

CONTRAST BREAST MAGNETIC RESONANCE IMAGING: THE SURGICAL PERSPECTIVE

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Background: Contrast breast magnetic resonance imaging (CB-MR) has excellent sensitivity (93%) for breast abnormalities. The value of CB-MR for the surgeon remains controversial.

Methods: Retrospective review of clinical and imaging records was undertaken for 79 surgical patients evaluated by CB-MR. Characteristics of patients selected for CB-MR and the impact of CB-MR on surgical care was evaluated.

Results: Of 79 patients reviewed, 71(90%) had dense mammograms, 62(78%) had known primary breast cancer (BrCA), 42(53%) had a BrCA family history and 8(10%) had known breast atypia. Of the 62 BrCA patients, 14(23%) had ductal carcinoma *in situ*, 43(69%) had invasive ductal carcinoma and 6(10%) had invasive lobular carcinoma. Prior to CB-MR, 57(92%) of BrCA patients desired breast conservation surgery (BCS) and 14(25%) of these desired accelerated partial breast irradiation (APBI). CB-MR identified an increased BrCA size in 10(16%) and BrCa extent in 26(42%). Of 17 non-BrCA patients, CB-MR led to biopsy in 8(47%) identifying BrCA in 3(18%).

Overall, CB-MR identified new BIRADS Category 4 abnormalities in 36(46%) of 79 patients. Of 15 CB-MR initiated core biopsies, 10(67%) identified BrCA or atypia. Of 65 BrCA patients, 13(20%) had neoadjuvant chemotherapy. In 12 of these, CB-MR results contributed to this decision. CB-MR had good pathology correlation in 46/59(78%) patients. There were minor BrCA undercalls of lesions <3.5mm in 7(12%), major undercalls in 3(5%) and major overcalls in 3(5%). Following CB-MR, 34/65(52%) BrCA patients had total mastectomy (10 bilateral). In 5/31(16%) of BCS patients, APBI was possible. In 26/71(37%) BrCA or atypia patients, CB-MR changed the surgical plan significantly, always to a greater extent of resection.

Conclusion: CB-MR identifies new significant lesions in almost ½ high risk breast patients studied. Clinical utilization requires good judgment by the radiologist and surgeon in collaboration. CB-MR is reliable and impacts surgical decisions in over 1/3 of BrCA patients.