

Original Research Article

Spectrum of benign breast disease; a critical review of therapy. A single – center experience.

Abstract:

Background: A benign breast condition is one that is not cancer. These conditions often go away on their own or are easily treated. Because a few benign breast conditions can increase your risk of getting cancer in the future, you may need to have follow-up tests or exams with your benign breast disease comprises a large spectrum of disease which ranges from mastalgia, nipple discharge to discrete lump. Medical management with Danazol, bromocriptine, primrose oil and Vitamin E capsules has importance along with surgical intervention in few cases.

Materials & methods: One hundred and one (n=101) patients with mastalgia, nipple discharge and breast lump were treated with medical or surgical management. Post treatment all patients were followed up for symptomatic relief.

Results: Majority of the patients (n=64) presented with mastalgia. Rest of the patients presented with nipple discharge and discrete lump. Most patients (n=75) were treated with Danazol, Linoleic Acid or Vitamin E. 85% patients were satisfied with the treatment administered to them.

Conclusion: Benign breast disease is a diverse spectrum with miscellaneous symptoms. Benign breast diseases are common in female patients and fibroadenoma is the commonest of them all. Triple assessment gave a firm diagnosis and it eliminates unnecessary anxiety in the patients about breast cancer or any other serious illness. Medical management is mainstay with indication of surgery in few cases.

Key words: Benign breast disease, Aberrations of Normal Development and Involution, Fibrocystic disease, Breast abscess, FNAC, Mammogram.

Introduction:

Benign breast diseases are common disorders, up to 30% of women are clinically presented with benign breast diseases and seeking treatment at sometimes in their lives [1-9]. The term benign breast diseases abbreviated as BBD encompasses a heterogeneous clinical and pathological condition which ranges from inflammatory condition to benign neoplastic conditions [2-14]. A comprehensive classification which puts all the processes of physiological changes, growth, development and involution into a single frame work termed as ANDI (Aberrations of Normal Development and Involution) [15].

Chart 1: Early and late reproductive phases

	Normal	Disorder	Disease
Early reproductive years (15-25 yrs)	Lobular development	Fibroadenoma	Giant Fibroadenoma
	Stromal development	Adolescent hypertrophy	Giantmastia
	Nipple eversion	Nipple inversion	Subareolar abscess
Late reproductive year (26-35 yrs)	Cyclical changes of menstruation	Cyclic mastalgia	Incapacitatory mastalgia
	NA	Nodularity	NA
	Epithelial hyperplasia of pregnancy	Bloody nipple discharge	NA

Clinical presentations include cyclic or noncyclic mastalgias, nipple discharge, and discrete lump or diffuse lumpiness. 90% Patient may present with one or more symptoms. Breast lump in premenopausal women are benign and usually represents with fibroadenoma in early reproductive period. In middle reproductive period fibrosis, hyperplasia and cyst are more likely. In later reproductive period hyperplasia, cyst and carcinoma in situ are more common. Multipapilloma, sclerosing adenosis and radial scar are other clinical presentations of breast lump. Spontaneous, serous or bloody, unilateral single duct discharges are considered pathological or non-pathological. It needs radiological evaluation. Etiology of mastalgia remains unproven. Role of caffeine, iodine deficiency, and alteration in fatty acid levels in the breast, fat intake in diet and psychological factors in the etiology of breast pain has been suggested [16-23].

Medical management of BBD is mainstay of treatment. Danazol, bromocriptine and tamoxifen has been proven to be effective. Linoleic acid in the form of evening **primerose** oil has been found to be effective. In randomized trials Vitamin E tablets being widely used and found to be ineffective (Reference). Surgical management in discrete breast lump is found to be satisfying in subset of patients of fibroadenoma, multiple papilloma, sclerosis adenosis and fibrocystic disease. This study was conducted at a tertiary cancer centre. Patients with BBD were followed up for a period of 6 months with surgical and non surgical treatment. Results were interpreted in terms of patient satisfaction and quality of life.

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Methods:

Study design : Observational study
Sample Size : 101 patients
Study Duration : 6 months (From June 2020 to December 2020)
Sponsor : No funding to conduct this study
Mode of contact : Telephonic Follow ups done

Inclusion Criteria:-

- Women of age groups 16-55 years.
- Lactating mothers.
- Willingness to sign the informed consent form.
- Willingness to turn up for routine follow ups.

Exclusion Criteria:-

- Histopathologically proven cases of neoplastic lesions.
- Lost to follow ups.
- Not willing to sign informed consent form.

One hundred and one patients (n=101) clinically presented with mastalgia, breast lumps and nipple discharge visited OPD of tertiary cancer care centre between June 2020 to December 2020. **Histopathologically** confirmed neoplastic lesions were excluded from this study. Biospy proven fibroadenoma and phyllodes tumor cases were also excluded from this study. All patients undergone USG and breast bilateral mammography (B/L MMG). Majority of medical management in the form of Danazol or Vitamin E/ Linoleic acid for at least 2 months or maximum 6 months. Few patients underwent surgery in the form of lumpectomy or microdochectomy. Patients post treatment were on regular follow ups.

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Result:

Table : 1 Data interpretation of the treatment result was done in the form of symptoms relive and patient satisfaction.

Sr. No.	Clinical presentations	No. of patients = 101	In percent
1	Mastalgia	64	64.64
2	Nipple Discharge		
a	Serous discharge	14	14.14
b	Greenish discharge	5	5.05
c	Milky discharge	6	6.06
d	Bloody discharge	8	8.08
3	Breast lump (discrete)	22	22.22
4	Menstrual irregularity	41	41.41

Table 2 Diagnosis of benign breast disease clinically presented in the OPD at a tertiary cancer centre.

Sr. No	Diagnosis of BBD	No. of patients
1	Fibrocystic disease	21
2	Fibroadenosis	12
3	Ductal papilloma	12
4	Ductal ectasia	11
5	Ductal hyperplasia	6
6	Inflammatory breast disease	5
7	Granulomatous mastitis	4

Fig 1: Line of treatment administered to the patients

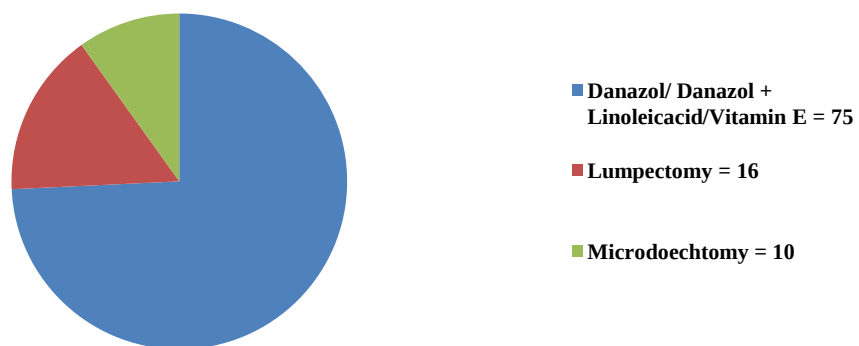


Table 3: Result of treatment captured on the basis of patient satisfaction and relief in symptoms.

Patient Satisfaction	Yes	No
	85%	15%
Symptoms relieve	Yes	No
	Complete response in 55% Partial response in 25%	20%

Discussions: In this study majority of the patients presented with cyclic or non-cyclic mastalgia. One third of the patients experienced nipple discharge and few patients presented with breast lump. Menstrual irregularity was almost present in patients with mastalgia. Among all diagnosed benign breast disease fibrocystic disease was in majority followed by ductal papilloma and ductal ectasia. Navneet et al found 40% women with fibroadenoma, 50% patients with nodularity and mastalgia and less than 10% with galacto and nipple discharge [32].

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Do you mean galactorrhea?

Hatim et al similarly found 77.62% cases of fibroadenoma followed by fibrocystic disease (4.3%) and gynaecomastia [33]. As fibroadenoma was excluded from our study, fibrocystic disease was also in majority in our study too. Many randomized and non-randomized clinical trials have been done regarding the efficacy of Linoleic acid, Danazol, bromocriptine and tamoxifen in the treatment of BBD. Linoleic Acid is found promising in few randomized clinical trials but Vitamin E is considered ineffective in randomized trials [28-31].

As hormonal depletion principle of mastalgia is well effective treatment. Many hormonal treatments i.e. GnRH analogue, Androgens have been tried to treat symptoms associated with Danazol, Linoleic acid or Vitamin E. Lumpectomy and microdochectomy is the main surgical modality being used in minority of the patients with mixed results.

In our study 75% of the patients were treated medically with Danazol, linoleic acid or Vitamin E. Rest of the patients were treated surgically. Majority of the patients were satisfied by their treatment with 55% having complete symptomatic relief.

Finally we concluded that benign breast disease being a wide spectrum of disorder is successfully treated by medicine in majority of the cases followed by surgery in few cases.

References:-

1. Caleffi M, Filho DD, Borghetti K et al. Cryoblation of benign breast tumors: evolution of technique and technology. Breast 2004;13:397-407.

2. Kelsey JL, Gammon MD. Epidemiology of cancer. *Epidemiology Rev* 1990;12:228-240.
3. Cole P, Mark Elwood J, Kaplan SD. Incidence rates and risk factors of benign breast lesion. *Am J Epidemiol* 1978;108:112-120.
4. Hutchinson WB, Thomas DB, Hamlin WB et al. Risk of breast cancer in women with benign breast lesion. *J Natl Cancer Inst* 1980;65:13 13-20.
5. Fitzgibbons PL, Henson DE, Hutter RV. Benign breast changes and the risk for subsequent breast cancer an update of the 1985 consensus statement. Cancer committee of the college of American Pathologists. *Arch Pathol Lab Med* 1198;18:271-279.
6. Sarnelli R, Squartini F. Fibrocystitic condition and 'at risk' lesions in asymptomatic breasts: a morphologic study of postmenopausal women. *Clin Exp ObstetGynecol* 1991;18:271-279.
7. Bartow SA, Pathal DR, Black WC et al. Prevalence of benign, atypical and malignant breast lesions in populations at different risk for breast cancer. A forensic autopsy study *Cancer*1987;146:1-15.
8. Cook MG, Rohan TE. The patho-epidemiology of benign proliferative epithelial disorders of the female breast. *J pathol*1985;146:1-15.
9. La Vecchia C, Parazzini F, Franceschi S et al. Risk factors for benign breast disease and their relation with breast cancer risk. Pooled information from epidemiologic studies. *Tumori* 1985;71:167-178.
10. Donegan WL. Common benign conditions of the breast. In: Donegan WL, Spratt JS. Eds. *Cancer of the breast*, fifth edition. St. Louis, MO: Saunders. 2002:67-110.
11. Shaaban AM, Sloane JP, West CS et al. Histopathologic types of benign breast lesions and risk of breast cancer. *Am J Surg Pathol* 2002; 26:421-430
12. Morrow M. Pre-cancerous breast lesions: implications for breast cancer prevention trials. *Int J Radiant Oncol Biol Phys* 1992;23:1071-1078.
13. Lomdon SJ, Conolly JL, Schintt SJ et al. A prospective study of benign breast disease and the risk of breast cancer. *JAMA* 1992;267:941-944.
14. McDivitt RW, Stevens JA, Lee NC et al. Histologic types of benign breast disease and the risk for breast cancer. *Cancer* 1992;69:1408-1414.
15. Hughes LE, Mansel RE, Webster DJT. Benign disorders and diseases of the breast – concepts and clinical management. 2nd edition. W.B. Saunders; 2000, pp. 7 – 20.

16. Khan SA, Apkarian AV. The characteristics of cyclical mastalgia: a prospective study using a modified McGill pain Questionnaire. *Breast Cancer Research & Treatment* 2002; 75(2):147-157.
17. Kessel B. Premenstrual syndrome. Advances in diagnosis and treatment. *Obstetrics & Gynecology Clinics of North America* 2000; 27(3):625-639.
18. Goodwin PJ, Neelam M, Boyd NF. Cyclical mastopathy: a critical review of therapy. *British Journal of Surgery* 1988; 75(9):837-844.
19. Goodwin PJ, Miller A, Del Giudice ME, Ritchie K. Breast health and associated premenstrual symptoms in women with severe cyclic mastopathy. *American Journal of Obstetrics & Gynecology* 1997; 176(5):998-1005.
20. Ader DN, Shriver CD. Cyclical mastalgia: prevalence and impact in an outpatient breast clinic sample. *Journal of the American College of Surgeons* 1997; 185(5):466-470.
21. Ader DN, South-Paul J, Adera T, Deuster PA. Cyclical mastalgia: prevalence and associated health and behavioural factors. *Journal of Psychosomatic Obstetrics and Gynecology* 2001; 22(2):71-76.
22. Berg JC, Visscher DW, Vierkant RA, Pankratz VS, Maloney SD, Lewis JT et al. Breast cancer risk in women with radical scars in benign breast biopsies. *Breast cancer research and treatment* 2008; 108(2):167-174.
23. Seltzer MH, Perloff LJ, Kelley RI, Fitts WT, Jr. The significance of age in patients with nipple discharge. *Surgery, Gynecology & Obstetrics* 1970; 131(3):519-522.
24. Fentiman IS, Caleffi M, Brame K, Chaudhary MA, Hayward JL. Double blind controlled trial of tamoxifen therapy for mastalgia. *Lancet* 1986; 1(8476):287-288.
25. Messinis IE, Lolis D. Treatment of premenstrual mastalgia with tamoxifen. *Acta Obstetrics et Gynecologica Scandinavica* 1986; 67(4):307-309.
26. O'Brien PM, Abukhalil IE. Randomized controlled trial of the management of premenstrual mastalgia using luteal phase-only danazol. *American Journal of Obstetrics & Gynecology* 1999; 180(1):1-23.
27. Millet AV, Dirbas FM. Clinical management of breast pain. A review. *Obstetrical & Gynecological Survey* 2002; 57(7):451-461.
28. Pashby NL, Mansel RE, Hughes LE, Hanslip JJ, Preece P. A clinical trial of evening primrose oil in mastalgia. *British Journal of Surgery* 1981; 68:801.

29. Preece PE, Hanslip JI, Gilbert L. Evening primrose oil (Efamol) for mastalgia. In: Horrobin DF, editor. Clinical uses of essential fatty acid. Montreal: Eden; 1982. P. 147-154.
30. Bloomers J, De Lange-De Klerk ES, Kuik DJ, Bezemer PD, Meijer S. Evening primrose oil and fish oil for severe chronic mastalgia. A randomized, double-blind, controlled trial. American journal of obstetrics & Gynecology 2002; 187(5):1389-1394.
31. Hamed H, Caleffi M, Chaudhary MA, Fentimen IS. LHRH analogue for treatment of recurrent and refractory mastalgia. Annals of the Royal College of Surgeons of England 1990; 72(4):221-224.
32. Kaur N et al. Clinico-pathological profile of benign breast disease in Indian women; Prospective study based on aberrations of normal development and involution classification. World J Surgery 2012 September.
33. Hatim KS, Laxmikant NS, Mulla T. Patters and prevalence of benign breast disease in western India. Int J Res Med Sci 2017; 5:684-8.