

# The incidence of malignancy in breast lumps in females: A prospective population study

ADEL KHDAIR ABBAS

Iraqi Board of General Surgery, M. B. Ch. B. F. I. C. M. S, Department of General Surgery, Al – Kadhimain Medical City, Baghdad, Iraq

## SUMMARY

**Background:** Breast cancer is one of the three most common cancers worldwide, along with lung and colon cancers. It accounts for 27% of all female cancer in the western world. A higher incidence of breast cancer has been observed in young age group and one – fourth women suffer from breast disease in their life time after puberty. Early diagnosis is the key to increased survival and every breast lump must be examined and evaluated to rule out malignancy.

**Objective:** to assess the incidence of malignancy in females presented with breast lumps and to find out the age related incidence of benign and malignant breast lumps in those patients.

**Patient and Methods:** A prospective study was conducted among 241 patients presented with breast lumps in the surgical outpatient clinic in Al – Kadhimain medical city from June 2019 to December 2020. The assessment was done by thorough history, clinical examination and fine needle aspiration cytology. Cases with cytology diagnosis of benign lesion but showing any sign or suspicion of malignancy were subjected to core needle or excisional biopsy to confirm the diagnosis. After confirming the diagnosis of the lesion, age related incidence of benign and malignant lesions was determined. Patients presented with recurrence of malignant lesions were excluded from the study.

**Results:** 75.94% of breast lumps were benign and 24.06% were malignant. The incidence of malignancy increases from 0% in 2<sup>nd</sup> decade to 42.59% in the 5<sup>th</sup> decade and 100% in the 8<sup>th</sup> decade.

**Conclusion:** The incidence of malignancy increases with age with a maximum incidence in the older age group. However, malignant breast lumps had been reported in the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> decades of life. Therefore, more cautions are required in managing breast lumps especially in younger age group between 30 – 50 years. Females with breast lumps should be encouraged to seek medical advice as soon as the lump is detected.

**Objectives:** The objectives of this study were to assess the incidence of malignancy in females presented with breast lumps and to find out the age related incidence of benign and malignant breast lumps in those patients.

## INTRODUCTION

Breast cancer is one of the three most common cancers worldwide, along with lung and colon cancers. <sup>(1)</sup> Although the mortality rates of breast cancer have been stabilized, the annual numbers of new cases are permanently increasing. <sup>(2)</sup> Breast cancer is the second leading cause of cancer death of women after the age of 30 years in USA and western world. <sup>(3, 4)</sup> Breast cancer accounts for 27% of all female cancer in the western world. <sup>(5)</sup>

A higher incidence of breast cancer has been observed in young age group. <sup>(6, 7)</sup> About 5.6% of all invasive breast cancers occur in adolescents and young adults. <sup>(8)</sup> Even among patients with early – stage breast cancer, adolescents and young women are 39% more likely to die compared with older women. <sup>(9)</sup> In addition, adolescents and young women are more likely to experience side effects from therapy and psychological issues after diagnosis. <sup>(10)</sup> One – fourth women suffer from breast disease in their life time after puberty. <sup>(11, 12)</sup>

In spite of the fact that over 80% of breast lumps are benign, every breast lump must be examined and evaluated to rule out malignancy. Early diagnosis is the key to increased survival. <sup>(13)</sup>

## PATIENTS AND METHODS

This study was conducted among 241 patients presented with breast lumps in the surgical outpatient clinic in Al – Kadhimain medical city from June 2019 to December 2020.

The assessment was done by thorough history, clinical examination and fine needle aspiration cytology. Cases with cytology diagnosis of benign lesion but showing any sign or suspicion of malignancy were subjected to core needle or excisional biopsy to confirm the diagnosis. After confirming the diagnosis of the lesion, age related incidence of benign and malignant lesions was determined. Patients presented with recurrence of malignant lesions were excluded from the study.

## RESULTS

This study was conducted among 241 patients who attended the surgical outpatient clinic in Al – Kadhimain medical city. The patients included in his study were aged between 12 and 83 years with mean age of 36.1. The majority of those patients were in the 3<sup>rd</sup> (26.55%), 4<sup>th</sup> (24.06%) and 5<sup>th</sup> (22.4%) decades of life. Among those 241 patients, 183 (75.94%) patients had benign breast lesions and 58 (24.06%) had malignant breast lesions. Table (1)

Table (1) number of patients with benign and malignant breast lesions

Characteristics	Number of patients (total = 241)	Percentage %
Benign breast lump	183	75.94
Malignant breast lump	58	24.06

The numbers of patients with benign and malignant breast lumps according to age group are shown in table (2) and table (3) respectively.

The incidence of malignancy in breast lumps increases with age (0% in 2<sup>nd</sup> decade, 4.68% in 3<sup>rd</sup> decade, 22.4% in 4<sup>th</sup> decade, 42.59% in 5<sup>th</sup> decade, 45% in 6<sup>th</sup>

decade, 70% in 7<sup>th</sup> decade and 100% above the age of 70) while the incidence of benign lesions were decreasing with age (100% in 2<sup>nd</sup> decade, 95.31% in 3<sup>rd</sup> decade, 77.58% in 4<sup>th</sup> decade, 57.4% in 5<sup>th</sup> decade, 55% in 6<sup>th</sup> decade, 30% in 7<sup>th</sup> decade and 0% above the age of seventy) as shown in Table (4).

Table (2) patients with benign breast lump according to age group

Age group (in years)	Number of patients (total = 183)	Percentage %
11 – 20	32	17.48
> 20 – 30	61	33.33
>30 – 40	45	24.59
>40 – 50	31	16.93
>50 – 60	11	6.01
> 60 – 70	3	1.63
>70 – 80	0	0
> 80	0	0

Table (3) patients with malignant breast lump according to age group

Age group (in years)	Number of patients (total = 58)	Percentage %
11 – 20	0	0
> 20 – 30	3	5.17
>30 – 40	13	22.41
>40 – 50	23	39.65
>50 – 60	9	15.51
> 60 – 70	7	12.06
>70 – 80	2	3.44
> 80	1	1.72

Table (4) Comparison of the incidence of benign and malignant breast lumps according to age group

Age group	Benign lesion	Malignant lesion	Total
11 – 20	32 (% within age group = 100%) (% of total = 13.27%)	0	32 (Total % within age group = 100%) (Total % of the age group from the total = 13.27%)
> 20 – 30	61 (% within age group = 95.31%) (% of total = 25.31%)	3 (% within age group = 4.68%) (% of total = 1.24%)	64 (Total % within age group = 100%) (Total % of the age group from the total = 26.55%)
>30 – 40	45 (% within age group = 77.58%) (% of total = 18.67%)	13 (% within age group = 22.41%) (% of total = 5.39%)	58 (Total % within age group = 100%) (Total % of the age group from the total = 24.06%)
>40 – 50	31 (% within age group = 57.4%) (% of total = 12.86%)	23 (% within age group = 42.59%) (% of total = 9.54%)	54 (Total % within age group = 100%) (Total % of the age group from the total = 22.4%)
>50 – 60	11 (% within age group = 55%) (% of total = 4.56%)	9 (% within age group = 45%) (% of total = 3.73%)	20 (Total % within age group = 100%) (Total % of the age group from the total = 8.29%)
> 60 – 70	3 (% within age group = 30%) (% of total = 1.24%)	7 (% within age group = 70%) (% of total = 2.9%)	10 (Total % within age group = 100%) (Total % of the age group from the total = 4.14%)
>70 – 80	0	2 (% within age group = 100%) (% of total = 0.82%)	2 (Total % within age group = 100%) (Total % of the age group from the total = 0.82%)
> 80	0	1 (% within age group = 100%) (% of total = 0.41%)	1 (Total % within age group = 100%) (Total % of the age group from the total = 0.41%)

## DISCUSSION

Breast lump is the commonest presentation of breast diseases. Almost 78% of the patients diagnosing as breast cancer present with breast lump.<sup>(4)</sup>

This study reveals that about one fourth of females presenting with breast lump have malignancy. These results are similar to that results obtained by Usmani in Pakistan<sup>(14)</sup> and by Chaudhury in India.<sup>(15)</sup>

Our results was higher than that results obtained by Fleming et al in Australia<sup>(16)</sup> who found that the incidence of malignancy in breast lumps was 19.6%. The higher incidence of breast malignancy in our country in comparison with the developed country may be due to several factors such as poor education and poor awareness of the disease in addition to religious reasons. Patients with breast lumps hide the lesion and only seek medical advise when it causes symptoms such as pain, discomfort, skin changes or an increase in the size of the lump.

The incidence of malignancy in breast lumps increases with age (0% in 2<sup>nd</sup> decade, 4.68% in 3<sup>rd</sup> decade, 22.4% in 4<sup>th</sup> decade, 42.59% in 5<sup>th</sup> decade, 45% in 6<sup>th</sup> decade, 70% in 7<sup>th</sup> decade and 100% above the age of 70) while the incidence of benign lesions were decreasing with age (100% in 2<sup>nd</sup> decade, 95.31% in 3<sup>rd</sup> decade, 77.58% in 4<sup>th</sup> decade, 57.4% in 5<sup>th</sup> decade, 55% in 6<sup>th</sup> decade, 30% in 7<sup>th</sup> decade and 0% above the age of seventy). These findings are comparable to that results obtained by West<sup>(17)</sup> and El Tamer<sup>(18)</sup> who found that the incidence of malignancy was 0% in the 2<sup>nd</sup> decade and 1.4% in the 3<sup>rd</sup> decade.

Similar results were obtained by Shahid<sup>(19)</sup> and Usmani<sup>(14)</sup> in Lahore.

The peak incidence of malignancy in breast lumps reported by Gaudette<sup>(20)</sup> in Canada was in the 6<sup>th</sup> decade of life. This indicates that malignancy in breast lumps is more common at an early age in our country. Therefore, surgeons and clinicians should be more cautious in managing breast lump in early age group.

After the 6<sup>th</sup> decade of life, the incidence of malignancy in breast lumps is almost the same in our study and that reported by other literature.

The incidence of malignant breast lumps in our study in women less than 30 years of age is negligible. Therefore, surgeon can rely on his clinical judgment and reassure the patient after negative diagnosis of malignancy on FNAC and ask the patient for repeated follow up, i. e., conservative approach.

## CONCLUSION

The incidence of malignant breast lumps in our study was 24.06%. This incidence of malignancy increases with age with a maximum incidence in the older age group. However, malignant breast lumps had been reported in the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> decades of life. Therefore, more cautions are required in managing breast lumps especially in younger age group between 30 – 50 years. Females with breast lumps should be encouraged to seek medical advice as soon as the lump is detected.

## REFERENCES

1. Ferlay J, Colombet M, Soerjomataram I, et al. Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. *International Journal of Cancer*. 2019; 144 (8): 1941 – 1953.
2. Bray F, Ferlay J, Soerjomataram I, Siegel R. L, Torre L. A, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA A Cancer J. Clin.* 2018; 68: 394 – 424.
3. Yusuf A, Khan JS, Bhopal FG, Iqbal M, Minhas S, Mahmood N, et al. Level of awareness about breast cancer among females presenting to general hospital in Pakistan. *J Coll Physician Surg Pak*. 2001; 11: 131 – 5.
4. Berg JW, Hutter RV. Breast cancer. *Cancer* 1995; 75: 257 – 69.
5. Saunders CM, Baum M. The breast. In: Russell RCG, Williams NS, Bulstrode CJK editors. *Bailey and loves short practice of surgery*. 23<sup>rd</sup> ed. London: Arnold, 2000: 749 – 72.
6. Rasool A, Malik MI, Luqman M. A clinicopathological study of carcinoma of breast. *Pak J Med Res* 1987; 26: 135 – 9.
7. Mehdi I. Breast carcinoma; treat or over treat *J Pak Med Assoc* 1996; 46: 142 – 3.
8. Johnson RH, Andes CK, Litton JK, et al: breast cancer in adolescents and young adults. *Pediatr blood cancer* 65: e 27397, 2018.
9. Gnerlich JL, Deshpande AD, Jeffe DB, et al: Elevated breast cancer mortality in women younger than age 40 years compared with older women is attributed to poorer survival in early – stage disease. *J Am Coll Surg* 208: 341 – 347, 2009.
10. Murphy BL, Day CN, Hoskin TL, et al: adolescents and young adults with breast cancer have more aggressive disease and treatment than patients in their forties. *Ann Surg Oncol* 26: 3920 – 3930, 2019.
11. Siddiqi K, Imtiaz RM. Pattern of breast diseases: preliminary report of breast clinic. *J Coll Physician Surg Pak*. 2001; 11: 497 – 500.
12. Ghumro AA, Khaskheli NM, Memon AA, Ansari AG, Awan MS. Clinical profile of patients with breast cancer. *J Coll Physician Surg Pak*. 2002; 12: 28 – 31.
13. Dunn JM, Lucarotti ME, Wood SJ, Mumford A, Webb AJ. Exfoliative cytology in the diagnosis of breast disease. *Br J Surg*. 1995; 82: 789 – 91.
14. Usmani K, Khanum A, Afzal H, Ahmed N. Breast carcinoma in Pakistani women. *J Environ Pathol Toxicol Oncol* 1996; 15: 251 – 3.
15. Chaudhuri M, Sen S, Sengupta J. Breast lumps a study of 10 years. *J Indian Med Assoc* 1995; 93: 455 – 7.
16. Fleming NT, Armstrong BK, Shiner HJ. The comparative epidemiology of benign breast lumps and breast cancer in western Australia. *Int J Cancer* 1982; 30: 147 – 52.
17. West KW, Rescoria FJ, Scherer LR. Diagnosis and treatment of symptomatic breast masses in the paediatric populations. *J Paed Surg* 1995; 30: 182 – 7.
18. El Tamer MB, Song N, Wait RB. Breast masses in African American teenage girls. *J Pediatr Surg* 1999; 34: 140 – 4.
19. Parveen S, Shahid MA. Prognostic factors in stage I breast cancer: a prospective study. *J Pak Med Assoc* 1997; 47: 117 – 8.
20. Gaudette LA, Silberger C, Atmayer CA. Trends in breast cancer incidence and mortality. *Health Report* 1996; 8: 29 – 37.