

PVC burden	Age	Sex	BMI	BSA	Heart rate	SBP	DBP	LVEF	LVCO	LVmass/BSA	LVEDV/BSA	LVESV/BSA	LVSV/BSA	
	-0.024	-0.230	0.067	-0.115	0.170	-0.151	-0.108	-0.186	0.022	-0.042	0.261*	0.258*	0.125	
	LVEDV/BSA	LVESV/BSA	3DGRS	3DBRS	3DMRS	3DARS	3DGRS	3DBCS	3DMCS	3DACS	3DGLS	3DBLS	3DMLS	3DALS
	0.261*	0.258*	-0.051	0.053	-0.055	-0.043	0.359**	0.333**	0.328**	0.288*	0.230	0.104	0.292*	0.208
	—	0.065	0.069	0.092	0.049	0.080	0.304*	0.312*	0.258*	0.242*	0.192	0.074	0.246*	0.156
	0.083	—	0.085	0.131	0.060	0.062	0.277*	0.289*	0.231	0.208	0.229	0.080	0.229	0.131
	—	—	0.087	0.117	0.063	0.081	0.316*	0.307*	0.266*	0.237	0.182	0.075	0.237	0.143
	LVEDV/BSA	LVESV/BSA	2DGRS	2DBRS	2DMRS	2DARS	2DGRS	2DBCS	2DMCS	2DACS	2DGLS	2DBLS	2DMLS	2DALS
	0.261*	0.258*	-0.335**	-0.165	-0.294*	-0.415***	0.360**	0.274*	0.312**	0.435***	0.302*	0.167	0.151	0.027
	—	0.065	-0.252*	-0.098	-0.192	-0.362**	0.279*	0.211	0.216	0.378**	0.257*	0.165	0.133	-0.010
	0.083	—	-0.235	-0.054	-0.176	-0.353**	0.268*	0.182	0.203	0.373**	0.234	0.171	0.092	-0.025
	—	—	-0.251*	-0.078	-0.183	-0.375**	0.279*	0.203	0.209	0.375**	0.250*	0.167	0.118	-0.020

Spearman correlation coefficient

Figure S1 Spearman correlation and partial correlations between baseline characteristics, segmental strain parameters, and PVC burden. The horizontal lines (LVEDV and/or LVESV) represent the control factors. All strain parameters are reported in both 2D and 3D formats (e.g., 3DGRS, three-dimensional global circumferential strain). *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$. 2D, two-dimensional; 3D, three-dimensional; ACS, apical circumferential strain; ALS, apical longitudinal strain; ARS, apical radial strain; BCS, basal circumferential strain; BLS, basal longitudinal strain; BMI, body mass index; BRS, basal radial strain; BSA, body surface area; DBP, diastolic blood pressure; GCS, global circumferential strain; GLS, global longitudinal strain; GRS, global radial strain; LVCO, left ventricular cardiac output; LVEDV, left ventricular end-diastolic volume; LVEF, left ventricular ejection fraction; LVESV, left ventricular end-systolic volume; LVSV, left ventricular stroke volume; MCS, mid-circumferential strain; MLS, mid-longitudinal strain; MRS, mid-radial strain; PVC, premature ventricular contraction; SBP, systolic blood pressure.

Table S1 Two- and three-dimensional global and segmental strain for healthy controls and patients with PVC

	PVC/24 h			Controls	ANOVA	P value			JT test
	<500 (n=22)	500–10,000 (n=21)	>10,000 (n=26)	(n=25)		>10,000 vs. controls	>10,000 vs. <500	>10,000 vs. 500–10,000	
Global									
GRS-2D (%)	32.05±3.85	30.42±5.95	27.40±6.98 [†]	33.85±6.19	0.038	0.005	0.029	0.388	<0.001
GCS-2D (%)	−18.72±1.52	−18.05±2.39	−16.72±2.76*†	−19.20±2.11	0.016	0.001	0.016	0.200	<0.001
GLS-2D (%)	−17.83 (−15.25, −19.03)	−17.21 (−15.72, −19.20)	−16.48 (−14.70, −17.85)	−17.51 (−16.77, −19.01)	0.128				0.025
GRS-3D (%)	35.05±7.55	35.40±7.30	35.37±11.27	39.76±8.43	0.259				0.153
GCS-3D (%)	−20.04±1.72	−19.17±2.19	−17.51±3.72*†	−20.62±2.00	0.024	0.003	0.019	0.243	<0.001
GLS-3D (%)	−14.95±3.24	−14.26±2.56	−12.98±4.09	−15.12±1.71	0.146				0.033
Basal									
BRS-2D (%)	33.46±3.31	32.16±6.86	30.29±7.32 [*]	35.78±5.87	0.066				0.005
BCS-2D (%)	−19.14±1.30	−18.85±3.44	−17.57±2.60*†	−19.53±1.85	0.058				0.004
BLS-2D (%)	−22.99 (−20.22, −24.57)	−21.19 (−20.18, −22.96)	−21.85 (−18.90, −24.00)*†	−24.24 (−21.45, −25.16)	0.038	0.037	0.262	0.725	0.002
BRS-3D (%)	48.74 (43.38, 56.02)	53.67 (47.51, 70.73)	56.94 (37.94, 73.56)	60.85 (48.97, 72.86)	0.153				0.461
BCS-3D (%)	−19.02±1.77	−18.26±2.33	−16.76±3.12*†	−19.12±2.01	0.036	0.012	0.016	0.246	0.002
BLS-3D (%)	−13.60 (−10.16, −17.95)	−13.48 (−10.72, −14.89)	−12.72 (−9.62, −17.56)	−14.23 (−12.25, −15.38)	0.720				0.245
Mid									
MRS-2D (%)	28.99±4.75	27.65±4.89	25.56±6.92 [*]	30.90±5.98	0.035	0.024	0.195	0.624	0.002
MCS-2D (%)	−17.75±1.96	−17.18±2.23	−16.15±2.93 [*]	−18.40±2.28	0.040	0.007	0.106	0.467	0.001
MLS-2D (%)	−14.79 (−12.72, −16.91)	−15.26 (−12.93, −18.82)	−13.92 (−12.47, −17.16)	−16.30 (−13.80, −16.91)	0.583				0.474
MRS-3D (%)	33.42 (29.50,38.47)	34.58 (28.83,39.33)	33.84 (22.77,47.05)	34.37 (29.11,42.45)	0.837				0.476
MCS-3D (%)	−19.94±1.77	−19.10±2.28	−17.54±4.01*†	−20.29±2.05	0.041	0.018	0.044	0.351	0.003
MLS-3D (%)	−13.90 (−11.36, −17.10)	−14.33 (−11.74, −15.54)	−12.51 (−9.19, −15.07)	−14.98 (−12.32, −15.91)	0.154				0.028
Apical									
ARS-2D (%)	40.23±11.99	35.68±10.29	28.12±10.97 [†]	40.15±12.21	0.004	0.002	0.002	0.116	<0.001
ACS-2D (%)	−21.14±3.06	−19.56±3.56	−16.65±4.40*†‡	−20.82±3.76	0.007	0.001	<0.001	0.048	<0.001
ALS-2D (%)	−14.33±3.47	−14.84±4.25	−13.99±3.47	−13.96±3.19	0.831				0.847
ARS-3D (%)	25.07 (19.74,33.15)	23.27 (19.84,31.36)	24.93 (20.99,30.16)	28.17 (21.99,38.73)	0.610				0.204
ACS-3D (%)	−21.54 (−20.80, −22.88)	−19.94 (−17.58, −23.65)	−19.79 (−16.31, −22.75)*	−23.00 (−20.45, −24.26)	0.044	0.029	0.358	>0.99	0.001
ALS-3D (%)	−16.87±2.28	−16.54±2.29	−15.31±3.98	−17.34±2.06	0.120				0.046

Data are presented as the mean ± SD or median (interquartile range). *, P<0.05 vs. controls; [†], P<0.05 vs. <500 PVC/24 h group; ^{††}, P≤0.05 vs. 500-10,000 PVC/24 h group. GRS, global radial strain; GCS, global circumferential strain; GLS, global longitudinal strain. BRS, basal radial strain; BCS, basal circumferential strain; BLS, basal longitudinal strain; MRS, mid-radial strain; MCS, mid-circumferential strain; MLS, mid-longitudinal strain; ARS, apical radial strain; ACS, apical circumferential strain; ALS, apical longitudinal strain; JT, Jonckheere–Terpstra; ANOVA, analysis of variance.

Table S2 Intra- and interobserver reproducibility for myocardial strain and mapping measurements

	ICC (95% CI)	
	Interobserver	Intraobserver
Global		
GRS-2D (%)	0.993 (0.957, 0.998)	0.910 (0.852, 0.946)
GCS-2D (%)	0.986 (0.922, 0.996)	0.918 (0.862, 0.951)
GLS-2D (%)	0.888 (0.738, 0.954)	0.844 (0.749, 0.905)
GRS-3D (%)	0.743 (0.460, 0.890)	0.921 (0.836, 0.963)
GCS-3D (%)	0.919 (0.807, 0.967)	0.904 (0.803, 0.955)
GLS-3D (%)	0.797 (0.556, 0.915)	0.818 (0.630, 0.914)
Basal		
BRS-2D (%)	0.908 (0.749, 0.965)	0.736 (0.591, 0.835)
BCS-2D (%)	0.904 (0.761, 0.962)	0.762 (0.628, 0.852)
BLS-2D (%)	0.819 (0.572, 0.926)	0.738 (0.593, 0.837)
BRS-3D (%)	0.711 (0.409, 0.874)	0.856 (0.712, 0.931)
BCS-3D (%)	0.777 (0.518, 0.905)	0.876 (0.746, 0.941)
BLS-3D (%)	0.764 (0.498, 0.899)	0.626 (0.332, 0.809)
Mid		
MRS-2D (%)	0.970 (0.926, 0.988)	0.936 (0.893, 0.962)
MCS-2D (%)	0.962 (0.909, 0.985)	0.932 (0.888, 0.960)
MLS-2D (%)	0.612 (0.254, 0.828)	0.847 (0.754, 0.907)
MRS-3D (%)	0.736 (0.453, 0.885)	0.918 (0.828, 0.962)
MCS-3D (%)	0.932 (0.840, 0.973)	0.910 (0.812, 0.958)
MLS-3D (%)	0.679 (0.351, 0.857)	0.847 (0.694, 0.927)
Apical		
ARS-2D (%)	0.981 (0.950, 0.992)	0.961 (0.934, 0.977)
ACS-2D (%)	0.981 (0.804, 0.967)	0.923 (0.873, 0.954)
ALS-2D (%)	0.681 (0.321, 0.864)	0.927 (0.880, 0.956)
ARS-3D (%)	0.687 (0.367, 0.863)	0.920 (0.834, 0.963)
ACS-3D (%)	0.801 (0.544, 0.918)	0.873 (0.737, 0.941)
ALS-3D (%)	0.664 (0.302, 0.855)	0.924 (0.841, 0.965)
Mapping		
Native T1 (ms)	0.834 (0.634, 0.930)	0.856 (0.674, 0.941)
Native T2 (ms)	0.767 (0.508, 0.900)	0.805 (0.577, 0.918)

ICC, intraclass correlation coefficient; CS, circumferential strain; LS, longitudinal strain; RS, radial strain.