

Original Research Article

FREQUENCY OF DIFFERENT HISTOLOGICAL TYPES OF BREAST TUMORS REPORTED AT DHQ HOSPITAL ABBOTTABAD PAKISTAN

ABSTRACT

Introduction: The carcinoma of Breast is the most common form of cancer and thus the major source of carcinoma mortality globally. **Objective:** The goal of this study was to determine the most prevalent etiology of a fresh breast tumor as well as the occurrence of different types in subjects who presented with breast tumors at DHQ Hospital Abbottabad KPK Pakistan. **Methodology:** The research was carried out at the DHQ Hospital Abbottabad. The research was performed from 20 February 2018 to 20 February 2020. It is a cross-sectional study and consisted of 200 female patients. **Results:** The age of the patients ranged from between 30 years to 65 years, 47.6800 mean and 9.22187 SD, BMI minimum 20.20 and maximum 33.40 mean 24.7615 and 2.97309 SD. Regarding the symptom analysis breast pain was common feature in benign and malignant disorders. For diagnostic purpose here the FNAC and Biopsy incisional, trucut and excisions were carried out. FNAC was done in 66.5% incisional 5.5%, trucut 10.5% and excisions 17.5% cases. Regarding the different ratios of benign and malignant lesions there were 64.0% benign and 36% were malignant lesions. **Conclusion:** Early identification and prompt treatment as per type to define the managing concerns for subjects with a fresh breast lump may improve in terms of morbidity and mortality.

Keywords: Breast Carcinoma, Histological Types, Malignancy, Breast Lumps, Benign, FNAC, Biopsy, Incisional, Trucut, Excisional.

INTRODUCTION

Carcinoma of breast is the most common cancer among female and hence the major source of carcinoma associated mortality globally. It is contributing for 23.0% (1.38 million) among all newly diagnosed cancers and 14.0 percent (458,400) among all cancer-related mortality in 2008.¹ Pakistan is amongst one in Asia with highest rates. In contrast to Western demographics, the

illness strikes at a pretty young age, with bigger tumors and an increased rate of metastasis to nearby lymph nodules.²

About half of the cases related to the 4th and 5th decades of life. The average age of the participants was 39.11 years. Moreover, according to Naseer Ahmed Shaikh³, the highest number of cases occurred in the fourth and fifth decades of life (23.52 percent and 35.29 percent, respectively). Breast lumps are frequent and can be caused by a variety of conditions, ranging as benign physiologic adenosis to metastatic lesion. In order to examine individuals who have a new breast lump, an organized and complete approach is essential. This practice explains how to evaluate and treat a new breast lump, as well as the responsibility of the inter - professional team in subjects care with this disease.⁴

Breast lumps or tumors are quite prevalent, especially amongst women of childbearing age. Breast illness affects almost 25% of women at some stage of life, as well as the great majority of these instances will show as a fresh breast mass in the basic healthcare setting. Breast lumps can be caused by a variety of factors, ranging between physiologic adenosis to extremely aggressive cancer. While adult females are more likely to develop breast lumps, adolescents and men can still be afflicted. Male breast cancer is a well-known illness that necessitates a high index of suspicion for early detection and treatment.^{5,6}

Even though the large number of breast lumps are benign, a comprehensive and systematic approach is essential in all instances. Breast cancer is the most commonly type of cancer in women globally, with an occurrence of roughly 12%. Generally, the triple-assessment process of clinical evaluation, radiographic screening, and pathological investigation should be followed. This paper will describe such a strategy, using examples of typical breast diseases throughout.^{7,8} Cancer of breast is the largest cause of cancer-related deaths globally, as per the WHO, with a lifetime prevalence of 12 percent.⁷

Benign breast illness is more widespread, involving 25.0 to 50.0%t of adult females and accounts for 03.0% of female subjects seen in general practice.⁹

Earlier menarche, delayed ages of gravidity, nulli-parity, oral contraceptives or hormonal therapy, and delayed menopausal age, all lead to increased oestrogen exposures, although breast-feeding protects against it.¹⁰

Endogenous estrogens are hypothesized to be increased by other risk factors such as excessive alcohol use and obesity.¹¹

In relationship of morbidity and mortality, early detection and rapid treatment according to type to define the management concerns for patients with a new breast mass may improve. A considerable number of studies on breast illnesses have been conducted in Pakistan and other parts of the globe. However, there are no studies that compare the prevalence of malignant breast tumors in a surgical casualty unit to the patient's age.

The goal of this study was to determine the most prevalent causes of a new breast lump and the occurrence of its various kinds in subjects who presented with breast mass at DHQ Hospital Abbottabad, KPK Pakistan.

OPERATIONAL DEFINITIONS

BREAST MASS/LUMP: A palpable breast lump having no inflammatory symbols.

A lump developing in the breast is known as breast lump. Lumps in breast present with a variable sizes and textures, and they can be painful. Sometimes are only discovered after a clinical or radiological examination. The majority of breast lumps are harmless (non-malignant).¹² A lump breast is a distinctive growth that is palpably distinct than adjacent tissue and is always of variable texture.¹³

METHODOLOGY

From 20th February 2018, to 20th February 2020; current research was carried out in surgical units at **DHQ Hospital** Abbottabad. This was a cross-sectional research with a total of 100 subjects. A total of 200 female subjects were enrolled in the study. After receiving informed permission, all consenting female patients between the ages of 18 and 60 years with a breast lump were enrolled in this research. Subjects with a breast abscess and those who had been established and managed for breast carcinoma but had a relapse of the disease were excluded.

Data collection

This research was carried out with the approval of the hospital's ethics committee and the written informed signed consent was obtained from participants. A thorough medical assessment of the patients was performed after getting a comprehensive history from all of the subjects, with a focus on the breast mass. With the help the lymph nodes under the armpits were examined of the involved area, and were documented in the questionnaire.

A systemic evaluation was also carried out to look for any co-morbidity. The information was gathered from individuals who had a breast lump and were hospitalized to a surgical unit. To determine the right stage of illness, all subjects had basic and specific tests such as x-ray chest, ultrasound abdomen, CT Scan chest, and abdomen. During a complete medical assessment, important and relevant discoveries were noted, and related investigations were conducted in all subjects. In all individuals, FNAC or excisional biopsies were performed, as well as ultrasonography in certain cases. Additional standard investigations have been carried out, and relevant advice for follow-up was given in situations where it was essential. The findings and perceptions were tallied and compared to age. The facts observed from subjects were entered on a prescribed format, and the findings were tallied and evaluated.

Data analysis

The IBM Statistical Package for Social Science (SPSS) package, Version 22 will be used to conduct the analysis after the data has been collected. For numerical factors like age, mean and standard deviation were determined. For quantifiable characteristics such as age, mean and standard deviation were determined. For nominal variables such as, percentages and frequencies were calculated. The Chi-square test will be used to examine categorical variables. $P < 0.05$ will be reflected as substantial.”

RESULTS

The goal of this research was to assess various forms of breast lumps in respect to age categories. The participants' ages varied from 30 to 65 years old, 47.6800 mean and 9.22187 SD, BMI minimum 20.20 and maximum 33.40 mean 24.7615 and 2.97309 SD as shown in table 01.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age in years	200	30.00	65.00	47.6800	9.22187
Body Mass Index	200	20.20	33.40	24.7615	2.97309
Valid N (listwise)	200				

Regarding the different variables like marital status, occupation, address SE class and addiction different percentages and frequencies are shown in figure 1 below.

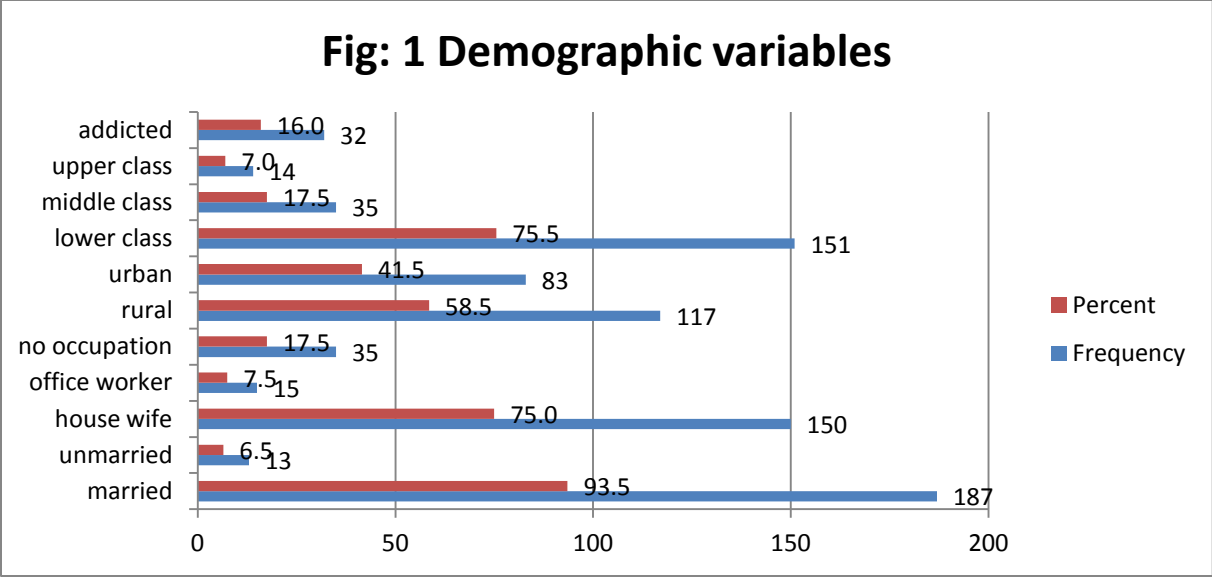


Fig. 1. Demographical data of the patients.

Regarding the comorbidities like HTN, DM, CLD etc are shown in figure 2.

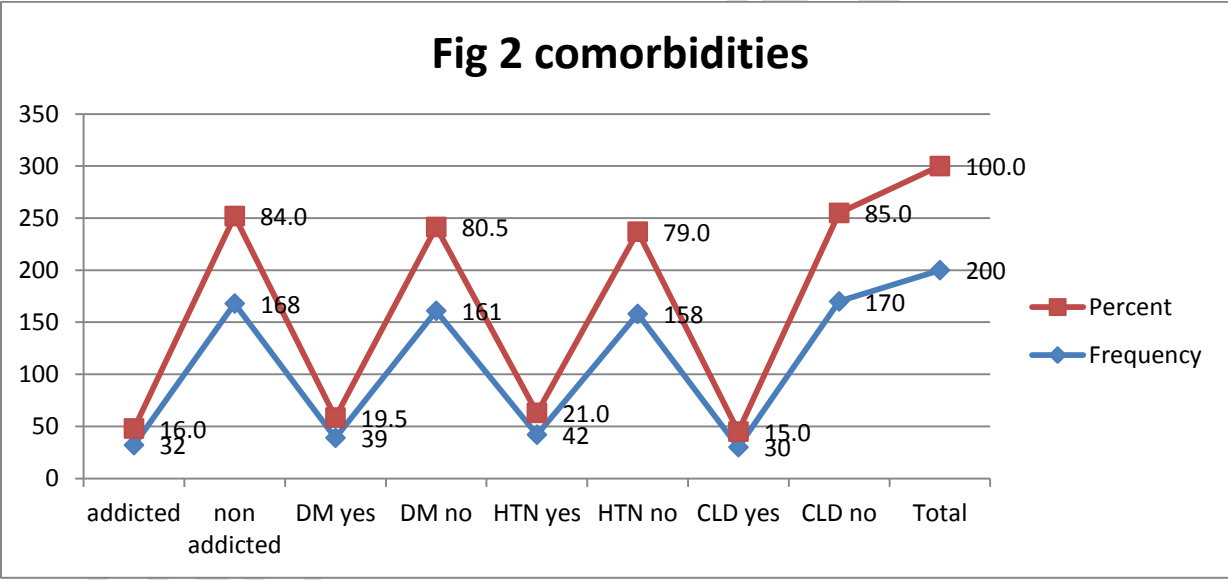


Fig. 2. Comorbidities like HTN, DM, CLD of the patients.

Regarding the symptom analysis breast pain was common feature in benign and malignant disorders. The frequency and percentages of other clinical symptom like discharge from Nipple, skin Ulceration, Fever, retraction of Nipple and involvement of Lymph node are shown in table 2.

Table 2. Clinical feature with Non parametric chi-square test

Clinical feature				Non parametric chi-square test		
		Frequency	Percent	Chi-Square	df	Asymp. Sig.
BREAST LUMP	yes	165	82.5	84.500 ^a	1	.000
	no	35	17.5			
Painful breast	yes	186	93.0	147.920 ^a	1	.000
	no	14	7.0			
discharge from Nipple	yes	62	31.0	28.880 ^a	1	.000
	no	138	69.0			
skin Ulceration	yes	32	16.0	92.480 ^a	1	.000
	no	168	84.0			
Fever	yes	41	20.5	69.620 ^a	1	.000
	no	159	79.5			
retraction of Nipple	yes	14	7.0	147.920 ^a	1	.000
	no	186	93.0			
involvement of Lymph node	yes	11	5.5	158.420 ^a	1	.000
	no	189	94.5			
	Total	200	100.0			

For diagnostic purpose here the FNAC and Biopsy incisional, trucut and excisions were carried out. FNAC was done in 66.5% incisional 5.5%, trucut 10.5% and excisions 17.5% cases.

Regarding the different ratios of benign and malignant lesions there were 64.0% benign and 36% were malignant lesions.

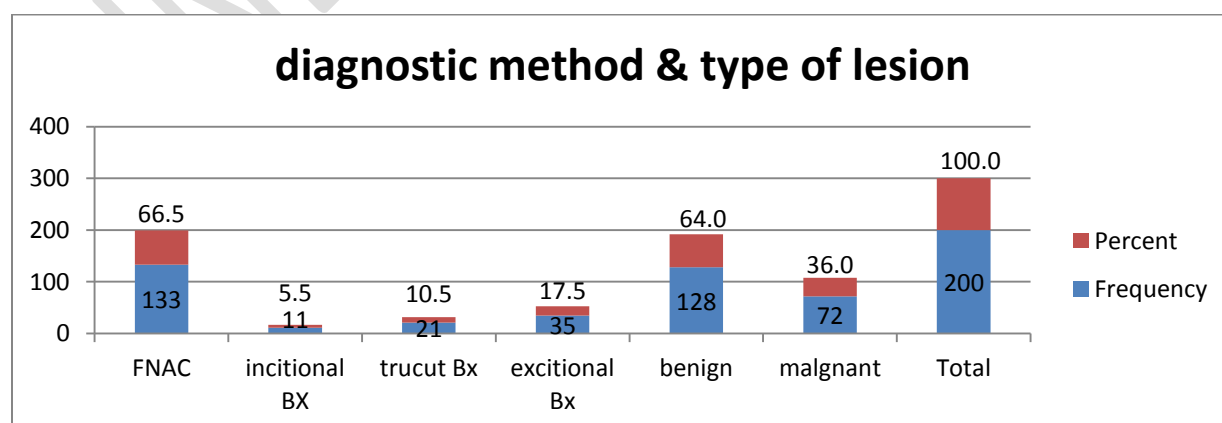


Fig. 3. Diagnostic method and type of lesion

Fibro-adenoma was perhaps the most prevalent benign tumor 27.5% and malignant lesion was Invasive ductal carcinoma (ductal breast cancer) 22.5% While investigations had shown here that malignant lesions including Ductal carcinoma in situ (DCIS) 02%, Lobular carcinoma in situ 0.5%, Invasive ductal carcinoma (ductal breast cancer) 22.5%, Invasive lobular carcinoma 5%, Medullary carcinoma 4%, Mucinous (colloid) carcinoma 0.5%, Tubular carcinoma 0%, Papillary carcinoma 0.5%, Metaplastic breast cancer (MBC) 0%, Phyllodes tumors 0.5%, Mammary Paget disease (MPD) 0% and Inflammatory breast cancer 0.5% from total 200 cases while benign lesions were Fibroadenoma 27.5%, Fibroadenosis 17.5%, Chronic inflammation 3.5%, Phyllodes 0.5%, Lipoma 8% and Others 7% of total cases.as shown in table 03.

Table 3. Sub types of lesions

Lesion Type	Frequency	Percentage
Ductal carcinoma in situ (DCIS)	04	2%
Lobular carcinoma in situ	01	0.5%
Invasive ductal carcinoma (ductal breast cancer)	45	22.5%
Invasive lobular carcinoma	10	5%
Medullary carcinoma	08	4%
Mucinous (colloid) carcinoma	01	0.5%
Tubular carcinoma	00	0%
Papillary carcinoma	01	0.5%
Metaplastic breast cancer (MBC)	00	0%
Phyllodes tumors	01	0.5%
Mammary Paget disease (MPD)	00	0%
Inflammatory breast cancer	01	0.5%
Fibroadenoma	55	27.5%
Fibroadenosis	35	17.5%
Chronic inflammation	07	3.5%
Phyllodes	01	0.5%
Lipoma	16	8%

Others	14	7%
Total	200	100%

DISCUSSION:

A breast lump is considered as a unique mass that is demonstrably distinct from adjacent tissue and is almost always of varying constancy. A skilled breast assessor can typically tell the difference among a specific breast tumor and a bumpy breast in general. All breast lumps, in general, need evaluation. Clinical assessment, radiography, and some sort of biopsies (fine needle aspiration (FNA), core, or rarely excisional) are all used to evaluate a breast lump. Here is a tendency to use ultrasonography over all masses and reserving mammography in females aged, over 40 whose clinical evaluation or ultrasound is worrisome or ambiguous.

Lumps in breast can develop as a result of a localized trauma or infectious cause. Though innocent breast lumps are more prevalent than malignant tumors, the existence about any prolonged mass in the breast elevates the possibility of malignancy, the far more commonly diagnosed breast tumor and the major cause of mortality in females.¹⁴ The most typical age ranged between 11 to 20 years. Fibroadenoma was shown to be frequent throughout the 2nd and 3rd decade of life. According to Oluwle and Freeman,¹⁵ the major age of occurrence in their research were 11 to 20 years, and the highest age of occurrence for Fibroadenoma has been between 16 to 25 years, and this is comparable with our research. Top most three mass causing disorders with in breast include fibroadenoma, fibrocystic disease (fibroadenosis) and cancer. The proportional frequency of all these 3 disorders fluctuates between researches. Olwole and Freeman¹⁵ examined 255 anomalies in 282 individuals and discovered that fibroadenoma was perhaps the most prevalent (34.75 percent) tumor, with carcinoma and fibrocystic disease accounting for 28 and 17 percent, correspondingly. This was usually seen in people in their later twenties and early thirties, while malignancy was identified in those aged 30 to 50 years. Across one's lifetime, the likelihood of having carcinoma upsurges with time. Females that are at a higher than average risk of getting breast cancer must be detected through better healthcare awareness through the use of a testing program that includes regular self-examination of the

breast, physical assessment by experts, and mammograms. A cytological assessment is required for each suspected condition. The importance of early discovery of breast lumps, classification among benign and malignant tumors, and correct management had enormous importance. Cancers of breast are often epithelial tumors of the ductal or lobular type. The following are the several types of breast cancer: DCIS (ductal carcinoma in situ) is a kind of noninvasive breast cancer that affects just the interior of the breast ducts. The identification of ductal carcinoma in situ has increased dramatically as a result of increased usage of mammography screening. In the U.s, about 64,000 cases of DCIS are identified each year.

Mammogram detects suspected calcifications in 90% of DCIS patients, with such a straight, clustering, segmented, localized, or heterogeneous distributions.^{16, 17} LCIS stands for lobular carcinoma in situ, which is not a malignancy. The frequency of LCIS has increased in the last 25 years, to 2.8/100,000 females. Females in their 40s and 50s have the highest prevalence.¹⁸ The far more prevalent kind of breast cancer is invasive ductal carcinoma, which has an ability to spread through the lymphatic system. 75 percent of breast cancers are caused by this lesion¹⁹. Invasive lobular carcinoma is substantially less common than infiltrating ductal carcinoma, accounting for fewer than 15% of invasive breast cancer cases. The "Indian file" configuration of small tumor cells characterizes it histologically. Medullary cancers are more common in females with BRCA1 genetic mutations and are more common in younger patients. Infiltrating ductal carcinoma has a worse outcome than these malignancies. A large palpable tumor with axillary lymphadenopathy is seen in the majority of cases. Another uncommon histologic form is mucinous (colloid) carcinoma, which occurs in less than 5% of invasive breast cancer patients. Breast tubular carcinoma is a rare histologic form that accounts for 1-2 percent of all breast malignancies. Papillary breast cancer is more common in people over 60 years old and makes up around 1-2 percent of all cancers of breast. MBC is a rare kind of breast cancer that affects fewer than 1% of women. Phyllodes tumors are uncommon breast cancers that account for less than 01.0% of all breast tumors. Mammary Paget disease (MPD) is a fairly uncommon breast cancer, accounting for just 1-4 percent of all cases. Breast Cancer with Inflammation It is extremely uncommon, accounting for just 01.0 to 05.0% of all aggressive breast malignances. The histological form of a tumor mass plays a crucial role in its treatment.²⁰ Infiltrating ductal, invasive lobular, ductal/lobular, mucinous (colloid), tubular, medullary, and papillary cancers are the most common invasive tumor forms. Its most prevalent variety is infiltrating ductal

carcinoma (IDC), which accounts for 70–80 percent of all aggressive cases.²¹ Depending on the degrees of nuclear pleomorphism, glandular/tubule development, and mitotic index, IDC is more sub-classified as well-differentiated (grade 1), moderately differentiated (grade 2), or poorly differentiated (grade 3).²²

Giant fibroadenoma, phyllodes tumor, duct papilloma, periductal mastitis, breast abscess, single duct nipple discharge, and autoimmune mastitis are benign conditions that typically require treatments or may be deemed diseases. Regardless of the fact that breast cancer in females young than 25 years is extremely rare, the major fear of young females who arrive with a breast lump is malignancy. The phobia of breast cancer dominates American culture, to the point where 80 percent of women in one research exaggerated their individual risk of breast cancer by 50 percent or over. Sometimes, a grievance of a breast tumor is "code" for another breast problem, such as a variable breast sizes. In the diagnosis and management of this condition, it is critical to conduct a comprehensive and courteous evaluation while reducing possible trauma. In the assessment and treatment of this situation, it's critical to conduct a comprehensive and courteous assessment while reducing possible trauma. Breast discharge is a less prevalent problem amongst women of childbearing age than breast soreness or lumps. Breast cancer accounts for less than 1% of breast illness in teenagers. Although a biopsy is necessary for assessment, the patients and families must be assured that the risk of malignancy is extremely low. Breast tumors in teenagers were caused by inflammation or infection in 3.7 percent of cases.

In Neinstein's series of adolescent breast tumors, axillary mass accounted for 13% of biopsied breast tumors. Many (50–60%) females do have nodular consistency in their breasts, which undergoes proliferative modifications over the menstrual cycle, in the luteal phase with a shift in breast size of approximately to 15%. The patients could be encouraged if the lump appears and disappears with hormone stimulus. In teenagers, giant fibroadenoma accounts for 01.0% of breast lesions and phyllodes tumor for 0.40 percent. In young females, fibroadenoma accounts for 50 percent to 76 percent of breast masses. Cystic lesions are less frequent in young females, representing for just 06.0% to 12.0% of breast masses in teenagers.^{23,24}

CONCLUSION

Early identification and prompt treatment as per type to define the managing concerns for subjects with a fresh breast lump may improve in terms of morbidity and mortality.

COMPETING INTERESTS:

Authors have declared that no competing interests exist.

REFERENCE

1. Palmar M L, Tsangaris T N. Breast biopsy in women 30 yrs old or less. *Am J Surg* 2013; 165: 708-712.
2. Raju GC, Narynsingh V. Benign breast diseases in a West Indian population. *Br. J. Surg* 2012 Jan; 72(1): 17-8.
3. Jemal A, Bray F, Center MM, Jacques-Ferlay ME, Ward E, Forman D. Global cancer statistics. *CA Cancer J Clin.* 2011;61:69-90.
4. Catriona Daly; Yana Puckett. New Breast Mass Continuing Education Activity. Last Update: October 3, 2021. <https://www.ncbi.nlm.nih.gov/books/NBK560757/>
5. Kamal MZ, Banu NR, Alam MM, Das UK, Karmoker RK. Evaluation of Breast Lump - Comparison between True-cut Needle Biopsy and FNAC in MMCH: A Study of 100 Cases. *Mymensingh Med J.* 2020 Jan;29(1):48-54. [PubMed]
6. Yuan WH, Li AF, Chou YH, Hsu HC, Chen YY. Clinical and ultrasonographic features of male breast tumors: A retrospective analysis. *PLoS One.* 2018;13(3):e0194651. [PMC free article] [PubMed]
7. Siegel R, Naishadham D, Jemal A. Cancer statistics, 2013. *CA Cancer J Clin.* 2013 Jan;63(1):11-30. [PubMed]
8. Karim MO, Khan KA, Khan AJ, Javed A, Fazid S, Aslam MI. Triple Assessment of Breast Lump: Should We Perform Core Biopsy for Every Patient? *Cureus.* 2020 Mar 30;12(3):e7479. [PMC free article] [PubMed]
9. Stachs A, Stubert J, Reimer T, Hartmann S. Benign Breast Disease in Women. *Dtsch Arztebl Int.* 2019 Aug 09;116(33-34):565-574. [PMC free article] [PubMed]
10. Akram M, Iqbal M, Daniyal M, Khan AU. Awareness and current knowledge of breast cancer. *Biol Res.* 2017 Oct 02;50(1):33. [PMC free article] [PubMed]
11. Travis RC, Key TJ. Oestrogen exposure and breast cancer risk. *Breast Cancer Res.* 2003;5(5):239-47. [PMC free article] [PubMed]
12. <https://www.radiologyinfo.org/en/info/breastlumps>
13. Breast Pathology, 2006 <https://www.sciencedirect.com/topics/medicine-and-dentistry/breast-lump>

14. Nigro DM, Organ CH. Fibroadenoma of female breast, some epidemiological surprise. *Postgrad Med.* 1986; 59:113-7.
15. Oluwole SF, Freeman HP. Analysis of benign breast lesions in blacks. *Am J surg.* 1979; 137:786-9.
16. Lips EH; Mukhtar RA; Yau C; de Ronde JJ; Livasy C; Carey LA; Loo CE; Vrancken-Peeters MJ; Sonke GS; Berry DA; Van't Veer LJ; Esserman LJ; Wesseling J; Rodenhuis S; Shelley Hwang E Lobular histology and response to neoadjuvant chemotherapy in invasive breast cancer. *Breast Cancer Res Treat.* 2012; 136(1):35-43 (ISSN: 1573-7217)
17. Moinfar F. Flat ductal intraepithelial neoplasia of the breast: evolution of Azzopardi's "clinging" concept. *Semin Diagn Pathol.* 2010; 27(1):37-48 (ISSN: 0740-2570)
18. Tran-Thanh D; Arneson NC; Pintilie M; Deliaallisi A; Warren KS; Bane A; Done SJ Amplification of the prolactin receptor gene in mammary lobular neoplasia. *Breast Cancer Res Treat.* 2011; 128(1):31-40 (ISSN: 1573-7217)
19. Galea MH; Blamey RW; Elston CE; Ellis IO The Nottingham Prognostic Index in primary breast cancer. *Breast Cancer Res Treat.* 1992; 22(3):207-19 (ISSN: 0167-6806)
20. <https://emedicine.medscape.com/article/1954658-overview>
21. Li CI, Uribe DJ, Daling JR. Clinical characteristics of different histologic types of breast cancer. *Br J Cancer.* 2005;93:1046–1052. [PMC free article] [PubMed] [Google Scholar]
22. Lester SC, Bose S, Chen YY, Connolly JL, de Baca ME, Fitzgibbons PL, et al. Protocol for the examination of specimens from patients with invasive carcinoma of the breast. *Arch Pathol Lab Med.* 2009;133:1515–1538. [PubMed] [Google Scholar]
23. Overview of Clinical Aspects of Breast Disease. R Douglas MacMillan, in *Breast Pathology*, 2006
24. Christine Gilroy Nipple discharge in adolescent girls. *Berman's Pediatric Decision Making (Fifth Edition)*, 2011