

Table S1 Scoring criteria of image quality evaluation for T2-weighted imaging

Image evaluation content	Scoring criteria
Overall image quality	The overall image quality encompasses resolution, noise, and clarity, where a score of 1 indicates a blurry image with significant noise and minimal diagnostic value, while a score of 5 denotes a clear image with very low noise and rich detail
Anatomical clarity	Anatomical clarity evaluates the discernibility of key structures, such as the breast tissue, fat, and lesions, with 1 representing blurred boundaries and 5 signifying sharp, well-defined structures
Diagnostic information	Diagnostic information measures the extent to which the image supports clinical judgment, where a score of 1 indicates no diagnostic information and a score of 5 indicates comprehensive and precise information
Tissue contrast	Tissue contrast focuses on the differences between normal and pathological tissues, with 1 indicating inadequate contrast and 5 indicating significant contrast that allows for clear tissue differentiation
Image uniformity	Image uniformity assesses the distribution of brightness and contrast, where a score of 1 reflects uneven brightness and high noise, while 5 indicates uniformity without artifacts
Artifact status	The artifact status reflects the authenticity of the image, with 1 signifying that artifacts severely hinder structural recognition and 5 indicating no artifacts with true representation of structures. The artifact status reflects the authenticity of the image, with 1 signifying that artifacts severely hinder structural recognition and 5 indicating no artifacts with true representation of structures

Table S2 The results of the interobserver agreement test

Variables	2× SyMRI		3× SyMRI		3× SyMRI-DLR	
	ICC value	P value	ICC value	P value	ICC value	P value
T1 map	0.932	<0.001	0.772	<0.001	0.773	<0.001
T2 map	0.986	<0.001	0.986	<0.001	0.986	<0.001
PD map	0.969	<0.001	0.953	<0.001	0.953	<0.001
SNR	0.982	<0.001	0.986	<0.001	0.986	<0.001
Overall image quality-T1WI	0.771	<0.001	0.735	<0.001	0.754	<0.001
Overall image quality-T2WI	0.829	<0.001	0.873	<0.001	0.801	<0.001
Anatomical clarity-T1WI	0.868	<0.001	0.844	<0.001	0.823	<0.001
Anatomical clarity-T2WI	0.840	<0.001	0.786	<0.001	0.785	<0.001
Diagnostic information-T1WI	0.778	<0.001	0.798	<0.001	0.739	<0.001
Diagnostic information-T2WI	0.802	<0.001	0.799	<0.001	0.774	<0.001
Tissue contrast-T1WI	0.727	<0.001	0.733	<0.001	0.619	<0.001
Tissue contrast-T2WI	0.735	<0.001	0.812	<0.001	0.810	<0.001
Image homogeneity-T1WI	0.633	<0.001	0.714	<0.001	0.800	<0.001
Image homogeneity-T2WI	0.745	<0.001	0.788	<0.001	0.789	<0.001
Status of artifacts-T1WI	0.752	<0.001	0.798	<0.001	0.803	<0.001
Status of artifacts-T2WI	0.799	<0.001	0.778	<0.001	0.822	<0.001

P <0.05 was considered statistically significant. DLR, deep learning reconstruction; ICC, intra class correlation coefficient; SNR, signal-to-noise ratio; SyMRI, synthetic magnetic resonance imaging; T1WI, T1-weighted imaging; T2WI, T2-weighted imaging.