Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jb9va010

BENEATH THE SURFACE: UNCOVERING MALIGNANCY IN BENIGN BREAST LUMPS

Azhar Zahir Shah[1*], Ahmed Zeb[2], Aurang Zeb[3], Shah Jehan[4], Adil Shah Roghani[5], Jibran Umar Ayub Khan[6]

[1*,2,4,5]Department of Surgery, Kabir Medical College, Peshawar, Pakistan
[3]Department of Anaesthesia, Kabir Medical College, Peshawar, Pakistan
[6]Department of Medicine,Kabir Medical College, Peshawar, Pakistan

***Corresponding author:** Azhar Zahir Shah
*Professor General Surgery, Department of surgery, Sardar Begum Dental College, Peshawar, Pakistan, Email: azhar.135.as@gmail.com

ABSTRACT

Introduction: Breast lumps are incidentally diagnosed in females who are generally ignorant of their health especially in underdeveloped country like Pakistan where illiteracy rate is quite high. They are significant due to the fact as they have a potential to transform into malignancy

Research Methodology: This descriptive observational study was conducted in surgical department of MMC General Hospital, Peshawar. The duration of study was two years from October 2020, to October 2022. The study was designed to determine the frequency of malignancy in clinically benign looking breast lumps and to calculate the mean age of patients having malignancy in these cases. Hundred patients with breast lump were selected randomly from those patients who came through O.P.D. to seek treatment for breast diseases. They were registered after thorough clinical history, examination and specific relevant investigation where and when required.
100 cases were randomly selected for the study.

Results: The Common presenting feature at time of admission was painless breast lump (41%), lump with pain (32%) and with nipple discharge (22%) and skin changes (5%). The total number of patients with benign breast lumps was 76 and malignant breast lumps were 24. Benign fibro adenoma was the most common finding, found in 41 patients (41%) while fibrocystic disease was the second most found in 25 patients (25%). Out of 100 patients, total of 24 cases were found to be malignant. The patients in the study were aged between 15 and 75 years.

Conclusion: Most breast lumps are benign, but any new or unusual lump should be evaluated to rule out malignancy. Regular screenings and clinical exams are vital, especially for individuals with risk factors for breast cancer.

Key Words: Fibroadenoma, fibrocystic disease, invasive ductal carcinoma

INTRODUCTION

Breast or mammary glands – modified sweat glands, are of great importance for the offspring and are the symbol of womanhood and significant component of famine beauty. However, one fourth of

women suffer from breast disease in their life time after puberty, worst of all, it becomes the cause of death among the female population in the form of breast cancer, which is the most common female malignancy and second leading cause of cancer death among women aged 45-60 yrs after lung cancer in U.S.A. and Western.

Breast cancer is a global problem affecting women in both industrialized and developing countries. At present rate, one in every eight women will develop breast carcinoma during her lifetime. In western world, breast carcinoma accounts for 27% of all female malignancies and accounts for 3-5% of cancer deaths. In developing countries, the rates repotted are low and accounts for 1-3% of cancer deaths.

In Pakistan, it is also the most frequent female malignancy, as 26.7% of female patients suffer from this disease. Moreover, a higher incidence in younger age group has been observed in our population. The causes of breast cancer remains elusive and results from a complex interplay of various genetic, endocrine, environmental, and host factors. It has been observed that early childbirth, parity and breast feeding decreases the risk of breast cancer, but in spite of early marriages, multiparty and breast feeding of their babies, women in our community still develop breast cancer too frequently.

Most of breast carcinoma will present as hard lump, may be associated with withdrawing nipple. About 5% will present with locally advanced disease. Clinical presentation and course of the disease in Pakistani women is different from the west as majority of female patients having breast carcinoma present in an advanced stage. Unawareness is a major factor. The median age of presentation is 45yrs and advanced carcinoma accounts for 43.7% of the disease. Most of the breast lumps are caused by fibrocystic breast changes also known as benign breast disease, which can slightly increase risk for getting breast cancer. The present study was aimed to determine the frequency of malignancy in clinically benign looking breast lumps and to calculate the mean age of the patients presenting with benign breast lumps having malignancy.

MATERIAL AND METHODS

This descriptive observational study was conducted in surgical department of MMC general hospital, Peshawar. The duration of study was two years from September 2021 to September 2023. The study was designed to determine the frequency of malignancy in clinically benign looking breast lumps and to calculate the mean age of patients having malignancy in these cases. Hundred patients with breast lump were selected randomly from those patients who came through O.P.D. to seek treatment for breast diseases. They were registered after thorough clinical history, examination and specific relevant investigation where and when required.

100 cases were randomly selected for the study.

INCLUSION CRITERIA:

All female patients who presented with clinically benign looking breast lumps with age ranged at puberty and onwards.

EXCLUSION CRITERIA:

1) All female patients with age below puberty.
2) All female patients with breast lumps having strong clinical suspicion of malignancy.
3) Already diagnosed case of carcinoma breast.
4) Patient with overt clinical signs of carcinoma breast.
5) Patients with breast lumps having evidence of metastasis on radiological examination.

RESULTS AND OBSERVATIONS

This study was conducted in MMC general Hospital, Peshawar from September 2021 to September 2023. A total of hundred patients with benign looking breast lumps were included in this study. The following results and observations were made in all patients who underwent any diagnostic or therapeutic procedures.

The Common presenting feature at time of admission was painless breast lump (41%), lump with pain (32%) and with nipple discharge (22%) and skin changes (5%). (Table no. 1).The total number of patients with benign breast lumps was 76 and malignant breast lumps were 24. Benign fibroadenoma was the most common finding, found in 41 patients (41%) while fibrocystic disease was found in 25 patients (25%), Peri ductal mastitis in 7 patients (7%), fat necrosis in 1 patient (1%). Intra ductal carcinoma was found in 17 patients (17%). Insitu (non invasive) ductal carcinoma was in 5 patients (5%) and intra lobular carcinoma in 2 patient (2%). (Table 2).Out of 100 patients, total of 24 cases were found to be malignant. Out of these, an invasive intra ductal carcinoma was found in 17 cases (80.95%), noninvasive intraductal carcinoma 5 cases (20.83%), and invasive lobular carcinoma 2 cases (8.33%). (Table No.3).Stage of the malignant disease at presentation was the following:-Stage-I 06 cases (25%).Stage-II 16 cases (66.66%).Stage-III 02 cases (8.33%).Stage-IV nil (Table No. 4). Out of 100 patients, a total of 76 patients (lumps) were found to be benign. Out of these, fibroadenoma was the most common found in 41 patients (53.95%), fibocystic disease was in 25 patients (32.9%), duct ectasia 7 patients (9.21%), duct papilloma 2 patients (2.31%).(Table No. 5).The patients in the study were aged between 15 and 75 years. The maximum age range with benign breast lumps at diagnosis was from 15-40 years (88.15%) with mean age of 31 years. The maximum incidence of malignant lumps was noted at 51-60 years (37.5%) with mean age of 55 years. (Table No. 6).

TABLE No. 1 Clinical Presentation of Breast Diseases n = 100

Presentation	**No. of Patients**	**Percentage**
Painless lump	41	41%
Painful lump	32	32%
Nipple discharge	22	22%
Skin changes	05	05%
Total	**100**	**100%**

TABLE No. 2 Percentage of the Breast Lumps after Histopathology Results
Total number of patients = 100

Type of Lesion	**Number of Patients**	**Percentage (of Total)**
Fibroadenoma	41	41%
Fibrocystic disease	25	25%
Duct ectasia	07	07%
Duct Papiloma	02	02%
Fat necrosis	01	01%
Invasive duct carcinoma	17	17%
Early (non-invasive) duct carcinoma	05	05%
Lobular carcinoma	02	02%
Total	**100**	**100%**

TABLE No. 3 Percentage of Patients with Malignant Breast Lumpsn = 24

Type of Malignancy	No. of Patients /Frequency	Percent of Total Cases	Percent of Malignant Cases
Invasive ductal carcinoma	17	17%	80.95%
Early non-invasive	05	05%	20.83%
Lobular carcinoma	02	02%	08.33%
Total	**24**	**100%**	**100%**

TABLE No. 4 Stage of Malignant Disease n = 24

Stage of Disease	No. of Patients	Percentage (%)
Stage I	06	25%
Stage II	16	66.66%
Stage III	02	8.34%
Stage IV	--	--
Total	**24**	**100%**

TABLE No. 5 Percentage of Patients with Benign Breast Lumps n = 76

Type of Lesion	Frequency	Percent of Benign Cases	Percent of Total Cases
Fibroadenoma	41	53.95%	41%
Fibrocystic disease	25	32.9%	25%
Duct ectasia	07	9.21%	07%
Papiloma	02	2.63%	02%
Fat necrosis	01	1.31%	01%
Total	**76**	**100%**	**100%**

TABLE No. 6 Age Distribution of the Patients Presented with Breast Lumps Total number of cases: 100

Age in Years	Number of Patients			Percentage	
	Benign	Malignant	Total	Benign	Malignant
15 – 30	44	01	45	57.89%	41.6%
31 – 40	23	05	28	30.26%	20.83%
41 – 50	09	07	16	11.84%	29.16%
51 – 60	--	09	09		37.5%

> 60	--	02	02		8.33%
Total	**76**	**24**	**24**	**100%**	**100%**

DISCUSSION

Breast carcinoma is a global problem affecting women both in industrialized and developing countries. Fear of the breast cancer is the most important concern for women and is the most common malignant tumor among females as in the west, 9.3% of women are at risk of developing it[1,2].

The incidence of breast carcinoma in Pakistan is 26.6% of all cancers in females[3], which is far less than in the west and in America (60-80%) with average age of 64 years[4,5]. Majority of the patients attending the breast clinic have benign breast conditions. Female patients with breast diseases present in surgical O.P.D. with various symptoms including breast lumps, nodularity, pain, nipple discharge and nipple discharge. Among these, lump in the breast is the commonest presentation, which may or may not be accompanied by by other complaints. This study shows that almost 1/4th of the patients presenting with breast lump in surgical O.P.D. may have malignancy. It is noted that almost 77-78% of the patients diagnosed as breast cancer presented as breast lump[6,7,8], that is comparable to this work (73%). In this study, the overall incidence / frequency of malignancy in all patients presented with clinically benign looking breast lumps in surgical O.P.D. was (24%) and remaining (76%) cases were benign breast lumps which is comparable to (24.2% & 75.8%) observed by Chaudhary[9] and (80% benign) by DUNN[10]. Six out of 24 patients having malignancy presented at an early stage-I (25%) and 16 patients at stage-II (66.66%) which is nearer to the work observed (25% and 75%) respectively by J. Qureshi[11]. In this study, breast carcinoma was more common on left side (54.16%) than on the right (45.83%) nearer to reported (54% & 46% respectivelly) by A. Rasool[12]. In this study, upper outer quadrant is the usual site (39%) followed by outer lower quadrant (22%), as is also reported in literature.

In present work, breast carcinoma was (24%) macimum between4th & 6th decade of life, which is comparable to 26% reported by Usmani[13], Shahina in Pakistani and 24.8% by M. Chaudary[14], in India. These figures are higher than observed in developed countries, i.e., (19.6%) reported by Fleming[15] et al at Australia and (21% and 15%) by Denagon[8] and Bennette in UK respectively. The observed high figures in this study compared to western world suggest a greater incidence of breast cancer in our population. This higher frequency is because: our significant population is illiterate and has poor awareness of breast carcinoma. By virtue, Islamic Beliefs, modesty, poor awareness and lack of self examination, patients hiding their breast lumps and only present to the surgeon when it is giving them significant symptoms such as increase in size of lump , pain and skin changes. These reasons could be the basis of higher incidence in our people.

In this study, fibroadenoma was the most frequent histopathological diagnosis (41% of all and 53.95% of benign cases) with maximum frequency in 2nd and 3rd decade of life . it was also commonest observation in 15 to 20 years age group in study made by Donegon[8]. In other studies, its frequency observed in benign breast disorders falli.e., 34% in Ciatto[16] et al. So there was no significant difference in epidemiology compared to figure in literature. Fibrocystic disease was second most common (25% of all cases and 32.9% of benign cases) histopathological diagnosis with maximum incidence in 4th and 5th decade of life. Its frequency in benign cases observed by other studies, i.e., 47% Donegan and 43.2% in India[17]. The values in this study were closer to the values observed in other studies.

Duct ectasia is another finding (7% of total and 9.2% among benign breast lumps). Majority of them were in the third decade of life. Only 2% in Western population reported by Denagon[8].

Invasive intraductal carcinoma was the third frequent histopathological diagnosis in the study, was found in 17 cases (80.95%) among the malignant breast lumps, comparable to (80%) by Munawar Jamil[18]. The reported figure in literature 67.9% at U.S.A. by Berg et al[2] and 74.6% by Corton[4].

In this study, the mean age at diagnosis of benign and malignant breast lumps was 31 and 55 years respectively, which is comparable to the figure (34.7 and 48 years respectively) observed by Shah[19] at Karachi and (32.96 and 51.81 years) observed by Chauhary[14]. The peak age incidence of

malignancy observed in this study was 5th decade (37.5%) that is more as compared to fourth decade observed by Usmani[13]. Majority (87.49%) of the patients with breast lumps having malignancy belonged to age group between 31 to 60 years, is slightly more as observed 87% by J. N. Qureshi[11] but comparable with Baloch[20] study. In this work, majority of the patients were younger (45%) in second, (28%) in third decade of life and (27%) were above age 40 years, which coincides with studies observed by Rasool[12] and Mehdhi[21]. The youngest patient recorded with benign lesion was 15 years old and patient having malignant lump was <30 years. This study is coherent with study in U.S.A. by Clayman[22] and Eltamer[23] in which no case of malignancy was found in 2nd decade.

Treatment of breast carcinoma depend upon the stage of the disease and the patient's preference. Because of the poor survivallence and compliance of patient, we still believe that mastectomy has and edge over wide local excision of tumor with post op. radiation. Breast reconstruction may be considered in patients treated with mastectomy if they desire so. Lumpectomy followed by radiotherapy is not an appropriate procedure for all patients. In this study, patients with early breast cancer, following mastectomy and axillary lymph node dissection were referred to oncologist for chemo or radiotherapy. All these patients were put on Tamoxifen irrespective of their hormonal or menopausal status. Due to high incidence in our setup, it is recommended that all clinically benign looking breast lesions recorded should be biopsied to rule our malignancy.

CONCLUSION

Frequency of diagnosis of breast cancer in clinically benign looking breast lumps was (24%) in the total cases and remaining (76%) of cases were benign. So almost one in four female patients coming to surgical O.P.D. with breast lump can have malignant breast lump. The frequency / incidence of diagnosing a malignant breast lump is increased with subsequent age group. There is a trend towards a greater incidence in younger age group in Pakistani population studied compared with international data. This observation should alert the clinician in our country to be more cautious in managing breast lumps, specially in the younger age groups between 30 to 50 years. Female medical officers in all patients reporting to out patient department should examine the breast. Female patients with breast disease should be advised breast self-examination and encouraged to report for management as soon as a breast lump is detected.

REFERENCES

1. Chiechi L.M, Secreto G. Breast cancer and replacement therapy, which women are at risk. Clin exp obst Gynaecol 1999; 26 (2): 105-8.
2. Berg JW, Hutter RV, Breast cancer 1995; 75:257-69.
3. Polk. C.H, Gardnar B, Stone H.H. Lump in the Breast. In: Basic surgery, 4th edn, Quality medical publishing company, 1993: 384-402.
4. Christopher P.C, Lesster DC, Corton RS. The Breast. In: Kumar v, Corton RD, Robbin S (editors). Robin's basic pathology. 7th edn. AW Saunders company, Philadelphia. 2004:619-717.
5. Richard C, Sainsbury. The Breast. In: Russel R C G, Williams NS, Bulstrode CJK, editors. Bailey and Love's short practice of surgery, 24th edn. London: Arnold, 2004:824-46.
6. Chianakwalam CL, Bates T. Diagnosis and management of breast lump. Surgery International 2001; 19:73-6.
7. Cady B et al: Evaluation of common breast problems. Guidance for primary care providers. CA Cancer J Clin 1998; 48: 49.
8. Denagon WL. Introduction to the history of breast cancer. In: DonaganWL&Spratt JS. Editors. Cancer of the breast, 4th edn. Philadelphia: WB Saunders. 1995:1-15.
9. Chaudhary I A, Qureshi SK, Rasul S, Incidence of malignancy in females presenting with breast lumps in opd. Pak J Med Sci 2003; 19 (4): 287-94.
10. Dunn J M, Lucarotti M E, Wood S J, Mumford A, Webb A J. Exfoliative cytology in the diagnosis of breast disease. Br J Surg 1995; 82: 789-91.
11. Qureshi JN, Qureshi ZA, Ahuja P, Memon A. s, Evaluation of breast carcinoma in breast lump. J Surg Pak 2001; 3: 7-9.

12. Rasool A, Malik MI, Luqman M. A Clinicopathological study of carcinoma breast. Pak J Med Res 1987; 26:135-39.
13. Usmanni K, Khanum A, Afzal H, Ahmaed N,. Breast carcinoma in Pakistani women .J Enviorn pathol toxicol oncol 1996; 15:251-53.
14. Chaudhary M, Sen S, Sengupta JR. Breast lumps, a study of 10 years. J India Med Assoc 1995; 93:455-57.
15. Fleming NT, Armstrong BK, Shiner HJ. The comparative epidemiology of benign breast lumps and breast cancer in Western Australia. International J.cancer 1982; 30:147-52.
16. Ciato S, Bonardi R, Ravaili A, Canuti D, Foglitta Fetal. Benign surgical biopsies. Are they always justified? Tumor 1998; 84:521-24.
17. Raju GC, Jankey N. Narynsingh V. Breast disease in young western Indian women; an analysis of 1051 consecutive cases. Postgraduate med journal 1985: 61:977-78.
18. Munawar J, Zaheer A. Muhammad Z. Risk factors of carcinoma breast. JSP International 2000: 5(3): 145-49.
19. Shah S.S, Kayani. N. Hasson S.H et al. Diagnostic evaluation of FNAC in the management of breast Lesions. J Pak Med Assoc. 1998:48(1): 7-8.
20. Balooch Q, Sheikh SA. Soomro AH. Clinical presentation of carcinoma breast at CMC hospital larkana. Pak J Surg 1996; 1: 76-9.
21. Mehdi I. Breast carcinoma. Treat or over treat. (Esitorial). J pak Med assoc 1996; 46: 142-43.
22. Clayman C, ED, Benign breast diseases. In: The American Medical Association Encyclopedia of Medicine, New York, and Random House. 1989; 666-67.
23.El-Tamer M. B, Song M et al, Breast masses in African, s American teenage girls. J Paediat Surg 1999; 34(9): 1401-04.