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Contribution of pre operative breast MRI study in pure DCIS

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Abstract

Purpose: To evaluate the usefulness of preoperative MAI study in patients with pure ductal carcinoma in situ (DCIS).

Methods and materials: IRB approved, retrospective, descriptive observational study, of a series of cases. Patients with breast cancer operated between January 2015 and March 2017 were reviewed and pure DCISs with mammography (Mx), ultrasound (US), and preoperative MRI available in PACS were selected. Bland-Altman test was used to describe the size concordance considering the histopathology of the surgical specimen as the reference standard. The MAI contribution was classified into 4 groups.

Group 1: MARI provided the same information as conventional studies.

Group 2: improved the description of tumor size without changing surgical approach.

Group 3: generated unnecessary procedures.

Group 4: correctly changed the surgical management.

Results: Of 467 cancers operated, 77 (16.5%) were DCIS, 41 (53.2%) pure and 36 with microinvasion (46.8%). Thirty-three patients met inclusion criteria. Average age 52.78 + 12.55 years. The detectability of the lesions was 90.9%, 30.3% and 74.2% for the Mx, US and MARI respectively. Concordance index of tumor size: MRI=73.3%, US=70% and Mx=58.1%. MRI contribution in preoperative staging: Group 1=18 cases (58%), Group 2= 3 cases (9.7%), Group 3=0 and Group 4=2 cases (6,5%).

Conclusion: Undoubtedly Mx is the main method of detection of pure DCIS. However, MAI proved to be the best technique to evaluate tumor size, allowing better pre-operative staging than conventional studies in 15% of cases, even to correctly change surgical management in 6%.