Supplementary

Table S1 Detailed scanning parameters of cine and LGE images

Parameters	Cine image			LGE image		
	Siemens	GE	Philips	Siemens	GE	Philips
TR (ms)	3.1	3.6	3	4.1	6.2	6.1
TE (ms)	1.3	1.4	1.5	1.6	2.9	3
FA (°)	45	60	45	20	25	25
Receiver bandwidth (Hz/px)	704	1041.7	1268.9	156	284.1	147
GRAPPA Acceleration factor	2	2	2	2	2	2
FOV (mm^2)	276×340	380×380	270×270	350×284	380×380	350×350
in-plane resolution (mm^2)	1.8×1.4	2.0×1.7	1.8×1.8	1.9×1.4	1.7×2.0	1.6×1.9
Temporal resolution (ms)	40-50	86	50	140-150	149	154

Cine images include four-chamber, three-chamber, two-chamber, and short-axis images. Siemens refers MAGNETOM Verio 3.0T, Siemens Health Care, Erlangen, Germany; GE refers Discovery MR750 3.0T, GE Medical Systems, Milwaukee, WI, USA; Philips refers Ingenia 3.0T, Philips Healthcare, Best, Netherlands. LGE, late gadolinium enhancement; TR, repetition time; TE, echo time; FA, flip angel; FOV, field of view.

Table S2 Clinical characteristics of HCM and HHD patients in the training group and validation group

Characteristics	HCM			HHD		
	training group (n=252)	validation group (n=169)	P value	training group (n=120)	validation group (n=80)	P value
Gender			0.91			0.82
Male	177 (70%)	120 (71%)		107 (89%)	70 (88%)	
Female	75 (30%)	49 (29%)		13 (11%)	10 (13%)	
Age (years)	50 (38-59)	50 (38-60)	0.47	45 (34-57)	42 (36-57)	0.75
Body surface area (m^2)	2.0 (1.8-2.1)	2.0 (1.8-2.0)	0.87	2.1 (1.9-2.1)	2.1 (1.9-2.1)	0.96
Systolic blood pressure (mmHg)	119 (112-121)	119 (112-121)	0.81	140 (130-145)	142 (126-147)	0.71
Diastolic blood pressure (mmHg)	75 (71-78)	75 (71-79)	0.35	90 (80-96)	90 (79-95)	0.66

Quantitative data were expressed as median and interquartile range (IQR), categorical variables were present as frequencies or percentages. HCM, hypertrophic cardiomyopathy; HHD, hypertensive heart disease; IQR, interquartile range.

Table S3 The independent value of each discriminator in the discrimination models for distinguishing HHD from HCM

Discriminators	Training group		Validation group	
	AUC (95% CI)	P value	AUC (95% CI)	P value
Maximal LVEDWT (mm)	0.818 (0.772-0.864)	<0.001	0.848 (0.799-0.897)	<0.001
LV ejection fraction (%)	0.826 (0.777-0.874)	<0.001	0.818 (0.755-0.882)	<0.001
LVH asymmetry	0.695 (0.634-0.756)	<0.001	0.703 (0.630-0.776)	<0.001
Quantification of LGE (%)	0.587 (0.526-0.648)	0.007	0.727 (0.662-0.791)	<0.001
LGE	0.560 (0.496-0.624)	0.06	0.642 (0.565-0.719)	<0.001
Radscore derived from cine images	0.942 (0.920-0.964)	<0.001	0.872 (0.820-0.924)	<0.001
Radscore derived from LGE images	0.851 (0.811-0.892)	<0.001	0.848 (0.796-0.900)	<0.001

HHD, hypertensive heart disease; HCM, hypertrophic cardiomyopathy; LVEDWT, left ventricular end diastolic wall thickness; LV, left ventricle; LVH, left ventricular hypertrophy; LGE, late gadolinium enhancement; AUC, area under the receiver operating characteristics curve; CI, confidence interval.

https://dx.doi.org/10.21037/cdt-23-350

Table S4 The AUC of different models for discriminating patients with HCM and HHD using different MR scanners in the training and validation group

Model	Equipment	Training group		Validation group	
		AUC (95% CI)	Delong test	AUC (95% CI)	Delong test
Combined model	Siemens	0.974 (0.937-0.992)	0.0526*	0.978 (0.931-0.996)	0.4093*
	Philips	0.994 (0.955-1.000)	0.1233†	0.990 (0.927-1.000)	0.6878†
	GE	0.972 (0.914-0.995)	0.9123‡	0.985 (0.920-1.000)	0.6802‡
Combined radscore	Siemens	0.951 (0.907-0.978)	0.1125*	0.919 (0.853-0.962)	0.4381*
	Philips	0.981 (0.934-0.998)	0.1749†	0.954 (0.872-0.990)	0.4716†
	GE	0.948 (0.881-0.983)	0.9075‡	0.920 (0.829-0.972)	0.9778‡
Cine radscore	Siemens	0.935 (0.887-0.967)	0.1362*	0.884 (0.811-0.936)	0.8954*
	Philips	0.975 (0.925-0.995)	0.0737†	0.894 (0.794-0.956)	0.6087†
	GE	0.912 (0.836-0.961)	0.5019‡	0.852 (0.746-0.926)	0.6002‡
LGE radscore	Siemens	0.803 (0.736-0.860)	0.0781*	0.847 (0.767-0.907)	0.4734*
	Philips	0.900 (0.827-0.949)	0.5794†	0.894 (0.794-0.956)	0.2088†
	GE	0.869 (0.783-0.930)	0.2048‡	0.795 (0.680-0.882)	0.4497‡

*, indicates the Delong test between Siemens and Philips; †, indicates the Delong test between Philips and GE; ‡, indicates the Delong test between GE and Siemens. Philips refers to Ingenia 3.0T, Philips Healthcare, Best, Netherlands; Siemens refers to MAGNETOM Siemens Verio 3.0T, Siemens Health Care, Erlangen, Germany; GE refers to Discovery MR750 3.0T, GE Medical Systems, Milwaukee, WI, USA. HCM, hypertrophic cardiomyopathy; HHD, hypertensive heart disease; MR, magnetic resonance; AUC, area under the receiver operating characteristics curve; CI, confidence interval.

Table S5 Intra-observer and inter-observer reproducibility of multiparameter CMR findings

Parameters	Intra-observer ICC (κ)	Inter-observer ICC (κ)
Maximal LVEDWT (mm)	0.971 (0.941-0.986)	0.884 (0.771-0.943)
LVEDV (ml)	1.000 (0.999-1.000)	0.999 (0.999-1.000)
LVESV (ml)	1.000 (1.000-1.000)	1.000 (0.999-1.000)
LVEF (%)	0.999 (0.997-0.999)	0.997 (0.995-0.999)
LVM (g)	0.999 (0.999-1.000)	0.999 (0.999-1.000)
LGE (%)	0.973 (0.945-0.987)	0.939 (0.875-0.970)
LVH asymmetry	0.923	0.923
SAM	0.889	0.889
Presence of LGE	1.000	1.000
Mid-wall LGE	1.000	0.933
RV insertion point LGE	0.933	0.933

Data in parentheses are 95% confidence intervals (CIs). CMR, cardiovascular magnetic resonance; ICC, intraclass correlation coefficient; κ, kappa coefficients; LVEDWT, left ventricular end diastolic wall thickness; LVEDV, left ventricular end diastolic volume; LVESV, left ventricular end systolic volume; LVEF, left ventricular ejection fraction; LVM, left ventricular mass; LGE, late gadolinium enhancement; LVH, left ventricular hypertrophy; SAM, systolic anterior motion; RV, right ventricle.

https://dx.doi.org/10.21037/cdt-23-350

Appendix 1 Equation

Cine Radscore

-1.0218*wavelet-LLL_glszm_SmallAreaLowGrayLevelEmphasis-
1.339*wavelet-LLL_glcm_InverseVariance-
0.6014*square_glszm_SmallAreaLowGrayLevelEmphasis-
1.0215*wavelet-LLH_firstorder_Skewness+
0.6195*wavelet-LLH_firstorder_Skewness+
2.0089*wavelet-LLL_glrlm_ShortRunLowGrayLevelEmphasis-
1.0101*wavelet-LLH_gldm_LargeDependenceHighGrayLevelEmphasis-
1.922*wavelet-LHL_glcm_MaximumProbability-
0.9122*lbp-2D_firstorder_90Percentile+0.7469*wavelet-LHH_glcm_Correlation-
1.8769*gradient_ngtdm_Coarseness-8.2806*square_glszm_ZoneVariance+
4.4607*wavelet-HHL_glszm_LargeAreaHighGrayLevelEmphasis+
1.3137*logarithm_glszm_SizeZoneNonUniformityNormalized-
24.9143*logarithm_glszm_LargeAreaLowGrayLevelEmphasis-
1.2189*original_shape_MinorAxisLength+
8.8485*wavelet-HLL_firstorder_Median-0.5829*logarithm_glcm_InverseVariance-
4.0423*wavelet-HHH_glcm_ClusterShade-
0.4473*wavelet-HHH_firstorder_10Percentile [S1]

LGE Radscore

0.2618-1.247*wavelet-LLL_glszm_GrayLevelNonUniformityNormalized+
0.3878*wavelet-HLH_firstorder_Skewness-
1.6169*square_ngtdm_Strength+
0.6325*lbp-2D_firstorder_Median-
0.6207*wavelet-LLL_firstorder_Maximum+
0.5933*squareroot_glszm_SmallAreaLowGrayLevelEmphasis-
0.9537*original_shape_MinorAxisLength+
0.8797*square_gldm_DependenceNonUniformityNormalized-
0.7572*wavelet-LHH_glszm_SizeZoneNonUniformityNormalized-
0.4308*wavelet-LLL_glcm_InverseVariance+
0.365*wavelet-HHL_firstorder_Maximum-
0.929*wavelet-LLL_glszm_SmallAreaLowGrayLevelEmphasis+
0.3788*wavelet-LHH_firstorder_Maximum-
0.6282*wavelet-LLH_glszm_SmallAreaHighGrayLevelEmphasis+
0.3988*exponential_glszm_SmallAreaHighGrayLevelEmphasis+
0.5754*original_glszm_GrayLevelNonUniformityNormalized-
0.6239*wavelet-HHH_firstorder_Maximum+
0.6071*squareroot_glcm_Correlation-
0.7961*wavelet-HHH_firstorder_Mean+
0.2974*wavelet-HLH_firstorder_Maximum [S2]

Combined radscore

Cine radscore*2.319+1.679*LGE radscore [S3]

https://dx.doi.org/10.21037/cdt-23-350