

BREAST CANCER SCREENING AND A COMPREHENSIVE BREAST CANCER PROGRAM IN SAUDI ARABIA

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Breast cancer continues to be a major cause of morbidity and mortality throughout the world.¹ In countries with a high incidence of this disease, such as the United States, it receives great attention in both the scientific and public media. Even in countries where its incidence is lower, such as Japan, the disease remains a cause for concern and attention.² While it had once been presumed that the incidence of breast cancer in Saudi Arabia was low, more recent data has indicated the contrary. Not only is breast cancer a significant disease in the Kingdom, as elsewhere in the world, but its pattern is very disturbing.³ A recent report in this journal by the group at King Khalid University Hospital makes many important statements to this issue that bear emphasizing.⁴

In the United States, factors considered statistically "protective" against breast cancer include: early childbearing, multiparity, and breast feeding.⁵ All of these factors are commonly present among Saudi women, yet not only do they get breast cancer anyway, but frequently at more than a decade younger than their American counterparts.⁶ The reasons for this are not clear, but should provide incentive for further research in areas such as genetics,⁷ environmental toxicology, and others. The disease often presents in advanced stages, especially at the tertiary care centers, perhaps partly because the patients are younger than the age normally considered at risk. Other factors, including cultural and religious ones, may also play a role in delayed diagnosis. Nonetheless, all of these factors provide tremendous incentives for implementing screening programs to diagnose breast cancer earlier than is currently the norm.

A frustrating fact about breast cancer, as is true of many forms of cancer, is that successful treatment depends heavily on early detection.⁸ Despite the enormous strides made over the last decades in the treatment of breast cancer, including the development and refinement of adjuvant chemotherapy, survival rates *per stage* have improved only modestly.⁹ Rather, the major gains in the past 20 years have been in reducing the destructiveness of breast surgery, and instituting screening programs to improve overall survival rates by increasing the percentage of patients with preclinical detection and subsequent treatment of early stage disease.¹⁰⁻¹²

Breast cancer engenders an exceptional level of fear among women, most probably because of its external location on the body, with all of the obvious cosmetic and psychosocial implications, coupled with the major concern for all types of cancer, namely loss of life. Often they fear the treatment more than the disease itself. This places an even greater burden upon the health care system to convince such patients to undergo screening;¹³ for not only will earlier disease be more curable, it will more likely be treatable without loss of the breast.¹⁴ Paramount to early detection is an organized screening program—the examination of asymptomatic individuals. In breast cancer, this includes the traditional method of physician examination, at appropriate intervals, coupled with patient self-examination, where this is acceptable, and most importantly, mammography.

While virtually every known modality of imaging has been applied at one time or another to the detection and diagnosis of breast cancer, mammography remains the *sine qua non* in this field. From its earliest beginnings with nondedicated x-ray machines, through its dalliance with xeroradiography years ago, its present state-of-the-art dedicated equipment, when coupled with specially trained radiologists, provides a 90% diagnostic yield.¹⁵ Ultrasonography is a helpful adjunct to mammography in some situations, but is not in itself as sensitive a screening method. Recently, MRI is being investigated as another potentially sensitive screening/diagnostic tool for breast cancer, but has its own limitations, not the least of which is cost.

In order for mammography to be useful, it must be available to the population of women at risk. There must be sufficient numbers of well-trained, experienced mammographers to interpret the films; and there must be available methodology to define and diagnose mammographically detected lesions, as described by the group from KKHU. They emphasize the critical application of screening mammography to the early detection and treatment of breast cancer, as well as the technical aspects of needle-localization breast biopsy. Needle-localization breast biopsy has been widely applied to nonpalpable, mammographically identified breast lesions in the United States and Europe for many years,

with a high degree of success and remarkably low morbidity.¹⁶⁻¹⁹ Even newer technology for diagnosis of mammographically demonstrated breast lesions is now undergoing scrutiny—stereotactically guided core-needle biopsy.^{20,21} This technique offers the promise of less invasiveness and possibly less cost than open needle-localization biopsy, and offers more diagnostic accuracy than stereotactic fine-needle aspiration cytology.²² Further evaluation is underway to determine whether these techniques can be as dependably safe and accurate as the benchmark technique described by the KCUH group,^{23,24} and to determine the long-term outcomes and costs when lesions diagnosed as benign are followed over many years without excision. The potential for research in this and other areas brings us to the next important development in the area of breast cancer in the Kingdom.

The subject of breast cancer in Saudi Arabia has been given a new emphasis by the Breast Cancer Program at King Faisal Specialist Hospital and Research Centre (KFSH&RC), which I was privileged to work with through the auspices of the former Saudi-U.S. University Project. The essence of this program, which has been running for four years, is the close functional collaboration in clinical, educational and research areas of breast cancer.²⁵ On the clinical level, patients referred to KFSH&RC with breast cancer are seen initially by a team consisting of a medical oncologist, radiation oncologist and a breast surgeon. The diagnostic workup and initial treatment plan is developed collaboratively by this group. This plan is then taken to the educational arena, and is presented in the weekly combined breast conference, attended by everyone involved in the comprehensive breast program—surgeons, oncologists, radiation oncologists, diagnostic radiologists, pathologists, nurses, physical therapists, and social workers. Residents and fellows from all involved departments are encouraged to attend this session both for their input and for the educational benefits of these discussions.

This interdisciplinary collaboration enhances the care of patients with breast disease, as well as the education of those in training in this area. It provides a richer professional environment for all involved in the care of breast cancer patients, and provides a fertile ground for exchange of ideas for research. Ongoing research projects are enhanced by this exchange, and ideas for new projects have been spawned. To complete the circle, despite the outstanding expertise applied by this team in the care of patients with established, and often advanced, breast cancer, the greatest benefit to the women of the Kingdom will be the development of more widespread screening and educational programs. Currently, lectures to foster public awareness of breast cancer are given every two months, and certified nurses provide workshops on breast self-examination.

It is hoped that future developments in the Breast Cancer Program will include outreach educational programs to other cities and institutions, assisting colleagues there with the latest breast cancer techniques and management, as described by Dr. Adnan Ezzat's article in this issue. Of equal or greater importance will be expanding mammographic screening programs throughout Riyadh and the rest of the Kingdom, providing access to this most critical portion of the breast cancer management process to all women in the Kingdom. Some areas of the U.S. without adequate mammographic facilities or personnel successfully utilize mobile mammography units.²⁶ Such facilities can reach large numbers of women in a wide geographic area, with relatively efficient use of specialized equipment and trained technical and professional personnel. Whether such a facility is applicable within the system in Saudi Arabia certainly deserves consideration, along with other forms of screening. The final, and perhaps most important, element of the Breast Cancer Program is the training of Saudi physicians and surgeons, toward the goal of managing the program and reducing dependence on expatriate health care professionals. This training is currently taking place at KFSH&RC, but we hope it can be expanded in the future to other centers within the Kingdom, as well as in exchange programs abroad. It is hoped that this program's benefits, as well as the exciting future possibilities, will elicit support from a wide array of resources. The development and implementation of a comprehensive Breast Cancer Program is an important first step toward raising the national consciousness about this disease and directing additional resources toward its solution.

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