Marine Park Radiology Enhances Breast Cancer Screening and Radiologist Workflow with iCAD ProFound AI™ for Digital Breast Tomosynthesis

Challenges:

- Increase in reading time for radiologists reading digital breast tomosynthesis (DBT), compared with 2D mammography

- Continued desire to optimize overall practice efficiency and improve breast cancer detection

- Growing patient base contributing to increased workload and volume of images

Solution:

- ProFound AI™ for Digital Breast Tomosynthesis – iCAD, Inc.

Results:

- 50% increase in cancer pickup rate with combination of DBT and ProFound AI

- Improved workflow and significant reduction in radiologist reading time

- 1-2 minutes processing time per case, enabling radiologists to quickly communicate results

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– Dr. Harold Tanenbaum, MD, DABR, MBA, Marine Park Radiology, Brooklyn, NY

The Story of Marine Park Radiology

Located in Brooklyn, NY, Marine Park Radiology, P.C. is a stand-alone radiology practice offering several modalities of imaging solutions, including mammography, CT, MRI, x-ray, DEXA and ultrasound. Led by Dr. Harold Tanenbaum and Dr. Richard Steinberg, Marine Park Radiology has been a fixture in the community for more than 30 years and is one of the few remaining privately held facilities in the New York City metropolitan area.

On average, Marine Park Radiology sees more than 60 patients a day across all imaging modalities. The practice prides itself on reading all imaging studies in-house, which enables Dr. Tanenbaum and Dr. Steinberg to develop stronger personal relationships with referring doctors and patients, and to provide more individualized patient care.

Cutting-edge Technology Enhances Patient Experience

With a solid commitment to its patients and a desire to provide a personal touch and high-quality patient care, Marine Park Radiology makes it a priority to feature the latest in state-of-the-art technology at the facility. The practice has adopted several iCAD solutions for breast screening since 2006, moving from the company's film-based products to digital in 2010. Most recently, Marine Park adopted ProFound AI for DBT in 2018.

Leveraging the latest in deep-learning artificial intelligence, ProFound AI for DBT was designed to detect malignant soft tissue densities and calcifications with unparalleled accuracy. The software rapidly and accurately analyzes each image, or slice, and provides radiologists with crucial information, such as Certainty of Finding lesion and Case Scores, which can assist in clinical decision-making and prioritizing caseloads.

– Dr. Harold Tanenbaum, MD, DABR, MBA, Marine Park Radiology, Brooklyn, NY

ProFound AI, in combination with 3D tomosynthesis, increased the cancer pickup rate by 50% at Marine Park. Positive clinical results from a large reader study involving ProFound AI for DBT were also recently published in Radiology: Artificial Intelligence; according to study results, the algorithm increases sensitivity by 8 percent, minimizes the rate of false positives and unnecessary recalls by 7 percent, and reduces reading time for radiologists by 52.7 percent.[i]

Improved Sensitivity and Workflow Efficiency

"iCAD's ProFound AI for DBT offers a quantum improvement in terms of our efficiency, enabling us to focus on abnormal findings, while reducing the rate of false positives." said Dr. Tanenbaum. "This is a vital tool for our practice that allows radiologists to zero-in on questionable areas, while reducing reading time and improving our overall confidence in the results."

"With ProFound AI for DBT, iCAD has accomplished exactly what we were looking for in terms of technology for us and our patients," Dr. Tanenbaum added.

Marine Park Radiology adopted 3D DBT in recent years, which increased reading times seven-fold due to the volume of images produced with each case. The addition of ProFound AI enabled the practice to cut the time of 3D analysis and detection down to around same timeframe it took for 2D images previously.

"ProFound AI eliminates some of the questions that clinicians like us have debated before, such as arteries crossing or the potential for shadows to impact the image," he added. "3D mammography can better visualize this part of breast tissue and ProFound AI helps focus in on the areas that really matter for examine more closely."

ProFound AI also aids with the more challenging cases at Marine Park. "There are some instances when our entire team collaborates on the most difficult cases to read," Dr. Tanenbaum noted. "ProFound AI acts as our third or fourth opinion, helping focus the discussions between our doctors and giving us greater confidence in our ultimate diagnosis."

[i] Conant, E. et al. (2019). Improving Accuracy and Efficiency with Concurrent Use of Artificial Intelligence for Digital Breast Tomosynthesis. Radiology: Artificial Intelligence. 1 (4). Accessed on August 14, 2019 via https://pubs.rsna.org/doi/10.1148/ryai.2019180096

About iCAD, Inc.

Headquartered in Nashua, NH, iCAD is a global leader in medical technology providing innovative cancer detection and therapy solutions. For more information, visit www.icadmed.com.

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