

Profile of breast lesions among women with positive biopsy findings in Yemen

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مُرتَسَم آفات الثدي لدى النساء الإيجابيات الخزعة في الجمهورية اليمنية

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الخلاصة: توضح هذه الدراسة المُرتَسَم الباثولوجي للثدي بالاعتماد على سجلات مختبر الهيستوباثولوجيا المرجعي في الجمهورية اليمنية، الخاصة بنحو 773 سيدة إيجابية الخزعة للسرطان، أو ممن استؤصل الثدي لديهن. وتم تصنيف أنواع السرطانات وفقاً للتصنيف الدولي لعلم الأورام. ووجدت آفات حميدة لدى 79.9% من الحالات، وكان أكثر هذه الآفات انتشاراً الورم الغدي الليفي (30.0%) بعمر وسطي يبلغ 22.2 سنة عند ظهور المرض، يليها الداء الليفي الكيسي (27.4%) ثم التهاب الثدي (13.1%). كما وجدت سرطانة غزّاءة invasive في 155 حالة (20.1%) بعمر وسطي 44.7 سنة.

ABSTRACT This study described the profile of breast pathology based on records from a reference histopathology laboratory in Yemen of 773 women with positive biopsy or mastectomy findings. Cancers were classified according to the International classification of diseases for oncology. Benign lesions were found in 79.9% of cases. Fibroadenoma was the most prevalent lesion (30.0%) with a mean age at presentation of 22.2 years, followed by fibrocystic disease (27.4%) and breast inflammation (13.1%). Invasive carcinoma was found in 155 cases (20.1%), at a mean age of 44.7 years.

Profil des lésions mammaires chez les femmes ayant des résultats de biopsie positifs au Yémen

RÉSUMÉ La présente étude a décrit le profil de la pathologie mammaire sur la base des dossiers d'un laboratoire d'histopathologie de référence au Yémen pour 773 femmes ayant des résultats positifs de ponction-biopsie ou de biopsie de tissus suite à une mastectomie. Les cancers ont été classés selon la Classification internationale des maladies pour l'oncologie. Des lésions bénignes ont été trouvées dans 79,9 % des cas. Le fibro-adénome était le type de lésion le plus répandu (30,0 %), l'âge moyen à la présentation étant de 22,2 ans, suivi par la mastose sclérokystique (27,4 %) et l'inflammation mammaire (13,1 %). Un carcinome invasif a été trouvé dans 155 cas (20,1 %) à l'âge moyen de 44,7 ans.

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Introduction

Globally, breast cancer ranks first among cancers affecting women [1]. It has been found to be the main cause of death from cancer, second to lung cancer in some countries [1,2]. Worldwide 1 in 10 women is affected by breast cancer during their lifetime [3]. There is also the problem of benign tumours reported to be premalignant and the increased risk of developing breast cancer associated with proliferative fibrocystic diseases of the breast [4]. Furthermore, it is very important to differentiate between benign and malignant breast diseases in view of the clinical similarities between them [3]. Therefore, every change in the breast should be evaluated carefully for early detection of possible precancerous elements.

In Yemen, the magnitude of the problem of breast diseases is not yet known. There has been one limited study of breast cancers in the south-eastern governorates [5]. The current study aimed to describe the profile of breast lesions in the records of women with positive biopsy or mastectomy findings from a reference laboratory in Yemen.

Methods

The data were the results of all fine-needle breast biopsies, excisional breast biopsies and biopsies of mastectomies carried out between January 1997 and December 2001 in a histopathology laboratory in Yemen. The laboratory is one of the 4 major histopathology laboratories in Yemen and a reference laboratory for different hospitals and clinics throughout the country. Biopsies from male patients and biopsies that did not produce a clear and confirmed diagnosis were excluded ($n = 77$). Data were complete for the purpose of the study in 773 out of 850 records (90.9%).

Cancers were classified according to the *International classification of diseases for oncology* (3rd edition) [6]. Data about histopathological diagnosis, site of the lesion and women's age were analysed by *SPSS* to find means and standard deviations.

Results

Specimens from 773 patients had positive findings. The major diagnoses were fibroadenoma (in 30.1% of cases) at a mean age of 22.2 years, fibrocystic disease (27.4%) at a mean age of 30.2 years, invasive carcinoma (20.1%) at a mean age of 44.7 years and breast inflammation (13.1%) at a mean age of 33.1 years (Table 1). Other disorders were lactating adenoma, tubular adenoma and miscellaneous disorders.

Of the carcinoma cases, 137/155 (88.4%) were the ductal type. The remainder were lobular carcinoma (7 cases, 4.5%), medullary carcinoma (5 cases, 3.2%), intraductal carcinoma with Paget's disease (3 cases), mixed ductal-lobular carcinoma (2 cases) and tubular carcinoma (1 case).

Most of the patients with fibrocystic changes had a simple type (181/212 cases, 85.4%); 30 patients (14.2%) had proliferative fibrocystic changes without atypia and 1 case was with atypia.

Of the cases of inflammation, 45/101 (44.6%) were chronic mastitis. The others were duct ectasia (40 cases), galactocoele (6 cases), fat necrosis (5 cases), plasma cell mastitis (3 cases) and granulomatous mastitis (2 cases).

Miscellaneous disorders found were: normal breast tissue (6 cases), hyperplastic adipose tissue (2 cases), phylloides tumour (3 cases), malignant fibrous histiocytoma (3 cases), benign fibrous histiocytoma (2 cases), non-Hodgkin's lymphoma (2 cases),

Table 1 Distribution of breast diseases in women with positive findings on breast biopsy and mean age

Disease	Total		Left breast		Right breast		Both breasts		Age (years)	
	No.	%	No.	%	No.	%	No.	%	Mean	(SD)
Fibroadenoma	233	30.1	103	44.2	124	53.2	6	2.6	22.2	(6.8)
Fibrocystic disease	212	27.4	94	44.3	108	50.9	10	4.7	30.6	(10.5)
Carcinoma	155	20.1	92	59.4	63	40.6	0	–	44.7	(12.4)
Inflammation	101	13.1	54	53.5	47	46.5	0	–	33.1	(10.0)
Lactating adenoma	30	3.9	13	44.3	16	53.3	1	3.3	28.3	(6.4)
Tubular adenoma	13	1.7	7	53.8	6	46.2	0	–	27.9	(7.8)
Other	29	3.8	12	41.4	17	58.6	0	–	37.1	(16.2)
Total	773	100.0	375	48.3	381	49.3	17	2.3	31.3	(12.8)

SD = standard deviation.

intraduct papilloma (2 cases), fibrosarcoma (2 cases), and leiomyoma, small cell tumour, stromal sarcoma, haemangioma, granular cell tumour, angiosarcoma and lipoma (1 case each).

Carcinoma affected the left breast more than the right one (59.4% versus 40.6%), so too did inflammation. Fibroadenoma and fibrocystic disease, however, affected the right breast more than the left one (Table 1).

Table 2 shows the age distribution of cases. The peak incidence for fibroadenoma cases was at ages 11–20 years (61.4% of cases) and for fibrocystic disease was 21–30 years (42.9%). For carcinoma cases the peak incidence was in the age group 41–50 years (34.2%), followed by age 31–40 years (24.5%).

Discussion

Most studies on female breast pathologies in different centres in the Eastern Mediterranean Region have concentrated mainly on malignant neoplasms [5,7–12] and there are few reports addressing the pattern of all

breast diseases [13–17]. The present study is the first focusing on the pattern of different breast diseases in Yemen.

This study revealed that about 80% of women with positive biopsy results had non-malignant changes. This finding is comparable with other results reported in Saudi Arabia [13,14]. The most frequent benign tumour in our study was fibroadenoma, constituting 30.1% of all cases. Similar results were obtained from other studies in Saudi Arabia [13,14]. Different results were observed in studies from the United States of America (18.5%) [18], United Kingdom (7.7%) [19], American blacks (34.7%) [20] and Africans [21]. Racial predisposing factors have to be considered in this issue, as the frequency of fibroadenoma is higher among blacks and lower among Euro-American female patients [4,22].

Non-neoplastic fibrocystic lesions of the breast ranked second in our study (27.4%), and this is comparable with one study from Saudi Arabia (24.1%) [14], but different from other studies in that country (13.1% and 12%) [13,23]. Fibrocystic diseases are more frequent in referrals in the United

Table 2 Type of breast diseases by age

Age (years)	Fibroadenoma		Fibrocystic disease		Carcinoma		Inflammation		Lactating adenoma		Tubular adenoma		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
11-20	143	61.4	41	19.3	5	3.2	7	6.9	4	13.3	4	30.8	7	24.1
21-30	68	29.2	91	42.9	22	14.2	42	41.6	17	56.7	4	30.8	4	13.8
31-40	18	7.7	50	23.6	38	24.5	39	38.6	8	26.7	5	38.5	8	27.6
41-50	3	1.3	20	9.4	53	34.2	10	9.9	1	3.3	0	-	5	17.2
51-60	1	0.4	10	4.7	24	15.5	2	2.0	0	-	0	-	2	6.9
>60	0	-	0	-	13	8.4	1	1.0	0	-	0	-	3	10.3
Total	233	100.0	212	100.0	155	100.0	101	100.0	30	100.0	13	100.0	29	100.0

Kingdom (37%) [19] and the United States of America (33.9%) [18]. Hormonal imbalance with prolonged exposure to oestrogen is hypothesized to be the main cause of these disorders [4]. The lower frequency in our society could be due to cultural factors which deter women from consulting medical staff who are predominantly men. Simple fibrocystic disease comprised most of the cases of fibrocystic disease in our study (around 85%) and this is less dangerous than proliferative fibrocystic disease (15%), which is associated with an increased risk of breast cancer [4,22]. Research has shown an association with carcinoma of the breast among female relatives of patients suffering from proliferative fibrocystic disease; thus clinical surveillance should be carried out with both the patient and their female relatives [4,24,25].

Inflammation of the breast was found in 13.1% of biopsies. The pattern of inflammatory breast disease in our study is relatively close to that observed in Saudi Arabia and Jordan [14,15]. Social factors and personal behaviours could be the possible cause of this condition where repeated pregnancies and lactations with accompanying change of breast physiology predispose women to breast infections.

Cancer of the breast constituted about 20% of biopsies in our study. This result is comparable with results from other studies in the region [13,14]. A previous study in Yemen showed that cancer of the breast ranked first among malignant neoplasms affecting women, along with gastrointestinal tract malignancies [26]. Invasive ductal carcinoma was the predominant type in our study, affecting 88% of women with carcinoma, a finding which is comparable with many studies [5,17,18,23,25,27]. The left breast was more affected than the right one, which was also seen in the study from

Oman [17]. The tendency for the left breast to be affected has been reported before [28], although the reasons are unclear.

The mean age of our carcinoma patients was 44.7 years, which is close to that found in patients in other studies in Yemen [5], Oman [17], Saudi Arabia [12–14,23], Egypt [10], Kuwait [10], Sudan [29], Lebanon [30], Jordan [11,15] and Palestine [31]. This study and reports from other Arab countries all concur that the peak incidence of breast cancer is higher around 10 years earlier in Arab countries compared with Europe and America [18].

The current study cannot explain trends of breast diseases between different countries. Factors such as age, genetics, racial,

social, cultural, hormonal [4,22] and dietary habits may play a role. However, the overall results of this study are in concordance with studies performed in other Arab countries [5,10–15,17,23,29–31].

Conclusion

This study has shown that fibroadenomas, fibrocystic diseases, invasive carcinomas and inflammations were the major breast disorders among Yemeni female patients. About 80% of these diseases were benign and 20% of breast lesions were malignant and were found in a relatively young age group.

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