



Research Article

PATTERN OF BENIGN BREAST DISEASES WITH MASTALGIA IN THE FEMALE POPULATION OF BIHAR AND ITS EFFECT UPON THE SELECTED PHYSIOLOGICAL PARAMETERS AND PERCEIVED STRESS

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ABSTRACT

Introduction: Mastalgia is one of the commonest breast conditions compelling the middle age female population to seek medical attention. It has almost uniform distribution across all the socio-economic strata and geographical areas of the world.

Material and method: Present study aimed to analyze the pattern of the mastalgia related breast conditions in the subjects attending surgical outdoor of the parent Institute. The subjects had been screened systematically, investigated in detail and categorized for appropriate management protocol. They had been further followed up to assess the outcome of various management protocol adopted.

Result and discussion: the result showed about 22% of the female subjects attending surgical OPDs had some complaint related to mastalgia. More than 50% of the cases were suffering from benign breast disease most of whom responded well to reassurance and symptomatic treatment. Malignancy appeared to have significant share among serious conditions which required interventional management. Some of the physiological parameters assessed among them showed significant alterations which include higher perceived stress score, Decreased HRV and decreased HF/LF ratio.

Conclusion: Mastalgia is an important breast condition requiring immediate medical attention. It may be caused by benign as well as malignant conditions and need to be diagnosed at earlier stage. Some of the physiological parameters do also show significant alterations and may be utilized in future to predict outcome measures.

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INTRODUCTION

Breast is a dynamic structure which undergoes changes throughout a women's reproductive life and superimposed upon it is the cyclical changes throughout the menstrual cycle. Mastalgia is exceedingly common problem among the females of reproductive age group. It is generally classified as either cyclical i.e. associated with menstrual period or non cyclical. In case of non cyclical the pain either arises from the breast itself or may come from surrounding tissues or from a distant structure coming as a referred pain. The pain may range from a mild discomfort to a severely incapacitating pain. Many times the anticipated underlying serious condition is more a source of worry and distress rather than the pain itself. Fear of having breast cancer is one of them. The most common type of breast pain (mastalgia) is associated with the menstrual cycle and is

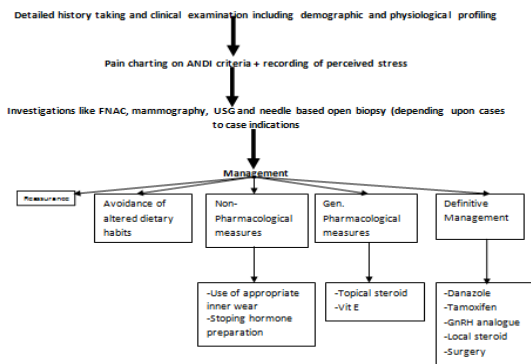
nearly always of hormonal etiology. Some women begin to have pain around the time of ovulation which continues till beginning of their menstrual cycle. The pain can range from barely noticeable to severe variety which many times even prevents them wearing tight clothing. Physician continue to study the role that hormones play in cyclical mastalgia, one study suggest that some women with cyclical mastalgia had a decreased ratio of progesterone to estrogen in the second half of menstrual cycle. The hormone prolactin also plays some role in cyclical mastalgia. Conditions associated with mastalgia are lump in the breast, menstrual problem, psychological disorders etc. The role of even dietary factors could not be ruled out. In one of the recent study on the dysmenorrhea subjects walnut consumption have been found to be of significant benefit¹. The pathological basis of most of the causes of mastalgia is largely unknown till date, investigation procedures play very little role in the diagnosis of the condition and finally the burden of diagnosing the condition lies on the expertise of the clinician herself/himself.

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The mastalgia is not only one of the common source of pain among women of reproductive age group but it is also a source of great psycho-social distress among them which affects their quality of life in most disastrous way. The numbers of mastalgia cases are gradually increasing among Indian women population largely because of lack of exercise, increasing stress, habit of using tobacco and high fat diet. This work is an attempt to find out a clinic-pathologic account of the pattern of the condition from its management point of view and its impact upon the selected physiological parameters and perceived stress among them.

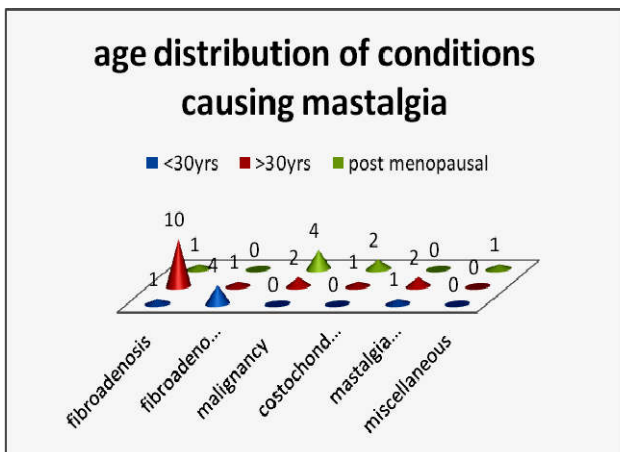
MATERIAL AND METHOD

A total of 232 cases attending the surgery OPD of DMCH Laheriasarai with complaints related to breast have been recruited for the study after written informed consent. The protocol of study has been duly approved by the Institutional ethical committee. The protocol of the study was as follows-



Observations and result

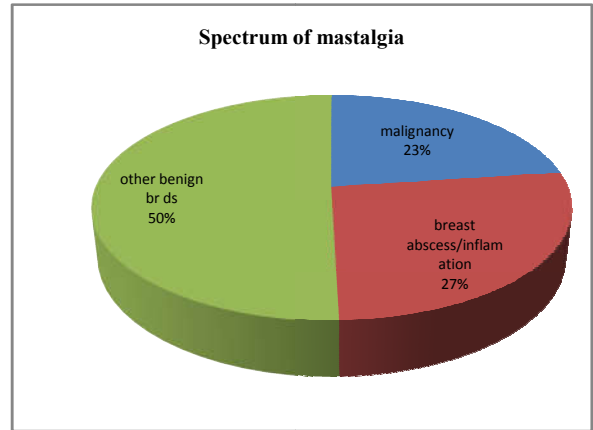
In the study period out of 1042 female patients attending the surgery OPD of the Institute, a total of 232 presented with the complaints related to breast (22.26%). This represents the magnitude of the clinical condition. The subjects had almost equal representation from all the socio-economic strata of the society.



Graph 1 Spectrum of mastalgia

Most of the conditions have been diagnosed as benign in nature (see Graph: 1& 2) and most of them required a mere reassurance, counseling and symptomatic management (48%). Besides the benign conditions, malignancy and inflammatory

conditions have been found contributing almost equally to the mastalgia.



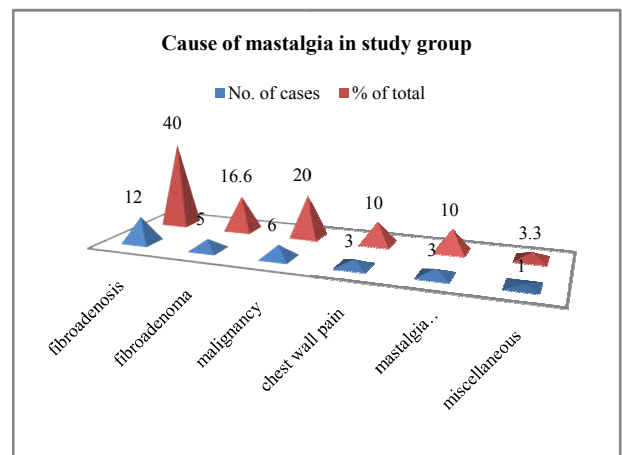
Graph 2 Spectrum of mastalgia

Most of the conditions have been diagnosed as benign in nature (see Graph: 1& 2) and most of them required a mere reassurance, counseling and symptomatic management (48%). Besides the benign conditions, malignancy and inflammatory conditions have been found contributing almost equally to the mastalgia.

Table 1 various pathological conditions responsible for cyclic and non-cyclic mastalgia

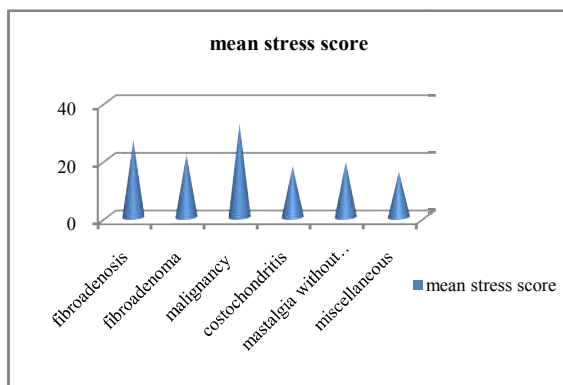
	cyclic mastalgia	non cyclic mastalgia
fibroadenosis	9 (7.20) [0.45]	3 (4.80) [0.68]
fibroadenoma	3 (3.00) [0.00]	2 (2.00) [0.00]
malignancy	3 (3.60) [0.10]	3 (2.40) [0.15]
others	3 (4.20) [0.34]	4 (2.80) [0.51]
Column Totals	18	12

Out of all the cases with mastalgia 70 % of the subjects have been found to be cases of cyclic mastalgia. Those suffering from non-cyclic mastalgia, 20% were of true non cyclic mastalgia where as 10% was found to be having chest wall pain. Chi square test for the various pathologies related to cyclic and non cyclic mastalgia (see table 1) showed a test statistic of 2.23 with a p value 0.5 which appears to be non-significant.



Graph 3 disease specific cause of mastalgia in study population

As far as specific pathological cause of mastalgia is concerned, Fibroadenosis has been found to be the biggest contributor, responsible for majority (40%) of the cases under study. Malignancy has been found to be responsible for almost one fifth of the cases under study. Most of the cases of fibroadenosis were reported in the younger age group subjects whereas most of the cases with malignancy were in there postmenopausal stage of life. Some association between fat intake and breast conditions have been observed but it is mostly inconclusive. Same thing stands true for association with tea/coffee intake too. As far as diagnostic accuracy is concerned, Taking open biopsy as gold standard procedure, MRI appears to be 100% sensitive and specific technique followed by FNAC(66% accuracy)) and USG(55.5% accuracy).



Graph 4 mean perceived stress score of subjects with mastalgia of diverse pathologies

Among various physiological parameters, No significant difference has been observed between the cases of breast disease subjects and other individuals for pulse and BP (both systolic as well diastolic) but cases of malignancy showed decreased heart rate variability (decreased total power compared to normal recommended standard) and higher than normal LF/HF ratio. Mean Perceived stress score have been found to be 23 which is significantly higher than normal recommended value (P value< 0.05). Furthermore the stress score was significantly higher in the malignancy and fibroadenosis group than other group (P<0.05).As far as management is concerned, as stated earlier, most of the benign cases responded well to counseling, reassurance and symptomatic management. GnRH analogue (where indicated) appeared to well tolerated and was effective in some 50% of the subjects. Other management protocols which proved effective include Danazole with oral NSAIDs (38%), Tamoxifen with oral NSAIDs and steroids with local anesthetics (esp. in malignancy patients for palliative care).

DISCUSSION

Mastalgia is one of the commonest breast conditions responsible for breast discomfort and distress among women worldwide. According to an estimate some 80% of women population suffer from this condition at least once in her life time and is the leading cause of consultation in primary care settings especially in the western health care system². According to a report published in LANCET almost 20% of females in their pre-menstrual periods suffer from severe mastodynia generically called mastalgia^{3,4}. Present study, though strictly speaking not a true prevalence study, fairly

represents the world population of mastalgia with 22% of the females attending surgery OPD (which caters a wider area of Bihar and most of the populations of Nepal especially from the bordering region) having mastalgia as her chief complaint. Evidences suggest Hyperprolactinemia could be playing an important role in the cases of premenstrual mastodynia. Stress appears to be another factor apparently playing its role in mastalgia. The perceived stress score⁵ of the study population shows significantly higher mean value for fibroadenosis and malignancy patients than other subjects though all the mastalgia patients were found to have higher perceived stress score than non mastalgia group of subjects. The study Stress is linked to mastalgia apparently by the stimulation of prolactin release^{6,7}. Sleep duration has also been associated with mastalgia which again apparently acts by its effect upon the prolactin release mechanism. Luteal insufficiency has been projected as another cause of mastalgia by some researchers⁸. Besides stress, Heart rate variability is another important parameter that has come in to picture recently. Though very few if any studies are available on mastalgia and HRV per se, studies have been conducted in various painful conditions and the findings are not very conclusive except for some decrease in the high frequency values⁹. In case of subjects with breast cancer the findings are more conclusive and revealed that heart rate was significantly higher and the SDNN, RMSSD, HRV index and high-frequency values were significantly lower in the breast cancer survivors than in the matched¹⁰.

As far age distribution of mastalgia is concerned, Females of reproductive age groups especially in their late 30s have been found to be the commonest victim owing to the cyclically changing hormonal milieu, more proneness to stressors and proneness to infective and inflammatory conditions in the particular age group. Non-cyclic mastalgia has been reported to be commoner in the age group of 40-50 years¹¹. As far as investigations are concerned, most of the cyclic mastalgia could be diagnosed clinically and don't require imaging^{12,13,14}. Mammography and USG are one of the commonly prescribed investigations for mastalgia patients which are sensitive but less specific for diagnosis of breast cancer in these patients. Owing to false positive and false negative reports the subject may undergo unnecessary mental agony and wastage of resources¹⁵. Breast cancer is one of the most dreaded outcomes of detailed follow-up of mastalgia cases. The study reported a total of 6 cases (20%) of malignancy in the subjects examined for mastalgia. Prevalence of breast cancer in patients with mastalgia alone found in from 0.41% [95% confidence interval (CI) 0.16–1.04%] to 3.32% (95% CI 1.58–6.54% being higher in older women and null in women under 35 years of age¹⁵. As far as management of mastalgia is concerned, Reassurance and symptomatic treatment has been the most effective tool of management in most of the benign cases. This is in agreement with most of the studies related to the management of mastalgia cases^{16,17}. Besides, other treatment modalities found effective include Danazole therapy, GNRH analogues and tamoxifen therapy etc.

CONCLUSION

Most of the women in her life time experience the agony of mastalgia at least once. Though most of them are benign in nature, they need careful assessment and empathetic management protocol. Stress is one of the important determinant as well as outcome of the condition that warrants

scientific approach for a better outcome measure. Besides reassurance and symptomatic care, which holds important place in the management algorithm, hormonal preparations and analogues have appreciable impact upon the morbidity.

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