

## Introduction

One of the most rapidly evolving areas of breast disease involves the diagnostic and surgical management of primary breast cancer. It is hard to imagine a time, not too long ago, when the management of breast cancer was limited largely to radical, extirpative surgical procedures. By the mid-1980s, the paradigm for breast-conserving treatment had become well established, with a continuing trend towards less radical surgical procedures for the primary tumor and the axillary lymph nodes. Today, advances in mammography are detecting breast cancers at earlier stages and providing methods of diagnosis without the need for open surgical biopsy. At the same time, technological developments such as image-guided biopsy and sentinel lymphadenectomy have pushed surgical treatments to become even less invasive for the patient, while providing significantly more diagnostic and prognostic information. Nascent advances in genetic testing are allowing identification of carriers of the BRCA 1 and BRCA2 genes, with implications for prophylactic and reconstructive surgery. The development of effective chemotherapeutic agents is providing methods for preoperative downstaging of more advanced breast cancers, potentially making them eligible for breast-preservation. Newer hormonal therapies are offering strategies designed to prevent the development of breast cancer. Finally, methods of ablating breast cancers *in situ*, without surgery, are on the horizon.

Each of these developments has added significant complexity to the surgical management of breast disease. The care of the breast surgical patient now demands an understanding of risk assessment, preventive options, as well as diagnostic and therapeutic options and their risks and benefits. Furthermore, as treatments become less invasive, they must be compared to the older, better established methods to ensure that the diagnosis and treatment of breast cancer have not been compromised. At the same time, these new technologies demand additional training and credentialing requirements for the surgeon, which has spurred the development of sub-specialized training in breast disease and breast surgery.

In this issue, we have attempted to provide an overview of these changing paradigms for breast surgery with a series of reviews by leaders and pioneers in their respective fields. Within this context, we have also tried to provide a sense of where the field is heading over the next decade, as we see further refinements in the various technologies, and more effective chemotherapeutic and hormonal regimens designed to treat and prevent breast cancer. It is truly the hope of all who are involved in the care of the breast patient that we are not far from a time when prevention is maximized, breast cancers are diagnosed at the earliest possible stage, and the definitive treatment of breast cancer can be accomplished with the most minimal surgical procedures, while offering excellent prospects for cure of the disease.

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