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A Rational approach towards the Management of Benign Breast Diseases (BBD)

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ABSTRACT

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Benign Breast Diseases (BBD) accounts for the most common cause of breast problems in modem day practices. Up to 30% of women will suffer from a BBD requiring treatment at some time or other in their lives. The important aspect is to differentiate a BBD from a malignant lesion. It is under these circumstances that BBD assumes significance.

The factors in normal breast development are examined. The risk factors in development of malignancy are discussed.

From our experience spanning over twenty years, we have devised a more practical and cost effective management plan for BBD. This is presented below because nowadays there is an alarming increase in interventional surgeries for BBD for which it is not at all recommended and many of them return to yet another doctor with a history of recurrence and this cycle goes on and on.

When patients present with BBD after confirmation of the benign status of the disease the options are medical management with Danazol or Bromocryptin before surgery. This will reduce the number of patients needing surgery.

Keywords: Benign breast disease, Malignancy, ANDI, Management protocol, Progesterone, Bromocryptin.

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Benign Breast Diseases (BBD) accounts for the most common cause of breast problems in modem day practices. Up to 30% of women will suffer from a BBD requiring treatment at some time or other in their lives. The important aspect is to differentiate a BBD from a malignant lesion. It is under these circumstances that BBD assumes significance. This article pertains to the problems of BBD and a rational approach towards their management in hundred cases spread over 20 years.

BBD (excluding neoplasms) can be classified in the following manner described by The Cardiff Breast Clinic, Wales.

I. ANDI (Aberrations of Normal Development and Involution) (may be present as lumpy breasts, tenderness or smooth lump).
   - Fibroadenamatosis
   - Cyclical nodularity
   - Cysts
   - Fibroadenoma.

II. Duct Ectasia/Periductal Mastitis
   - Nipple discharge and inversion
   - Abscesses
   - Mammilary fistula.

III. Epithelial Hyperplasia

IV. Pregnancy related
   - Galactocele
   - Puerperal abscess

V. Congenital disorders
   - Inverted nipples
   - Supernummary nipples/breasts

VI. Non breast diseases
   - Tietze's disease
   - Sebaceous cysts and other skin condition.

In the following sections, we attempt to discuss the management of ANDI which is not a disease but physiological change. If we exclude ANDI, there are only few remaining pathological group in BBD such as:

Hyperplasia, congenital disorders, ductectasia breast abscess etc. Their incidence compared to ANDI is very low.

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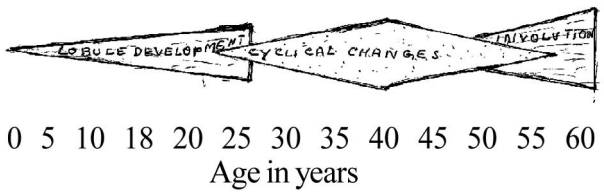

Figure 1. **Normal Breast Changes throughout Life.**

Aetiology

Breast is a dynamic structure which undergoes changes throughout a woman's reproductive life and undergoes cyclic changes throughout the menstrual cycle. This is depicted in the figure.

The pathogenesis of ANDI involves disturbances in the breast physiology extending from an extreme of normality to well defined disease processes. So as to understand this in more detail let us review the anatomy and physiology of breast.

ANATOMY

Breast tissue consists of breast lobules, ductules, lactiferous duct and sinuses, areola and the nipple.

Effect of Principal Sex Hormones on the Breast Tissue

1. OESTRADIOL
   - Ductal growth
   - Connective tissue congestion
   - Prolactin stimulation
   - Activation of prolactin receptors.
2. PROGESTERONE
   - Inhibition of duct growth and Acinar differentiation
   - Anti-inflammatory effect on the connective tissue
   - Inhibition of prolactin receptors
3. PROLACTIN
   - Differentiation of duct growth
   - Essential for secretory activity
   - Activation of oestradiol receptors
   - Proliferative synergism with oestradiol

Relative risk for invasive breast carcinoma based on pathological examination of benign breast tissue.

I. No increased risk to malignancy
   1. Adenosis
   2. Sclerosing adenosis
   3. Apocrine metaplasia
   4. Cysts
   5. Duct Ectasia
   6. Fibroadenoma
   7. Fibrosis
   8. Hyperplasia (mild 2-4 epithelial cells depth)
   9. Mastitis
   10. Periductal mastitis

II. Slightly increased risk (1.5-2 times)
   - Hyperplasia, moderate or florid, solid or papillary
   - Papilloma with a fibrovascular core.

III. Moderately increased risk (5 times)
   - Atypical hyperplasia (ductal or tabular)

III. Insufficient data to assign risk
   - Solitary papilloma of lactiferous sinus
   - Radial scar lesion

Clinical Features of ANDI

- Area of lumpiness (seldom discrete)
- Breast pain-mastalgia
- A benign discrete lump is commonly a Fibroadenoma or cyst.

Lumpiness may be bilateral, commonly in the upper outer quadrant or less commonly confined to one quadrant of one breast. The changes may be cyclical with an increase in lumpiness and often tenderness before a menstrual period.

Noncyclical mastalgia is commoner in the peri and post menopausal period. It may be associated with ANDI or periductal mastitis or referred from a musculoskeletal disorder. About 10% of breast cancers exhibit pain at presentation.

From the above descriptions, it will be clear that a number of benign breast lesions may present either as lump or lumpiness or nodularity or as mastalgia in the various age groups. These in turn could produce anxiety in women. Hence the doctor here can play a major role in reassuring the patient after clinical examination and necessary investigations that it is only a benign lesion and that it is not a malignant one.

From our experience spanning over twenty years, we have devised a more practical and cost effective management plan for BBD. This is presented below

because nowadays there is an alarming increase in interventional surgeries for BBD for which it is not at all recommended and many of them return to yet another doctor with a history of recurrence and this cycle goes on and on.

In our clinical practice we have come across a variety of BBD presenting in the various age groups ranging from 20-55 years and maximum distribution is seen in the 25-40 year age groups. This according to the figure above is one wherein the breast undergoes various cyclical changes under hormonal influence, in the reproductive period of the female.

Oestrogen and prolactin as discussed above under physiology are found to stimulate breast growth and they have a synergistic role whereas progesterone is found to have their opposite influence on breast tissue. Normally there is a delicate balance between oestrogen, progesterone and prolactin. In situations where oestrogen sensitivity is more, or when the relative progesterone concentration is low, there is a resultant unopposed hyperoestrogenic state. This unopposed estrogen or hyperprolactinaemia is thought to be the basic factor that leads to stimulation of breast tissue resulting finally in a BBD.

It is under this circumstance that progesterone assumes significance in treating BBD along with Bromocryptine. Listed below are the findings in a number of cases of BBD in various age groups who were subjected to cyclical progesterone therapy with (or Regestrone) Orgametril (Lynesterol-5mg) or with Brom (bromocryptin) in selected cases.

Criteria of selecting a case

1. Age
2. Parity
3. Lumpiness
4. Lump
5. Mastalgia
6. Discharge - milk
7. Serum prolactin level
8. Mammogram
9. FNAC

Irrespective of age and parity, patients with BBD without galactorrhoea or raised serum prolactin with definite mammogram and FNAC evidence of BBD responded to cyclical Orgametril 5 mg twice daily for 20 days from the fifth day of the cycle repeated for 2 or 3 courses depending on the symptoms and signs.

Those with galactorrhoea with or without elevated serum prolactin were given Bromocryptine alone and they also showed remarkable improvement.

ANALYSIS

Maximum number of BBD in 26-48 year age group

Number of Orgametril course required is maximum in the reproductive age group (2 or more cyclical courses at a stretch followed by a single course yearly if needed after assessing the patient during followup).

Marked improvement and least recurrence below 25 years and above 45 years

Need for surgery 4% of cases

Improvement with Orgametril or brome is much better and cheaper than with (danazol)

From the above discussion it is clear that maximum number of cases occurred in the reproductive age group during which the breast undergoes cyclical changes under hormonal influence. Hence such cases required more courses of Orgametril or registron for complete remission. It is to be noted that pregnancy and lactation may result in complete disappearance in most of such cases below 25 years and above 45 years, the improvement was marked with least recurrence because above45 years with courses of Orgametril the disease process is arrested and most of these women attain menopause during which involution changes start taking place in the breast tissue. Below 25 years also the recurrence rate is less because most of such cases got corrected spontaneously or pregnancy sets in leading to a prolonged progestational state where the influence of unopposed oestrogen is removed.

Standard text books recommend Danazol treatment for BBD as 100mg bd for 6 months - to one year continuously. In our study, we have found that progesterone (those preparations used for the treatment of DUB) for three cycles (1 bd from fifth day of cycle for 20 days) is very effective and cheap. Danazol produces menstrual irregularity in patients and in most of the cases patient discontinues the treatment because of the very high cost and the inconvenience due to menstrual irregularities. On the other hand, when such patients were given progesterone preparation in a cyclical fashion, they get the periods regularly while on treatment and the cost is very much less, Even if surgery is done in doubtful lumps, and when histopathology reveals a fibroadenosis, then we recommend progesterone therapy during the post-operative period so as to prevent a recurrence.

ADVANTAGES OF PROGESTERONE TREATMENT

- Convenience of the patient. The patient will be willing to take up the medicine than to undergo a traumatizing surgery.
- Cost effective compared to surgery/danazol.
- Associated diseases like endometriosis, DUB is also simultaneously treated or corrected. So the patient is in fact very much happy because both her menstrual irregularity and breast problem are corrected.
- Follow up of the patient is easy and cheap with FNAC
- In case of recurrence/persistence - remission is achieved with repeat course for 1 or 2 cycles.
- Avoidance of unwanted scar is a cosmetic advantage.
- Infertility in a few case with irregular cycles and infertility, showed improvement after therapy with bromocryptin.

Thus, from the above description we can note that in a vast majority of patients in the reproductive age group presenting with any form of BBD can be given medical treatment before subjecting them to any of the traumatizing surgeries. Thus ideally any case of BBD presenting to a surgeon must be dealt with medically under the expert guidance of a gynecologist also, because most of such cases also have some menstrual irregularities and both these conditions can be effectively managed by medical treatment alone. In the few cases of recurrence or persistence of the disease, the patient may undergo surgery.

The following table and results illustrate our observations.

1. Complete recovery of cases with progesterone either Single or multiple courses : 68%
2. Cases needing repeat courses of progesterone after 1 or 2 years: 21%
3. Total No. of cases treated with progesterone alone: 89%
4. Progestrone & Bromocryptin : 3%
5. Danazol needing cases : 4%
6. Cases needing surgery : 4%

Generally, we find that patients go for other system of treatment when surgeons advice for surgery for BBD. If surgeons are prepared to give medicines for these patients, they will have more confidence and stick on to the surgeon for the management of their problem.

END NOTE

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REFERENCES

1. Bailey and Love's Short Practice of Surgery, 19™ Edition.
2. A Companion in surgical studies: Ian Aird.
3. Inadequate Corpus Luteal Function in Women with Benign Breast Diseases. L.R.Sitruk-Ware, N. Sterkers, I. Mowszowicz and P. Mauvais- Jarvis: Department of Endocrinology and Gynecology, Faculty of Medicine Necker Paris, France.