
The pattern of breast lesions among Saudi females: A retrospective study from a teaching hospital in the Riyadh Region

Mohammad O. Al Sohaibani, MBBS, FCAP, AC Al Rikabi, MD, MRCPath, FIAC
MB Khoshim, MD, FRCS(C), Mervat S. Al Saleh, MD, FRCS (Ed)

Abstract Objectives: To determine the pattern and distribution of the various types of breast lesions among Saudi females and assess the magnitude of malignant tumors of the breast as a problem among Saudi women.

Design: A retrospective study of 932 surgically removed breast lesions over a period of 12 years (between April 1983 and June 1995).

Setting: The age distribution and pathological diagnoses of 932 patients attending the Surgical Department of King Khalid University Hospital (KKUH) because of breast related complaints were evaluated. A comparison with other similar studies is made.

Results: Of the 932 specimens examined in the Pathology Department at KKUH, 358 (38.41%) were non-neoplastic lesions, and 574 (61.59%) were neoplastic. Fibroadenoma was found to be the most commonly occurring lesion (35.6%) followed by fibrocystic disease (23.49%), carcinoma (20.36%), inflammatory lesions (13.8%), duct ectasia (0.86%), intraductal papilloma (3.1%), lactating adenoma (1.39%) and phyllodes tumor (0.96%) with angiosarcoma, hamartoma and galactocele (each 0.1% respectively). The mean age of Saudi Arab females diagnosed as having invasive mammary carcinoma was 44.5 years as compared to 54 years in Western countries. Most of these patients presented with advanced disease and high frequency of axillary lymph node metastases (60% of cases). The high incidence of fibroadenoma could be due to the large number of young females in the population of Saudi Arabia.

Conclusions: There has been an increase in the number of breast cases in our surgical practice during the last ten years. This could be related to the changes in the socioeconomic conditions in the Kingdom of Saudi Arabia which has led to an increase in the awareness among Saudi Arabia females of their health problems.

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Keywords: Breast lesions, pattern, Saudi females, retrospective study.

The widespread availability of free modern medical care facilities in the Kingdom of Saudi Arabia which in some areas, like the Riyadh region, is thought to be surpassing the needs of the local and expatriate communities has led to an increase in the number of breast cases seen in surgical clinics in the last ten years. This increase could also be due to more awareness among Saudi Arab females of their health problems despite the lack of a national screening program for breast cancer and the limited role played by community medicine doctors and the media in encouraging self-examination of breasts among middle-aged and older Saudi women. The other apparent reason for the relative increase in breast cancer in our surgical practice is perhaps related to the fact that

Saudi women are becoming less reluctant to be examined by surgeons who are mainly males. The surgical team at King Khalid University Hospital, which is a secondary/tertiary health care facility has had an interest in breast problems for some time and our surgeons see breast cases as part of general surgical outpatients, not at a specialized breast clinic. This practice enables them to see a wider range of breast lesions than would be the case in a breast clinic adopting strict referral criterias. This retrospective study describes the pattern and age distribution of breast lesions seen both in the departments of Surgery and Pathology at King Khalid University Hospital, Riyadh over a period of 12 years.

From the Department of Pathology (Sohaibani, Rikabi) and Surgery (Khoshim, Saleh), King Khalid University Hospital, Riyadh, Saudi Arabia.

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Address correspondence and reprint request to: Professor MO Al Sohaibani, Department of Pathology (32), King Khalid University Hospital, PO Box 2925, Riyadh 11461, Kingdom of Saudi Arabia.

Materials and methods All breast surgical specimens (932 cases) received in the Pathology Department at King Khalid University Hospital, which is a large secondary/tertiary health care facility in the Riyadh region, over the period April 1983 to June 1995 were included in this retrospective study.

The surgeons at KKUH see breast cases as part of general surgical outpatients, not at a specialized breast clinic.

We reviewed the surgical pathology records of all female patients who presented with breast lesions during the last twelve years. The information retrieved included the name of the patient, age, nationality, lesion characteristics (site and size) with clinical and pathological diagnosis. The status of the axillary lymph nodes and results of hormonal receptor studies (when available) were recorded in all malignant cases. Cases of accessory breast, patients found to have normal breast tissue with or without lactational change and "old" involuting lobular changes were excluded from this study. Only Saudi Arab female patients were targeted for this study. The histological sections were examined independently by two Pathologists (MOS and AR).

The results of the histopathological review and the data obtained were tabulated (Table 1 and Fig. 1) and analyzed.

Table 1: Pathological diagnosis and mean age in 932 Saudi Arab females with various breast lesions KKUH series April 1983-June 1995.

Type of lesion	No. of patients	% of total	Mean age in years
Non-neoplastic conditions	358	38.4	-
Fibrocystic disease	220	23.60	37.37
Inflammatory lesions	129	13.8	33.7
Graft node	1	0.1	24
Duct ectasia	8	0.86	33.9
Neoplastic lesions	574	61.59	-
Fibroadenoma	337	35.6	25.3
Phylloides tumor	9	0.96	28.91
Intraductal papillomas	29	3.1	43.93
Lactating adenomas	13	1.39	31.42
Hamartoma	1	0.1	19
Invasive ductal carcinoma	181	19.4	44.5
Invasive lobular carcinoma	9	0.96	-
Angiosarcoma	1	0.1	36
Total	932	100	-

Results The histopathological diagnosis for the 932 cases forming the population of this study with the corresponding number of affected patients and the mean age for each group are listed in Table 1 and Fig.1. Fibroadenoma was found to be the most commonly occurring neoplasm, with 55.42% of the patients (184 cases) below the age of 30.

There were 9 cases of benign phylloides tumor (0.96% of the total number of cases), 13 lactating adenomas and 29 cases of intraductal papillomas of which 10 patients had associated fibrocystic mastopathy and 9 (31.03%) were below the age of 40. Duct ectasia was seen in 8 patients (0.86% of the total) with a mean age of 33.39.

An interesting finding was that 33.3% of the phylloides tumor cases were below the age of 20. The mean age for the lactating adenoma cases was 31.42 with the majority of cases (61.52%) between the ages of 20 and 39.

Other less common breast lesions included a single case of hamartoma in a 19 year old girl and galactocele in a 24-year old lady. Fibrocystic disease (also called fibrocystic mastopathy and mammary dysplasia) was the second breast lesion in frequency, accounting for 23.49% of all cases. The majority of patients (31.50%) in this group were between the ages of 40 and 49 with a mean age of 33.7. Most of our patients, who had a diagnosis of fibrocystic mastopathy, did not show histopathological criterias indicating an increased risk of cancer development. Carcinoma of the breast took the third rank in this series. The vast majority of cases were invasive ductal carcinoma (181 out of 190 cases) and a total percentage of 19.41%. An important finding was that 33.15% of the carcinoma cases were below the age of 50 years with a mean age of 44.55 in contrast to 54-56 years in most Western countries.^{2,3}

There were no cases of in situ ductal carcinoma (DCIS). Nine cases of invasive lobular carcinoma (0.96% of the total) were identified with five of these patients (0.54% of the total) showing features of both in situ and infiltrating lobular carcinoma in their tumor. The majority of patients with invasive carcinoma underwent mastectomy and axillary lymphadenectomy. Histological examination of the lymph nodes revealed that 114 patients (60% cases) had metastatic deposits. This finding indicates that most of our patients presented at a late stage of their disease.

A single case of angiosarcoma was included in our study. The patient was a 36-year old woman who presented with a large mass. The diagnosis was suggested by fine needle aspiration cytology

and later confirmed by excision biopsy. Inflammatory lesions of the breast constituted the fourth major category in this series with a total of 137 cases and a mean age of 33.77. Table 1 shows that 37.95% of patients were less than 40 years of age reflecting the association between these inflammatory conditions and lactation.

A point of interest is that granulomatous mastitis was found in 30 cases (21.8% of cases). In the majority of these cases, lactational changes were noticed within the mammary nodules and tuberculosis was ruled out by special stains and culture studies. Our cases support the findings of Going et al² who found a strong association between granulomatous mastitis, recent pregnancy and lactation.

Discussion This hospital-based retrospective study on 932 surgically removed breast lesions from Saudi Arab females covers a relatively well defined population in the Riyadh and surrounding Central Province of the Kingdom over a period of 12 years.

It is certain that there are many economic, social and demographic factors which contribute to and influence the pattern of breast diseases encountered in this country. Saudi Arab females tend to marry at a younger age because of the traditional and religious values of this conservative society with the child-bearing period extending over most of their reproductive life. These facts explain the occurrence of many lactation-related inflammatory lesions which include mastitis, breast abscesses, lactating adenomas, granulomatous mastitis, galactocele and duct ectasia (Table 1). Similar findings were found by other investigators.^{3,4}

Fibroadenomas were the most frequent lesions found constituting 35.6% of all lesions encountered with a mean age of 26 years. This is higher than the reported frequency from other local studies^{5,6,7} and from data in the West, e.g. USA (18.5%)² and England (7.7%).² The incidence is, however, almost similar to the one reported in American blacks (34.7%)⁸ but slightly lower than Africans (39.5%)⁹ and the Caribbean island of Trinidad (39.3%).¹⁰

The reason for the apparent high frequency of fibroadenoma in Saudi Arab females is, in our opinion, related to the large population of young females included in this study and the fact that fibroadenoma, in general, is frequently seen between 20 and 30 years of age although it has been described even in elderly women.¹¹ Furthermore, fibroadenoma may increase in size and become more apparent during pregnancy. This

is usually due to acinar hyperplasia of the lobules which is associated with increased secretions.¹¹ In this study, 43 of our fibroadenoma patients (approximately 13%) showed lactational changes histologically.

Non-neoplastic breast lesions constituted the second largest group in the present study, accounting for 38.4% of cases and fibrocystic disease was the most frequent entity in this group (23.49%). This condition was found, however, to be the most common breast condition in studies from England (37%)² and the USA (33.9%).²

There are few studies on cancer of the breast in Saudi Arab females.^{5,7,12,13} In a project on computerized tumor registry of the Eastern Province, Tamimi¹² concluded that breast cancer has the highest crude frequency rates over all other cancer sites among Saudi females. These high crude rates were similar to those derived from a population based registry in Kuwait,¹³ Iraq¹⁴ and Egypt.¹⁵ Our own data supports these findings.

As expected, patients with breast cancer were relatively young with a mean age of 43.7 years (44.55 in this study) in contrast to 54-56 years in most Western countries.^{2,3} This mean age (43.7 years) may however, correspond to the first peak of breast cancer among Westerners.⁸

Other similarities shared in these studies on Arab females with breast cancer include several poor prognostic factors including large size of tumor at presentation and higher frequency of axillary lymph node metastasis.

In our opinion, this reflects the delays in the presentation of the patient to the physician due to social or cultural factors. Many older Arab females refrain from seeking medical advice out of shyness until their disease becomes far advanced. This trend is, fortunately changing due to the increase in the number of educated Saudi and other Arab females in the last ten years.

Other factors deserving consideration could be related to the proliferative activity and hormonal status of these breast carcinomas. We were unable, however, to include results of such investigations in this study. Further work is certainly needed to shed more light on the natural history and factors affecting the prognosis of breast carcinoma in Saudi Arab females.

Finally, despite the hospital based nature of this study and the relatively small number of patients in this series; we believe that it will be of benefit to epidemiologists and other health workers who are involved in establishing preventive policies for breast lesions in general and breast carcinoma in particular as well as an effective screening program for breast cancer in

Saudi Arabia and other countries in the Arabian Gulf.

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نماذج آفات الثدي عند الإناث السعوديات

دراسة استيعادية (Retrospective) من مشفى تعليمي في منطقة الرياض

الأهداف: تحديد نموذج وتوزيع الأنماط المختلفة لآفات الثدي عند الإناث السعوديات وتقييم مدى انتشار أورام الثدي الحبيثة كمشكلة صحية بين النساء السعوديات .

التصميم: دراسة استيعادية لـ ٩٣٧ آفة ثدي مستأصلة خلال فترة ١٢ سنة (بين نيسان ١٩٨٣ و حزيران ١٩٩٥ م).

الإطار والمكان: تقييم التوزيع السنوي والتشخيصي التشريحي المرضي لـ ٩٣٧ مريضة راجعن قسم الجراحة في مستشفى الملك خالد الجامعي بسبب شكاوي متعلقة بالثدي مع مقارنة للدراسات الأخرى المشابهة .

النتائج: لقد تبين وجود ٣٥٨ حالة (٣٨,٤١%) لآفات غير تشعوية و ٥٧٤ (٦١,٥٩%) آفة تشعوية من أصل ٩٣٢ عينة تم فحصها في قسم التشريح المرضي لمستشفى الملك خالد الجامعي . كما كان الورم العدي الثديي الحميد من أكثر الآفات حدوثاً (٣٥,٦%) متبوعاً بالداء الليفي الكيسي (٢٣,٤٩%) للسرطانة (٣٠,٣٦%) والآفات الالتهابية (١٤,٧%) والورم الخليمي داخل القناة (٣,١%) والغدوم الرضاعي (١,٣٩%) والورم الورقي (٠,٦٩%) بينما شكل الغرن الوعائي والورم العجائني والكيسة اللبينة ٠,١% كل على حدة .

كان متوسط العمر عند الإناث السعوديات اللواتي شحص لديهن سرطانة ثدي احتياحية ٤٤,٥ سنة بالمقارنة مع ٥٤ سنة في البلدان الغربية . ولقد كان المرض متقدماً عند معظم هؤلاء المرضى مع نسبة عالية من الانتقالات للعقد اللمفاوية الأبطية (٦٠% من الحالات) .

يمكن أن تكون النسبة الكبيرة للورم الغدي الليفي الحميد ناجمة عن العدد الكبير للنساء الشابات ضمن سكان المملكة العربية السعودية .

الخلاصة:

لقد حدثت زيادة في عدد حالات الثدي في ممارستنا الجراحية خلال السنوات العشرة الأخيرة ومن الممكن أن يكون ذلك ناجماً عن التغيرات في الظروف الاجتماعية والاقتصادية للمملكة العربية السعودية والتي أدت إلى زيادة الوعي عند النساء السعوديات لمشاكلهن الصحية .