

# NATUROPATHIC MANAGEMENT OF FIBROCYSTIC BREAST DISEASE

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## DEFINITION, PATHOPHYSIOLOGY, AND ETIOLOGY

**F**ibrocystic Breast Disease (FBD) is one of several benign breast disorders (BBD). FBD is defined as poorly delineated thickness or palpable nodularity of the breast that is accompanied by pain. (1) The cause is unknown, although it is generally agreed that either a relative estrogen excess or an amplification of estrogen sensitivity on breast tissue is a major factor in FBD. (2-4) Additionally, prolactin levels are increased in women with FBD. Estrogen stimulates prolactin secretion, and prolactin can cause many of the histological changes seen in the breast tissue of women with FBD. Histological changes observed on biopsy include cyst formation, stromal fibrosis, ductal epithelial hyperplasia, duct ectasia, and sclerosing adenosis. Pain is thought to be due to stromal edema, ductal dilation, and inflammation. (2-4)

## EPIDEMIOLOGY

FBD is a common disorder, occurring in up to 50% of women. It usually occurs between the ages of 35 and 50. In women who have had biopsy-demonstrated fibrocystic disease, there is an increased risk of subsequently developing breast cancer. This increased risk is only for those women whose biopsies revealed ductal or lobular proliferation, or atypical hyperplasia (about 33% of biopsied patients). For this group, the relative risk of developing breast cancer is 4.4 times that of an age-matched control population. (5)

It has not been demonstrated that women with a clinical diagnosis of FBD who have not had a biopsy are at increased risk of breast cancer, although it is logical to speculate that a similar percentage of non-biopsied FBD patients may be at increased risk.

## SIGNS AND SYMPTOMS

The symptoms most commonly reported by women who have FBD are bilateral breast pain, swelling, and increased lumpiness, occurring one to two weeks prior to menses, and resolving in most cases with the onset of menses. Some women report these symptoms as constant, with very little alteration with the menstrual cycle.

Objectively, palpation of the breasts usually reveals thickened and lumpy tissue, usually bilateral, and most prominent in the upper outer quadrants. Frequently, discrete cystic masses can be palpated. These are usually firm, mobile, clearly delineated, and quite tender. Examination of the breasts both pre-menstrually and just after the menses usually demonstrates a distinct difference in the size and tenderness of these masses. This can be a useful strategy to help with a decision about whether breast biopsy should be performed. Palpable axillary lymph nodes can be found in up to 20 percent of FBD patients. (2) Clavicular lymph nodes are not usually palpable.

## DDX

Differential diagnoses for fibrocystic breast disease include other types of benign breast disease, malignant breast disease, infectious breast disease, and unrelated conditions of the chest such as costochondritis. Other benign breast disorders include cysts, solid neoplasms, papillomas, galactocele, fat necrosis, breast thrombophlebitis (Mondor's disease), and mammary duct ectasia.

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CASE STUDY

## DIAGNOSIS

The diagnosis of FBD is generally clear when a premenopausal woman reports a chronic cyclic, bilateral breast tenderness that is worse before menses and better with the onset of menses. A breast exam revealing multiple mobile, cystic tender masses with generalized thickening or lumpy breast tissue usually is adequate to confirm the diagnosis. Occasionally, it may be useful to repeat a breast exam pre and post menses to document the change in breast tissue, and to assess a discrete mass for possible breast biopsy. Any unusual or atypical breast mass findings should warrant further diagnostic evaluation, usually mammography, ultrasound or thermography, and perhaps biopsy.

## CLINICAL CONSIDERATIONS

It is important to evaluate the FBD patient for hypothyroidism. There is indirect evidence to suggest a link between the two. Iodine deficiency which is induced in rats leads to breast changes that are histologically similar to FBD in women. (7) Supplementation with levothyroxine decreases mastodynia, serum prolactin levels, and breast nodules in women who are considered euthyroid. (8) Laboratory defined euthyroidism should be further evaluated by other methods, such as basal body temperature or achilles reflex recovery time to assess for occult hypothyroidism in suspected cases.

Environmental estrogens (xenoestrogens) may play a significant role in the incidence of FBD. Many substances, including some foods, pesticides, plastics, and components of petroleum (9) may mimic estrogen and promote estrogen activity in the body. Plant source xenoestrogens, such as soybeans, promote the production of 2-hydroxyestrone from estradiol. This substance is thought to be a weakly active and "friendly" form of estrogen. In contrast, xenoestrogens from pesticides, plastics, and petroleum substances promote the formation of 16-alpha-hydroxyestrone, a strongly active "unfriendly" estrogen. 16-alpha-hydroxyestrone increases the interaction of receptors with growth promoting genes, enhances breast cell proliferation, and may damage DNA. (8)

While there are no studies directly linking FBD to synthetic xenoestrogens, the links with cancer,

(9,10) endometriosis, (11, 12) and other estrogen-excess related diseases strongly suggest the possibility of an association.

Synthetic xenoestrogens can also be ingested through food, especially animal products. The major source of transmission is probably through fat, where xenoestrogens are stored. Animals higher on the food chain tend to contain more fat, and thus are likely to contain more synthetic xenoestrogens. (9)

## BODY FAT

Adipose tissue produces estrogen. Androstenedione from the ovary and the adrenal gland is converted to estrone by the aromatase enzyme, primarily in adipose tissue. (13) Women who are obese have higher mortality from many estrogen-excess related diseases: cancer of the gallbladder, biliary passages, breast, uterus, endometrium, and ovaries. This was the conclusion of a panel of experts at the National Institute of Health in February, 1985. Given the link between excessive estrogen activity and fibrocystic breast disease it is logical to theorize that excessive body fat and obesity are contributing factors to this condition.

## CONSTIPATION

Constipation can lead to increased estrogens in women in two different ways. First, endogenous estrogen is conjugated by the liver and excreted via the gall bladder into the intestinal tract. With constipation, intestinal microflora deconjugate the estrogen, and it is reabsorbed by the colon into the body, where it again becomes active. Secondly, fecal microflora can synthesize estrone, estradiol, and 17-methoxyestradiol, which can be absorbed into the body. (14) It has also been shown that women with severe constipation have a higher incidence of epithelial dysplasia in breast fluid than those women without constipation. (15)

## LIVER FUNCTION

The liver is the primary site for estrogen conjugation and excretion via the biliary tract. Any disease of the liver, many medications interfering with liver function, or other substances that may alter liver function can lead to estrogen excess. Optimal liver function is important in the management of FBD.

## NUTRITIONAL FACTORS

### FAT

Many nutritional factors play a role in either the occurrence or treat-

ment of fibrocystic breast disease. One study demonstrated significant symptom relief (pain, nodularity, or discharge) in a group of women eating 15% fat derived calories. (16, 17) Another study correlated frequent meat fat consumption with severe atypia histologically in benign breast disease. (18)

### VITAMIN A

Benign breast disease has been shown to be inversely associated with vitamin A supplementation and with green vegetable consumption. (18) Additionally, supplementation with 150,000 I.U. vitamin A resulted in reduction of breast pain in 10 out of 12 women with BBD; however 5 women in the study reported side effects consistent with vitamin A toxicity. (19)

### VITAMIN E

Vitamin E supplementation may be beneficial in the treatment of benign breast disease. Although negative results have been demonstrated in some studies (20,21), symptom relief, increased progesterone to estradiol ratios, and elevated LH and FSH levels that returned to normal have been reported in other studies. (22,23) The positive studies used 600 I.U. D, L-alpha-tocopheryl acetate daily for 8 weeks.

### IODINE

Iodine supplementation, even in the absence of hypothyroidism has been demonstrated in several studies to reduce pain and decrease cyst size and formation, in fibrocystic breast disease. (24,25) Oral iodine supplementation also has anti-inflammatory and anti-fibrotic effects (26), which may explain some of its beneficial effects in FBD unrelated to either hypothyroidism or iodine deficiency.

### EFA'S

Essential fatty acids, specifically omega-6 fatty acids have been documented to be helpful in cyclical and non-cyclical mastalgia. Specifically, evening primrose oil, a rich source of omega-6 fatty acids, used in doses of 3 grams daily over 3-6 months resulted in significantly reduced reports of breast pain. (27-29)

### METHYLYXANTHINE

Methylxanthines, primarily caffeine, have been shown to be associated with FBD. (30,31) Coffee, black tea, chocolate, and cola are the predominant forms of methylxanthines in a typical western diet. The mechanism of action for methylxanthines on breast tissue appears to be due to their inhibition of cAMP and cGMP

phosphodiesterase. Increased cyclic nucleotide levels in breast tissue lead to increased protein-kinase activities resulting in elevated production of fibrous tissue and cyst fluid. (32) Studies show that decreasing or eliminating methylxanthines from the diet results in improvement of the symptoms of FBD. (33, 34) The results of one of these studies suggests that greater improvement can be expected with total abstention from methylxanthines than from just limiting them. (34)

### TREATMENT

The allopathic medical treatments for FBD include estrogen blockers such as oral contraceptives, danazol, and tamoxifen; the prolactin inhibitor bromocriptine, diuretics, and levothyroxine. Most of these are accompanied by significant side-effects and adverse reactions. Long-term effects for some of them are not known.

### NATUROPATHIC TREATMENT GOALS

The goals of a naturopathic treatment approach for FBD are:

1. To restore the proper balance and functioning of estrogen on breast tissue.
2. To reduce the symptoms of FBD, i.e., pain, swelling and nodularity.
3. To reduce any potential increased risk of breast cancer in the FBD patient.

### NATUROPATHIC TREATMENT STRATEGIES

The strategies for naturopathic treatment of FBD are:

1. Decrease exogenous estrogen intake.
2. Balance endogenous estrogen activity.
3. Decrease breast tissue sensitivity to estrogen.
4. Reduce the inflammatory activity in the breast.

### NATUROPATHIC TREATMENT AND MANAGEMENT GUIDELINES

1. Evaluate patient for hypothyroidism and treat if appropriate.
2. Diet
  - Reduce percent of calories from fat to 15% - 20% of total daily caloric intake.

- Increase consumption of green and yellow vegetables to 3- 5 servings daily to insure adequate Vitamin A intake.
  - Emphasize fresh fruits, vegetables, and complex carbohydrates to insure a high fiber intake.
  - Increase amount of phytoestrogens in diet, i.e., soybeans, lentils, almonds, etc.
  - Drink adequate water — at least 50 ounces daily to promote optimal bowel and other eliminative functions.
  - Eliminate methylxanthines from the diet (coffee, black tea, chocolate, cola).
  - Eliminate dietary synthetic xenoestrogens (35), and arachidonic acid sources (meat, animal products).
3. Body Weight/Body Fat percent
    - Reduce weight to ideal level based on age, frame size, and height.
    - Reduce body fat percent to 20 - 22%.
  4. Exercise
    - Establish regular exercise program for proper weight and body fat levels:
      - flexibility exercises daily for 15 minutes.
      - strengthening exercises 2-3 times weekly for 30 minutes.
      - aerobic exercises 3-5 times weekly for 30 minutes.
      - establish target heart rate (THR) for patient by subtracting 220 minus her age = maximum heart rate (MHR).  
THR = 60 - 85% of MHR.
  5. Decrease exposure to synthetic xenoestrogens.
    - Avoid ingesting substances stored in plastic containers or cans.
    - Avoid heating food to high temperatures in plastic containers.
    - Avoid pesticide exposure or ingestion.
  6. Support liver function for conjugation/excretion of estrogen.
    - lipotropic factors - 1 TID before meals. Include choline, methionine, inositol, milk thistle, beets.
    - Vitamin B6 - 50 mg, TID with meals.
  7. Additional nutrient supplementation

- Omega-6 fatty acids - evening primrose oil - 3 grams daily.
  - Vitamin E - 600 I.U. daily - D,L-alpha tocopheryl acetate.
  - Vitamin A - 25- 50,000 I.U. daily \***caution** - contraindicated if pregnancy is a possibility, watch for signs of toxicity, such as headache and dry skin.
  - Iodine - aqueous iodine 3 - 6 mg. daily.
8. Additional therapies to consider:
    - Turska's formula - 1/4 tsp BID \***caution** - watch for signs of toxicity, such as headaches, anxiety, paresthesias, nausea, vomiting, diarrhea.
    - Traditional naturopathic formula for cystic and tumorous conditions of the female reproductive system (1/2 dram Acomite tincture; 1 1/2 dram Bryonia tincture; 1 1/2 dram gelsemium tincture; 4 1/2 dram Phytolacca tincture).
    - Phytolacca oil - apply topically to breasts five nights per week. Stains sheets and bedclothes. Phytolacca is a classic botanical agent known for its alterative effects on glandular organs, especially lymphatic and reproductive organs. (36) Discontinue use if irritation occurs.
    - Castor oil packs - apply nightly over breasts day 1-14. This oil has soothing and antiinflammatory properties.

### 9. Management and follow-up

Monitor patient for subjective improvement pre-menses every month for 3 months. Re-examine breasts pre-menses after 3 months of treatment. Expect significant improvement in 3 months if patient has been compliant. If there is minimal improvement despite compliance, increase vitamin B6 to 200-400 mg daily, add magnesium 500-700 mg daily, and add a phytoestrogen formula containing *cimicifuga racemosa*, any or all of the following: *trifolium pratense*, *medicago sativa*, *angelica sinensis*, *vitex agnus castus*, *caulophyllum thalictroides*.

Once significant improvement occurs, begin tapering supplements over 1-2 months. Long-term maintenance can usually be achieved with continued dietary and exercise habits and a general vitamin-mineral supplement.

**SUMMARY**

Fibrocystic Breast disease is a common condition of pre-menstrual women. (1) Cyclical breast pain and increased nodularity bilaterally are the most common presenting symptoms. Differential diagnoses include breast malignancies, breast infections, other benign breast disorders, and other chest conditions. Naturopathic treatment guidelines include:

- Low fat, high fiber, high vegetable, low methylxanthine, low animal product diet.
- Maintain optimal body weight and body fat percentage with a regular exercise program and diet.
- Decrease exposure to environmental estrogens.
- Support liver metabolism of estrogen.
- Lipotrophic factors 1 TID before meals.
- Vitamin B6- 50 mg TID with meals.
- Supplement with:  
Vitamin A - 25-50,000 IU daily.  
Vitamin E - 600 IU.  
Iodine - aqueous- 3-6 mg daily.  
Evening Primrose oil- 3 grams daily.

Expect significant subjective improvement within three months.

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