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New Frontiers in Breast Imaging

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October is Breast Cancer Awareness Month, a time when many of us reflect on the extraordinary progress made in breast cancer detection, diagnosis, and treatment over the course of our careers. Few areas of radiology have evolved more dramatically than breast imaging.

When I began my training, the role of the breast imager was relatively well defined: detect abnormalities on screening mammography, characterize findings with diagnostic mammography and US, and perform image-guided biopsies and surgical localizations. Those responsibilities remain at the heart of our specialty.

Over time, however, the field has broadened considerably. Today, breast imagers routinely incorporate advanced modalities such as MRI and contrast-enhanced mammography into clinical practice. We have also assumed new responsibilities related to breast density notification, risk assessment, and personalized screening.

In this issue of *Applied Radiology*, we highlight additional ways that the scope of breast imaging is evolving. Our “Eye on AI” column, authored by Dr Alyssa T. Watanabe and colleagues, examines the growing role of artificial intelligence in the assessment of breast arterial calcifications (BACs) on screening mammography. BAC is increasingly recognized as a marker of cardiovascular risk, creating an opportunity for mammography to support not only breast cancer screening but also the identification of women who may benefit from cardiovascular risk assessment and preventive interventions.

In “Radiology Matters,” our interview with Drs Rajshri N. Shah and Julie A. Ritner explores the evolution of remote diagnostic mammography interpretation. Remote diagnostic imaging offers a means to expand access to subspecialty breast imaging expertise while helping address workforce shortages. Advances in communication technology are making it possible for radiologists, technologists, and patients to interact in ways that previously required everyone to be physically present in the same location. These innovations may help extend high-quality breast imaging services to underserved communities and create new models for delivering specialized care.

Finally, Dr Kenneth R. Tomkovich and colleagues review the emerging use of breast cancer cryoablation. Their article reminds us that radiologists are increasingly contributing not only to diagnosis but also to treatment. Advances in image-guided therapy have brought the possibility of treating selected breast cancers through minimally invasive procedures closer to reality, further extending our involvement across the continuum of care.

Taken together, these articles point toward a common theme. The future of our field will be defined not only by how effectively we detect cancer, but also by how broadly we serve our patients. From opportunistic assessment of cardiovascular risk, to improved access to specialized care, to image-guided treatment, breast imaging continues to evolve in ways that would have been difficult to imagine when many of us entered the field.