

HYPOMASTIA - AN INTEGRATED APPROACH AND FUTURE SCOPE IN TERMS OF COSMECEUTICALS

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ABSTRACT:

Defining an ideal breast shape is one of the most fundamental and essential parts for a breast surgery. In Ayurveda ideal breasts (*Stana Sampata*) are described as not too huge or not too small (hypoplastic). In a global survey published in the journal *Body Image*, scientists have found an important public health implication which suggests that the majority of women are unhappy with the size of their breasts. Poor body image can affect physical and psychological health and can influence self-esteem, mood, competence, social functioning and occupational functioning. Hypomastia is describing as underdeveloped breasts. Small breast is not disease but it acts as major psychological disease. Hypomastia may be due to hormonal defect or any iatrogenic causes. For getting perfect size of breast, girls go for breast surgery or silicone and saline breast implants may put their lives in danger. There are many Ayurvedic formulations which claim to enhance the size of the breasts and also can help to manage the psychological symptoms. With the help of medicaments, food and various dietary preparation, external application and exercise this condition is treated very well with no any side effect.

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INTRODUCTION

Breast development is a vital part of a woman's reproduction. Breast being a secondary reproductive organ has a lot of importance not only from aesthetic point of view but also from psychological point of view. Body image is a complex construct which comprising thoughts, feelings, evaluations and behaviors related to one's body. Poor body image can affect physical and psychological health and can influence self-esteem, mood, competence, social functioning and occupational functioning. Breast development happens in certain stages during a woman's life: first before birth, again at puberty, and later during the childbearing years. Breast also changes during the menstrual cycle and when a woman reaches menopause.

In Ayurveda ideal breasts (*Stana Sampata*)ⁱ are described as not too huge or not too small (hypoplastic). In Sushruta Samhita, one whose breasts are neither very prominent nor firm and intermammary region is broad up to 12 *Angula* (approximately 20 cm) are considered under *Dirghayu Lakshana* (general features of long-life expectancies)ⁱⁱ. For many women, breasts contribute to their personal sense of attractiveness and femineity throughout their lifetime and it adds more charm in a women's personality.

Hypomastia is describing as underdeveloped breasts. It may also call breast hypoplasia, or mammary hypoplasia. The degree of hypoplasia is of course major importance. Female hormones deficiency in the body, growth factor deficiency, zinc deficiency, estrogen biosynthetic defects, congenital adrenal hyperplasia and absence of estrogen receptors in breast tissues, etc. are possible causes associated with small breasts. Psychological reactions to the hypoplasia such as inhibitions in social behavior must be taken into considered.

Prevalence of study

Breast implants have the most explicit relationship with today's trend. For getting perfect size of breast, girls go for breast surgery or silicone and saline breast implants may put their lives in danger. However, post-surgical follow-ups and repeated surgeries are part of this procedure, and there are many risks associated with the same. According to the American Society of cosmetic surgery, breast augmentation (also known as augmentation mammoplasty), "involves using implants to fulfil your desire for fuller breasts or to restore breast volume lost after weight reduction or pregnancy."ⁱⁱⁱ Breast augmentation is possibly the most famous form of cosmetic surgery in American pop culture. Since 2006, it has been the most popular cosmetic procedure amongst women, with a 4% rise from 2010 to 2011^{iv}. These all indicate that small breast is not disease but has major psychological effect.

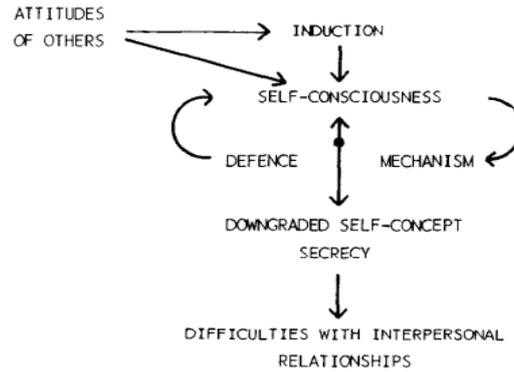


Figure 1 The Psychogenesis of symptoms of abnormal appearance

MATERIALS AND METHODS

Literatures and concepts regarding *Stana* and other concepts of *Mamsa*, *Meda Dhatu* and their *Kshaya Karana* have been collected from different *Samhita* and classical literature. Related anatomical concepts of breasts were studied from related literature, journals and internet material which were co-related, analysed with present knowledge. Observation made through the literary study of Ayurveda and modern anatomical literature were compared and analysed with observation gained through literary study.

Breast formation according to Ayurveda

Breasts (*Stana*) are secondary reproductive organ present in female body which is formed by *Mamsa*, *Meda*, *Sukra Dhatu*, *Snayu* and *Peshi*. *Mamsa Dhatu* of the human body covering *Shira*, *Snayu*, *Asthi* and *Samdhi*. Along with this principal site, it manages the components of *Mamsa Dhatu* present all over the body through its micro circulating channels namely *Raktavahi Dhamani*^v. *Mamsa Dhatu* is predominant of *Prithvi Mahabhuta*; which is responsible for *Sharira-pushti* and *Meda Dhatu-pushti* and giving a perfect and particular shape to body. When *Pitta-yukta-vayu* enters the *Mamsa* and then divides it into *Peshi*. *Peshi* are made up of and representatives of *Mamsa Dhatu* in body so we can include all the muscular structures situated in body. There are twenty *Peshi* extra in female entity, among them ten are in *Vaksha-sthala*^{vi}.

Breasts are composed of fatty tissues known as *Meda Dhatu* which is predominant of *Prithvi* and *Jala Mahabhuta* and gives *Dridhatva* (compactness) to the body. *Sukra Dhatu* is predominant of *Jala Mahabhuta* which is responsible for *Bijartha* (estrogen progesterone secretion).

It also has vital centres (*Marma*) like *Stanamool* and *Stanarohit* which have potential to cause death after some while if any trauma occurs (*Kalantar Pranahar*). Aacharya Sushrut has also narrated those two veins in each breast is *Avedhya* i.e. should not be operated upon, this itself elucidates how breasts implants is a risky operation and how do it lead to several complications.

Modern view^{vii}

Mammary gland is ectodermal in origin. Each breast has one pigmented and muscular projection which called nipple. That is covered by smooth muscles which make it erectile. The circular pigmented area of skin surrounding the nipple is called the areola which contains few involuntary muscles. The breast is composed of 15 to 20 lobes, which are each composed of several lobules. Each lobe terminates in a lactiferous duct which opens through a constricted orifice into the ampulla of the nipple.

The lining epithelium of the duct is cubical, becomes stratified squamous near the openings. Each duct divides and subdivides ultimately ends in alveoli, which is lined by columnar epithelium. A network of branching longitudinal striated cells called myoepithelial cells surrounds the alveoli and smaller ducts. Fibrous bands of connective tissue travel through the breast (Cooper's suspensory ligaments), insert perpendicularly into the dermis, and provide structural support.

At menarche, hormonal changes facilitate the growth of various breast tissue. Later, duct system proliferates and acini appears. Considerable further proliferation takes place during pregnancy. There is partial atrophy of glandular element after the end of lactation. Then in old age, the breast atrophy occurs more.

Effects of Hormone on Breasts^{viii} –

Effects of oestrogen on the breasts: -

- Oestrogen causes development of stromal tissue of the breast,
- growth of an extensive ductile system,
- deposition of fat in breast. The lobules and alveoli of the breast develop to a slight extent under the influence of oestrogen alone, but it is progesterone and prolactin that causes the ultimate determinative growth and function of these structures.

In summary, the oestrogen initiates growth of the breast and milk producing apparatus. They are also responsible for characteristic growth and external appearance of the mature female breasts.

Effects of progesterone on the Breasts: -

Progesterone promotes the development of the lobules and alveoli of the breasts, causing the alveolar cells to proliferate, enlarge and become secretory in nature.

Pathogenesis of *Stana Kshaya*



Breast Hypoplasia

Varying degree of under development of the breasts are seen and young women may seek medical advice on this account. The size of the breast depends on the fat as much as on glandular tissue and the development of the nipple is the best guide to the latter.

Breast hypoplasia occurs due to some congenital or acquired reasons. It may be unilateral or bilateral. Histologically, both unilateral and bilateral hypoplastic breast tissue consists of fibrous stroma and ductal structures without acinar differentiation. Ducts typically resemble those in the prepubertal breast and lack lobular development. Most cases of non-syndromic breast hypoplasia are idiopathic, but some have an identifiable cause. Acquired mammary hypoplasia has been reported in patients who have received breast radiation in infancy or childhood, most frequently for the treatment of cutaneous hemangiomas. Studies have demonstrated that the degree of hypoplasia directly correlates with the amount of radiation administered to the patient. Other iatrogenic causes include previous tube thoracostomy, thoracotomy, and excision of both benign and malignant breast tumors during childhood.

leading to impaired breast development. Burns to the anterior chest can lead to failure of complete mammary expansion from injury to the breast bud. Medication-induced breast hypoplasia has also been described^{ix}.

TABLE 1 – MEARA ET AL TUBEROUS BREAST CLASSIFICATION

Type	Base	Inframmary fold	Skin envelope	Breast volume	Ptois	Ar eo la
1	Minor constriction	Normal laterally with some minor elevation medially	Sufficient	Not substantially deficient (may be in excess)	None	-
2	Moderate constriction	Obvious elevation medially with some minor elevation laterally	Insufficient inferiorly	Mild to moderate deficiency	Minimal to moderate	-
3	Severe constriction	Obvious substantial elevation of entire fold	Insufficient circumferentia lly	Severe deficiency	Severe	-

Treatment as per Ayurvedic Principles

In India, there are many Ayurvedic formulations which claim to enhance the size of the breasts. Breast enhancement supplements usually contain herbs, with natural estrogenic properties from plant sources (phytoestrogens) that work by regulating hormones and promote healthy tissue growth. Breast tissue growth occurs most efficiently with the balanced presence of oestrogen, progesterone, prolactin, prostaglandins, and GF compounds (human growth factor hormones). Improper balances of these hormones, along with other complications, lead

to insufficient breast development. At some point after adolescence, the body ceases to produce GF compounds, resulting in a completion of breast tissue growth. Ayurvedic medicaments which help to stimulate breast growth again.

Additionally, herbal Ayurvedic medications also possess properties, which can help to manage the psychological symptoms that are common in the women with smaller breast such as low self-confidence and self-esteem.

Condition of Hypomastia is treated with the help of medicaments, food and various dietary preparation, external application and exercise.

Such drugs are like *Ashwagandha*, *Satavari*, *Yastimadhu*, *Sweta Musali*, *Bala*, *Gambhari*, etc.

<i>Ashwagandha</i>	<i>Rasa- tikta, Kashaya</i> <i>Guna- Guru</i> <i>Veerya- Usna</i> <i>Vipaka- Madhura</i> <i>Karma- Balya, Pushtida</i> <i>Rasayani, Atisukrala</i>	It increases energy, youthful vigour, endurance, strength, health, nurture the time elements of the body, increase vital fluids, muscle fat, blood, lymph, semen and cell production. It helps counteract chronic fatigue, weakness, dehydration, bone weakness, loose teeth, impotency, premature aging emaciation, debility and muscle tension, helpful in gaining muscular strength, managing weight and curbing malnutrition ^x .
<i>Satavari</i>	<i>Rasa- Tikta</i> <i>Guna- Guru, Snigdha</i> <i>Veerya- Shita</i> <i>Vipaka- Madhura</i> <i>Karma – Balya, Vrishya,</i> <i>Vayasthapana, Sukrala,</i> <i>Stanyakara</i>	<i>Shatavari</i> is exceedingly rich in phytoestrogens. Phytoestrogen content, if taken as recommended, is a great way to increase a woman's breast size naturally. It contains steroidal saponins and alkaloids as well as the trace minerals zinc, manganese and copper.
<i>Yastimadhu</i>	<i>Rasa- Madhura</i> <i>Guna- Guru, Snigdha</i> <i>Veerya- Shita</i> <i>Vipaka- Madhura</i> <i>Karma- Balya, Brihana,</i> <i>Vrisya, Chakshusya, Keshya,</i> <i>Varnya</i>	It is very good for eyes, boosts immunity, enhances the complexion and moisturizes skin, increases sperm count, provides healthy & shiny hair, improves voice quality. It pacifies <i>Pitta, Vata</i> and vitiated <i>Rakta</i> . Enriched with such properties, it helps to heal injuries, relieves swelling, very helpful for the weak and depressed persons and very helpful herb used in degeneration disorders.

<i>Sweta Musali</i>	<i>Rasa- Madhura, Tikta</i> <i>Guna- Guru</i> <i>Veerya- Shita</i> <i>Vipaka- Madhura</i> <i>Karma- Balya, Brihana,</i> <i>Rasayani</i>	It is a health tonic, used in case of weakness, malnutrition and provides strength.
<i>Bala</i>	<i>Rasa- Madhura, Kashaya</i> <i>Guna- Guru, Snigdha</i> <i>Veerya- Shita</i> <i>Vipaka- Madhura</i> <i>Karma- Tridosahara,</i> <i>Balya, Brihana, Vrishya,</i> <i>Ojavaradhana,</i> <i>Kantivardhana, Grahi</i>	In classical references <i>Bala</i> found in <i>Brihaniyan, Balya</i> and <i>Vatasamana Gana</i> .
<i>Gambhari</i>	<i>Rasa- Madhura, Kashaya,</i> <i>Tikta</i> <i>Guna- Guru</i> <i>Veerya- Usna</i> <i>Vipaka- Madhura</i> <i>Karma- Medhya,</i> <i>Shoshaghna</i> <i>Phala Guna</i> <i>Rasa- Kashaya, Amla</i> <i>Guna- Guru</i> <i>Veerya- Shita</i> <i>Vipaka- Madhura</i> <i>Karma- Brihana, Vrishya,</i> <i>Keshya, Rasayanakara,</i> <i>Kshayajit</i>	<i>Gambhari</i> acts as cardiac tonic, anti-aging, causes cell and tissue rejuvenation, improves intelligence, useful to improve depleted body tissues, nourishing, improves sperm and semen quantity and quality, balances <i>Vata Dosha</i> , Aphrodisiac, useful in relieving effects of blood loss, external injury.

Food which helps to increase in breast size^{xi}

According to the most recent National Health and Nutrition Examination Survey (2003–2006), half of the US adult population uses one or more dietary supplements; most of those are multivitamin and/or multimineral supplements (4).

Foods such as *Kshira* and *Kshir-vikriti* like *Go-dugdha*, *Go-dadhi*, *Mahisha-dadhi*, *Go-ghrita*, etc.

Product	Actions
<i>Go-dugdha</i>	<i>Madhu Rasa, Guru, Snigdha, Shita, Madhura-paki, Alpa-abhishyandi, Jivaniya, Rasayana, Parama Vata-pittaghna.</i>
<i>Go-dadhi</i>	<i>Snigdha, Madhura-paki, Bala-varadhana, Vatahara, Karshyahara, Vrishya, Pushtikrita</i>
<i>Mahisha-dadhi</i>	<i>Snigdha, Guru, Madhura-paki, Vrishya, Kapha-varadhana, Vatapitta-prasadana</i>
<i>Go-ghrita</i>	<i>Guru, Snigdha, Shita, Madhura-paki, Vata-pitta-kaphahara, Vrishya, Rasayana, Medha-lavanya-kanti-oja-vridhdikara, Vayasthapaka</i>

Dhanya like- *Shali*, *Shashti*, *Godhuma*, *Masha* etc.

Cereals and Pulses	Actions
<i>Rakta-Shali</i>	<i>Madhura, Laghu, Snigdha, Tridosahara, Balya, Vrishya, Brihana</i>
<i>Shashti</i>	<i>Madhura-kashaya, Laghu, Snigdha, Tridosahara, Sthairyakrita, Bala-varadhana</i>
<i>Godhuma</i>	<i>Madhura, Guru, Ati-shita, Snigdha, Balya, Sthairyakrita, Vata-pittahara, Kaphakara, Shukrala, Sandhanakara</i>
<i>Masha</i>	<i>Madhura, Guru, Snigdha, Usna, Vatahara, Kaphakara, Santarpanakrita, Balaprada, Sukrala</i>

Shaka like- *Jivanti*, *Kushmanda*, *Vidarikanda* etc.

Vegetables	Actions
<i>Jivanti</i>	<i>Madhura, Shita, Laghu, Snigdha, Tridosahara, Rasayani, Grahi, Balakara</i>

<i>Kushmanda</i>	<i>Laghu, Usna, Sarvadoshahara, Hridya, Cheta vikare Pathya</i>
<i>Vidarikanda</i>	<i>Madhura, Guru, Shita, Vrishya, Brihana, Balya, Vata-pittahara</i>

Fruits like- *Draksha, Kharjura, Phalgu, Kadali* etc.

Fruits	Actions
<i>Draksha</i>	<i>Madhura, Shita, Snigdha, Sara, Hridya, Kshayanasaka</i>
<i>Kharjura</i>	<i>Madhura, Shita, Guru, Tarpana, Hridya, Kshayanasaka</i>
<i>Phalgu</i>	<i>Madhura, Guru, Snigdha, Tarpanakara</i>
<i>Kadali</i>	<i>Madhura-kashaya, Shita, Guru, Vrishya, Kaphakara</i>

External application

In Sushrut Samhita, *Abhyang* i.e. local application of oil has been cited to lead to *Dhatupushti*. Breast tissue is primarily composed of fat tissue (*Meda Dhatu*), so the application of medicated oil in breast augmentation is justified. Further Acharya Dalhan has narrated in tika of the same Shlok that if massage is done for 700 Matras i.e. approximately 12 minutes, the oil will reach to fatty tissue (*Meda Dhatu*) which will lead to its augmentation (*Dhatupushti*) leading to breast enlargement.

Exercises

Exercises targeting one's upper body will help strengthen the chest muscles. It will also improve chest posture, which will make breasts look perkier.

Yoga has been a natural healing agent for thousands of healings. It unites the body with the mind and helps one's counter diseases from within. They help strengthen the breast muscles and builds strength and endurance which makes breasts firmer. Here, are some examples of asanas for breast enhancement like *Bhujangasana, Ushtrasana, Gomukhasana* etc.

DISCUSSION:

Breast being a secondary reproductive organ has a lot of importance not only from aesthetic point of view but also from psychological point of view. Breast development happens in certain stages during a woman's life. Breast hypoplasia occurs due to some congenital or acquired reasons. For getting perfect size of breast, girls go for breast surgery or silicone and saline breast implants may put their lives in danger. However, post-surgical follow-ups and repeated surgeries are part of this procedure, and there are many risks associated with the same. In

ayurvedic classics, there are some basic principles and references to overcome this problem permanently. Such drugs are like *Ashwagandha*, *Satavari*, *Yastimadhu*, *Sweta Musali*, *Bala*, *Gambhari*, *Sunthi* etc. Among them some cause direct growth of breast by regulating oestrogenic effect. Some drug may increase breast by local fat deposition. Some drug may clear the obstructed channels in breast and cause normal breast growth. Food and dietary preparation may cause nourish the body, increase muscle tone and fat deposition in breast. Herbal Ayurvedic medications also possess properties, which can help to manage the aesthetic as well as psychological symptoms.

CONCLUSION:

Breast being a secondary reproductive organ has a great impact from aesthetic as well as psychological importance. Therefore, one should not ignore Hyper or Hypomastia. Ayurveda medical science has very safe and effective solution for this problem.

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