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FIBROCYSTIC BREAST DISEASE IN AYURVEDA: A REVIEW

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ABSTRACT

Fibrocystic breast disease is the most common benign breast condition in females of mature reproductive years (25–40 years) characterized by cyclical mastalgia and tenderness along with a sense of increased breast engorgement, nodularity or lumpiness of fluctuating sizes. The objective of present article is to comprehend the understanding of fibrocystic breast disease in terms of Ayurveda. A literary survey of relevant Ayurveda texts, standard textbooks of surgery and gynecology as well as web-based search engines and electronic databases revealed that the description of breast diseases in Ayurveda revolves around inflammatory and suppurative pathologies and no specific breast disease has been described which can be directly correlated with fibrocystic breast disease. However, the features of fibrocystic disease like cyclical nature of pain of varying degree, areas of nodularity with lumps of waxing and waning nature, cysts containing a cloudy yellow or clear fluid with firm consistency etc. are in accordance with the features of Vataja and Kaphaja Granthi described in Ayurveda. Therefore, on the basis of pathology, appearance, character and clinical presentation of fibrocystic breast disease, it may be closely correlated with Stana-granthi of Vataja or Kaphaja type in Ayurveda.

Keywords: Fibrocystic breast disease, fibroadenosis, Ayurveda, Granthi-roga, Stana-roga, Stana-granthi.

INTRODUCTION

Fibrocystic breast disease (FBD) is the most common of all benign breast conditions which is nowadays being called by a more non-specific term, fibrocystic breast changes, to describe the multiple irregularities in the consistency and contour of the breast (nodularity) along with mastalgia of cyclic nature.[1] It usually affects females who are in their mature reproductive years (25–40 years). Studies have shown a 50% incidence of disease in females of reproductive age, despite the fact that the true incidence of the disease is difficult to estimate.[2-3] According to some authors, as many as 90% of women exhibit some type of fibrocystic change.[4] The pathological changes produced in the breast involve cystic dilatation of the terminal duct lobular units, apocrine metaplasia, periductal mastitis, fibrosis in the stromal tissue, epithelial hyperplasia, calcifications and chronic inflammation.[5] The classical symptoms of the disease are mastalgia and tenderness of cyclical nature along with a sense of increased breast engorgement, nodularity or lumpiness of fluctuating sizes specially during the premenstrual phase.[1] These changes usually subside and disappear with menopause.

Breast diseases in Ayurveda have been mentioned as Stana-roga. Though five types of breast diseases are noted in Ayurveda, the features described are suggestive of an inflammatory and suppurative pathology and do not hold simulation with the main features of FBD.[6,7] The clinical features of FBD are rather similar to the symptoms of another entity called Granthi-roga (cystic diseases). Therefore, the present article aims at reviewing the concept of Stana-roga and Granthi-roga described in Ayurveda and understand the features, presentation and pathogenesis of FBD in terms of Ayurveda. To fulfil the objective, a comprehensive literary study was performed searching through relevant texts of Ayurveda, standard textbooks of surgery and gynaecology as well as web-based search engines and electronic databases like Google scholar, PubMed, Medline, AYUSH Research Portal, Digital Helpline for Ayurveda Research Articles (DHARA) etc. Collected information has been described under following headings so as to describe the disease from Ayurveda point of view.

STANA-ROGA (BREAST DISEASES) IN AYURVEDA

According to Shabdakalpadrum, the word 'Stana' is derived from the root "Stan" with suffix "Dhay" which means Stambhana (solidity/firm enough to keep its contour), grammatically denoting the solidity of female breast. In Ayurveda, these have been described as the seat and source of breast milk (Stanya) and are included among externally opening channels (Bahirmukha Srotas) of female body.[8-9] In addition, various anatomical and physiological considerations related to breast have also been described.

The diseases of breast have been described under the heading of Stana-roga in classical texts of Ayurveda. Sushruta and Madhava described five varieties of breast diseases[10-11] and considered the vitiation of Rakta and Mamsa Dhatu by Doshas as the causative factor[12-13] with clinical features similar to an external abscess (Bahya Vidradhi). Therefore, pain and inflammation are present as the general features in all varieties[14] in addition to some

specific features according to the Dosha involved in pathogenesis.[15] Sushruta also highlighted that the incidence of breast diseases is not seen in girls as the openings (Dwara) of ducts (Dhamanya) are not open and hence, the Doshas cannot spread through them. However, in pregnant and post-partum lactating women, the same ducts become dilated physiologically and become prone to the occurrence of breast diseases.[16]

The principles of management of breast diseases follow the management of inflammatory abscesses. Accordingly, systemic and local anti-inflammatory measures like anointing, fomentation, sudation etc. should be implemented along with oral medications based on Dosha predominance to prevent suppuration.[17,18] Milk should always be pressed out from the breasts of lactating woman to alleviate inflammation. If, however, suppuration takes place despite of all measures, incision and drainage should be performed in the affected part, avoiding injury to the lactiferous ducts in the nipple-areola region. In addition, Sushruta has also cautioned against the use of poultices (Upanaha) to achieve suppuration in breast inflammation as being constituted of soft tissue, the breasts are vulnerable to necrosis.[19]

GRANTHI-ROGA (CYSTIC DISEASES) IN AYURVEDA

According to Sushruta, Granthi (cyst) is a round, protruded and knotty swelling produced in any part of the body where the vitiated Doshas associated with Kapha affect the Rakta, Mamsa, and Meda Dhatu.[20] They are of five types; Vataja, Pittaja, Kaphaja, Medoja and Siraaja. The former three are Doshaja varieties with physical appearance, character of pain and discharge being characteristic to the involved Dosha. While Vataja Granthi is a firm swelling like an inflated bladder which gives rise to various types of pains such as stretching, pricking, cutting, tearing etc. and discharge clear fluid on bursting; Kaphaja type is harder with itching and little pain which, on bursting, discharge thick white purulent material. The features of Pittaja variety include a cystic swelling which is inflamed with burning sensation and discharges blood on bursting. The other two types have more distinct features. The Medoja Granthi is a large, glossy, mobile swelling with itching and little pain, the size of which grows and decreases with an increase or decrease in body mass. It exudes fat-like substance when burst. The last variety told by Sushruta is Siraaja Granthi which is a compressed, contracted, round and protruded cyst type lesion formed by pulling of the vascular (venous) ramifications at a place by the aggravated Vata Dosha.[21] Apart from these, Charaka has also told a sixth variety originating from muscular tissue known as Mamsa Granthi while Vagbhata has added three more types in the form of Raktaja-, Asthi- and Vrana-granthi.[22-23]

The management of cystic diseases is described by Sushruta based on the stage of the disease. Before suppuration, anti-inflammatory measures should be employed. Dashamoola treated oil and ghee preparations should be orally administered with local measures like sudation, fomentation, poultice etc. On suppuration, incision and drainage should be done followed by wound management by cleaning (Shodhana) and healing (Ropana) measures. Incision with enucleation of contents or surgical excision followed by cauterization by Agnikarma or Ksharakarma is indicated in cases where the cystic lesion is large with firm consistency and it does not subside with the above mentioned management.[24]

FBD IN AYURVEDA

It is clear from above descriptions that the breast diseases described in classical texts of Ayurveda do not include any nodular or cystic disease of the breast. Rather, the description is indicative of inflammatory and suppurative pathology. According to Gayadasa, the description of Stana-roga by Sushruta, alongside Visarpa and Nadi-roga[6] just after the chapter describing the Vidradhi, itself indicate towards the involvement of inflammatory process in these diseases. The descriptions in Madhukosha (Stana-kopa and Stana-shotha) and Kashyapa Samhita (Stana-keelaka) also indicate towards the suppurative nature of the disease.[7] Further, the observation of Sushruta that the breast diseases are more prevalent in women who are pregnant or lactating or in later years than young girls[6] also suggests that the breast diseases described in Ayurveda are limited to inflammatory and suppurative pathologies only as it is clear from modern literature also that the inflammatory breast abscesses are more prevalent in lactating mothers or non-lactating women in their later years of age.[1]

Fibrocystic breast disease, on the other hand, does not exhibit inflammatory or suppurative features and can occur even in young girls. The main pathological features of FBD are cystic dilatation of the terminal duct lobular units, periductal mastitis and stromal fibrosis which account for the development of firm areas of nodularity or palpable lumpiness (with fluctuation in size of cystic areas) in the breasts along with pain and tenderness; the changes however are cyclical usually and are more pronounced in the premenstrual phase with remission after menstruation. These features of lumps or cysts with pain hold a simulation with the symptoms of Granthi-roga described in Ayurveda. Also, while defining the pathogenesis of Granthi-roga, Sushruta has not mentioned any specific site; which means that the disease may occur in body at any site and hence, may occur in breasts also.

Further, on reviewing the varieties of Granthi told by Sushruta, the features of Vataja (clear fluid containing cyst with varying nature of pain) and Kaphaja (hard, large, thick fluid containing cysts with mild or no pain) varieties appear to be related with FBD subtypes appearing at different ages of a women. As per Aberrations of Normal Development and Involution (ANDI) of breasts framework[25], the ANDI related to mature reproductive period (25-40 years) is generalized nodularity with cyclical mastalgia or pain while the ANDI associated in the 35-55 years of age-group is the formation of macrocysts with sclerosing lesions. While the former may be correlated with Vataja Granthi where the degree of mastalgia may become severe and incapacitating with areas of nodularity or lumpiness; the latter, with formation of smooth, discrete, rounded, palpable macrocysts and sclerosing adenosis may well be associated with Kaphaja Granthi. Therefore, the fibrocystic breast disease may be understood as the Vataja or Kaphaja type of Stana-granthi in Ayurveda according to the predominant presenting features.

SHAT-KRIYAKAALA OF FBD

In Ayurveda, the primary aetiology of the diseases has been defined to be the vitiation of Doshas which leads to sequential pathogenic changes at a particular site (the site of Kha-vaigunya) and the features of the disease are manifested. These sequential changes are termed as the Kriyakaala of that particular disease.[26-27] Sushruta has described Shat-kriyakaala as the six-step pathogenic mechanism for the development of diseases. Accordingly, the Kriyakaala of FBD may also be postulated as follows.

The pathophysiology of fibrocystic breast disease is determined by estrogen predominance and progesterone deficiency that result in hyperproliferation of connective tissue (fibrosis), which is followed by epithelial proliferation.[28] Haagensen CD (1986)[29] noted that the periductal mastitis is the initial insult in the fibrocystic breast disease which leads to connective tissue

hyperplasia of the periductal connective tissue and fibrous stroma leading to periductal scarring. According to Comprehensive Gynaecology[30], fibrocystic changes represent an exaggeration of normal physiologic response of breast tissue to the cyclic levels of ovarian hormones. The disease progresses through three general clinical stages of fibrocystic change which are variable and may overlap but each stage has its characteristic histologic findings. The first stage, mazoplasia (mastoplasia), is associated with intense stromal proliferation and occurs in the early reproductive years. The second clinical stage, adenosis, is characterized by marked proliferation and hyperplasia of ducts, ductules, and alveolar cells and typically occurs in women in their 30s. The last stage is the cystic phase which typically occurs in women in their 40s.

Hence, the pathogenesis may start with the breast tissue becoming sensitive to an imbalance between estrogen and progesterone level (the most widely accepted theory) and showing exaggerated response due to an aberration of the normal process of development. Role of inflammatory cytokines have been postulated[25] which suggest an underlying inflammatory process e.g. periductal mastitis and may produce mastalgia. This stage where the normal equilibrium of the tissue gets disturbed and an exaggerated response occurs resulting in accumulation of Doshas can be compared with Sanchaya Awastha. This stage progresses to the connective tissue hyperplasia of the fibrous stroma and the periductal tissue. This growing fibrous component may compress the ducts and there may be retrograde dilatation of the ductal system. This stage may be correlated with Prakopa Awastha where the vitiated doshas lead to further pathological changes in the breast tissue. Further, the proliferation and hyperplasia of the epithelial lining of the lobules and the ducts occur under estrogenic stimulation, which may range from mild to florid type. Apocrine metaplasia may also occur in the epithelial lining which may progress from lobular to ductal system. This stage of progressive epithelial hyperplasia with metaplastic changes may be simulated with the Prasara awastha. Now, this periductal fibrosis may compress the ducts from outside while the epithelial hyperplasia may block the lumen of the ducts. These changes lead to the blockage of channels (Srotas), a feature that is related to the Sthana-sanshraya of the Doshas in body channels and causing the Srotodushti which is of Sanga or obstructive type here. These changes lead to the cystic dilatation of the lobules and the ducts which may become tense when filled with fluid and may cause pain. Macrocysts may develop from continued dilatation or by coalescing of microcysts and the breast feels lumpy. The tense cysts may also rupture, discharging the secretions into the stroma which may produce an inflammatory response, again leading to pain and tenderness. All these lead to the expression of the symptom complex of this disease and may be designated as the Vyakti Awastha of this disease. Further, there may be proliferative epithelial hyperplasia with or without atypia which is associated with chances of carcinoma in future. This may be treated as the Bheda Awastha of the disease.

CONCLUSION

Fibrocystic breast disease is the most common benign breast entity reported in clinics by females of reproductive age group. In Ayurveda, five types of breast diseases have been described but none of these can be directly correlated with FBD. However, the features of FBD like cyclical nature of pain of varying degree, areas of nodularity with lumps of waxing and waning nature, cysts containing a cloudy yellow or clear fluid with firm consistency etc. are in accordance with the features of Vataja and Kaphaja Granthi described in Ayurveda. Therefore, considering the pathology, appearance, character and clinical presentation of FBD, it may closely be associated with Stana-granthi of Vataja or Kaphaja type in Ayurveda.

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