, as shown in the current study, extended parallel to the epidermis. In the current study, sphincter-like smooth muscles were present in the distal of ducts as stated by Giacometti and Montagna (1962). These muscles prevented milk leakage between breast-feeding episodes (ERIKSSON, LINDH, UVNÄS-MOBERG et al., 1996). In a similar way, muscle fibers that precede parallel to ducts and that are in close association with them shorten the ductal length with its contractions (ERIKSSON, LINDH, UVNÄS-MOBERG et al., 1996) and may prevent their rise during the erection. Besides, during the breast-feeding of an erected nipple, relaxation of sphincter-like smooth muscles placed in distal parts of ducts is necessary in order not to prevent milk flow (GIACOMETTI and MONTAGNA, 1962; ERIKSSON, LINDH, UVNÄS-MOBERG et al., 1996). According to these data and assessments, for the nipple erection, the relaxation of the smooth muscles in its structure is necessary. The case is different when nipple erection is considered in terms of areola. In contrast to the nipple, wrinkles in the areola are seen during erection and surface of the areola at this time reduces (MONTAGNA, 1970; MONTAGNA and MACPHERSON, 1974). Contraction of muscle

fibres in the areola may explain the reducing of areola surface and wrinkles in the skin of areola."[3]

"The abundant smooth muscle in the nipple and the areola is so disposed that its contraction reduces the surface of the areola and causes it to wrinkle and the nipple to raise. Most muscle fibres seem to converge toward the nipple; radially and circularly disposed ones, however, are intertwined. Their orientation can be traced more easily in the breasts of children where the muscles are smaller and stacked in more orderly layers. Smooth muscles in breasts contract readily in response to cold, tactile and psychic stimulation making the nipple more prominent and the areola puckered. In such responses they show adaptation to the two major biological functions of these structures: making milk available to infants and serving as visual and tactile sex releasers."[4]

"Myoepithelial cells are contractile structures found in mammary, salivary and sweat glands. They have a combined smooth muscle and epithelial phenotype."[5]

CONCLUSION

Now the five *peshi* which can be explore out from the above literature could be-

i. Longitudinal muscles of nipple
ii. Horizontal muscles of areola
iii. Longitudinal and horizontal muscles around the lactiferous ducts
iv. Myoepithelial cells in alveoli
v. Suspensory ligament of cooper

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