A RETROSPECTIVE ANALYSIS OF WOMEN WITH ONLY MASTALGIA

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ABSTRACT

Background: Research conducted over the years to find any association between breast pain and malignancy report consistently low incidences of malignancy, ranging from 0% to 2.3%. Thus the question remains as to whether women with mastalgia should undergo imaging or not. The answer lies in how unlikely the likelihood is.

Objective: To determine if mastalgia is a sign of breast cancer and to evaluate the benefit of diagnostic workup, particularly mammography in its work up.

Material and Method: This was a descriptive cross-sectional study based on data retrieved from the hospital information management system conducted at the Radiology Department of Northwest General Hospital and Research Centre Peshawar for two years from 2022 to 2023. 127 female patients complaining of focal or diffuse breast pain were referred for mammography.

Results: 11.8% of the cases had cyclical while 88.2% had acyclic mastalgia. 28.3% of the patients were below 40 years, and 71.7% were above 40 years, with the mean age being 46 years. 11% of patients had a higher BIRADS (4 or 5) on mammogram. These 14 patients were referred for histopathology, out of which 11 patients had histopathology performed. 3.9% had breast cancer, and 4.7 % had benign findings on histopathology. Complementary ultrasound was normal in 29.1% patients, 18.9% had dilated ducts, 6.3% had benign-looking enlarged axillary nodes, 5.5% had fibroadenoma, 5.5% had multiple small simple cysts, 2.4% had small hypoechoic lesion, 0.8 % had lipoma, and 18.9% of patients did not undergo ultrasound examination.

Conclusion: Studies assessing the outcomes of diagnostic workup in patients with mastalgia report that the cancer rate in these women is comparable to the general population. The clinician should thus reassure and counsel the patient regarding pain management. If imaging is performed, the American College of Radiology Appropriateness Criteria should be followed.

Keywords: Mastalgia, mammography, malignancy, appropriateness criteria.

INTRODUCTION

Seventy to eighty percent of the female population will have breast discomfort at some instance during their lifetime.[1] Premenopausal women are the most likely group to experience breast pain. According to reports, the incidence of malignancy in individuals with breast pain ranges from 0% to 3.2% with one research showing the rate of about 7%[2]. Breast pain is usually self limited and is not usually a sign of underlying sinister pathology.

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Reassurance and conservative management e.g over-the-counter medicines can help with these symptoms.

Clinically mastalgia is classified as cyclical and non-cyclical mastalgia. Numerous studies demonstrate that diffuse and cyclic pain are benign.[2,3] Certain investigations have identified a weak but persistent correlation between noncyclic focused pain and cancer. Preece et al.[4] in their study conducted in the late nineteenth century found that among the 240 breast cancer cases, 17 (7%) reported pain as their only complaint and described it as “well localized and persistent.” This research is among the first to describe the link between breast pain and cancer. Since this study was conducted during a period when screening mammography was far less common than it is now, its applicability to modern times is probably restricted. Leddy et al.[5] in a relatively recent study reported three cases (1.2%) of cancer in 257 women with focal mastalgia.

Numerous studies have shown that even focused and non cyclical pain is not associated with cancer. In a research

conducted on 200 women under the age of 30 years who presented with either cyclic (38% of the cases) or noncyclic pain (62% cases), no focal lesion was discovered .[3]

We carried out this study to ascertain whether pain is a sign of malignancy and to evaluate the usefulness of diagnostic work-up, particularly mammography, in these patients.

MATERIALS AND METHODS

This retrospective descriptive cross sectional study based on data retrieved from hospital information management system was performed in Radiology Department, Northwest General Hospital and Research Centre, Peshawar from 2022-2023. Ethical approval was taken from the Northwest General Hospital ethical committee on 27-01-2022 (IRB 2701). A total of 127 female patients who presented to radiology department NWGH with breast pain only fulfilling the inclusion criteria were included in the sample via non probability consecutive sampling.

Excluded from the study were women who had a breast lump, nipple discharge, redness or skin retraction on physical examination or were pregnant or nursing. Mammogram with/without complementary ultrasound was done for all the patients followed by histopathology in some cases.

The mammograms were interpreted by two consultant radiologists using the **Breast Imaging Reporting and Data System (BI-RADS)** to standardize the reporting process. In cases where there was disagreement, a third radiologist was consulted to provide an additional opinion and resolve the discrepancy

Data was entered into a performa for analysis. Each entry was double-checked for accuracy and completeness. Any missing or incomplete data were addressed as follows:

- If the missing data was minimal or non-critical, the record was included .
- For patients with significant missing data, they were excluded from the analysis if it affected the integrity of the study.

The gold standard in case of suspicious mammograms was histopathology of the suspicious lesion .Gold standard was needed because mammograms, like all diagnostic tools, can sometimes produce false positive or negative results .Histopathology serves as the most reliable way to confirm the true nature of a suspicious lesion, reducing the chances of misdiagnosis.

Results of mammograms, ultrasounds (USG), breast exams, whether or not biopsies were performed, and diagnosis were looked into retrospectively. The data was evaluated with SPSS version 25.0. The descriptive analysis was performed and data was presented in the form of frequency and percentages.

RESULTS

Demographics;

Our study included 127 female patients referred for mammogram complaining of breast pain only. The mean age of the patients was 46 years. Age was divided into two categories i.e 35-40 years and 40-60 years.

Table.1: Age Category

Age category	Frequency	Percentage
35-40 years	36	28.3
40-60 years	91	71.7

Pain was classified as cyclic or non-cyclic.

Table.2: Types of Mastalgia

Type of Mastaglia	Frequency	Percentage
Cyclic pain	15	11.8%
Non cyclic pain	112	88.2%

Results of the mammograms were interpreted by two consultant radiologists and were assigned BIRADS categories.

Table.3: BIRADS Category

BIRADS	Frequency	Percentage
BIRADS 1	17	13.4
BIRADS 2	32	25.2
BIRADS 3	64	50.4
BIRADS 4	6	4.7
BIRADS 5	8	6.3

Complementary ultrasound was normal in 29.1% patients, 18.9% had dilated ducts, 6.3% had benign looking enlarged axillary nodes, 5.5% had fibroadenoma, 5.5% had multiple small simple cysts,3,9% had focal cystic area, 2.4% had small hypoechoic lesion, 0.8 % had lipoma and 18.9% patients did not undergo ultrasound examination.

Table.4: Ultrasound findings

Ultrasound findings	Frequency	Percentage
Normal	37	29.1
Not done	24	18.9
Dilated ducts	24	18.9
Fibroadenoma	7	5.5
Small hypoechoic lesion	3	2.4
Multiple small cysts	7	5.5
Focal cystic area	5	3.9
Malignant looking lesion	11	8.9
Benign enlarged axillary nodes	8	6.3
Lipoma	1	0.8

14 out of the 127 patients, with BIRADS 4 and BIRADS 5, were referred for histopathology, out of which 11 patients had histopathology performed and 3 patients were lost to follow up . 3.9% (5 out of 127) had breast cancer and 4.7 % (6 out of 127) had benign findings on histopathology. Majority of the patients were not advised histopathology because of normal mammogram or a benign finding.. The histopathologic results are shown in table.4.

Table.5: Histopathology results

Histopathology results	Frequency	Percentage
Benign	6	4.7
Malignant	5	3.9
Not advised	111	87.4
Not done	5	3.9

DISCUSSION

Bilgin et al[3] conducted a study on a sample of 937 patients and reported that 41.1% had no abnormal radiological findings. Fibrocystic disease was found in 50.6% while 0.6% of the cases were found to have malignancy. 83.3% of the patients were over forty years of age. In their prospective research, Yıldırım et al[2] found that the female patients with breast pain only and no abnormal findings on clinical examination or diagnostic imaging were not at an increased risk of breast cancer. In a prospective research by Joyce et al[7] on more than five thousand patients, the only symptom in 3331 (57%) of the cases was mastalgia; among them 1.2% were positive for malignancy and all of these positive cases were older than 35.

Researchers have observed that the risk of malignancy at the site of focal pain is not higher than that of women who do not experience pain (i.e., same as the background rate). Duijm et al[8] monitored 987 women complaining of mastalgia or discomfort and 987 who had screening mammography but no breast symptoms. Seven (0.7%) positive cases were discovered in the control group, compared to four (0.4%) in the group experiencing pain .According to research by Tumyan and colleagues[9], out of 86 women who had focal mastalgia, two (2.3%) had tumors at the location of mastalgia and two (2.3%) had cancers in unrelated areas. Similar findings were reported by Owen et al[10] in his study on women with mastalgia alone. He found cancer incidence of 0.4% (4/944) distant from the area of discomfort and 0.3% (3/944) close to the region of discomfort. Kushwaha et al[11] discovered one (0.1%) case having malignancy in the opposite asymptomatic breast in a sample of 799 patients having breast as the sole complaint. This is less than the concurrent cancer detection rate (5.5/1000, 0.6%) in their screening cohort. One malignancy (0.4%) was discovered after Chetlen and colleagues[12] examined the data of 236 women with mastalgia alone.

In this research conducted at our department, the rate of malignancy in cases with breast pain only was found to be 3.9% which is consistent with the aforementioned studies. The results of these studies highlight the need of primary care services and counseling for those who suffer from mastalgia, thus helping in preserving health care resources . Additionally, unnecessary breast imaging may amplify patients' fears .The American College of Radiology Appropriateness Criteria expert panel has produced guidelines for the initial assessment of patients complaining of mastalgia that should be adhered to, if the decision of imaging is made.[13]

The findings of our study are in line with other studies in literature.This study has some limitation including its retrospective data and small sample size. Our study did not compare the cancer rate in the cases with the control group. We found that our study lacked a scale for measuring pain intensity, and that there was no information about smoking, use of hormone , family history of breast cancer and the last menstrual date, which is a limiting factor. Three of the patients (2.3%) who needed histopathology were lost to follow up hence the results were unknown. Any data that were not questioned or not entered into the system could not be retrieved for our investigation because the data were collected retrospectively.

We recommend that more studies involving a large sample of patients and advanced modalities like tomosynthesis are required. Long term research assessing the incidence of breast cancer over time at the area of discomfort might also be important. There is still more to be done to assist and guide the physicians on the low incidence rate of cancer in patients with breast discomfort, especially those with cyclic or diffuse pain, and to help them reassure patients without referring them for imaging.

CONCLUSION

In this research conducted at our department, the rate of malignancy in cases with breast pain only was found to be 3.9% .The results were consistent with prior studies. The study concluded that mastalgia alone is not an indication of underlying sinister pathology. Primary health care physicians should therefore be trained in the primary management of mastalgia, as this would help to address this health issue that pose great inconvenience to women to avoid the unnecessary burden on healthcare resources. Patients with any abnormality detected during their physical examination or those at higher risk for cancer should be referred to a specialist right away.

Conflicts of Interests: None.

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