
Abstract:
Purpose: This study was conducted to investigate the appearance of breast lesions in MR mammography (MRM) as a function of size and to identify the potential impact on diagnostic accuracy. Materials and Methods: 936 histologically verified breast lesions (standardized MRM protocol; consecutive 12-year period at our institution, diameter 5 - 50 mm) were prospectively evaluated in consensus by two radiologists with significant MRM experience. For this purpose previously published descriptors (n = 17) were used. These were summarized as the "basic catalog and extended catalog" of descriptors (BC vs. EC). According to a cut-off of 20 mm, the database was divided into the subgroups "small" (n = 669) and "advanced" (n = 267). The diagnostic accuracy of MRM in these two subgroups was then determined using BC and EC, separately (binary logistic regression analysis; AUC analysis). Results: The majority of descriptors (n = 11) showed a significantly different prevalence in correlation with size (p< 0.05). The diagnostic accuracy of MRM for "advanced" lesions (AUC = 0.969) was significantly higher (p< 0.001). This difference was significantly decreased (p< 0.001), if instead of BC (AUC = 0.865) EC was applied for the assessment of "small" lesions (AUC: 0.908 vs. 0.865). Conclusion: The
typical appearance of breast lesions in MRM depends on lesion size. This resulted in lower diagnostic accuracy in small lesions compared to advanced findings. This difference was able to be significantly decreased by applying the catalog of extended descriptors.