 DOI: 10.18231/2394-2754.2017.0029

Clinicopathological profile of breast lesions at tertiary care centre: A study of 602 cases

Kusum Heda[1], Kalpana Beniwal[2,*], Kalpana Sharma[3], Neena Kasliwal[4]

[1,4]Professor, [2,3]Assistant Professor, Dept. of Pathology, JLN Medical College, Ajmer, Rajasthan

***Corresponding Author:**
Email: kalpananhr@gmail.com

Abstract

Introduction: The aim of the study was to asses clinicopathological profile of breast lesions at tertiary care center.

Material and Method: The study was conducted in department of pathology, JLN medical college, Ajmer. We retrieved breast biopsies received in histopathology department over a period of 18 months from January 2015 to October 2016. A total of 602 cases of breast lesions were included in the study.

Results: Out of a total of 602 cases of breast lesions, most common lesions were benign 454 (75.4%) with mean age 30.15 years, followed by malignant 99(16.4%) with mean age 48.5 years and inflammatory 49 (8.1%) with mean age 32.9 years. The overall mean age of patients was 31.8 years, with a wide age range of 11–88 years. Overall the most commonly reported lesion was fibroadenoma 322(53.4%) cases, followed by infiltrating duct carcinoma 83 (13.7%) cases, mastitis 45(7.4%) cases, gynecomastia 39(6.4%) and fibrocystic disease 37 (6.1%) cases. The maximum cases of malignancy were seen in 41- 50 years of age of life. Most common malignant lesion was infiltrating duct carcinoma.

Conclusion: The breast lesions pattern revealed by the present study provides valuable information regarding clinicopathological profile of breast lesions.

Keywords: Breast lesion, Inflammatory, Benign lesion and Malignancy.

Date of Acceptance: 3rd March, 2017 **Date of Manuscript Receipt:** 10th February, 2017

Introduction

Breast lesions constitute a heterogeneous group of diseases which classified as inflammatory, benign includes epithelial and stromal proliferations and developmental anomalies and malignancy. Approximately 200,000 cases of breast lesions were diagnosed annually.(1)

Benign breast diseases are more prevalent as compared to malignant and inflammatory.(2) Fibroadenomas are most common benign lesion, constituting almost half of all cases of benign diseases.(3) Breast cancer is the most commonly diagnosed cancer accounting for 23% of all diagnosed cancers and the most common cause of death in women worldwide.(4) Risk factor for benign and malignant breast diseases include low parity, nulliparity, low age at first birth and late menopause, highlighting the fact towards excessive circulating estrogen levels.(5,6) These lesions are more prevalent among females as compared to males and the pattern of breast diseases and their etiology varies among different countries and ethnic groups.(7)

The aim of study was to make clinicopathological profile of breast lesions and to assess the age and sex profile, distribution and histomorphological profile of inflammatory, benign and malignant lesions.

Material and Methods

The study was conducted in the Department of Pathology, JLN Medical College, Ajmer over a period of 18 months from Januray 2015 to October 2016 on total of 602 cases of Breast lesions were received in histopathology department. The tissues were routinely processed for histopathological examination and were stained by Hematoxylin and Eosin (H&E).Data were analysed on the basis of age, sex and histological diagnosis. Histopathological cases were classified as inflammatory, benign and malignant lesions.

Results

There were 602 cases of breast lesions diagnosed in 18 months study period. The overall mean age of patients with breast lesion was 31.8 years, with a wide age range of 11–88 years. Out of all cases, most common lesions were benign 454 (75.4%), followed by malignant 99(16.4%) and inflammatory 49 (8.1%).(Fig. 1) Of the 39(6.47%) cases of breast lesions encountered in males, all cases were of gynecomastia.

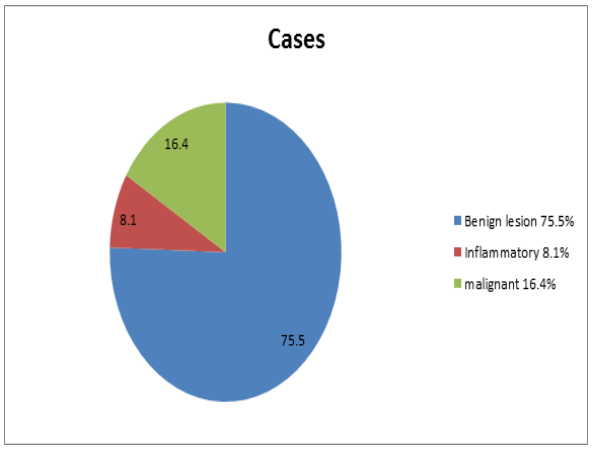

Fig. 1: Distribution of breast lesions

The age wise distribution of inflammatory breast lesions shown in Table 1. Most of the lesions belonged to the age group of 21-40 years. Among all the inflammatory lesions, the most common was mastitis 45 (92%) with mean age of 33.9 years, followed by fat necrosis 2 (4%) with mean age of 32.5 years. (Table 2)

Table 1: Age-wise distribution of inflammatory breast diseases

Age(years)	No. of cases	Percentage
11-20	4	8.2
21-30	22	45.0
31-40	15	30.2
41-50	4	8.2
51-60	2	4.0
61-70	1	2.0
71-80	1	2.0
Total	49	100

Table 2: Patterns of Inflammatory breast diseases and their mean ages

Inflammatory breast lesions	No of cases	Percentage	Mean age (years)
Mastitis	45	92	33.91
Fat necrosis	2	4.0	32.5
Granulomatous mastitis	2	4.0	32.5
Total	49	100	32.9

Out of 454 cases of benign lesion the commonest was of fibroadenoma (70.9%), followed by gynecomastia (8.59%) and fibrocystic disease (8.14%).(Table 3) Overall the most commonly reported lesion was fibroadenoma 322 cases(53.4%) and it occurs mostly in second and third decade of life with mean age of 25 years.(Table 4)

Table 3: Histomorphological Distribution of benign breast Lesions

Benign Lesions	No. of cases	Percentage	Mean age
Fibroadenoma	322	70.9	25.0
Fibrocystic Disease	37	8.14	37.8
Benign proliferative hyperplasia	17	3.74	34.8
Duct Ectasia	4	0.88	33.7
Fibroadenosis	12	2.64	26.2
Papilloma	2	0.44	33
Scelerosis Adenosis	1	0.22	34
Galacectocele	1	0.22	25
Tubular adenoma	3	0.66	22.1
Accessary breast	3	0.66	25
Normal breast tissue	13	2.8	37.6
Gynecomastia	39	8.59	27.6
Total	454		30.15

Table 4: Age wise Distribution of Individual benign lesions

Type	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
Fibroadenoma	131	122	56	10	2	0	1	322
Fibrocystic Disease	5	8	10	9	3	2	0	37
Benign proliferative hyperplasia	4	5	5	0	1	1	1	17
Duct Ectasia	1	1	1	0	1	0	0	4
Fibroadenosis	3	6	3	0	0	0	0	12
Papilloma	0	1	1	0	0	0	0	2
Scelerosis Adenosis	0	0	1	0	0	0	0	1
Galacectocele	0	1	0	0	0	0	0	1
Tubular adenoma	3	4	0	0	0	0	0	3

Accessary breast	1	2	0	0	0	0	0	3
Normal breast tissue	1	4	4	2	1	1	0	13
Gynecomastia	13	18	3	2	1	1	1	39
Total (Percentage)	162 (35.7%)	172 (37.9%)	84 (18.5)	32 (7.0%)	9 (1.98%)	5 (1.0%)	3 (0.66%)	454

Table 5: Histomorphological Distribution of malignant breast Lesions

Malignant lesions	No. of cases	Percentage	Mean age
Infiltrating duct carcinoma	83	83.8	51.9
Comedo carcinoma	1	1.0	30
Lobular carcinoma	11	11.1	58.0
Mucinous carcinoma	2	2.0	58
Invasive papillary carcinoma	1	1.0	30
Medullary carcinoma	1	1.0	63
	99		48.5

Table 6: Age wise Distribution of malignant lesions

Malignant lesions	11-20	21-30	31-40	41-50	51-60	61-70	71-80	
Infiltrating duct carcinoma	0	5	12	26	20	16	04	83
Comedo carcinoma	0	1	0	0	0	0	0	1
Lobular carcinoma	0	1	1	1	2	5	1	11
Mucinous carcinoma	0	0	0	0	1	1	0	2
Invasive papillary carcinoma	0	1	0	0	0	0	0	1
Medullary carcinoma	0	0	0	0	0	1	0	1
Total (Percentage)	0	8 (8.0%)	13 (13.1%)	27 (27.7%)	23 (23.2%)	23 (23.2%)	5 (5.0%)	99

The most common malignant lesion was infiltrating duct carcinoma (83.8%) followed by lobular carcinoma (11.1%). The overall mean age for malignancy was 48.5 years. (Table 5) Age wise distribution showed that the maximum cases of malignancy was seen in fifth decade of life. (Table 6)

Discussion

The incidence of breast lesions has dramatically increased over the last decade, which may be due to increased use of mammography more and more and women are diagnosed with benign and malignant breast diseases.[8] Breast carcinoma is now the leading cause of cancer related deaths in women worldwide after lung cancer. In the year 2010 Breast cancer accounted for an estimated 28% of all new cancer cases in United States.[9] There are data regarding the distribution of various breast lesions is very limited. This study is aimed to focusing on breast lesions.

Majority of cases in this study are benign lesion (75.4%) followed by malignant (16.4%) and inflammatory 49 (8.1%). Our findings are similar to those by A N Olu eddo et. al., Malik et al and Rakhsanda et al.[1,3,10] In contrast to it, other studies observed highest incidence of inflammatory lesions compare to benign and malignant lesions.[11]

In India, fibro adenoma is the most frequent benign lesion of the breast.[12] We found that most common benign lesion was fibroadenoma constitutes 70.9% with the peak incidence in the age group of 11-20 years. This is similar to various studies from Nepal, Lahore, Aurangabad, Mumbai and Malawi region and contrast to lower frequency in England (7.7%) and the USA (8.5%).[13,14,15,16]

The causes of this high frequency of fibroadenoma is not known, may be influenced by racial

predisposition, demographic factors and hormonal imbalance.

Inflammatory lesions of breast are uncommon, accounting for less than 1% of women with breast symptoms.[17] These lesions are important not only in terms of local symptoms and discomfort, but also because many may mimic malignancy.[18]

In Our study, 8.1% cases are of inflammatory lesions which was similar to the studies done by Das et. al. (9.1%), and Bafakeer S et. al. (8.3%) but it was lower as compared to studies done by MS Siddqui et. al. (14%), and Mansoor et. al.(10.7%).[19,20,7,2] Mastitis was the most common inflammatory lesions in this study accounting for 92% of all inflammatory cases. This was also the finding in studies done by Shewta et. al. and Malik M et. al.[18,1]

Age wise distribution showed most of the inflammatory and benign lesions were seen in early 30 years with a mean age of 32.9 and 30.15 respectively. Other studies have shown similar result.[2,21]

In our study, gynecomastia was most common male breast disease constituting 8.59% of all the benign cases, similar to previous studies.[3]

Age distribution for malignant lesions revealed that maximum numbers of cases were seen between 41 to 50 years of age. Christiana et. al. found the peak-age frequency of occurrence in India is at least a decade earlier than that described in the western literature.[22] These results point toward racial differences in the molecular profiles of breast carcinoma.[23]

On histopathological examination, infiltrating duct carcinoma is the most common malignancy and is similar to other studies.[22,24]

Conclusion

The most common breast lesions are benign and the commonest benign lesion is fibrodenoma. Infiltratng duct carcinoma carcinoma is most common malignancy and found to be more common in 41-50 years of age group.

References

1. Malik M, Salahuddin O, Azhar M, Dilawar O, Irshad H, Sadia SA: Breast diseases; spectrum in Wahcantt; POF hospital experience. Professional Med J Sep 2010,17(3):366–372.
2. Mansoor I: Profile of female breast lesions in Saudi Arabia. JPMA 2001,51(7):243–246.
3. Olu-Eddo A, Ugiagbe EE: Benign breast lesions in an African population: A 25-year histopathological review of 1864 cases. Niger J Med: J Niger Med Assoc 2011, 52(4):211.
4. Justin NK, Troh E, Kouakou EK, Doukoure B, Kouame AD, Abouna AD, *et al.* Epidemiology and histology aspects of breast cancers of women in ivory coast. J Cancer Ther 2012;3:782-6.
5. Hislop T, Elwood J: Risk factors for benign breast disease: a 30-year cohort study. Can Med Assoc J 1981,124(3):283.
6. Parazzini F, La Vecchia C, Franceschi S, Decarli A, Gallus G, Regallo M, Liberati A, Tognoni G: Risk factors for pathologically confirmed benign breast disease. Am J Epidemiol 1984,120(1):115–122.
7. Siddiqui M, Kayani N, Gill M, Pervez S, Muzaffar S, Aziz S, Setna Z, Israr M, Hasan S: Breast diseases: a histopathological analysis of 3279 cases at a tertiary care center in Pakistan. J Pak Med Assoc 2003,53(3):94–97.
8. Zhou WB, Xue DQ, Liu XA, Ding Q, Wang S: The influence of family history and histological stratification on breast cancer risk in women with benign breast disease: a meta-analysis. J Cancer Res Clin Oncol 2011,137(7):1053–1060.
9. Mukhopadhyay P, Chakraborty S, Ponnusamy MP, Lakshmanan I, Jain M, Batra SK: Mucins in the pathogenesis of breast cancer: implications in diagnosis, prognosis and therapy. Biochim Biophys Acta 2011,1815(2):224–240.
10. Rakhshanda Rashid SMH, Khushal Khan, Shabana Jamal, Tanwir Khaliq, Aslam Shah: Benign breast disorders, a clinicopathological study. Ann Pak Inst Med Sci 2005,1(4):187–190.
11. Awatif J, Nader M, Tarick M, et al. Profile of breasi diseases; Saudi. Med. J., 1997;18:364-66.
12. Raju GC, Narayansingh V. Benign breast disease in a West Indian population. Br. l Sttrg 1985:72:17-18.
13. Ranabhat S, Subedi M, Bhandari A, Tiwari M, Maharjan S, Kshetri J, *et al*. Clinico - pathologic profile of women with palpable breast lumps in Chitwan medical college, Nepal. Int J Res Med Sci 2015;3:1611-6.
14. Kohler RE, Moses A, Krysiak R, Liomba NG, Gopal S. Pathologically confirmed breast cancer in Malawi: A descriptive study: Clinical profile of breast cancer. Malawi Med J 2015;27:10-2.
15. Ellis H, Cox PJ Breast problems in 1000 consecutive referrals to surgical out patients.Postgrad Med .J 1984:60:653-66.
16. Yonernoto R. Breast cancer in Japan anti United States, epidemiology, hormone receptors, pathology and survival. Arch Surg 1980:115:1056-62.
17. Kumar, Abbas, Fausto, Aster. Robbins and Cotran: Pathologic basis of disease. 8th ed. Philadelphia: Elsevier; 2010. p. 1069.
18. Shweta Pai, Shashikala P, Kavita G.U. Histomorphological Study of Inflammatory Breast Lesions Tear. J Pub Health Med Res,2014;2(1):24-27.
19. Das D K, Sodhani P, Kashyap V, Parkash S, Pant J N, Bhatnagar P. Inflammatory Lesions of the Breast: Diagnosis By Fine Needle Aspiration. Cytopathology 1992;3: 281–9.
20. Bafakeer S. Breast diseases in Southern Yemen. Saudi Med J 2010;31:1011-4.
21. Al-idrissi-HY: Pattern of Breast cancer in Saudi Females. Indian J, Med. Sci.,1992;4: 58-9.
22. Christiana SJ, Balakrishnan K, Hemalatha G, Uma Maheswari K. Clinical and Histomorphological Profile of Breast Neoplasms. Int J Sci Stud 2016;4(4):170-175.
23. Shirley SE, Sinclair PA, Stennett MA, Codrington G, Bhatt R, Escoffery CT. The pathology of breast cancer in Jamaica: The national public health laboratory study. West Indian Med J 2010;59:177-81.
24. Raina V, Bhutani M, Bedi R, Sharma A, Deo SV, Shukla NK, *et al.* Clinical features and prognostic factors of early breast cancer at a major cancer center in North India. Indian J Cancer 2005;42:40-5.