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Breast One Stop Clinic – Follow up Experience at Sultan Qaboos University Hospital in the Sultanate of Oman

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ABSTRACT

Background: The role of the breast clinics is to diagnose breast cancer and reassure patients with benign disorders. One stop clinics - same day reporting - further reduce anxiety caused by the delay in the results. The first one stop clinic was introduced in SQUH–Oman in September 2011.

Methods: This retrospective analysis of 395 consecutive cases presented to Breast One Stop Clinic at SQUH was done between September 2011 and December 2013. All patients underwent triple assessment conducted by consultants. Mammography was performed for patients above 35 years with no contraindications. Ultrasound was done for all patients with palpable lesions. The reports were assigned a score (BIRADS 0-6). Fine Needle Aspiration Cytology (FNAC) was done for all patients with palpable abnormality or nipple discharge. An immediate report was given using the standard reporting categories: acellular/inadequate, benign, atypical, suspicious, and malignant (C1-C5).

Results: Out of 395 patients, 210 were found to have palpable lesions with a mean age of 36 years (12-84 years). All patients were female. The FNAC sensitivity and specificity was 95.7% and 92.2%, respectively. Out of 210 patients, 15.3% were diagnosed with breast cancer on FNAC who were subsequently staged and discussed in the Breast Multidisciplinary Team Meeting (MDT), and 84.7% were diagnosed to have benign breast disorders who were reassured and advised to be followed up after 6 months.

Conclusions: Immediate relief and reassurance to the majority of patients with benign disease obviate the need for review appointments. A reliable diagnosis can be obtained with triple assessment which can be used to avoid unnecessary core biopsy of benign lesions, if correctly done.

Introduction

The incidence of breast cancer is increasing in Oman and worldwide. With industrialization and urban development, delayed child births and reduced fertility, westernization of the lifestyle and increasing life expectancy among women, the incidence of breast cancer is increasing in all developing countries. Although the breast cancer incidence rate has been increasing worldwide since

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1950, the mortality rate has leveled off or begun to decline recently. Countries that have a downturn in mortality are generally those with the highest rates; countries with the lowest incidence rate tend to be the ones in which the mortality is increasing, mainly due to advanced stage at the time of diagnosis.[1, 2] The advanced stage at presentation of breast cancer in developing countries has been attributed to a lack of mass education and screening programs, poverty, poor access to health care facilities, lack of expertise, and poor infrastructures.[1-7]

Breast cancer patients in Oman present with advanced stages and at younger ages than their counterparts in the west; the mean age is 46.8 years and 48% of the female patients are premenopausal. Breast cancer patients in Oman present with advanced stages of the disease at younger ages than their counterparts in the west; as a result, their survival rates are lower. The overall 5-year survival of breast cancer patients in the western countries is 75%, whereas it is only 50% in eastern countries.[1] The age-standardized incidence rate is 15.6 per 100,000. In our last reported study, we found that age at diagnosis was lower in Oman than in the western world, and the majority of patients presented with advanced stages of the disease (III and IV).[1]

In this regard, we need a policy for early breast cancer detection to minimize the anxiety resulting from the breast cancer taboo. More than 80% of the patients seeking medical help for breast lump have benign disorders. However, the taboo of breast cancer and anxiety continue to exist until the patient is reassured by the treating breast specialist.[1]

With the above mentioned in mind, rather than simply expressing concern, indulging in wailing and hand wringing, it was the time to take action by setting one stop clinic at Sultan Qaboos University Hospital (SQUH) for early breast cancer diagnosis and possible treatment. Our first result was encouraging and the results were published in 2013.[8]

At Sultan Qaboos University Hospital (SQUH) which is a modern teaching institute, all patients with breast lesions undergo triple assessment, namely history and examination, imaging (breast ultrasound or mammogram), and histopathology (FNAC or core biopsy).

As a result of the increased public awareness of breast cancer results, many patients expect successful and efficient management of their symptoms. There is also an increasing professional requirement on the part of clinicians for improved health care delivery to these patients.[2]

This public and professional awareness has led to a change in the referral of patients with breast symptoms. Therefore, specialists visit more patients and the benign to malignant ratio constantly rises.[3, 4] The majority of the patients referred to a breast clinic have benign diseases.[5] Most of these patients, however, are in a state of anxiety until they have undergone triple assessment and have received eventual reassurance.[6,7]

Methods

The Breast One Stop Clinic (BOSC) is the first such clinic in the Sultanate of Oman. The data of 395 patients presenting to BOSC at SQUH, from September 2011 to December 2013, was retrospectively analyzed. The clinic is managed by a breast consultant once a week together with senior registrars, residents, a social counselor, a breast nurse, and a staff nurse. All patients were examined by a consultant breast surgeon. The clinical examination was performed using standard examination techniques in the presence of a chaperone. The clinical impression following the examination and evaluation of the symptoms was documented as normal, benign, suspicious, or malignant in the Hospital's Electronic Patient Records (EPR). The patients 35 years and above who did not have a mammogram within a year of their referral to the clinic were routinely subjected to two-view mammography unless they were pregnant or had mastitis. The mammography was performed on a LORAD Selenia full field digital mammography system. Two X-rays of each breast were taken, namely cranio-caudal (CC) and medio-lateral oblique (MLO) views. Supplemental views tailored to the specific problems were taken whenever necessary. The images were viewed by a consultant breast radiologist on a Selenia soft copy review work station. Reports were assigned a score (BIRADS 0-6) by the radiologists, and the mammograms were reviewed by the consultant breast surgeon at the clinic.[9]

Ultrasound (US) was performed by the consultant radiologist on a Philips IU 22 machine using linear 7.5 – 12.5 MHz transducers. The patients were scanned in the supine and/or contra-lateral oblique position, depending on the site of the lesion. Indications for US were the presence of a palpable abnormality in a woman below 35 years of age, a non-contributory mammogram (e.g. a dense background pattern or no obvious abnormality at the site of clinical concern), and contraindications to mammography (e.g. pregnant patients).

A written informed consent was obtained from all patients undergoing cytological or histological evaluation. Biopsy was performed as the gold standard against which the sensitivity and specificity of clinical, US/mammo/FNAC would be calculated.

The procedure was performed by the consultant surgeon, senior registrar, or supervised residents in all patients with a palpable abnormality such as a discrete lump, circumscribed area of thickening, or asymmetrical nodularity, using a UNOLOK size 21Gx38mm needle. Cytology was also performed on blood stained nipple discharges. The aspirate and smears were sent both dry and stained using "Diff-Quik" Rapid

and Papanicolou methods with 95% alcohol.

An immediate report was given using the standard reporting categories, namely acellular/ inadequate, benign, atypical, suspicious and malignant (C1-C5).[10]

Patients with BIRADS 2, 3, and 4, those with lumps bigger than 4 cm, or patients older than 25 years of age were subject to core biopsy and FNAC at the same time regardless of their imaging reports.

Core biopsy was performed in all patients with lump, as it is considered the gold standard against which the sensitivity and specificity of clinical, Ultrasound, mammogram and FNAC would be calculated.

Statistical analysis

The SPSS version 20 software package was used for all data analysis.

Results

A total of 395 patients were seen in the Breast One Stop Clinic from September 2011 to December 2013, of whom 185 (47%) patients had no palpable lumps, had nodularity, or had mastalgia who were reassured and discharged. The remaining 210 (53%) patients were found to have palpable lesions and underwent triple assessment (clinical examinations, imaging, and biopsies) on same day. The mean age of the patients was 36 years (range: 12 – 84 years). Moreover, 95% of the patients were Omanis and only 5% of the patients were expatriates. All the patients were female. Mammography was performed in 28% of the patients. Ultrasound showed a sensitivity of 85.1% and specificity of 92%, with false positive and negative of 8% and 14.9%, respectively (Table 1).

Out of 210 patients who had FNAC and core biopsy simultaneously, 84.7 % had benign breast disorders and 15.3% had malignancy. Furthermore, 29% of the benign disorders were fibroadenoma and the rest of the patients had cysts, mastitis, and other breast aberrations; all these patients were advised to be followed up after 6 months as per unit protocol. The patients diagnosed with malignancy were staged and discussed in a Multidisciplinary Team (MDT) meeting.

The sensitivity of FNAC was 95.7% and its specificity was 92.2% with false negative and false positive of 4.3% and 7.8%, respectively (Table 1).

Table 1. Comparison of the two diagnostic approaches in detecting breast cancer

	Ultrasound	Mammography
Sensitivity	85%	96%
Specificity	92%	92%
False negative	15%	4%
False positive	8%	8%

Discussion

The peculiarity of the Breast One Stop Clinic (BOSC), a "one-stop" diagnostic service, is the ability to discuss with the patient at the first outpatient visit, thus, reassuring most of patients with benign disorders and obviating the need for follow up in the outpatient clinic.

Previous studies in our institute and other centers have focused on the accuracy of triple assessment in breast lumps.[8,11-14] These results have shown a reliable diagnosis can be established, thereby avoiding unnecessary biopsy of benign lesions which can be managed conservatively.[15-18]

In this study, almost 85% of the patients were diagnosed to have benign disorders and were reassured and given a follow up appointment after 6 months. Of the remaining, 15% were diagnosed with malignancies.

Mammography remains the most important imaging investigation for breast complains and is the standard against which newer imaging modalities are compared.

Ultrasonography is operator dependent and accurate if done by a skillful operator. At SQUH, ultrasound is performed by a very senior radiologist subspecialized in women imaging; hence, the results are good and showed a sensitivity of 85% and specificity of 92%, with false positive and negative of 8% and 15%, respectively. However, radiologists generally consider breast ultrasound to have a limited role in the diagnosis of breast cancer, offering targeted evaluation of a focal area rather of the breast unlike mammography.[17] Furthermore, mammograms (when performed) are available to the radiologist at the time of performing and reporting the ultrasound scan.

FNAC of palpable breast lumps is an established diagnostic technique with high accuracy rates.[11-18] In our study, the sensitivity of FNAC was found to be 95.7%; it provided the highest overall prediction of both benign and malignant disease in our clinic. When the FNAC report was categorically malignant (i.e. C5), there were no false positive outcomes. The percentage of acellular specimens was low in our experience (9%) but nonetheless compared well with figures from other centers.[19,20]

A diagnosis was made in 98% of the patients at the first clinic consultation. The high benign to malignant ratio is a reflection of the increasing anxiety in relation to breast symptoms and need for reassurance of both patients and their general practitioners.

In conclusion, we believe that in our practice, the Breast One Stop Clinic (BOSC) diagnostic service provides a reliable and accurate means of establishing a rapid diagnosis and is a safe and efficacious process for managing the ever increasing number of patients presenting with breast symptoms.

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