Breast MRI: Poorly Differentiated Invasive Carcinoma

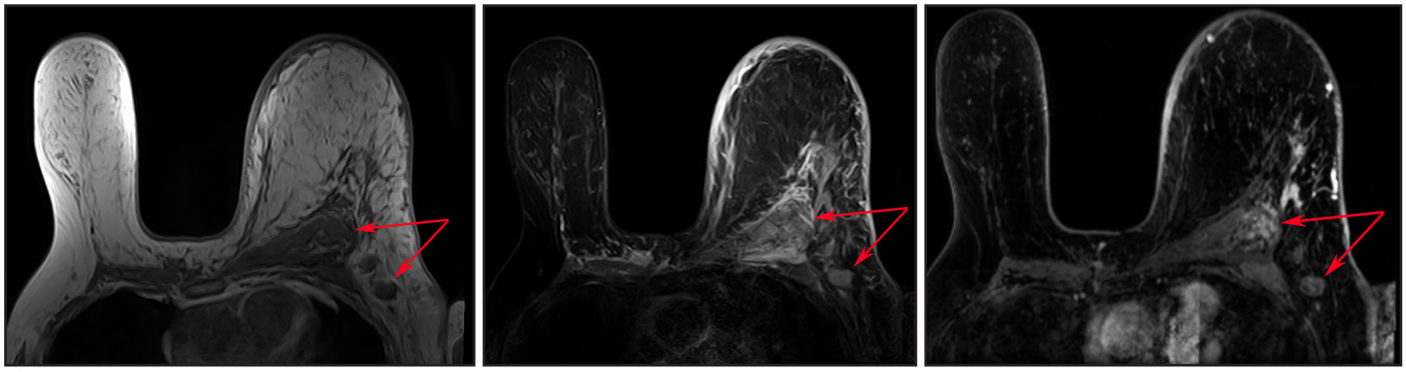


Figure 1. *Axial T1, Axial T2 FAT SAT and Dynamic sequences of the area show the clumped, non-enhancing mass on the left upper outer quadrant of the breast. The red line arrows point to the infiltration of the pectoralis major muscle as well as the enlarged lymph nodes on the left axillary area.*

History

A 62-year-old female patient presented with left breast redness and swelling for three weeks. She had bilateral mammography, left breast ultrasound and PET/CT exams done prior to the MRI.

Technology

A Toshiba Vantage Titan™ 3T MR system with M-Power software and the Hologic Sentinelle 8-channel Breast SPEEDER Coil were used. The patient was in the prone position, feet first inside the gantry. The reduction in acoustic noise, the 71-centimeter ultra-short open-bore design and the gantry lighting provided a comforting environment for the patient. In addition, the ergonomic design of the breast coil enabled the imaging elements to be adjusted to the patient's anatomy, providing superb image quality and patient support, improving the patient's overall experience during the exam. The exam consisted of conventional MR breast protocol sequences including the acquisition of dynamically enhanced sequences.

Findings

The breast MRI successfully identified a moderate sized region of clumped, non-mass enhancement involving the left upper-outer quadrant that measured approximately 6.9 cm AP by 2.6 cm transverse by 4.8 cm craniocaudal. The anterior margin of the region of abnormal enhancement is 9 cm posterior to the nipple. There is also significant infiltration of the pectoralis major muscle and there are numerous abnormally enlarged lymph nodes in the axillary area. The report suggested a biopsy of a left axillary lymph node and a punch biopsy of the skin to confirm possible inflammatory carcinoma.

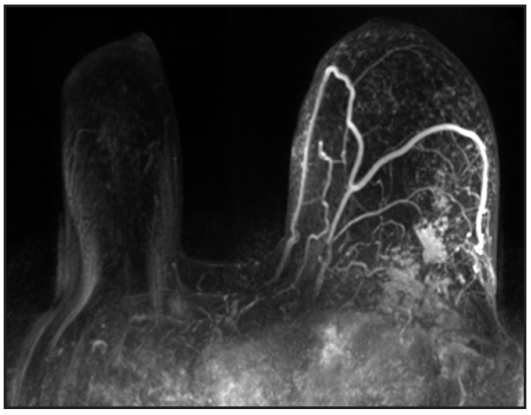


Figure 2. *MIP reconstruction showing the increased vascularity of the breast affected by the tumor, as well as the enlarged lymph node distribution.*

Conclusions

A final diagnosis of a poorly differentiated carcinoma was confirmed after an MRI-guided biopsy. The outstanding fat saturation as a result of slice-selective fat saturation technology enabled the visualization of the enlarged lymph nodes and the biopsy of those areas without patient repositioning. The ergonomic design of the breast coil and the ultra-short, open-bore magnet allowed the patient to be comfortably positioned on the coil during the MRI diagnostic and biopsy exams, allowing for optimal image quality even with the noticeable difference in breast size due to pathology, improving overall patient experience during both procedures.

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