

Ministry of Higher Education

and Scientific Research

University of Diyala

College of Medicine



The clinicopathological parameters in patients with breast carcinoma in baaquba.

**Submitted to the Council of the College of Medicine, Diyala University, In
Partial Fulfillment of Requirements for the Bachelor Degree in medicine and
general surgery.**

Submitted by

Qosai Imad

Supervised by

Dr. Thura Abbas

2022-2023

Acknowledgement

I would like to acknowledge and give my warmest thanks to my supervisor (Dr.Thura Abbas) who made this work possible. His/her guidance and advice carried me through all the stages of writing my project. I would also like to thank my committee members for letting my defense be an enjoyable moment, and for your brilliant comments and suggestions, thanks to you.

I would also like to give special thanks to my wife and my family as a whole for their continuous support and understanding when undertaking my research and writing my project. Your prayer for me was what sustained me this far.

Finally, I would like to thank God, for letting me through all the difficulties. I have experienced your guidance day by day. You are the one who let me finish my degree. I will keep on trusting you for my future.

Abstract

Background

Tumours of the female breast are common and clinically significant but are rare in men..Carcinoma of the breast is an important malignant tumour which occurs as non-invasive (carcinoma in situ) and invasive cancer with its various morphologic varieties. It may be found in any part of the breast but most frequently it is in the upper outer quadrant.

Objectives

Demonstrate The clinicopathological parameters in patients with breast carcinoma depending on the age, gender, marital state ,residence ,family and COCP use in baaquba teaching hospital .

Patients and methods: -

The present study covered a total of 15 female patients who visited the Al Batool Teaching Hospital presenting with palpable breast lumps. Patients were clinically interviewed and examined using a triple assessment technique . Tissue sections formalin-fixed, paraffin-embedded specimens were stained with haematoxylin and eosin and stored for further analysis. Carcinoma type was determined following the WHO classification while the TNM (tumors, node, metastasis) staging system of the American Joint Committee on Cancer (AJCC) was used in recording the clinical stage of the disease.

Data routinely recorded on the patient's file sheet questionnaire by the examining physician included age; marital status; residence; history of lactation, contraceptive pills and/or hormonal therapy; and family history of breast cancer. All statistical analyses were performed using SAS statistical software.

Results: -

15 report cases of breast carcinoma were analyzed according to age, gender, residence, marital status and family history. the patients were females and males, females were 93.33 %. patients were between 20 to 70 years, about 79% less than 51 years and 6.9 % more than 51 years . 13 sample were IDC (86.66%) and 2 samples were ILC (13.33%).

Conclusion: -

this disease is more common in females, this disease is more common at age is below 51 years (20-51 years),the most common type of breast carcinoma is IDC.

Introduction

Breast cancer is a major public health problem for women throughout the world. In 2017, it was estimated there were 255,180 new cases of breast cancer, with 41,070 deaths. Worldwide, breast cancer is the most frequently diagnosed cancer and the leading cause of cancer death among females, accounting for 25% of cancer cases and 15% of the cancer deaths. Breast cancer mortality had been declining, suggesting a benefit from the combination of early detection and more effective treatment. [1]

In Iraq, breast cancer is the commonest type of female malignancy, accounting for approximately one-third of the registered female cancers according to the latest Iraqi Cancer Registry. This shows that the breast is the leading cancer site among the Iraqi population in general, surpassing even bronchogenic cancer. [2]

Several clinicopathological characteristics and biological factors, such as tumor size, tumor grade, lymph node status, hormone receptors, HER-2, urokinase plasminogen activator, and plasminogen activator inhibitor 1, which may help in the initial assessment of the extent of the disease and the prediction of response or resistance to specific therapies, require tumor tissue, thus necessitating either biopsy or surgery. [3]

There has been recent intense interest in the subset of breast cancer referred to as triple-negative breast cancer that lacks the expression of hormone receptors and HER2(cerbB2). Triple-negative breast cancer accounts for 10-17% of all breast carcinomas depending on thresholds used to define estrogen receptor (ER) and progesterone receptor (PR) positivity, as well as methods and criteria for HER2 assessment. [4]

CARCINOMA OF THE BREAST

Cancer of the breast is among the commonest of human cancers throughout the world. Its incidence varies in different countries but is particularly high in developed countries. In the United States, carcinoma of the breast constitutes about 25% of all cancers in females and causes approximately 20% of cancer deaths among females. Clinically, the breast cancer usually presents as a solitary, painless, palpable lump which is detected quite often by self-examination. Higher the age, more are the chances of breast lump turning out to be malignant. Thus, all breast lumps, irrespective of the age of the patient must be removed surgically. Currently, emphasis is on early diagnosis by mammography, xero-radiography and thermography. Techniques like fine needle aspiration cytology (FNAC), stereotactic biopsy and frozen section are immensely valuable to the surgeon for immediate pathological diagnosis. [5]

A variety of clinical and pathological factors are routinely used to categorize patients with breast cancer in order to assess prognosis and determine the appropriate therapy. These include patient age, axillary lymph node status, tumor size, histological features (especially histological grade and lympho-vascular invasion), hormone receptor status, and HER2 status. [6]

INVASIVE DUCTAL CARCINOMA

Invasive carcinoma that classically forms duct-like structures, Most common type of invasive carcinoma in the breast, accounting for > 80% of cases, presents as a mass detected by physical exam or by mammography, clinically detected masses are usually 2 cm or greater, advanced tumors may result in dimpling of the skin or retraction of the nipple, biopsy usually shows duct-like structures in a desmoplastic stroma; special subtypes of invasive ductal carcinoma include:- Tubular carcinoma- characterized by well-differentiated tubules that lack myoepithelial cells, Mucinous carcinoma- characterized by carcinoma with abundant extracellular mucin, medullary carcinoma- characterized by large, high-grade cells growing in sheets with associated lymphocytes and plasma cells, inflammatory carcinoma- characterized by carcinoma in dermal lymphatics. [7]

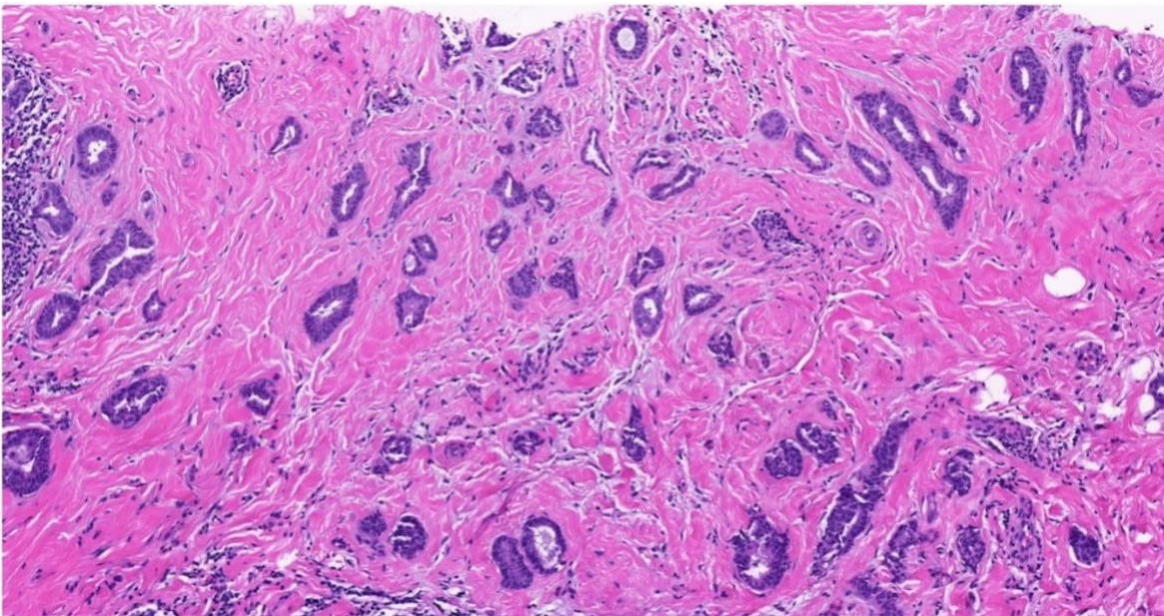


Fig 1 .demonstrate Invasive ductal carcinoma. H&E stain.

Invasive lobular breast carcinomas

Invasive lobular carcinoma comprises about 5% of all breast cancers. This peculiar morphologic form differs from other invasive cancers in being more frequently bilateral; and within the same breast, it may have multicentric origin. Histologically, there are 2 distinct features :

i) Pattern - A characteristic single file (Indian file) linear arrangement of stromal infiltration by the tumour cells with very little tendency to gland formation is seen. Infiltrating cells may be arranged concentrically around ducts in a target-like pattern.

Tumour cytology-Individual tumour cells resemble cells of in situ lobular carcinoma. They are round and regular with very little pleomorphism and infrequent mitoses. Some tumours may show signet- ring cells distended with cytoplasmic mucin. [5]

Although conflicting literature data are available on the outcome of ILC, recently reported data indicate that ILC carries a poorer prognosis if compared to invasive ductal carcinomas.[8]

The incidence rates of invasive lobular breast carcinomas increased steadily since 1977 whereas the incidence rates of invasive ductal carcinoma have plateaued since 1987. This rise occurred specifically among women age 50 years and may be related to postmenopausal status

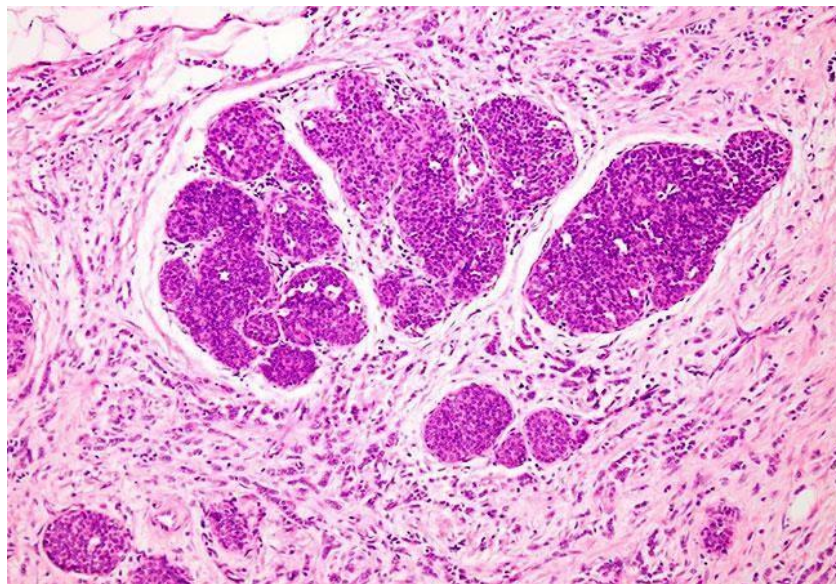


Fig 2 .demonstrate Invasive lobular carcinoma. H&E stain.

Phyllodes tumors

are usually felt as a firm, painless breast lump, but some may hurt. They tend to grow large fairly quickly, and they often stretch the skin. Sometimes these tumors are seen first on an imaging test (like an ultrasound or mammogram), in which case they're often hard to tell apart from fibroadenomas. Three major cytological features were exclusively seen in all of, or the vast majority of, the phyllodes tumor cases; fibromyxoid stromal fragments with spindle nuclei (90%), fibroblastic pavements (93%), and appreciable number of spindle cells of fibroblastic nature among dispersed cell population (100%) [19]



Fig 3 .demonstrate malignant phyllodes tumor . H&E stain.

Diagnosis of breast carcinoma

Early-stage cancer detection could reduce breast cancer death rates significantly in the long-term. The most critical point for best prognosis is to identify early-stage cancer cells. Investigators have studied many breast diagnostic approaches, including mammography, magnetic resonance imaging, ultrasound, computerized tomography, positron emission tomography and biopsy. However, these techniques have some limitations such as being expensive, time consuming and not suitable for young women. Developing a high-sensitive and rapid early-stage breast cancer diagnostic method is urgent. In recent years, investigators have paid their attention in the development of biosensors to detect breast cancer using different biomarkers. Apart from biosensors and biomarkers, microwave imaging techniques have also been intensely studied as a promising diagnostic tool for rapid and cost-effective early-stage breast cancer detection [20]

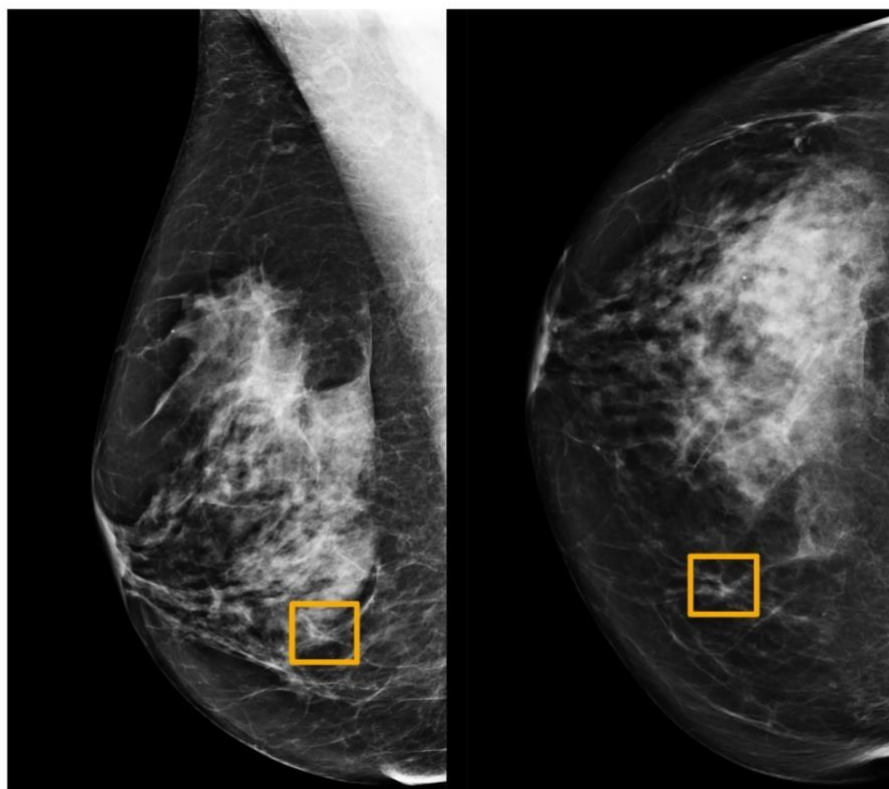


Fig 4. yellow box indicates where an A.I. system found cancer hiding inside breast tissue. Six previous radiologists failed to find the cancer in routine mammograms.

Patients and Methods

The present study covered a total of 15 female patients who visited the Al Batool Teaching Hospital presenting with palpable breast lumps. Patients were clinically interviewed and examined using a triple assessment technique . Tissue sections formalin-fixed, paraffin-embedded specimens were stained with haematoxylin and eosin and stored for further analysis. Carcinoma type was determined following the WHO classification while the TNM (tumors, node, metastasis) staging system of the American Joint Committee on Cancer (AJCC) was used in recording the clinical stage of the disease.

Data routinely recorded on the patient's file sheet questionnaire by the examining physician included age; marital status; residence; history of lactation, contraceptive pills and/or hormonal therapy; and family history of breast cancer. All statistical analyses were performed using SAS statistical software.

Results

Table 1. demonstrate the gender distribution among patients with breast carcinoma. The majority of the patients were females with only few males

Gender	Number of patients	Percentage
Female	14	93.33%
Male	1	6.66%

Table 2. this table demonstrate age distribution among patients diagnosed with breast carcinoma

The majority of the patients were between 20 to 50 years ,about two patient between 61-70 and only 1 patient is 52 years old

Age groups	Number of patients	Percentage
20-30 years	4	26.6%
31-40 years	4	26.6%
41-50 years	4	26.6%
51-60 years	1	6%
61-70 years	2	13.3%

Table 3. Marital status among patients with breast carcinoma

The majority of the patients were married and only 2 patient were unmarried

	Number of patients	Percentage
Married	13	86.66%
Unmarried	2	13.33%

Table 4. demonstrate the residence of patients with breast carcinoma

The majority of the patients live in urban areas while only 4 patients live in rural area

	Number of patients	Percentage
Urban area	11	73.3%
Rural area	4	26.66%

Table 5. demonstrate the COCP history and family history among patients with breast carcinoma

Majority of the patients has history of using COCP as method of contraception. the family history found in (40%) of the patients.

Parameter	Number of patients	Percentage
COCP		
+	8	53.33%
-	7	46.66%
Family history		
+	9	60%
-	6	40%

Table 6. demonstrate the histological and clinical findings in patients with breast carcinoma (Stage/Grade/nodal status)

The majority of the patients were stage 1 ,well differentiated and negative nodal status .

	Number of patients	Percentage
Stage		
I	7	46.66%
II	4	26.66%
III	3	20%
IV	1	6.66%
Grade		
Well	10	66.6%
Moderate	2	13.3%
Poor	3	20%
Nodal status		
+	6	40%
-	9	60%

Table 7. Demonstrate Histological types in patients with breast carcinoma

Histological type	Number of patients	Percentage
IDC	13	86.66%
ILC	2	13.33%

Discussion

The present study shows that the highest frequency of breast cancer was in women with age below 51 years (20-30 years 26.6%,31-40 years 26.6%,41-50 years 26.6%,51-60 years 6.6% followed by those with age of 61-70 years 0.3%). This trend of frequency rate in relation to age was consistent to that reported for Arab Countries and globally [9,10,14,15] as previous studies indicated that the highest incidence and frequency was in the women with age below 50 years, also another study detect that breast tumors arising in younger women (≤ 45 years)[16].

Our study show difference in prevalence between males and females so that majority of the patients were females (93.33%) and only (6.66%) males, this finding is similar to another study in which the breast carcinomas composed 9.4% of all male and 11.9% of all female breast carcinomas during the years 1973–2001[11].

The relatively high frequency of patients with positive family history (60 % positive family history and 40 % negative family history) observed in this study compared to others [12,17] could be attributed to the customary consanguineous marriages which are known to be common throughout the region [18].

Our findings suggest that majority of the samples were stage 1(53.33%) followed by stage 2(26.66%),stage 3 (20%) and stage 4(6.66%) also most samples were well differentiated(66.6%) followed by 3% poor differentiated tumor and negative nodal status(60%) while 60% were negative nodal state.Survival benefits of

mammographic screening and biopsy of no palpable lesions are likely the result of detection of invasive carcinoma at an early stage and detection of noninvasive carcinoma that may later develop into or mark increased risk of invasive carcinoma [13].

Conclusion

- 1- this disease is more common in females.
- 2- this disease is more common at age is below 51 years (20-51 years)
- 3- . It may be found in any part of the breast but most frequently it is in the upper outer quadrant
- 4- there is positive relationship between the age of the patient and breast carcinoma
As the ILC rise specifically among women age 50 years
- 5- the most common type of breast carcinoma is IDC.

References

- 1• Almallah, Noaman Abdul Razzaq, Azher Sebieh Alzubaidi, and Manwar Al-Naqqash. "The effect of different clinicopathological parameters on disease free survival in triple negative breast cancer Iraqi women." *Onkologia i Radioterapia* 15.12 (2021).
- 2• Alwan, N. A. S. "Breast cancer: demographic characteristics and clinico-pathological presentation of patients in Iraq." *EMHJ-Eastern Mediterranean Health Journal*, 16 (11), 1159-1164, 2010 (2010).
- 3• Orsaria, Paolo, et al. "Additional nodal disease prediction in breast cancer with sentinel lymph node metastasis based on clinicopathological features." *Anticancer Research* 38.4 (2018): 2109-2117.
- 4• Thike, Aye Aye, et al. "Triple-negative breast cancer: clinicopathological characteristics and relationship with basal-like breast cancer." *Modern pathology* 23.1 (2010): 123-133.
5. Mohan, Harsh. "Textbook of pathology." (2005): 842-854.
- 6• Schnitt, Stuart J. "Classification and prognosis of invasive breast cancer: from morphology to molecular taxonomy." *Modern pathology* 23 (2010): S60-S64.
- 7• A Sattar, Husain. *Fundamentals of pathology: medical course and step 1 review*. Pathoma, 2019.
- 8• Iorfida, Monica, et al. "Invasive lobular breast cancer: subtypes and outcome." *Breast cancer research and treatment* 133 (2012): 713-723.
- 9• Berkey, Catherine S., et al. "Adolescence and breast carcinoma risk." *Cancer: Interdisciplinary International Journal of the American Cancer Society* 85.11 (1999): 2400-2409.
- 10• Wenzel, Lari B., et al. "Age-related differences in the quality of life of breast carcinoma patients after treatment." *Cancer: Interdisciplinary International Journal of the American Cancer Society* 86.9 (1999): 1768-1774.

11. Anderson, William F., and Susan S. Devesa. "In situ male breast carcinoma in the Surveillance, Epidemiology, and End Results database of the National Cancer Institute." *Cancer* 104.8 (2005): 1733-1741.
12. Claus, Elizabeth B., Meredith Stowe, and Darryl Carter. "Family history of breast and ovarian cancer and the risk of breast carcinoma in situ." *Breast cancer research and treatment* 78 (2003): 7-15.
13. Perdue, Ph, et al. "Early detection of breast carcinoma: a comparison of palpable and nonpalpable lesions." *Surgery* 111.6 (1992): 656-659.
14. Thangjam, Shitalmala, Rajesh Singh Laishram, and Kaushik Debnath. "Breast carcinoma in young females below the age of 40 years: A histopathological perspective." *South Asian journal of cancer* 3.02 (2014): 097-100.
15. Li, Christopher I., Janet R. Daling, and Kathleen E. Malone. "Age-specific incidence rates of in situ breast carcinomas by histologic type, 1980 to 2001." *Cancer Epidemiology Biomarkers & Prevention* 14.4 (2005): 1008-1011.
16. Anders, Carey K., et al. "Breast carcinomas arising at a young age: unique biology or a surrogate for aggressive intrinsic subtypes?." *Journal of clinical oncology* 29.1 (2011): e18.
17. Russo, Antonio, et al. "Does family history influence survival in breast cancer cases?." *International journal of cancer* 99.3 (2002): 427-430.
18. World Health Organization. *Community control of genetic and congenital disorders*. 1997.
19. Zardawi, I., and J. Weigner. "The legitimacy of the atypical (C3) breast cytology category." *Journal of Diagnostic Pathology* 11.1 (2016).
20. Wang, Lulu. "Early diagnosis of breast cancer." *Sensors* 17.7 (2017): 1572.