

Pattern of breast diseases in a teaching hospital in Jeddah, Saudi Arabia

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ABSTRACT

Objectives: The aim of this case series study is to evaluate the outline and pattern of male and female breast diseases in Saudi Arabia. Also to compare 8 studies of literature discussing the profile of malignant and benign female breast diseases in the Kingdom. We hope that this study will assist us to appreciate the prototype breast diseases in our region.

Methods: Our study consisted of 1084 consecutive male and female breast lesions. Data on these specimens, received in the time frame of 15 years between January 1984 and March 2000, was retrieved from the records of the laboratory. The outline of breast lesions were tabulated and classified into inflammatory, benign and malignant lesions.

Results: In female breasts, benign lesions comprised 57% of all lesions (mean age 28.5), most commonly reported being fibroadenoma 47%, fibrocystic disease 22% and fibroadenosis 14%. Malignant lesions comprised 32.5% of all lesions (mean age 48.49), most commonly

reported being ductal carcinoma 88% and lobular carcinoma 4.5%. Inflammatory lesions comprised 11% of all lesions (mean age 35.0), most commonly reported lesion being chronic mastitis 31% and ductectasia 19%. Male benign lesions comprised 55 cases (87%). Eight cases (13%) of malignant lesions, 6 ductal carcinomas and 2 metastatic adenocarcinomas, were also identified.

Conclusion: The rates for female breast lesions varied in different studies but benign fibroadenoma constituted the most common breast lesion and secondly ductal carcinoma. The mean age for malignant lesion in 7 different studies came to be 44.05. In the male breast, carcinomas constituted 3% of all breast carcinomas. Gynecomastia being the most common male breast lesion constituting 54%.

Keywords: Breast lesions, neoplasm, fine needle aspiration, fine needle aspiration cytology.

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The outline of breast diseases are still not well reported in Saudi Arabia. In fact, the reporters have mainly expressed the pattern of malignant disease,¹⁻⁸ and none have expressed male breast lesions. The present situation of this common and serious health problem is less than ideal and indicates that a lot has to be carried out to detect the disease at an earlier stage. This can be achieved by encouraging a wider and more confident use of fine needle aspiration (FNA) in the routine practice of palpable breast lesions. This is a fast and cost-effective method that can be carried out as an office

procedure, requires little special equipment, causes minimal morbidity and has excellent patient acceptance.⁹⁻¹³ In order to compare our study with the literature, we are also including the information from 8 other reports using the same statistical criterion.^{1,4,14-16} This enabled us to analyze 1084 surgical breast biopsies of both male and females, in the Department of Surgical Pathology, King Abdul Aziz University Hospital (KAUH), Jeddah, during the time frame of 15 years from January 1984 to March 2000.

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Methods. King Abdul Aziz University Hospital is a 945 bedded tertiary care hospital located in Jeddah. In an attempt to delineate the spectrum of breast lesions, data on all breast biopsies and mastectomies carried out between 1984 and 2000 were retrieved from the records of the laboratory, keeping track of age, histopathological diagnosis, cytological diagnosis and frozen section diagnosis. Histopathologically these cases were classified as inflammatory, benign and malignant. The slides were also reviewed if the pathology records were not sufficient for precise diagnosis.

Results. While scrutinizing all the breast lesions for the time frame of 15 years, we obtained a total of 1084 cases, out of these 1021 cases (94%) were of female breasts and 63 cases (6%) of male breasts. First on analyzing the female breast (Table 1) they were filtered and categorized into 3 main groups: inflammatory breast lesions comprised 111 cases (11%), benign breast lesions comprised 578 cases (57%) and malignant lesions comprised 332 cases (32.5%). With the mean age of presentation for these groups being 35 years for inflammatory lesions, 28 years for benign lesions and 48.49 years for malignant lesions. It was noticed while analyzing the results in annual sessions, that in 1984 we came across only 19 cases of breast lesions which escalated up to 102 cases in 1999, almost 5 times the previous.

Table 1 - Inflammatory, benign and malignant female breast lesions with their mean age distribution and percentage.

Breast lesions	Mean Age	Number	Percentage
Chronic mastitis	38.42	35	31.5
Duct ectasia	34.04	21	19.0
Breast abscess	34.60	26	23.0
Granulomatous mastitis	35.00	12	11.0
Fat necrosis	36.81	11	10.0
Galactocele	31.60	6	5.5
Total Inflammatory Lesions	35.08	111	100.0
Fibroadenoma	28.69	271	47.0
Fibrocystic changes	41.92	130	22.0
Fibroadenosis	34.26	82	14.0
Normal Breast	33.79	58	10.0
Hyperplasia	34.33	15	3.0
Lactational adenoma	26.60	6	1.0
Hypertrophied axillary breast	26.60	6	1.0
Sclerosis adenosis	29.00	5	1.0
Benign Cystic lesion	21.60	3	0.5
Breast adenoma	35.00	2	0.5
Total Benign Lesions	28.51	578	100.0
Ductal carcinoma	46.79	268	81.0
Intraductal carcinoma	45.00	28	8.0
Lobular carcinoma	45.66	15	4.5
Cystosarcoma Phylloids	45.00	8	2.0
Medullary carcinoma	47.50	4	1.0
Tubular carcinoma	45.00	3	1.0
Mucoid carcinoma	60.00	2	0.5
Metastasis	50.00	2	0.5
Undifferentiated carcinoma	35.00	1	0.5
Clear cell carcinoma	65.00	1	0.5
Total Malignant Lesions	48.49	332	100.0

Table 2 - Male breast lesions with their mean age distribution and percentage.

Male breast lesions	Mean Age	Total	%
Fibroadenosis	24.60	2	3.0
No malignancy	22.40	6	9.5
Gynecomastia	31.23	34	54.0
Lipoma	38.30	8	13.0
Ductal carcinoma	58.40	6	9.5
Cystic lesion	17.50	4	6.0
Myofibroblastoma	36.00	1	2.0
Metastatic adenoacarcinoma	51.20	2	3.0
Total male breast lesions		63	100.0

This favors an increase in the awareness in females regarding breast diseases, expansion of our medical services and advances in the diagnostic facilities available.¹⁷ Overall the most commonly reported lesions were; fibroadenoma 271 cases (25%), infiltrating ductal carcinoma 268 cases (25%), fibrocystic disease 130 cases (12%), fibroadenosis 82 cases (14%). The benign lesions comprised the major fractions of our patient collection (mean age 28.51). Fibroadenoma was the most commonly reported benign lesions with 271 cases. The mean age of presentation was 28.6 years. The 2nd ranking lesion was fibrocystic changes comprising of 130 cases (22%) with the mean age of presentation being 41; and thirdly fibroadenosis comprised 82 cases (14%). A lot of normal breast biopsies were also reviewed during the analysis with the total of 58 cases (10%). The rest of the benign breast lesions were related to lactational breast and others to proliferative lesions such as epitheliosis and sclerosing adenosis. The malignant breast lesions comprised 32.5% of the total. Among them, the ductal carcinomas were the most common comprising 296 cases (27%). Out of these, 268 cases were clearly invasive cancers and 28 cases were intraductal carcinomas. The mean age of ductal carcinoma was around 46.7 years, a bit later than the age reported in the other papers. Fifteen cases of lobular carcinomas were also found, making 1.5% of total. Similarly the male lesions were also categorized into benign and malignant. As expected benign lesion comprised the major fraction i.e. 55 cases (87%), but 8 cases (13%) of malignant lesions mainly 6 cases of ductal carcinomas and 2 of metastatic adenocarcinoma were also identified (Table 2). The most common diagnosis was gynecomastia that comprised 34 cases and the mean age of presentation was 31 years. Eight-cases of lipoma (mean age 38.3) were found. Most of the

benign lesion presented at a young age (80% of all benign lesions occurred before the age of 30). Malignant lesions presented late with a mean age of 58.4.

Discussion. Most studies on female breast pathologies in Saudi Arabia focused mainly on malignant neoplasm,^{7,15,18,19} and the literature addressing the pattern of breast diseases is scant. No studies have been found in the literature addressing male breast lesions. In fact only 2 studies^{8,14} were found focusing on the profile of breast diseases. This study is aimed to highlight the spectrum of male and female breast lesions. The most common lesion found in our females was benign (57%) followed by malignant (32.5%) and inflammatory (11%). One study from Abha region reported the highest incidence of inflammatory lesions in their area. Another study from the eastern province reported a decline in inflammatory breast lesions from 29.5% in 1967-1971 to only 18.5% in 1992, even though they believed that this category of breast diseases is underestimated, as most abscesses are drained and rarely biopsied. The smaller number of inflammatory lesion (11%) in our study could have a similar explanation. All the inflammatory and benign lesions were received in their early 30s with a mean age of 35 for inflammatory lesions and 28.51 for benign lesions, similar values were found in other studies.^{8,14} The greater fraction of malignant lesions in our

hospital could be explained, due to the fact that our hospital is a tertiary care hospital receiving a large number of referral cases. In fact malignant lesions in our study comprised 332 cases (32.5%) with a mean age of 48.49. The mean age calculated by other studies for carcinoma were similar and Table 3 shows the comparison of the data published in the literature and the results obtained in this study. Taking the mean of all these values the mean age for carcinoma totalled 44.18. This study and others reported from other parts of the Kingdom and even from other Arab countries such as Egypt,¹⁵ Kuwait¹⁹ and Jordan,²³ all concur that the incidence of breast cancer is more prevalent in the younger age group in Arab countries.²⁴ Furthermore, most of the patients who seek medical advice have advanced disease. It is not known whether this is due to the delay in presentation and in seeking medical advice, due to the cultural and social customs, or whether it is due to a more aggressive disease in this part of the world. The current study cannot explain the differences in trends of breast diseases. Factors such as age, genetics, racial, social, cultural, and dietary habits may play a role in explaining these differences. Therefore, further combined studies are needed to elucidate the real pattern of breast diseases among females in this region and other regions. However, the overall results of this study are in concordance with many other studies performed in other parts of the Kingdom.^{1,2,5,8,14} Fibroadenoma is the most

Table 3 - Analytical comparison of mean age for malignant disease, percentage of fibroadenoma cases, percentage of fibrocystic cases, percentage of inflammatory cases and percentage of malignant cases in 8 studies from the literature.

Author	Hospital	Region	No. of years studied	No. of cases	Mean age for ca.	% cases of fibroadenoma	% cases of fibrocystic disease	% cases of inflammatory lesion	% of ca. cases
Al-Idrissi et al ¹		Eastern Province	10	130	40.00	+	+	+	+
Samir et al ¹⁴	DHC	Dharan	26	915	47.10	31.0	21.0	22.0	15.0
Ibrahim EM et al ⁴	KFUH	Eastern Province	10	292	42.00	+	+	+	+
Hasi Sengupta et al ²⁰	KAUH	Riyadh	3	304	42.85	14.0	+	17.5	5.0
Merdad et al ⁷	KAUH	Jeddah	8	121	45.00	-	+	+	+
Awatif et al ⁸	ACH	Abha	8	312	43.70	22.0		39.0	19.0
Ibrahim et al [*]	KAUH	Jeddah	15	981	49.19	26.0	13.0	10.0	31.0
Al-Idrissi et al ²¹	KFUH	Eastern Province	6	69	40.50	+	+	+	+
Ezzat et al ²²	KFSH	Riyadh	10	315	46.00	+	+	+	+
					44.18	23.0	17.0	22.0	17.0

DHC = Dharan Central Hospital; ACH = Asir Central Hospital; KAUH = King Abdul Aziz University Hospital; KFUH = King Fahad University Hospital; KFSH = King Faisal Specialist Hospital; + = some studies do not mention these values; * = not published; ca = carcinoma; No. = number

common lesion; diagnosed in 25% of our patients as compared to 31% in the Eastern Province and 22% in Abha Region.¹⁴ This frequency is much higher than England (8%)¹⁹ and slightly higher than the frequency reported in the United States of America (USA) (18.5%).²⁴ However, it is less than that shown for African American people (35%).²⁵ The causes of high frequency of fibroadenoma among our people is not known, but racial predisposition and hormonal imbalance may have some influence. When considering male breast lesions, especially carcinomas, they are not a common entity and they are reported rarely as compared to the female breast.¹⁰⁻¹² In our series, the fraction of male breast lesions comprised 6% which is higher than reported from the West (range from <1%),¹⁰ but lower than reported from other studies in the Middle East and Africa. Male breast carcinoma represents 1% of all breast carcinomas in the USA, but in countries like Egypt the incidence rises to nearly 10%.^{10,11} In one report from King Faisal Hospital, Taif breast carcinomas constituted 8% as there were 8 cases out of a total of 96 breast carcinomas.¹³ A similar higher incidence of male breast carcinoma has been reported by Koriech.¹² Though there are no recognizable etiological reasons, the higher incidence may be related to the higher incidence of liver cirrhosis following hepatitis B, leading to hyperestrinism and malignancy in susceptible males. Gynecomastia was the most commonly reported lesion in the male breast constituting 54% with a mean age 31.23. The majority of the patients presented at puberty (18 out of 34 i.e. 53%) and we assume that most of them involuted spontaneously with sexual maturation as none of these patients presented for follow up. Eleven cases (32%) of gynecomastia presented in middle age and 5 cases (15%) presented late. The present study has not concentrated on the etiological factors of the diseases, but factors such as hormonal imbalance with increased estrogen (endogenous or exogenous), obesity or idiopathic causes may be involved.

In conclusion, this study is the first to report the pattern of breast lesions in this area and it shows an interesting comparison with 8 other studies from other parts of the Kingdom. The similar results of the comparative analysis for the pattern of breast lesions from all regions of the Kingdom point to the fact that similar etiological influences are playing a role in our Kingdom. However, a large-scale study including all regions of the Kingdom looking at specific etiological factors and comparing them to other Arab and Western countries is highly recommended for the future.

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