

## EVALUATION OF PATIENTS WITH BREAST IMPLANTS BY ULTRASOUND AND MAGNETIC RESONANCE IMAGING

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*Background and study aim:* The number of women undergoing breast implant procedures is increasing. With the evolution of implant devices and surgical options, the radiologists are facing new challenges related to the identification of the type of implant, diagnosis of implant-related complications, as well as diagnosis and follow-up of additional breast lesions such as breast cancer. The purpose of the current study was to assess the role of breast ultrasound (USG) and magnetic resonance imaging (MRI) in the evaluation of patients with breast implants.

*Materials and methods:* The study included 19 consecutive female patients who presented for evaluation of their breast implants at the Medpark International Hospital in the period December 2014 – June 2016. All patients underwent a formal breast ultrasound exam and a breast MRI exam with contrast enhancement. The findings were reported according to the Breast Imaging Reporting and Data System (BI-RADS) classification and the results obtained by the two imaging modalities were compared.

*Results:* Contrast enhanced MRI revealed a higher number of breast abnormalities (42.1% exams ranking as BI-RADS II category and 10.5% as BI-RADS III category) compared to breast USG (31.6% exams ranking as BI-RADS II category and none as BI-RADS III category or higher). Findings revealed only on breast MRI were most commonly related to local fibrocystic changes or fibroadenomatoid mastopathy (FAM). A breast hamartoma (fibroadenolipoma) in one patient was also detected only on breast MRI. Breast MRI proved also useful in revealing implant ruptures in a higher number of patients compared to breast USG. Thus, extracapsular implant ruptures were revealed in 26.3% of patients on breast MRI versus only in 15.8% patients on breast USG. An intracapsular implant rupture in one patient could be also revealed only on breast MRI (Table 1).

**Table 1.** Findings obtained by breast USG and breast MRI in patients with breast implants

	<i>BI-RADS I</i>	<i>BI-RADS II</i>	<i>BI-RADS III</i>	<i>Intracapsular implant rupture</i>	<i>Extracapsular implant rupture</i>
<b>USG</b>	13 (68.4%)	6 (31.6%)	0 (0%)	0 (0%)	3 (15.8%)
<b>MRI</b>	9 (47.4%)	8 (42.1%)	2 (10.5%)	1 (5.3%)	5 (26.3%)

*Conclusions:* Breast MRI represents the modality of choice for evaluation of implant integrity and associated pathology in symptomatic patients. It can also provide additional information in patients with breast implants and persisting symptoms despite negative USG findings.